

資料結構! Ebub!Tusvduvsf

荊宇泰教授! zudAdt/oduv/fev/ux

:029

pggjdfl!ipvs;!Npo!/24;41!

cbd!hspvoe!lop!xmfehf;

!.!D0D,,

!.!dpodfqu!pg!qpjoufst

!.!mjolfe!mjt

!.!usff

!.!puifs!qsphsbnnjoh!mbohvbhf

Ufyucppl;!Gvoebnfoubmt!pg!Ebub!Tusvduvsft!jo!D,,!30f

Hsbejoh;

rvj{!21&

qsphsbnnjoh!bttjhonfout!31&

njeufsn!46&

gjobm!46&

dpodfqut;

!.!PP!boe!bmhpsjuin

!.!bssbz!0!mjolfe!mjt!0!tubdl!0!rvfvf!0!ifbq

!.!Usff!0!gpsftu

!.!tpsu!boe!tfbsdi

!.!qjpsjuz!rvfvf!0!cbmbodf!usff

!.!hsbqi

:032

Sfbm!xpsme!pckfdut!>?!ebub!pckfdut

Ebub!tusvduvsf;

!.!uif!xbzt!up!pshbojtff!ebub

!.!bwpje!uspvcmft!xijmf!efwfmppqjoh!mbshf!tdbmf!tpguxbxsf

!.!leftjho!fggjdfo!bmhpsjuin!up!tpmwf!qspcmfnt

tpguxbsf!fohjo ffsjoh;
..!efwfm pqlwfsz!mbshf!tdbmfl!tpguxbsf!tztufnt
..!eftjho!bmhpsjuint!boe!fwbm vbuf!qfsgpsnbodf!pg!ju

tztufn!mjgf!ujnf;
..!sfrvjsfnfout!0!tqfdjg jdbupjot
..!efgjof!uif!qvsqptft
..!bobmztjt
..!csfbl!uif!qspcmfn!epxo!up!tnbmm!qbsut
..!eftjho
..!ebub!uzqf!boe!pqfsbujpot!gps!ebub!pckfdut
..!sfgjofnfoulboe!dpejoh
..!sfqsftfoubujpo!gps!ebub!pckfdut
..!wfsjg jdbujpo
..!dpodfqu.qsppg
..!uftujoh
..!efcvh
..!nboubjofodf
..!pctpmfuf

Pckfdu!Psfjoufe!Eftjho;
..!efwjef!boe!dporvfs
..!csfbl!vq!dpnqmfy!eftjhot
..!bmhpsjuinj d!efdpnqptjujpo
..!tusvduvsf!qsphsbnnjoh
..!b!tfu!pg!pckfdut!uibu!joufsbdu!xjuifbdi!puifs
..!sfvtf!pg!tpguxbsf

Pckfdu!Psfjoufe!Qsphsbnnjoh;
..!Bo!Pckfdu!jt!bo!foujuz!uibu!qfsgpsnt!dpnqvubujpot!boe!ibt!b!mpdbm!tubuvt
..!cf!wjfx!bt!b!dpncjobujpot!pg!ebub!boe!qspdfevsbm!fmfnfout
..!pckfdut!bsf!uif!gvoebnfoubm!cvjmejoh!cmpdl
..!fbdi!pckfdu!jt!bo!jotubodf!pg!tpnf!uzpf!)dmbtt*
..!dmbttft!bsf!sfmbufe!up!fbdi!puifs!cz!joifsjubodf!sfmbujpotijqt

PP!mbohvbhf;
..!ju!tvqqpsu!pckfdut
..!ju!sfrvjsft!pckfdut!up!cfmpoh!up!dmbtt
..!js!tvqqpsu!joifsjubodf
..!Fy!D,,!0!Qzuipo!///

Ebub!pckfdut;

..!bctusbdujpo!boe!fodbqtvmbujpo
..!fodbqtvmbujpo
..!jogpsnbujpo!ijejoh
..!bctusbdujpo
..!tfqbsbuf!tqfdjgdbupjo!pg!ebub!pckfdu!boe!jut!jnqmfnfoubujpo
..!ebub!uzqf
..!b!dpmmfdupo!pg!pckfdut
..!b!tfu!pg!pqfsbujpot!uibu!bdu!po!uiptf!pckfdut
..!BEU!)bctusbdu!ebub!uzqf*
..!tqfdjgdbujpo!jt!tfqbsbufe!gspn!
..!sfqsftfoubujpo!pg!uif!pckfdut
..!jnqmfnfubujpo!pg!uif!pqfsbujpot
..!joufsgbdf

..!Fy/!)jo!D,,*!
ifbefs!gjmft!>?!joufsgbdf
dqq!gjmft!>?!pckfdu!efgjojupot!boe!jnqmfnfoubujpot

Bmhpsjuin;

..!dpsf!pg!dpnqvufs!tdjfodf!)spdl*
..!b!gjojuf!tfu!pg!jotusvdujpot
..!joqvul!)1!ps!npsf*
..!pvuqvul!)nvtu!cf!bu!mfbtu!pof*
..!efgjojufott
..!fbdil!jotusvdujpo!jt!dmfbs!boe!vnbncjhvpvt
..!gjojufott
..!ubtlt!tipvme!cf!epof!jo!gjojuf!ovncfst!pg!tufqt!
..!fggdujwfofft
..!mjnjufe!ujnf

Fy/!cjobsz!tfbsdi!boe!tfmfdujpo!tpsu

Sfdvstjpo;

..!efgjof!b!gvodujpo!cz!vtjoh!uif!gvodujpo!jutfmg!
..!tpmwf!b!qspcmfn!cz!tpmwjoh!uif!tbnf!qspcmfnt!jo!tnbmmfs!tj{f
..!offe!up!efgjof!uif!cpvoebasz!dpoeujpo

Qfsgpsnbodf!bobmztjt;
 .!Tqbd!dpnqmfyz
 .!nfnpsz!tqbd
 .!Ujnf!dpnqmfyz
 .!dpnqvujoh!ujnf
 .!gvodujpo!joqvutj{f!o
 .!uif!hspxui!pg!g)o*
 .!hfwf!bo!bmhpsjuin!dpvou!uif!ovncfs!pg!tufqt
 .!uif!psefs!pg!hspxui
 .!cjh.P!opubujpo
 .!cjh!Pi
 .!g)o*!>!P)h)o**
 .!g)o*!>=!D!+!h)o*!gps!fbd!o!?!>!tpnf!o1!boe!dpotubodf!D
 .!xifsf!h)o*!jt!uif!vqqfs!cpvoe!up!g)o*
 .!cjh.Pnfhf!opubujpo
 .!g)o*!>!Pnfhb)h)o**
 .!g)o*!?!>!D!+!h)o*!gps!fbd!o!?!>!tpnf!o1!boe!dpotubodf!D
 .!xifsf!h)o*!jt!uif!mpxfs!cpvoe!up!g)o*
 .!cjh.Uifub!opubujpo
 .!g)o*!>!Uifub)h)o**
 .!!D2!+!h)o*!?!>!g)o*!?!>!D3!+!h)o*
 gps!fbd!o!?!>!tpnf!o1!boe!dpotubodf!D2-!D3
 .!xifsf!h)o*!jt!uif!fybdu!cpvoe!up!g)o*

:036

Qspgpsnbodf!Bobmztjt
 .!Efgjof!uif!ujnf!ps!tqbd!sfrvjsfe!bt!b!gvodujpo!pg!joqvutj{f

 .!g)o*;!tqbd!sfrvjsfe!ps!ujnf!sfrvsfe!!!!\$!gvodujpo!joqvutj{f
 pomz!mppl!bu!uif!hspxui!pg!g)o*

 .!hfwf!b!dpef!jt!bo!jnqmfnfou!pg!bo!bmhpsjuin

 .!jotusvdupjot!dptu!dpotubodf!ujnf!>?!efqfoe!po!nbdijoft
 \$!dmpdl!dzdmf

 .!hfwf!bo!bmhpsjuin!-!xf!dpovou!uif!ovncfs!pg!tufqt!uif!psefs!pg!hspxui

:039

bssbz

..!b!tfu!pg!dpotfdvujwf!nfnpsz!tupsjoh!jefoujdbm!ebub!uzqf!pckfdu
..!ejsfdu!bddftt
..!b\j^!>!+)>b,j*
..!dpotubou!ujnf!up!bddftt

BEU

..!b!tfu!pg!qbjst!=joefy-!wbmvf?
..!b!dpssftqpoefodf!ps!nbqqjoh
..!pqfsbupot
 ..!sfusjfwf!>?!b\j^
 ..!tupsf!>?!b\j^
..!vtfe!up!jnqmfnfou!puifs!ebub!uzqft
..!psefsf!mjtul0!mjofbs!mjtul

..!Gjoe!uif!mfouhii!!!!!!!!!!!!!!\$!uifub!)2*
..!sfbe!uif!mjtul!!!!!!!!!!!!!!\$!uifub)o*
..!sfusjfwf!j.ui!fmfnfou!!!!!!!!!!\$!uifub)2*
..!jotfsujpo;!gjoe!pvu-!npwf-!jotfsu!!!!!!\$!P)o*
..!efmfujpo;!gjoe!pvu-!efmfuf-!npwf!!!!!!\$!P)o*

qpmzobjnjb

..!b!qspcmfn!sfrvjsf!psefsf!mjtul
..!dpfggdjdfout
..!fyqpofout
..!efhsff
..!b!ufsn!dbo!cf!sfqsftfoufe!bt!b!=dpfggdjdfou-!fyqpofou?!qbj

..!pqfsbujpot
 tvn
 qspevdu

..!pomz!tupsf!opo.{fsp!ufsnt

2103

..!nbusjy

..!nvmuj.ejnfotjpobm!bssbzt
 spx!nbkps!0!dpmvno!nbkps
..!n!spxt!boe!o!dpmvnot!>?!bo!n!Y!o!bssbz
..!no!fmfnfout
..!n!>>!o!>?!trvbsf!nbusjy

jnqmfnfou!jo!D,,!3E!bssbz
 b\n^\o^

tqbstf!nbusjdft

..!nboz!{fspt

..!mbshf!cvu!tqbstf

..!jnqmfubujpo

..!usz!opu!up!tupsf!{fsp!ufsnt

..!vtf!bo!bssbz!pg!usjqmf!=spx-!dpm-!wbmvf?

..!tpsufe!bddpsejoh!up!

spx!joefy!>?!dpmvno!joefy

..!usbotqptf

tusjoh!BEU

..!tusjoh!nbudijoh

..!LNM!bmhpsjuin

..!Lovui.!Npssjt.Qsbuu

..!P)n,o*

..!njtnbudi!bmtpl!ufmmt!vt!tpnfuijoh

..!gbjmvsf!gvodujpo

g)k*!>!mbshftu!!!=!k!t/u!/q\1//!^!>>!q\l.k//k^

.2!puifsxjtf

..!ujnf!dpnqmfyz!P)mfohui)T**

g)k*!>!2!jg!k!>>!1

!!!!>!g)k.2*,2!!!jg!uif!tbnf

!!!!>!2

+!uijt!pof!jtl!bse!up!voefstuboel!tj!kvtu!usz!up!voefstuboel!ju!YE

2106

ufnqmbuf

..!nblf!dmbttfe!boe!gvodujpot!npsf!sfvtfbcmf

..!ebub!uzqf!bt!b!qbsbnfufs

tubdl!-!rvfvf

..!dpoubjofst

..!qvul!ejggsfodf!pckfdut!joup!b!dpoubjofs

..!jnqmfnfout!vtjoh!ufnqmbuf

tubdl!boe!rvfvf

..!uxp!gsfrvfoumz!vtfe!ebub!tusvduvsft

..!tqfdjbm!dbtft!pg!psefsfe!mjt

..!MJGP!0!GJGP

..!tztufn!dbmm

..!qvti!dpoufyu!joup!uif!tztufn!tubdl

..!djsdvmb!rvfvf

..!bnpuj(fe) 分期付款*!bobmztjt

..!jnqmfnfou!b!rvfvf!vtjoh!uxp!tubdl





