

[ XQ[ CLP- ^-

, eqYc>|CI

[ CLP- ^- VbqS S

Z<C^zCqN| |„}EEc{CZw<C^zCqN

Z<C^zCqN rBQ8Zw<C^zCqN

Z<C^zCqN -<PS^C XC-q^S^L X 4 [ ^~~ YZw<C^zCqN

ya;

X-4 c

X-4 |

X-4 {

X-4 J

X-4 I

X-4 v

X-4 u

X-4 D

X-4 \_

X-4 c

c X-4 c rbyfS^L r%szC\ s bHBl ~-zb^s ~sS^L [ -zqf [ CzPb@ - ^@  
B' C-z bHa ~zYCs b^ [ C ^ - ^@ [ C@S ^

9I CE= S\ebqz ^~\e%o s ^e  
S\ebqz \-zeYbzYS4i e%eYbz -s eYz  
Hjb\ \eYfzbbYfzsi \eYbz{ @ S\ebqz , ‡Cs{?  
  
, E ^ei -qq- %f09|> { : > 9QJ> c : : g  
3 E ^ei -qq- %f09v> QD g  
  
sbY~zSb^ E ^ei YS^ - YLi sbYfCf , > 3g  
‡€sbY> %€sbY E sbY~zSb^  
  
eqS^zfHh|? rbY~zSb^= ‡ E 7‡€sbY8> %E 7%€sbY8g

‡€f- Ys E ^ei YS^se- <Cf Q:Ç cÇ JÇg

%œ E f v Q | 1‡€f- Ysg w {

%ð E f Q j J 1‡€f- Ysg

eYzi HSL~qCfHSLsS< Cef D>vgg

eYzi eYbz f ‡€f- Ys> %œ> Y- 4CYEn| ‡ j { %E vn> <bYbqEn4Y~Cng

eYzi eYbz f ‡€f- Ys> %ð> Y- 4CYEnQ| ‡ j %E Qn> <bYbqEnqC@ng

eYzi s<- zzCqf ‡€sbY> %œsbY> <bYbqEn4Y- <Wt> <bq@CqE{ > Y- 4CYEnrbY~zSb^ng

eYzi ‡Y- 4CYf n‡ng

eYzi %œ 4CYf n%ag

eYzi - ‡PYS^Cf Ç <bYbqEn4Y- <Wt> YS^C.S@PEcg

eYzi - ‡fYS^Cf Ç <bYbqEn4Y- <Wt> YS^C.S@PEcg

eYzi LqS@f yq-C> YS^CsZ%œCEnQQn> YS^C.S@PECEI g

eYzi YCLC^@f g

eYzi zSzY Cf nKq- ePS<- Y rbY~zSb^ bH | ? Bl ~- zSb^sng

eYzi sPb.fg

| ? rbY~zSb^= ‡ E | i cJ | D ucJ | D ucJ { > %dE ÇEI ucJ | D ucJ | D ucJ

$$\mathcal{Q} := \left\{ \begin{array}{l} \{ \langle \tau, e \rangle \in E \mid \tau \in \mathcal{Q} \} \mid \exists \tau \in \mathcal{Q} \text{ s.t. } \tau \in \mathcal{Q} \} \\ \{ \langle \tau, e \rangle \in E \mid \tau \in \mathcal{Q} \} \mid \exists \tau \in \mathcal{Q} \text{ s.t. } \tau \in \mathcal{Q} \} \end{array} \right.$$
 $zq^0\infty$ 

sbY~zSb^€{ ? E ^ei YS^- YLi sbYfCf, €{ ?> 3€{ ?g

$$\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & i \\ 0 & 1 \end{pmatrix}$$

eqS^zfHh{? }^Sl~C rBY~zSb^= ‡ E 7‡€{?8> %oE 7%€{?8> < E 7<€{?8ng

C†<Cez ^ei YS^- YLi XS^, YLBqqbq=

eqS^zf n{ ? r%szC\ P-s ^b ~^Sl ~C sbY~zSb^i ng

@Cz€, E ^ei YS^- YLi @Czf, €{ ?g

SH @Cz€, FE €

eqS^zf n} ^Sl ~C sbY~zSb^ C‡Sszsi ng

**CYSH** ^ei YS^- YLi \- zqSt€q- ^W, €?g EE ^ei YS^- YLi \- zqSt€q- ^W^ei

$$\langle bY \sim \wedge \in sz - \langle Wf, \in \{ ? \} \rangle \quad 3 \in \{ ? \} ggg =$$

eqS^zf nR^H^SzCY%\- ^%sbY~zSb^s C†Sszi ng

CYsC=

eqS^zf n] b sbY~zSb^ C‡Sszsi ng

HSL E eYzi HSL~qCf HSLsS< Cef D>vgg

- ‡ E HSLi - @@Cs~4eYbzfccc> eqbUC<zSb^Eo{ @og

$$\frac{1}{2} \epsilon_{\alpha\beta\gamma} \epsilon^{\alpha\beta\gamma} = 6$$

0%6q- ^LC E ^ei YS^se- <Cf QcC> cC> | Cg

†&gt; ^ E ^ei \CsPLqS@†€q- ^LC&gt; %€q- ^LCg

$$\check{S}_c \ E \ f_v \ Q \dagger \ Q \mid 1^{\wedge} g \ w \{$$
$$\mathbb{S} \mid E f \{ Q \mid 1 \dagger j \wedge g$$

Š{ E fJ Q { 1† Q ^g w Q

$$dY_{bz} = eY - \wedge Cs$$

- i eYbz€s~qH <Cf†> ^> Šc> <bYbqEo4Y~Co> - YeP- ECEI> Y- 4CYEndY- ^C cng

- ði eYbz€s-qH <Cf †> ^ > Š| > <bYbqEoqC@> - YeP- ECEI > Y- 4CYEndY- ^C | ng

- ði eYbz€s~qH <Cf†> ^> Š{> <bYbqEoLqCC^o> - YeP- ECEI> Y- 4CYEndY- ^C {ng

SH @CZ€, FE €

- ði s<- zzCqf ð€{ ?> %€{ ?> <€{ ?> <bYbqEn4Y- <Wt> sEcCE Y- 4CYEnR^zCqsC<zSb^  
lbS^zng

- this is a 4-year funding

- this is a 4CYF **ring**

- this is a Y-4CYf nŠng

- ~~is~~ Cz€zSzYcf n{ ? R^zCqsC<zSb^ bH dY- ^Csn<sup>gg</sup>

eYzi sPb.f g

```
{ ? } ^Sl -C r bY-zSb^= ‡ E ciI vvvvvvvvvvvvvv> %E Œ_vvvvvvvvvvvvvv> < E
ŒD{oooooooooooooI
```

 $\{$

}^Sl ~C sbY~zSb^ C‡Sszsi

```
9J: = S\ebqz ^~\e%o s ^e
S\ebqz \-zeYbzYS4i e%Ybz -s eYz

@CH LC^Cq- zC€ ^@€Ybz f@SszqS4-zSb^En~^SHbq\ng=
^ei q- ^@b\i sCC@fJ|g

SH @SszqS4-zSb^ EE n~^SHbq\n=
@z- E ^ei q- ^@b\i ~^SHbq\fqC€ c€ sS< Cef cCCCC |gg
CYsC=
@z- E ^ei q- ^@b\i ^bq\ -Yf€ I> sS< Cef cCCCC |gg

\C- ^€4CHbqC E ^ei \C- ^f@z- > - ‡SsECg
\C@S- ^€4CHbqC E ^ei \C@S- ^f@z- > - ‡SsECg

b~zYSCqs E ^ei -qq- %f99I€ I€> 9QI€ QI€> 9ul> Qul:> 9Qul> ul::g
```

@ z- € .SzP€b~zYSCqs E ^ei fsz- <W9@ z- > b~zYSCqs: g

\C- ^€- HZCq E ^ei \C- ^f@ z- € .SzP€b~zYSCqs> - ‡SsECg  
\C@S- ^€- HZCq E ^ei \C@S- ^f@ z- € .SzP€b~zYSCqs> - ‡SsECg

eqS^zfHh5^7@SszqS4~zSb^i <- eSz- YS< Cf g8 ?SszqS4~zSb^=ng  
eqS^zfHh[C ^ 4CHbqC b~zYSCqs= 7\C- ^€4CHbqC8ng  
eqS^zfHh[C@S- ^ 4CHbqC b~zYSCqs= 7\C@S- ^€4CHbqC8ng  
eqS^zfHh[C ^ - HZCq b~zYSCqs= 7\C- ^€- HZCq8ng  
eqS^zfHh[C@S- ^ - HZCq b~zYSCqs= 7\C@S- ^€- HZCq8ng

eYzi HSL~qCfHSLsS: CefD> vgg  
eYzi s<- zzCqf@ z- 9=> (E> @ z- 9=> c: > sEc> Y- 4CYE~~naqSLS~~^ - Y ?- z- ng  
eYzi s<- zzCqf b~zYSCqs9=> (E> b~zYSCqs9=> c: > <bYbqEoqC@> Y- 4CYE~~na~zYSCqs~~n>  
<- qWqEo~~f~~o> sEcECg  
eYzi - ‡fYS^Cf\C- ^€- HZCq9CE> <bYbqEo4Y~Co> YS^Csz%~~ACEoQQ~~> Y- 4CYEn[C ^ , HZCqng  
eYzi - ‡fYS^Cf\C@S- ^€- HZCq9CE> <bYbqEoLqCC^o> YS^Csz%~~ACEoQQ~~> Y- 4CYEn[C@S- ^  
, HZCqng  
eYzi zSzYCFHh7@SszqS4~zSb^i <- eSz- YS< Cf g8 ?SszqS4~zSb^ .SzP a~zYSCqsng  
eYzi YCLC^@f g  
eYzi sPb.fg

LC^Cq- zC€- ^@€eYbzf n~^SHbq\ng  
LC^Cq- zC€- ^@€eYbzf nL- ~ssS- ^ng

} ^SHbq\ ?SszqS4~zSb^=  
[C ^ 4CHbqC b~zYSCqs= 9QEECE|D{D CECH{cuCE:  
[C@S- ^ 4CHbqC b~zYSCqs= 9QEECE|DCE{v CECEJ{CH{:  
[C ^ - HZCq b~zYSCqs= 9QEECEcvcu CECH{cl{J:  
[C@S- ^ - HZCq b~zYSCqs= 9QEECE|DCE{v CECEJ{CH{:

$K_{\sim ss} S^{-\wedge} ?SszqS4-zSb^{\wedge}=$   
 $[C^{-\wedge} 4CHqC \ b\sim zYSCqs= 9CE\bar{C}e_u\bar{u}\bar{C} \ CE\bar{C}_\bar{C}\_\bar{C}\_\bar{I}:$   
 $[C@S^{-\wedge} 4CHqC \ b\sim zYSCqs= 9CE\bar{C}J\bar{C}e_{vu}| \ CE\bar{C}v\{JJD:$   
 $[C^{-\wedge} -HzCq \ b\sim zYSCqs= 9CE\bar{C}e_u\bar{v}\{ |c \ CE\bar{C}_\bar{C}\bar{C}\{I:$   
 $[C@S^{-\wedge} -HzCq \ b\sim zYSCqs= 9CE\bar{C}J\bar{C}e_{vu}| \ CE\bar{C}v\{JJD:$

X-4 |

| XS^G qpQLqCsb^ HbqOb~sCdq&CdqC@Szb^

9Ic: = S\ebqz ^~\e%o s ^e  
S\ebqz \-zeYbzYS4ie%Ybz -s eYz  
† E ^ei - qq- %99c|CE> 9cICE: g  
%E ^ei - qq- %9{CECE { |CECEg  
†€^C...E ^ei - qq- %99|CE> 9cDCE> 9ICE> 9{CE> 9|CE> 9|uCE: g  
%€^C...E ^ei - qq- %9JICECE JCECE IICECE vCECE JDCECE uCECEg  
†€<b\4S^C@ E ^ei fsz- <W9†> †€^C.:g  
%€<b\4S^C@ E ^ei Psz- <W9% %€^C.:g  
†€<b\4S^C@€4S- s E ^ei Psz- <W9^ei b^Csff†€<b\4S^C@ sP- eC9CE> cgg> †€<b\4S^C@ g  
  
` ]bq\ - Y Q ~-zSb^= zPCz- E f†/y †g/fQg †/y %o  
zPCz- E ^ei YS^ - YLi S^ff†€<b\4S^C@€4S- siy 2 †€<b\4S^C@€4S- sg 2 †€<b\4S^C@€4S- siy  
2 %€<b\4S^C@  
  
` dqC@<zC@ Pb-sC eqS<C Hbq - Pb-sC sS<C bH c\_JCE

sS< CēzbēeqC@S<z E c\_JCE  
 †ēeqC@S<z E ^ei - qq-%f9c> sS< CēzbēeqC@S<z: g ` , @@ 4S-s zCq\  
 eqC@S<zC@ēeqS<C E †ēeqC@S<z 2 zPCz-  
 eqS^zfHhXS^C-q pCLqCssSb^ ; bCHf<SC^zs fzPCz- g= 7zPCz- 8ng  
 eqS^zfHhdqC@S<zC@ eqS<C Hbq - c\_JCEsliHz Pb-sC= A7eqC@S<zC@ēeqS<C=i |Hng  
 ` , Ss~ YS<- zSb^  
 eYzi s<- zzCqf †ē<b\4S^C@ %b\4S^C@ <bYbqEo4Y~Co> Y- 4CYEo?- z- dbS^zsog  
 eYzi eYbz†ē<b\4S^C@ †ē<b\4S^C@€4S-s 2 zPCz- > <bYbqEoqC@> Y- 4CYEopCLqCssSb^  
 XS^Cog  
 eYzi s<- zzCqf sS< CēzbēeqC@S<z> eqC@S<zC@ēeqS<C> <bYbqEoLqCC^o> Y- 4CYEodqC@S<zSb^  
 fc\_JCEsliHzgog  
 eYzi ‡Y- 4CYforS<C fsl iHzgog  
 eYzi %Y- 4CYfodqS<C fAgog  
 eYzi zSzYcf oXS^C-q pCLqCssSb^ Hbq Ob-sC dqS<Csog  
 eYzi YCLC^@f g  
 eYzi LqS@f g  
 eYzi sPb.f g

XS^C-q pCLqCssSb^ ; bCHf<SC^zs fzPCz- g= 9|vuD\_i vI Cēcl v| |c|i cuCEu\_uD  
 dqC@S<zC@ eqS<C Hbq - c\_JCEsliHz Pb-sC= AJ{DJCEIu



9I | : =

```
S\ebqz ^~\e%o s ^e
S\ebqz \-zeYbzYS4i e%Ybz -s eYz
S\ebqz \-zeYbzYS4i - ^S\ -zSb^ -s - ^S\ -zSb^

` ?-z- ebS^zs
‡ E ^ei -qq- %f9c> {>J> v> u>_: g
%oE ^ei -qq- %f9l >|> I> J> c> u: g

` R^SzS- Y e- q- \CzCqs
-> 4> < E E E E
YC- q^S^Lq- zC E EEE

SzCq- zSb^s E I EE

Hbq € S^ q- ^LcfSzCq- zSb^sg=
%GeqC@ E - 1 ‡11| j 4 1 ‡ j <
@ E Q 1 ^eis~\f‡11| 1 f%Q %GeqC@gg w YC^f‡g
@4 E Q 1 ^eis~\f‡ 1 f%Q %GeqC@gg w YC^f‡g
@< E Q 1 ^eis~\f%Q %GeqC@gg w YC^f‡g
- QE YC- q^S^Lq- zC 1 @
4 QE YC- q^S^Lq- zC 1 @4
< QE YC- q^S^Lq- zC 1 @<
eYzi s<- zzCqf ‡> %o Y- 4CYEo?-z- ebS^zsog
eYzi eYbz f‡> - 1f‡11| gj 4l‡j <> <bYbqEoqC@o> Y- 4CYEoGSzzC@ YS^Cog
eYzi ‡Y- 4CYf o‡og
eYzi %Y- 4CYf o%og
eYzi YCLC^@f g
eYzi sPb.fg
```

X-4 {

{ XS^G qpCLqCssSb^ ~sS^L Kq @SC^z ? Cs<C^z

9{(: = S\ebqz ^~\e%o s ^e  
S\ebqz \-zeYbzYS4i e%Ybz -s eYz  
Hjb\ sWC q^i \b@CYsCYC<zSb^ S\ebqz zq S^EzCszEseYSz  
Hjb\ sWC q^i YS^C qE\ b@CY S\ebqz XS^C qpCLqCssSb^  
Hjb\ sWC q^i eqCeqb<CssS^L S\ebqz dbY%b\ S- YCC- z~qCs  
Hjb\ sWC q^i \CzqS<s S\ebqz \C ^EsI ~- qC@Cqqbq> q| Es<bqC  
Hjb\ sWC q^i eSeCYS^C S\ebqz dSeCYS^C  
  
` KC^Cq- zC s%zPCzS< @ z-  
^ei q- ^@b\i sCC@J| g  
† E ^ei q- ^@b\i ~^SHbq\ fQ| > {> I Qgi qCsP- eCf Qc> cg  
%E CEI 1 †11{ Q †11| j | j ^ei q- ^@b\i ^bq\ - Yf CE |> sS< CE†i sP- eCg  
  
` G~^<zSb^ zb eCqHbq\ dbY%b\ S- Y pCLqCssSb^  
@CH ebY%b\ S- YEqCLqCssSb^ f@CLqCC> - †g=

\b@CY E dSeCYS^Cf9f oebY%> dbY%b\S- YGC- z~qCsf@CLqCCgg> f oqCLqCsbqo>  
XS^C- qpCLqCsb^f gg: g  
†Ezq- S^> †EzCsz> %Ezq- S^> %EzCsz E zq- S^EzCszEseYSzf†> % zCszEsS<CECE|>  
q- ^b\Esz- zCEJ|g  
\b@CYi Hszf†Ezq- S^> %Ezq- S^g

%Ezq- S^EqC@ E \b@CYi eqC@S<z f†Ezq- S^g  
%EzCszEqC@ E \b@CYi eqC@S<z f†EzCszg

zq- S^€\sC E \C- ^€s! ~ qC@Cqqbqf%Ezq- S^> %Ezq- S^EqC@g  
zCsz€\sC E \C- ^€s! ~ qC@Cqqbqf%EzCsz> %EzCszEqC@g  
zq- S^€q| E q| €s<bqCf%Ezq- S^> %Ezq- S^EqC@g  
zCsz€q| E q| €s<bqCf%EzCsz> %EzCszEqC@g

†Ez- ^LC E ^ei YS^se- <CfQ|> {> cCECEgi qCsP- eCfQ> cg  
- †i eYbz f†Ez- ^LC> \b@CYi eqC@S<z f†Ez- ^LCg> Y- 4CYEHb?CLqCC 7@CLqCC8og  
- †i s<- zzCqf†Ezq- S^> %Ezq- S^> <bYbqEoLqCC^o> Y- 4CYEoyq- S^ ?- z- og  
- †i s<- zzCqf†EzCsz> %EzCsz> <bYbqEoqC@o> Y- 4CYEoyCsz ?- z- og

` , @@ zC†z .SzP 4b† - qb~^@ Sz  
- †i zC†zf (Ec> (E\_> Hbyq- S^ [rB= 7zq- S^€\sC=i |HB5^yCsz [rB= 7zCsz€\sC=i  
|HB5^yq- S^ p = 7zq- S^€q|=i |HB5^yCsz p = 7zCsz€q|=i |HBo>  
Hb^zsS<CE\_> P- EoYCHzo> f- Eozbeo> zq- ^sHbq\E- †i zq- ^s, †Cs>  
44b†E@S<z fH <C<bYbqEo. PSzCo> C@LC<bYbqEo4Y- <W>  
4b†sz%ACEoqb~^@e- @ECE{ogg

- †i sCzEzSzYCFHdbY%b\S- Y pCLqCsb^ f?CLqCC 7@CLqCC8gog  
- †i sCz€†Y- 4CYf o†og  
- †i sCz€%X- 4CYf o%og  
- †i YCLC^@f g

` dYbzzS^L Hbq @SHCqC^z @CLqCCs  
HSL> - †s E eYzi s~4eYbzsf c> {> HSLsS<CEf cD> vgg  
Hbq S> @CLqCC S^ C^~\Cq- zCf9c> {> c{: g=  
ebY%b\S- YEqCLqCsb^f@CLqCC> - †s9S: g

eYzi sPb.fg

X-4 J

J [ ~YSeYC- ^@dbY%bb\ S YpCLqCssb^ ~sS^L zPC; - YHbq^S Ob~sQ  
S^L ? - z- sCz

```
9{ J: = S\ebqz ^~\e%o s ^e
S\ebqz e- ^@s -s e@
Hjb\ sWc q^i @z- sCzs S\ebqz Hcz<P€<- YSHbq^S- €Pb~sS^L
Hjb\ sWc q^i b@CYeCYC<zSb^ S\ebqz zq- S^€zCsz€seYSz
Hjb\ sWc q^i eqCeqb<CssS^L S\ebqz dbY%bb\S- YCC- z~qCs> rz- ^@ q@<- YCq
Hjb\ sWc q^i YS^C q€b@CY S\ebqz XS^C- qpCLqCssSb^

` Xb- @ @z- sCz
@z- E Hcz<P€<- YSHbq^S- €Pb~sS^Lf g
† E e@ ?- z- Gq\ Cf@ z- i @z- > <bY~\^sE@ z- i HC- z~qC€^~\Csg
%oE @z- i z- qLCz

` reYSz zPC @z- S^zb zq- S^S^L - ^@ zCszS^L sCzs
†€zq- S^> †€zCsz> %€zq- S^> %€zCsz E zq- S^€zCsz€seYSzf†> %o zCsz€sS< CECE|>
q- ^@b\esz- zCEJ|g

` dqCeqb<CssS^L= r<- YC HC- z~qCs
s<- YCq E rz- ^@ q@<- YCqf g
†€zq- S^€s<- YC@ E s<- YCqi Hsz€zq- ^sHbq\ f†€zq- S^g
†€zCsz€s<- YC@ E s<- YCqi zq- ^sHbq\ f†€zCszg

` , eeY%ebY%bb\S- Y HC- z~qCs f?CLqCC E /g
ebY%oE dbY%bb\S- YCC- z~qCs f@CLqCCE|g
†€zq- S^€ebY%oE ebY%oHsz€zq- ^sHbq\ f†€zq- S^€s<- YC@g
†€zCsz€ebY%oE ebY%azq- ^sHbq\ f†€zCsz€s<- YC@g
```

```

` yq-S^ XS^C-q pCLqCssSb^ \b@CY ..SzP ebY%b\ S- Y HC- z~qCs
\b@CY E XS^C- qpCLqCssSb^fg
\b@CYi HZf†€zq- S^€ebY%o %€zq- S^g

` dqC@S<z b^ zCsz @z-
%€eqC@ E \b@CYi eqC@S<z†€zCsz€ebY%g

` ; - Y~Y-zC [C ^ r l ~- qC@ Bqgbq \- ^~ YY%o
\sC E ^ei s~\ff%€zCsz Q %€eqC@g 11 |g w YC^f%€zCszg

` ; - Y~Y-zC p r<bqC \- ^~ YY%o
%€C- ^ E ^ei \C- ^f%€zCszg
ss€zbz- Y E ^ei s~\ff%€zCsz Q %€C- ^g 11 |g
ss€qCsS@- Y E ^ei s~\ff%€zCsz Q %€eqC@g 11 |g
q| E c Q fss€qCsS@- Y w ss€zbz- Yg

eqS^zfHh[ C- ^ r l ~- qC@ Bqgbq fdbY%b\ S- Y ?CLqCCE|g= 7\sC=i JHBng
eqS^zfHhp r<bqC fdbY%b\ S- Y ?CLqCCE|g= 7q|=i JHBng

` `` 11ci XS^C-q pCLqCssSb^11
YS^C- q€\b@CY E XS^C- qpCLqCssSb^fg
YS^C- q€\b@CYi HZf†€zq- S^€s<- YC@ %€zq- S^g
%€eqC@YS^C- q E YS^C- q€\b@CYi eqC@S<z†€zCsz€s<- YC@g

` ; - Y~Y-zC [rB Hq XS^C-q pCLqCssSb^ \- ^~ YY%o
\sC€YS^C- q E ^ei s~\ff%€zCsz Q %€eqC@YS^C- qg 11 |g w YC^f%€zCszg

` ; - Y~Y-zC p r<bqC Hq XS^C-q pCLqCssSb^ \- ^~ YY%o
ss€qCsS@- Y€YS^C- q E ^ei s~\ff%€zCsz Q %€eqC@YS^C- qg 11 |g
q| €YS^C- q E c Q fss€qCsS@- Y€YS^C- q w ss€zbz- Yg

` , - qS- ^<C bH pCsS@- Ys fXS^C-q pCLqCssSb^g
qCsS@- Ys€YS^C- q E %€zCsz Q %€eqC@YS^C- q
f- qS- ^<C€YS^C- q E ^ei s~\ffqCsS@- Ys€YS^C- q Q ^ei \C- ^fqCsS@- Ys€YS^C- qgg 11 |g w
YC^fqCsS@- Ys€YS^C- qg

eqS^zfn5^`` XS^C-q pCLqCssSb^ pCs~Yzs ``ng
eqS^zfHh[ C- ^ r l ~- qC@ Bqgbq= 7\sC€YS^C- q=i JHBng
eqS^zfHhp r<bqC= 7q| €YS^C- q=i JHBng
eqS^zfHh, - qS- ^<C bH pCsS@- Ys= 7f- qS- ^<C€YS^C- q=i JHBng

` `` 11/i dbY%b\ S- Y pCLqCssSb^ f?CLqCC E Jg11
ebY%oE dbY%b\ S- YCC- z~qCs f@CLqCCEJg
†€zq- S^€ebY%oE ebY%o†€zq- ^sHbq\ f†€zq- S^€s<- YC@g
†€zCsz€ebY%oE ebY%oq- ^sHbq\ f†€zCsz€s<- YC@g

ebY%€\b@CY E XS^C- qpCLqCssSb^fg

```

```

ebY%6\b@CYi HZf†€zq- S^€ebY%00 %6zq- S^g
%6eqC@€ebY%0E ebY%6\b@CYi eqC@S<z f†€zCsz€ebY%g

` ; - Y<~Y-zC [rB Hbq dbY%b\ S- Y pCLqCssSb^ \- ^~ YY%0
\sC€ebY%0E ^ei s~\ff%6zCsz Q %6eqC@€ebY%g 11 |g w YC^f%6zCszg

` ; - Y<~Y-zC p r<bqC Hbq dbY%b\ S- Y pCLqCssSb^ \- ^~ YY%0
ss€qCsS@~ Y€ebY%0E ^ei s~\ff%6zCsz Q %6eqC@€ebY%g 11 |g
q|€ebY%0E c Q fss€qCsS@~ Y€ebY%0w ss€z bz- Yg

` , - qS- ^<C bH pCsS@~ Ys fdbY%b\ S- Y pCLqCssSb^g
qCsS@~ Ys€ebY%0E %6zCsz Q %6eqC@€ebY%0
f- qS- ^<C€ebY%0E ^ei s~\ffqCsS@~ Ys€ebY%0Q ^ei \C- ^f qCsS@~ Ys€ebY%gg 11 |g w
YC^f qCsS@~ Ys€ebY%g

eqS^zf n5^` `` dbY%b\ S- Y pCLqCssSb^ f?CLqCCEJg pCs~Yzs `` ng
eqS^zf Hh[ C- ^ r l ~ qC@ Bqqbq= 7\sC€ebY%0i JHBng
eqS^zf Hhp r<bqC= 7q|€ebY%0i JHBng
eqS^zf Hh, - qS- ^<C bH pCsS@~ Ys= 7f- qS- ^<C€ebY%0i JHBng

```

```

[ C- ^ r l ~ qC@ Bqqbq fdbY%b\ S- Y ?CLqCCE|g= CEJvJ{
p r<bqC fdbY%b\ S- Y ?CLqCCE|g= CEvJI u

```

```

```` XS^C- q pCLqCssSb^ pCs~Yzs ````
[ C- ^ r l ~ qC@ Bqqbq= CEIII_
p r<bqC= CEIuID
, - qS- ^<C bH pCsS@~ Ys= CEIII_

```

```

```` dbY%b\ S- Y pCLqCssSb^ f?CLqCCEJg pCs~Yzs ````
[ C- ^ r l ~ qC@ Bqqbq= cI CE_i uCEI
p r<bqC= QccJuvi cCE|
, - qS- ^<C bH pCsS@~ Ys= cI CE|i_JD_

```

X-4 I

I a fCq” zzS^L - ^@} ^@Cq” zzS^L S^ dbY%b\ S Yp CLqCssSb^

```

9J|:= S\ebqz ^~\e%00 s ^e
S\ebqz \- zeYbzYS4i e%0Ybz -s eYz
Hjb\ sWc q^i eqCeqb<CssS^L S\ebqz dbY%b\ S- YCC- z~qCs
Hjb\ sWc q^i YS^C q€b@CY S\ebqz XS^C qpCLqCssSb^
Hjb\ sWc q^i \CzqS<s S\ebqz \C- ^€s| ~ qC@CCqqbq> \C- ^€- 4sbY-zCCqqbq> q|€s<bqC

` y- sWc= ?- z- KC^Cq- zSb^
^ei q- ^@b\i sCC@fJ|g
‡ E ^ei YS^se- <CfQ> > {> I CEgi qCsP- eCfQ> cg
%6zq~C E CEI 1 ‡11{ Q ‡11| j |

```

^bSsC E ^ei q- ^@b\i ^bq\ - Yf c> %zq~Ci sP- eCg  
%oE %zq~C j ^bSsC

` , Ss~ YS^S^L LC^Cq- zC@ @ z-  
eYzi s<- zzCqf ‡> %o Y- 4CYEo] bSs%o?- z- o> <bYbqEoLq- %o> - YeP- ECEI g  
eYzi ‡Y- 4CYf o‡og  
eYzi %o- 4CYf o%og  
eYzi zSzYcf oKC^Cq- zC@ ?- z- og  
eYzi YCLC^@f g  
eYzi sPb.fg

` G-^<zSb^ zb HZ ebY%b\ S- Y qCLqCssSb^ \b@CYs  
@CH HZ€- ^@€cf- Y~ zC€ebY%b\ S- Yf @CLqCCg=  
ebY%oE dbY%b\ S- YGC- z~qCsf @CLqCCE@CLqCCg  
‡€ebY%oE ebY%aHsz€zq- ^sHbq\ f ‡g  
\b@CY E XS^C- qpCLqCssSb^fg  
\b@CYi Hszf ‡€ebY%o %g  
%€eqC@ E \b@CYi eqC@S<z f ‡€ebY%g

\sC E \C- ^€sl ~- qC@€Cqbbqf%o %€eqC@g  
\- C E \C- ^€- 4sbY~zC€Cqbbqf%o %€eqC@g  
q| E q| €s<bqCf%o %€eqC@g

eqS^zf HdbY%b\ S- Y ?CLqCC= 7@CLqCC8og  
eqS^zf Hb[rB= 7\ sC=i JHB> [, B= 7\ - C=i JHB> p/| = 7q| =i JHB5^og

eYzi s<- zzCqf ‡> %o Y- 4CYEo] bSs%o?- z- o> <bYbqEoLq- %o> - YeP- ECEI g  
eYzi eYbzf ‡> %€eqC@ Y- 4CYEHdbY%b\ S- Y ?CLqCC 7@CLqCC8o> YS^C.S@zPE| g  
eYzi ‡Y- 4CYf o‡og  
eYzi %o- 4CYf o%og  
eYzi YCLC^@f g  
eYzi zSzYcf HdbY%b\ S- Y pCLqCssSb^ f?CLqCC 7@CLqCC8gog  
eYzi sPb.fg  
Hsz€- ^@€cf- Y~ zC€ebY%b\ S- Yf cg

dbY%%b\S- Y ?CLqCC= c  
[rB= c|iDE{> [,B= |iDuCE p/= CEv{Iu



9J{:= Hsz€ ^@@Cf- Y~- zC€ebY%b\S- Yf | g  
 Hsz€ ^@@Cf- Y~- zC€ebY%b\S- Yf { g  
 dbY%b\S- Y ?CLqCC= |  
 [rB= Ii cv| c> [, B= ci\_ C€H> p/|= C€D {c

dbY%%b\S- Y ?CLqCC= {  
[rB= CE\_I Iv> [, B= CEuwI> p/|= CE\_u|D

X-4 v

v XbLSszS<pClqCssSb^ b^ 3qG sz ; - ^<Cq? - z- sCz

```
9I{:= S\ebqz sC 4bq^ -s s^s
S\ebqz ^~\e%o s ^e
S\ebqz e- ^@ s -s e@
S\ebqz \-zeYbzYS4i e%Ybz -s eYz
Hjb\ sWC q^i YS^C q€\b@CY S\ebqz XbLSszS<pClqCssSb^
Hjb\ sWC q^i \b@CYsCYC<zSb^ S\ebqz zq S^EzCszEseYSz
Hjb\ sWC q^i eqCeqb<CssS^L S\ebqz rz- ^@ q@<- YCq
Hjb\ sWC q^i \CzqS<s S\ebqz - <<~q- <%s<bqC

@H E e@ qC- @€<s ff o4qC- szQ<- ^<Cqi <s fog
@H <bY~\^s
@H @qbef oS@> - ‡SsEc> S^eY- <CEyq-Cg `@qbe qC@~^@ ^z <bY~\^s
@H Yb<9=>o@S- L^bsSso:
@H Do@S- L^bsSso: E f@Do@S- L^bsSso: EE o[ ogi -sz%eCfS^zg `C^<b@C zPC Y-4CY S^zb cw
CE
```

<bqq E @H <bqqf g  
 eYzi HSL~qCf HSLsS< CEf | CE| Cgg  
 s^si PC- z\~ ef<bqq> <\~ eEo\~ W€qo>- ^^bzEYq~Cg  
 eYzi sPb.fg  
 ` KCz zPC - 4sbY~zC f- Y~C bH zPC <bqqCY- zSb^  
 <bq€z- qLCz E - 4sf <bqq9n@S- L^bsSsn: g  
  
 ` rCYC<z PSLPY%<bqqCY- zC@ HC- z~qCs fzPqCsbY@ E CE/g  
 qCYCf- ^z€HC- z~qCs E <bq€z- qLCz9<bq€z- qLCzNCE| :  
  
 ` ; bYYC<z zPC ^- \Cs bH zPC HC- z~qCs  
 ^- \Cs E 9S^@C† Hbq S^@C†> f- Y~C S^ qCYCf- ^z€HC- z~qCsi SzC\sf g:  
  
 ` ?qbe zPC z- qLCz f- qS- 4YC Hjb\ zPC qCs~Yzs  
 ^- \Csi qC\bfCf o@S- L^bsSsog  
  
 ` ?SseY- %oPC qCs~Yzs  
 eqS^zf^~ \Csg  
 † E @H^~ \Cs:  
 %oE @Ho@S- L^bsSso:  
 †€zq- S^> †€zCsz> %€zq- S^> %€zCsz E zq- S^€zCsz€seYSzf†> % zCsz€sS< C E CE|>  
 q- ^@b\€sz- zCEJ| g `seYSz zPC @z- S^zb zq- S^L - ^@ f- YS@ zS^L  
 s<- YCq E rz- ^@ q@<- YCqf g `<qG- zC - ^ S^sz- ^<C bH sz- ^@ q@ s<- YCq  
 s<- YCqi Hbz†€zq- S^g ` Hbz Sz zb zPC zq- S^S^L @z-  
  
 †€zq- S^ E s<- YCqi zq- ^sHbq\ f†€zq- S^g `zq- ^sHbq\ zq- S^S^L @z-  
 †€zCsz E s<- YCqi zq- ^sHbq\ f†€zCszg `zq- ^sHbq\ f- YS@ zSb^ @z-  
 \b@CY E XbLSszS<pCLqCssSb^f g `<qG- zC YbLSszS< qCLqCssSb^ S^sz- ^<C  
 \b@CYi Hbz†€zq- S^> %€zq- S^g ` Hbz zPC \b@CY S^sz- ^<C  
 eqC@S<zSb^s E \b@CYi eqC@S<z†€zCszg ` <- Y<~Y- zC eqC@S<zSb^s  
 - <<~q- <%oE - <<~q- <%s<bqCf %€zCsz> eqC@S<zSb^sg  
 eqS^zf HbzPC \b@CY - <<~q- <% 7- <<~q- <%og

9oq- @s~s€\C- ^o> ozC‡z~qC€\C- ^o> oeCqS\CzCq€\C- ^o> o- qC- €\C- ^o>  
 os\bbzP^Css€\C- ^o> o<b\e- <z^Css€\C- ^o> o<b^<- fSz%€\C- ^o> o<b^<- fC ebS^zs€\C- ^o>  
 os%\Czq%€\C- ^o> oq- @s~s€sCo> oeCqS\CzCq€sCo> o- qC- €sCo> o<b\e- <z^Css€sCo>  
 o<b^<- fSz%€sCo> o<b^<- fC ebS^zs€sCo> oq- @s~s€.bqszo> ozC‡z~qC€.bqszo>  
 oeCqS\CzCq€.bqszo> o- qC- €.bqszo> os\bbzP^Css€.bqszo> o<b\e- <z^Css€.bqszo>  
 o<b^<- fSz%€.bqszo> o<b^<- fC ebS^zs€.bqszo> os%\Czq%€.bqszo>  
 oH- <z- Y€@S\C^sSb^€.bqszo:  
 zPC \b@CY - <<~q- <%€ CE\_u{vDJ|cCE|v{cID

9I J: = @CH Cf- Y~ zC€\CzqS<sf%€zq~C> %€eqC@g=  
 nm

; - Y<~Y-zC - <<~q- <% eqC<SsSb^> qC<- YY> sC^sSzSfSz% - ^@ seC<SH<Sz%  
 =e- q- \ %zq-C= XSsz bq - qq- %bH - <z~ Y <Y-ss Y-4CYs fEbq cg  
 =e- q- \ %eqC@ XSsz bq - qq- %bH eqC@<zC@ <Y-ss Y-4CYs fEbq cg  
 =qCz-q^= ?S<zSb^ - q%<b^z- S^S^L - <<~q- <% eqC<SsSb^> qC<- YY> sC^sSzSfSz%  
 - ^@ seC<SH<Sz%  
 nm  
 ` ; b^fCqz d- ^@s rCqSCs zb ]~\d%o- qq- % zb ~sC S^zCLCq S^@S^L SH ^C<Css- q%  
 %zq-C E %zq-Ci zb^~\e%g SH SsS^sz- ^<Cf%zq-C> e@ rCqSCsg CYsC %zq-C  
 %eqC@ E %eqC@ zb^~\e%g SH SsS^sz- ^<Cf%eqC@ e@ rCqSCsg CYsC %eqC@  
 ` yq-C dbsSzSfCs fydg= ; bqqC<zY%eqC@<zC@ ebsSzSfC <- sCs  
 yd E s~\ff%zq-C@S: EE c - ^@ %eqC@S: EE cg Hbq S S^ q- ^LCfYC^f%zq-Cggg  
 ` yq-C ]CL- zSfCs fy]g= ; bqqC<zY%eqC@<zC@ ^CL- zSfC <- sCs  
 y] E s~\ff%zq-C@S: EE CE- ^@ %eqC@S: EE Cg Hbq S S^ q- ^LCfYC^f%zq-Cggg  
 ` G YsC dbsSzSfCs fGdg= R^<bqqC<zY%eqC@<zC@ - s ebsSzSfC  
 Gd E s~\ff%zq-C@S: EE CE- ^@ %eqC@S: EE cg Hbq S S^ q- ^LCfYC^f%zq-Cggg  
 ` G YsC ]CL- zSfCs fG]g= R^<bqqC<zY%eqC@<zC@ - s ^CL- zSfC  
 G] E s~\ff%zq-C@S: EE c - ^@ %eqC@S: EE Cg Hbq S S^ q- ^LCfYC^f%zq-Cggg  
 ` , <<~q- <%  
 - <<~q- <%E fyd j y]g w fyd j y] j Gd j G]g SH fyd j y] j Gd j G]g FE CE CYsC  
 CE  
 ` dqC<SsSb^ f dbsSzSfC dqC@<zSfC , - Y-Cg  
 eqC<SsSb^ E yd w fyd j Gdg SH fyd j Gdg FE CE CYsC CE  
 ` pC<- YY frC^sSzSfSz%ow yq-C dbsSzSfC p- zCg  
 qC<- YY E yd w fyd j G]g SH fyd j G]g FE CE CYsC CE  
 ` rC^sSzSfSz%dr- \C - s pC<- Yyg  
 sC^sSzSfSz%E qC<- YY  
 ` reC<SH<Sz%f yq-C ]CL- zSfC p- zCg  
 seC<SH<Sz%E y] w fy] j Gdg SH fy] j Gdg FE CE CYsC CE  
 eqS^zfHb, <<~q- <% 7- <<~q- <%og  
 eqS^zfHbeqC<SsSb^= 7eqC<SsSb^8og  
 eqS^zfHb qC<- YY = 7 qC<- YY8og  
 eqS^zfHbsC^sSzSfSz%7sC^sSzSfSz%8og  
 eqS^zfHbseC<SH<Sz% 7seC<SH<Sz%8og

Cf- Y~ zC@CzqS<sf%zCsz> eqC@<zSb^sg

```
, <<~q< % CE_u{ vDI | cCE | v{ cI D
eqC<SsSb^= CE_uvc_CEUvc_CEUv|
qC<- YY = CE_I { JDD{ u| CE{ CE{ {
sC^sSzSfSz%CE_I { JDD{ u| CE{ CE{ {
seC<SHS<Sz% CE_DI_cI J_ | IuuJvI
```

```
9I I: = Hjb\ sWc q^i \CzqS<s S\ebqz <b^H-sSb^€\ - zqS†>qb<€<-q/fC> - ~<
Hjb\ sWc q^i eqCeqb<CssS^L S\ebqz X 4CYB^<b@Cq
YCEX 4CYB^<b@Cqf g
%zq~CEC^<b@C@EYCi HSz€zq ^sHbq\ f%zCs zg
eqC@E\ b@CYi eqC@S<z f†€zCs zg
eqC@€eqb4sE\ b@CYi eqC@S<z€eqb4 f†€zCs zg9=>c:
sC^sE9:
b^C\ S^seC<E9:
Hbq z S^ ^ei YS^se- <Cf CE{ >CED> | Cg=
<Y-ss€eqC@EqC@€eqb4sNz
z^>H>H^>zeE-b^H-sSb^€\ - zqS†f%zq~CEC^<b@C@<Y-ss€eqC@gi q fCYf g
zeqEzewf zej H^g
HeqEHwf Hej z^g
sC^si - eeC^@zeqg
b^C\ S^seC<i - eeC^@Heqg

eYzi HSL~qCf HSLsS< Cef D> vgg
eYzi eYzfb^C\ S^seC<> sC^s> \- qWqEobo> YS^Csz%CEoQog

` X 4CYs - ^@ zSzYC
eYzi ‡Y- 4CYf nrC<SHS<Sz%f Gdpng
eYzi % 4CYf nrC^sSzSfSz%f ydpng
eYzi zSzYcf nrC^sSzSfSz%ofs reC<SHS<Sz%aHbq ?SHCqC^z yPqCsPbY@ng
eYzi LqS@f yq-Cg

` rPb...zPC eYbz
eYzi sPb.fg
```

9I v: = ` ; b\ e~ zC zPC pa; <~ qfC  
Hëq> zeq> zPqCsPbY@s E qb<€~ qfCf%&zq~C^<b@C@ eqC@eqb4sg  
` ; b\ e~ zC zPC , } ; f, qC } ^@Cq zPC ; ~qfCg  
qb<€~ < E - ~<fHëq> zeqg  
` dYbz zPC pa; ; ~qfC  
eYzi HSL~qCfHSLsS< CefD> vgg  
eYzi eYbz fHëq> zeq> <bYbqEo4Y-Co> Y.E|> Y-4CYEHpa; ; ~qfC f, } ; E 7qb<€~ <=i | Hëgog  
eYzi eYbz f9C c: > 9C c: > <bYbqEoLq-%> YS^Csz%ACEoQQg ` ?S-Lb^~ Y YS^C f q- ^@b\  
\ b@CYg  
eYzi ‡Y-4CYf nG YsC dbsSzSfC p- zC f c Q reC<SH<Sz%gng  
eYzi %& 4CYf nyq~C dbsSzSfC p- zC frC^sSzSfSz%gng  
eYzi zSzYCF npC<CSfCq aeCq- zS^L ; P- q- <zCqSszS< fpa; g ; ~qfCng  
eYzi YCLC^@f Yb<EnYb.Cq qSLPzng  
eYzi LqS@f yq~Cg  
eYzi sPb.fg



X-4 u

u O%eCpe-q \ CzCqy~^S^L bHr~eebqz , C<zbq[ - <PS^Cfr, [ g

9l u: = S\ebqz ^~\e%o s ^e  
S\ebqz e- ^@ s -s e@  
S\ebqz \-zeYbzYS4i e%eYbz -s eYz  
S\ebqz sC 4bq^ -s s^s  
  
Hjb\ sWC q^i \b@CYsCYC<zSb^ S\ebqz zq S^EzCszEseYSz> KqS@C q<P, ,  
Hjb\ sWC q^i eqCeqb<CssS^L S\ebqz rz- ^@ q@<- YCq> X 4CYB^<b@Cq  
Hjb\ sWC q^i \CzqS<s S\ebqz - <<~q <%s<bqC> <Y-ssSHB<- zSb^EqCebqz  
Hjb\ sWC q^i sf\ S\ebqz r, ;  
Hjb\ sWC q^i C^sC\4YC S\ebqz p- ^@b\GbqCsz; Y-ssSHBCq  
Hjb\ sWC q^i zqCC S\ebqz ?C<SsSb^yqCC; Y-ssSHBCq  
  
` Xb- @ @ z-sCz  
@ z- E e@ qC- @€<sff oPC- qzi <s fog

```

` rCe- q- zC HC- z~qCs - ^@ z- qLCz
†> %oE @ z- i @qbef <bY~\^sE9oOC- qz?SsC- sCo: g> @ z- 9oOC- qz?SsC- sCo:

` R@C^zSH%o<- zCLbqS<- Y <bY~\^s
<- zCLbqS<- Y€<bYs E 9orC†o> o; PCszd- S^y%Co> opCszS^LB; Ko> oB†Cq<SsC, ^LS^~o>
ory€r YbeCo:
Y- 4CY€C^<b@Cqs E 78
Hbq <bY S^ <- zCLbqS<- Y€<bYs=
YC E X 4CYB^<b@Cqf g
†9<bY: E YC Hsz€zq- ^sHbq\†9<bY: g
Y- 4CY€C^<b@Cqs9<bY: E YC
†€zq- S^> †€zCsz> %€zq- S^> %€zCsz E zq- S^€zCsz€seYSzf†> % zCsz€sS< CECE|>
q- ^@b\€sz- zCEJ|> szq- zSH%o%g

` rz- ^@ q@ r<- YS^L
s<- YCq E rz- ^@ q@<- YCqf g
†€zq- S^€s<- YC@ E s<- YCqi Hsz€zq- ^sHbq\†€zq- S^g
†€zCsz€s<- YC@ E s<- YCqi zq- ^sHbq\†€zCszg

` ?CH^C e- q- \CzCq LqS@ Hbq z~^S^L
sf\€e- q- \s E 7
o; o= 9CEc> c> cCE>
oVq^CYo= 9oYS^C- qo> oq4Hb:
8

@€e- q- \s E 7
o\~ †€@CezPo= 9I> cCE cI> |b^C>
o\ S^€s- \eYCs€seYSzo= 9|> I> cCE
8

qH€e- q- \s E 7
o^€CszS\~ z bqso= 9I CE cCE | CE { CE>
o\~ †€@CezPo= 9|b^C> I> cCE | CE>
o\ S^€s- \eYCs€seYSzo= 9|> I> D
8

\b@CYs E 7
nr, |n= fr, ; fg> sf\€e- q- \sg>
n?C<SsSb^ yqCC= f?C<SsSb^yqCC; Y- ssSHSCqf q- ^@b\€sz- zCEJ|g> @€e- q- \sg>
np- ^@b\ GbqCzn= fp- ^@b\GbqCsz; Y- ssSHSCqf q- ^@b\€sz- zCEJ|g> qH€e- q- \sg>
8
qCs~Yzs E 78
Hbq ^~\C> f\b@CY> e- q- \sg S^ \b@CYsi SzC\sf g=
eqS^zfHy~^S^L 7^~\C8i i ng
LqS@ E KqS@<C- q<P, , f\b@CY> e- q- \s> <fEI> s<bqS^LEo- <<~q- <%@> ^€Ub4sEQg
LqS@ Hszf†€zq- S^€s<- YC@> %€zq- S^g
4Csz€\b@CY E LqS@ 4Csz€CszS\~ z bq€
%€eqC@ E 4Csz€\b@CYi eqC@S<z f†€zCsz€s<- YC@g

```

```

- << E - <<~q- <%Gs<bqCf%GzCsz> %GeqC@G
qCebqz E <Y- ssSHS<- zSb^EqCebqzf%GzCsz> %GeqC@ b~ze~z€@S<zEyq~Cg
qCs~Yzs9^~\C: E 7
n3Csz d- q- \sn= LqS@ 4Csz€e- q- \s€>
n, <<~q- <%a= - <<>
ndqC<SsSb^n= qCebqz9n.CSLPzC@ - fLn: 9neqC<SsSb^n: >
npC<- YYn= qCebqz9n.CSLPzC@ - fLn: 9nqC<- YYn: >
nGcQs<bqCn= qCebqz9n.CSLPzC@ - fLn: 9nHtQs<bqCn:
8
eqS^zfHh5^EEEE 7^~\C8 3Csz d- q- \CzCqs EEEEEng
eqS^zfLqS@ 4Csz€e- q- \s€g

eqS^zfHh5^EEEE 7^~\C8 ; Y- ssSHS<- zSb^ pCebqz EEEEEng
eqS^zf<Y- ssSHS<- zSb^EqCebqzf%GzCsz> %GeqC@gg
@HqCs~Yzs E e@ ?- z- Gq- \Cf qCs~Yzsgi y
eqS^zf n5^afCq- YY dCqHbq\~ ^<C r~\~ q%5^ n> @HqCs~Yzsg
@HqCs~Yzsi @qbef <bY~\^sE9n3Csz d- q- \sn: gi eYbz fW^@En4- qn> HSLsS: Cef c| > vg>
<bYbq\~ eEnfSqS@Sng
eYzi zSzYcf n; b\ e- qSsb^ bH ; Y- ssSHSCq dCqHbq\~ ^<Cng
eYzi ‡zS<Wf qbz- zSb^EJI g
eYzi %X: 4CYf nr<bqCng
eYzi YCLC^@fYb<EnYb.Cq qSLPzng
eYzi sPb.fg

```

y~^S^L r, [

EEEE r, [ 3Csz d- q- \CzCqs EEEEE  
7o; o= c> oVq^CYo= oq4Hb8

EEEE r, [ ; Y- ssSHS<- zSb^ pCebqz EEEEE  
eqC<SsSb^ qC<- YY HtQs<bqC s~eebqz

CE	CE_	CED	CEDv	D
c	CEdv	CE_J	CE_CE	cCf

- <<~q- <%o			CED_	cDJ
\- <qb - fL	CED_	CEDD	CEDD	cDJ
.CSLPzC@ - fL	CED_	CED_	CEDD	cDJ

y~^S^L ?C<SsSb^ yqCC

EEEE ?C<SsSb^ yqCC 3Csz d- q- \CzCqs EEEEE  
7o\~ ‡€@CezPo= I> o\ S^€s- \eYCs€seYSzo= | 8

EEEE ?C<SsSb^ yqCC ; Y- ssSHS<- zSb^ pCebqz EEEEE  
eqC<SsSb^ qC<- YY HtQs<bqC s~eebqz

CE	CEu_	CEuD	CEu_	D
----	------	------	------	---

c	ŒD{	ŒD{	ŒD{	cŒ
- <<~q- <%o			ŒDc	cDJ
\- <qb - fL	ŒDc	ŒDc	ŒDc	cDJ
..CSLPzC@ - fL	ŒDc	ŒDc	ŒDc	cDJ

y~^S^L p- ^@b\ GbqCsz

EEEE p- ^@b\ GbqCsz 3Csz d- q- \CzCqs EEEEE  
 7o\ - ‡€@CezPo= I > o\ S^€s- \eYCs€seYSzo= D> o^€CszS\ - zbqso= I Œ

EEEE p- ^@b\ GbqCsz ; Y- ssSHs<- zSb^ pCebqz EEEEE  
 eqC<SsSb^ qC<- YY H:Qs<bqC s~eebqz

Œ	Œ_Œ	ŒEDŒ	ŒD	D
c	ŒDv	Œ_{	ŒD_	cŒ
- <<~q- <%o			ŒDD	cDJ
\- <qb - fL	ŒDD	ŒDu	ŒDu	cDJ
..CSLPzC@ - fL	ŒDD	ŒDD	ŒDu	cDJ

afCq- YY dCqHbq\ - ^<C r~\\ - q%œ

3Csz d- q- \s , <<~q- <%o 5  
 r, [ 7o; o= c> oWq^CYo= oq4Hb8 ŒDDDu  
 ?C<SsSb^ yqCC 7o\ - ‡€@CezPo= I > o\ S^€s- \eYCs€seYSzo= |8 ŒDEuD{  
 p- ^@b\ GbqCsz 7o\ - ‡€@CezPo= I > o\ S^€s- \eYCs€seYSzo= D> o^€Cs ŒDuI

dqC<SsSb^ pC<- YY GcQs<bqC  
 r, [ ŒDDDJ\_ ŒDDDu ŒDDJ\_vu  
 ?C<SsSb^ yqCC ŒEDEI\_| ŒEDEuD{ ŒEDEvv{  
 p- ^@b\ GbqCsz ŒDuu{v ŒDuI ŒDuJŒ|

X-4 D

D a ezS S - zS^ bH p - ^@b\ GbqCsz; YssS' Cq~sS' LKqS@r G q<P; ,

```
9I D = S\ebqz ^~\e% s ^e
Hjb\ sWC q'i @ z- sCzs S\ebqz Yb- @ESqSs
Hjb\ sWC q'i C^sC\4YC S\ebqz p- ^@b\GbqCsz; Y- ssSHSCq
Hjb\ sWC q'i b@CYsCYC<zSb^ S\ebqz zq- S^EzCszEseYSz> KqS@r G q<P; ,
Hjb\ sWC q'i CzqS<s S\ebqz - <<~q- <%s<bqC

` rzCe c= Xb- @ ?- z- sCz
@ z- E Yb- @ESqSsfg
†> %oE @ z-i @ z-> @ z-i z- qLCz ` GC- z~qCs - ^@ Y- 4CYs
†Ezq- S^> †EzCsz> %Ezq- S^> %EzCsz E zq- S^EzCszEseYSzf†> %o zCszEsS< CECE|>
q- ^@b\Esz- zCEJ|g
e- q \eLqS@ E 7
o^ECszS\~ zbqso= 9I CE cCE | CE>
o\~ †E@CezPo= 9J b^C> cCE | CE { CE>
o\S^Es- \eYCsEseYSzo= 9|> I> cCE>
o\S^Es- \eYCsEYC- Hb= 9c> |> J;

8

` rzCe J= dCqHbq\ KqS@r G q<P .SzP IQQbY@; qbssQ- YS@ zSb^
qH\ b@CY E p- ^@b\GbqCsz; Y- ssSHSCqf q- ^@b\Esz- zCEJ|g
```

LqS@€S C q<P E KqS@r C q<P, , f qH\ b@CY> e- q \€LqS@ <fEI> s<bqS^LEo- <<~q- <%>  
^€Ub4sEQ-g  
LqS@€S C q<Pi Hszf†€zq- S^> %€zq- S^g  
` rzCe I= KCz 3Csz d-q \CzCqs  
4Csz€e- q \s E LqS@€S C q<Pi 4Csz€e- q \s€  
eqS^zf n3Csz O%€Cqe- q- \CzCqs=n> 4Csz€e- q \sg  
` rzCe v= yq- S^ 3Csz [b@CY b^ B^zSqC yq- S^S^L ?-z-  
4Csz€\b@CY E p- ^@b\GbqCsz; Y- ssSHSCqf 114Csz€e- q \s> q ^@b\€sz- zCEJ|g  
4Csz€\b@CYi Hszf†€zq- S^> %€zq- S^g  
%€eqC@ E 4Csz€\b@CYi eqC@S<z f†€zCszg  
zCsz€ <<~q- <%oE - <<~q- <%€s<bqCf%€zCsz> %€eqC@g  
eqS^zf HyCsz , <<~q- <%o 7zCsz€ <<~q- <%oi JHBng

3Csz O%€Cqe- q \CzCqs= 7o\ - †€@CezPo= ]b^C> o\ S^€s- \eYC€€YC- Hb= |>  
o\ S^€s- \eYC€€seYSzo= |> o^€CszS\ - zbqso= |€€B  
yCsz , <<~q- <%o ci €€€€€  
X- 4 \_

\_ ; Y-szCqS^L , ^- Y%€S } sS^L d%€Pb^

9I \_:= S\ebqz e- ^@s -s e@  
S\ebqz ^~\e%o s ^e  
S\ebqz \-zeYbzYS4i e%€Ybz -s eYz  
S\ebqz sC 4bq^ -s s^s  
Hjb\ sWGC q^i eqCeqb<CssS^L S\ebqz rz- ^@ q@<- YCq> X- 4CYB^<b@Cq  
Hjb\ sWGC q^i <Y-szCq S\ebqz V| C ^s> ?3r; , ]> adyR, r  
Hjb\ sWGC q^i @C<b\€bsSzSb^ S\ebqz d; ,  
Hjb\ s<Se%o<Y-szCqi PSCq- q<P% S\ebqz YS^WLC> HkY-szCq> @C^@qbLq- \  
` Xb- @ @z- sCz  
HSY€€e- zP E nPC- qzi <sfn  
@H E e@ qC- @€<sffHSY€€e- zPg  
` B^<b@C <-zCLbqS<- Y HC- z~qCs  
<-zCLbqS<- Y€<bYs E 9nrC†n> n; PCszd- S^y%€Cn> npCszS^LB; Kn> nB†Cq<SsC, ^LS^<-n>  
nry€rYbeCn:  
@HEC^<b@C@ E @H <be%fg  
Hbq <bY S^ <-zCLbqS<- Y€<bYs=  
YC E X 4CYB^<b@Cqf g  
@HEC^<b@C@<bY: E YC Hsz€zq- ^sHbq\ f@H<bY: g  
` dqCe- qC HC- z~qCs  
HC- z~qCs E @HEC^<b@C@ @qbef<bY~\^sE9nCC- qz?SsC- sCn: g

```

s<- YCq E rz- ^@ q@<- YCqf g
s<- YC@HC- z~qCs E s<- YCqi Hsz€zq- ^sHbq\fhC- z~qCsg

` VQ C ^s ; Y-szCqS^L
WC- ^s E V C ^sf ^€<Y-szCqsE[> q- ^@b\€sz- zCEJ|> ^€S^SzEcCg
@HC^<b@C@nM C- ^s€; Y-szCqn: E WC- ^si Hsz€eqC@S<zfs<- YC@HC- z~qCsg

` OSCq- q<PS<- Y ; Y-szCqS^L
PSCq- q<PS<- Y€YS^WLC E YS^WLCfs<- YC@HC- z~qCs> \CzPb@En..q@ng
@HC^<b@C@nOSCq- q<PS<- Y€; Y-szCqn: E HkY-szCqf PSCq- q<PS<- Y€YS^WLC> {>
<qSzCqSb^En\ - ‡<Y-szng

` ?3r; , | ; Y-szCqS^L
@4s<- ^ E ?3r; , | fCesEciI> \S^€s- \eYCsEI g
@HC^<b@C@n?3r; , | €; Y-szCqn: E @4s<- ^i Hsz€eqC@S<zfs<- YC@HC- z~qCsg

` adyR r ; Y-szCqS^L
bezS<s E adyR rf\ S^€s- \eYCsEI > ‡SECECE> \S^€<Y-szCq€sS<CECECEg
@HC^<b@C@nadyR; r€; Y-szCqn: E bezS<si Hsz€eqC@S<zfs<- YC@HC- z~qCsg

` ?S\C^sSb^ YSz%qC@<zSb^ .SzP d; ,
e<- E d; , f ^€<b\eb^C^zsE| g
qC@<C@HC- z~qCs E e<- i Hsz€zq- ^sHbq\fs<- YC@HC- z~qCsg
@HC^<b@C@nd; , cn: E qC@<C@HC- z~qCs9=> CE
@HC^<b@C@nd; , | n: E qC@<C@HC- z~qCs9=> c:

` G- ^<zSb^ zb dYbz ; Y-szCqs
@CH eYbz€<Y-szCqs f@z- > <Y-szCq€<bY> zSzYCg=
eYzi HSL~qCfHLSs< CEfD> vgg
s^si s<- zzCqeYbz f ‡End; , cn> %and; , | n> P-CE<Y-szCq€<bY> e- YCzzCEnfSqS@Ssn>
@z- E@z- > - YeP- ECEug
eYzi zSzYcfzSzYCg
eYzi YCLC^@fzSzYCEn; Y~szCqng
eYzi sPb.fg

` dYbz qCs~Yzs
eYbz€<Y-szCqs f@HC^<b@C@ nM C- ^s€; Y-szCqn> nVQ C- ^s ; Y-szCqS^Lng
eYbz€<Y-szCqs f@HC^<b@C@ n?3r; , | €; Y-szCqn> n?3r; , | ; Y-szCqS^Lng
eYbz€<Y-szCqs f@HC^<b@C@ nadyR; r€; Y-szCqn> nadyR; r ; Y-szCqS^Lng

` dYbz OSCq- q<PS<- Y ; Y-szCqS^L ?C^@qbLq- \
eYzi HSL~qCfHLSs< CEf cCE I gg
eYzi zSzYcf nOSCq- q<PS<- Y ; Y-szCqS^L ?C^@qbLq- \ng
@C^@qbLq- \fPSCq- q<PS<- Y€YS^WLC> zq- ^<- zC@b@CEnYCFCYn> eEI g
eYzi ‡Y- 4CYf n?- z- dbS^zsng
eYzi %X- 4CYf n?Ssz- ^<Cng
eYzi sPb.fg

```









9 :=

9 :=