\$A: =7! 6\$8)! ()<)6!: 88=6`!.:6)! A6: \$; ,/1! C - \$7! 8\$ (! 7 - '%! 9=\W,)! 7)\$8-! =\%! \$A: =7! 7-)! 9: \%'A','7/!: B!
; ),'A)6\$7': (!\$ (; !\$87': (!: (!6\$8'\$,!'\%=)\%!' (!7-)!96)\%) (8)!: B1; ))9!6\$8'\$,!; '<'\%': (\%`!

E!\$6+=)!7-\$7!7-)%)!%7/,)%!=(;)6&'()!7-)!;),'A)6\$7'<)!\$(;!9:,'7'8\$,

9: %'7': (!'(!6),\$7': (%: B!%76=87=6\$,!'()Y=\$,'7/!H^\$6\$C\$/!''fddl\(\dot{J}\)8\$=\%)!\(\dot{J}\); !@(: C,); +)\(\dot{J}\)\$6\(\dot{S}\)!\(\dot{J}\)

İ /

\$A,)!&: A','\\)!6\$8'\$,!; '<)6\\'7/!\$\\!\$!; ),'\A)6\$7'<)!\$ (; !9: ,'7'8\$,!6)\\: =68)!\A/!9: : ,'(+!7-)!\\'7=\$7); !\@(: C,); +)\\!

: B!; 'BB)6) (7!6\$8)\\!7: !+) ()6\$7)!\\&: 6)!'(8,=\\'4'\)!; '\\8=\\\': (!\$(; !9: ,'7'8\$,!\$87': (!: (!6\$8'\$,!'\\=)\\\!
!

E(!7-'%!\$67'8,)1!E!\$6+=)!7-\$7!6\$8'\$,!; '<)6%'7/!96)%) (7%!8-\$,,) (+)%!B: 6!; ),'A)6\$7': (!\$(; !9: ,'7'8\$,!\$87': (!: (!: 688'\$,!'%=)%!'(!\$%: 8'\$7': (%!C'7-!; ))9!6\$8'\$,!; '<'%': (%!E!; )<),: 9); !7-'%!\$6+=&) (7!'(; =87'<),/!; =6'(+! &/!B'),; C: 6@\P: 6!8,\$6'7/1!7-'%!%)87': (!: '%7',,%!7-)!7-6))!%7)9%!: B!7-\$7!\$6+=&) (7\!

P'6%71!E!\$6+=)!7-\$7!6\$8'\$,!;'<)6%'7/!B: 68)%!&)&A)6%!: B!\$%: 8'\$7': (%!7: !6)9)\$7); ,/!8-:: %)!A)7C))(!
-\$6&: (/!\$(;!6\$8'\$,!7)(%': (½ E!;)<),: 9!%)<)6\$,!)X\$&9,)%! B6: &!8-=68-)%!'(!7-)!)&9'6'8\$,! &\$7)6'\$,!
H[:=,;!96)\$8-'(+!\$A:=7!6\$8'\$,!<':,)(8)!6)76\$=&\$7'\)!:=6!9):9,)!:B!8:,:6`![:=,;!\$!8:%7D)BB)87'<)!
\*(+,'%-!%=6<)/!%9\$6@!;'\%:(7)(7!\$&: (+!(:(D(\$7'<)!\%9)\$@)6%'I1!A=7!:()!8\$(!'&\$+'()!\%&',\$6!8-:'8)\%!'(!:7-)6!;'<)6\%)!\$\%:8'\$7': (\%!\|[:=,;!\$!8,\$\%!:(!6\$8'\$,!<':,)(8)!6)76\$=&\$7'\)!\%7=;)(7\%!:B!8:,:6`![:=,;!\$!8,\$\%!:(!6\$8'\$,!<':,)(8)!6)76\$=&\$7'\)!\%7=;)(7\%!:B!8:,:6`![:=,;!\$!8,\$\%!:(!6\$8'\$,!<':,)(8)!6)76\$=&\$7'\)!\%7=;)(7\%!:B!8:,:6`![:=,;!\$!8,\$\%!:(!6\$8'\$,!<':,)(8)!6)76\$=&\$7'\)!\%7=;)(7\%!:B!8:,:6`![:=,;!\$!8,\$\%!:(!6\$8'\$,!<':,)(8)!6)76\$=&\$7'\]!\%9'6'7`!\%

M)8: (; 1!E!\$6+=)!7-\$7!\$%!&)&A)6%!:B!; '<)6%)!\$%: 8'\$7': (%!6)9)\$7); ,/!B\$8)!7-)%)!8-: '8)%!7-)/!
+6\$<'7\$7)!7: C\$6; !=(;)6%7\$(; '(+%!:B!F-: C!C)!; :!7-'(+%!-)6)G!HF%7/,)%G!!7-\$7!96'<',)+)!7-)!&\$'(7)(\$(8)!
:B!-\$6&: (/>!M7/,)%!-)6)1!6)B)6!7: !9\$77)6(%!:B!'(7)6\$87': (!7-\$7!\$6'%)!B6: &!%-\$6); !\$%=&97': (%!\$A:=7!
+::; !\$(;!\$996: 96'\$7)!+6:=9!A)-\$<':6!H\*,'\$%: 9-!\$(;!V'8-7)6&\$(!2334|>!E!6)B)6!7:!7-)%)!6)9)\$7);!

P'(\$,,,/1|E!\$6+=)!7-\$7!7-)%)!%7/,)%!=(;)6&'()!7-)!;),'A)6\$7'<)!\$(;!9:,'7'8\$,!<\$,=)!:B!6\$8'\$,!;'<)6%'7/!

A)8\$=%)!7-)/!96:<';)!9\$7-%!:=7!:B!8:(<)6%\$7':(%!\$(;!\$87':(!:(!6\$8) \times \$!<\$,=\$A,)!9\$7-1!:(!%:&)!

:88\$%':(%!!A=7!\$!9\$7-!7-\$7!6)%76'87%!7-)!)X8-\$(+)!:B!F%'7=\$7);!@(:C,);+)G!\$(;!7-)!,'@),'-::;!:B!

'(8,=%'<)!9:,'7'8\$,!\$87':(!:(!6\$8'\$,!'%=)%!5-'%!:=78:&)!:BB)6%!\$!76:=A,'(+!9'87=6)!A)8\$=%)!'7!%=++)%%!

5-'6; 1!&/!7-): 6/!96)%) (7%!\$!&: 6)!76: =A,'(+!8: &9\$(': (!7: !7-)!76\$; ): BB!A)7C)) (!; ),'A)6\$7'<)!
\$(; !9\$67'8'9\$7: 6/!; )&: 86\$8/!H. =7\text{W!2332g!}. =7\text{W!233\lay?88: 6; '(+!7: !. =7\text{W!!; '<)6\text{%}}!9: ,'7'8\$,!; '\text{%}=\text{%': (!}
()7C: 6@\text{%! B: \text{%}}: \text{%}) 6! 7: ,)6\$(8)! \$(; ! \$(! \$C\$6) ()\text{\text{M!}} : B! &=,7'9,)! <')C9: '(7\text{M!} A=7! ; '\text{\text{%}}: =6\$+)! 9: ,'7'8\$,!

9\$67'8'9\$7': (\text{A} S: (B,'87! \$<: '; \$(8)!)X9,\$'(\text{\text{M}}?-)!76\$; ): BB]! &) &A)6\text{M!} : B!; '<)6\text{\text{M}}! ()7C: 6@\text{\text{\text{M}}}: 6)76)\$7! B6: &!

9\$67'8'9\$7': (!A)8\$=\text{\text{M}}!?-)/!; :!(: 7!C\$(7!7: !9=7!7-)'6!\text{\text{\text{M}}}: 8'\$,!6),\$7': (\text{\text{\text{M}}}'-9\text{\text{\text{M}}}?!6'\text{\text{\text{\text{M}}}: (!7-'\text{\text{\text{M}}}=; /1!-: C)<)6!!

E!\$6+=)!7-\$7!7-)\text{\text{M}}!@'(; \text{\text{\text{M}}}: B!; '\text{\text{\text{M}}}: \text{\text{\text{M}}}: \text{\text{\text{M}}}: \text{\text{\text{\text{M}}}: \text{\text{\text{\text{M}}}: \text{\text{\text{\text{M}}}: \text{\text{\text{\text{M}}}: \text{\text{\text{\text{\text{M}}}: \text{\text{\text{\text{\text{\text{M}}}: \text{\t

<sup>!!5-&#</sup>x27;%!9: '(7!\$,%:!%=++)%%!\$!; 'BB)6) (7!&)8-\$('%&!B:6!6)%)\$68-!: (!7-)!F'6: (/!:B!-\$6&: (/G!'(!%:8'\$,!9%/8-:,:+/¾?88:6; '(+!7:!7-'%!,'7)6\$7=6)1!' (7)6+6:=9!8: (7\$87!8\$(!=(;)6&'()!8:,,)87'<)!\$87': (!7:!6)&); /! '()Y=\$,'7')%!A/!86)\$7'(+!7-)!B\$,%)!'&96)%%': (!:B!)Y=\$,'7/!HM\$+=/!)7!\$,¾233f1¾E(!7-'%!%=; /1!-:C)<)61!
8: (7\$87!=(;)6&'()%!7-'%!@'(;!:B!8:,,)87'<)!\$87': (!A)8\$=%)!+6:=9%!+6\$<'7\$7)!7: C\$6; !7-)!\$<: ';\$(8)!:B!; '(-'%'<)!'%=)%!5-'%!%=; /!7-=%!%-:C%!-:C!8: (7\$87!8\$(!=(;)6&'()!8:,,)87'<)!\$87': (!7:!6)&); /!

:=7! &/! \$6+=&) (7! \$A: =7! -: C!8-: '8)%! A)7C)) (!-\$6&: (/!\$(;!6\$8'\$,!7) (%: (!8: (76'A=7)!7:!%7/,)%!:B!\$ \$<: ';\$(8)!7-\$7!=(;)6&'()!7-)!;),'A)6\$7'<)!\$(;!9:,'7'8\$,!<\$,=)!:B!;'<)6%'7/\delta5-'\%!\%=; /!;6\$C\%!: (!;\$7\$!\%6: &!7-)!7C:!;'<)6\%)!8-=68-)\%!7:!;)<),:9!7-'\%!7-):6/!'(!;)7\$',!!\$,7-:=+-!7-)!\$6+=&) (7!C\$\%!8)67\$'(,/!\%16:6&);!A/!7-)!:7-)6!8-=68-)\%!'(!&/!B'6\%7!\$(;!\%)8: (;!6:=(;\%!:B!B'),;C:6\@>!\

## 4'%'!1-\*-%'%./\$!

5-'%!'%!(:7!\$!%=;/!:B!8-=68-)%!'(!J:%7:(\(\daggeright\) \(\daggeright\) \(\dag

<: ,=&'(:=%!+=';\$(8)!,'7)6\$7=6)!: (!F6\$8)D7\$,@G!%=++)%7%!7-\$7!7-)%)!96)%%=6)%!\$6)!8: &&: (9,\$8)!'(!8: (7)X7%!,'@)!;'<)6%)!%8-::,%!\$(;!C:6@9,\$8)%>!

?!6),\$7); !+) ()6\$,'W\$A','7/!8: (8)6(!'%!7-\$7!&/!7-): 6/!&'+-7!(: 7!\$99,/!7: !: 7-)6!7'&)!9)6':; %!: 6!
7: !%\$,') (7!; '<'%': (%!: 7-)6!7-\$(!6\$8)!H)>+>!%)87!: 6!8,\$%%!>E!8: (; =87); !&/!B'),; C: 6@!'(!7-)!7C: !/)\$6%!\$B7)6!
7-)! &=6; )6!: B! R): 6+)! P,: /; 1! \$(; ! '7! '%! 9: %'A,)!7-\$7! 7-)! %=A%)Y=) (7! F6\$8'\$,! 6)8@: ('(+G! = ('Y=),/! \$&9,'B'); !7-)!9)68)'<); !6'%#%!: B!8: (<)6%\$7': (%!\$A: =7!6\$8)>!A': C)<)6!!7-)!\$<: '; \$(8)!: B!6\$8'\$,!'%%=)%!-\$%!
,: (+!A)) (!; : 8=&) (7); !'(!+6: =9!%)77'(+%!'(!7-)! a('7); !M7\$7)%! H\*,'\$%: 9-! "fffg! J: (',,\$DM',<\$! 23"3g!
P)\$+'(!23"3g!. 81 '(()/!2330!A.: 6): <)6!!%8-: ,\$6%!-\$<)!: A%)6<); !\$<: '; \$(8)!(: 6&%!\$,: (+!: 7-)6!,'()%!
: B!; '<'%': (!'(!: 7-)6!; '<';); !8: (7)X7%]!%7=; ')%!: B!m=)A)8!!O: 67-)6(!E6),\$(; 1!\$(; !%)77,)608: ,: ('\$,'%&!'(!-\$6%: (!!B: 6!'(%7\$(8)1!B'(; !7-\$7!'(7)6+6: =9!'(7)6\$87': (%!: B7) (!\$<: '; !; '<'%'<)! 8: (8)6(%!7: ! &\$'(7\$'(!-\$6%: (!/!5\$/,: 61!Q=A)1!\$(; !J),,)6: %)!"fd\q!56)C!"fd\q!L)77'+6)C!"ffdq!Q) ('%!23"0!>

?!%)8: (; !, '&'7\$7': (!'%!7-\$7!7-)6)!\$6)!9,\$=%'A,)!\$,7)6(\$7'<)!)X9,\$(\$7': (%!B: 6!7-)!; ), 'A)6\$7'<)!\$(; ! 9: ,'7'8\$,!'(<: ,<)&) (7%!: B!7-)!8-=68-)%!B6: &!&/!B'),; C: 6@\delta5-)%)!)X9,\$(\$7': (%!'(8,=;)!7-)!9: \%'A','7/!7-\frac{1}{2} \cdot \frac{1}{2} \cdot \fra

Q)%9'7)!7-)%)!,'&'7\$7': (%!7-)%)!; \$7\$!6)7\$'(!'&9: 67\$(7!8-\$6\$87)6'%7'8%!7-\$7!&\$@)!7-)&!%='7); !7:!

=(;)6%7\$(;'(+!7-)!A\$66')6%!7:!;),'A)6\$7': (!\$(;!\$87': (!'(!7-)!96)%)(8)!: B!6\$8'\$,!;))9!; '<'%': (%!5-'%!'%!

A)8\$=%)!7-)%)!; \$7\$!8\$97=6)!7-)!\$34\$/"\$-+\$!: B!; '<'%': (%K C-\$7!\$87=\$,,/!+:)%!: (!B:6!9): 9,)!C-)(!7-)/!

!

8-=68-\(\frac{7}{2}\)7\)6! \(\frac{8}{2}\)6\\$,! \(6:=(; \mathcal{1}: B! 7-6: \frac{7}{1} \)8,)\(\frac{8}{1}' \)4\)6! \(\frac{1}{2}\)6\(\frac{1}{2}\)6\(\frac{1}{2}\)7\)7\(\frac{1}{2}\)7\(\fra

5-)%)!%8)()%!;)9'87!\$!7/9'8\$,!M=(;\$/!\$7!P\$'6<')C!S:&&=('7/!S-=68-\*(P\$'6<')C!'%!\$!(:(D\*;)(:&'(\$7':(\$,!8-=68-!7-\$7!%)6<)%!\$!6\$(+)!:B!6\$8)%!\$(;!)7-('8'7')%!'(!J:%7:(\*!jB!7-)!\3!6)+=,\$6!
&)&A)6%!:B!P\$'6<')C1!2''!\$6)!C-'7)!\$(;!(:(D^'%9\$('8

9\$(76/!: 6+\$('W)6I!'(76: ; =8); !&)!7: !7-)!96')%7!HP\$7-)6!. =69-/I1!-)6!-=%A\$(; !HJ: AA/I1!B: =6!O')7(\$&)%)!

C: &)(1!\$!/: =(+!^'\%9\$('8!8: =9,)1!\$(; !\%)<)(!C-'7)!8-=68-+:)6\%!P: =6!: B!7-)!\%)<)(!\$6)!E6'\%-1!\$(; !\\$B7)6!

%: &)!; '\%8=\%': (!: B!7-)!; '\%7\$(8)!A)7C))(!7-)'6!\$(8)\%76\$,!-: &)7: C(\%H'(17-)!\%: =7-I!\$(; !\&/!: C(!H'(17-)!)(!7-)!)(!67-I1!P': (\$!C),8: &); !\&)!7: !7-)'6!F<)6/!: C(!,)\$+=)!: B!(\$7': (\%G!5-'\%!,)\$+=)!: B!(\$7': (\%B'5-'\%!,)\$+=)!: B!(\$7': (\%B'5

@),6(G4/)9/\$''"0\$H(&-!(G+)-'\$/0&,"0\$H(E6/"',"&-'I(D6"'2(J&"/0"\$52("'(56\$/\$(5\$(&/\$(9)"-9(5/)-9:(; \$(&/\$(,)#!(,6&,("\*(5\$(!)-8,(@\$#"\$0\$(,6\$(5&1(,6\$(9/).4(!)\$'2(,6\$-(,6\$/\$("'(-)(/))%(\*)/(.':(; \$(%.',(9/)5().,()\*(,6"'(',.@@)/--\$'':(

^)6)!!#)(('B)6!=%)%!8:(B,'87!:(!S-6'%7'\$(!%:8'\$,!&); '\$!7:!6)&'(;!8-=68-+:)6%!7:!6'%)!\$A:<)!
; '%\$+6))&)(7%!H7:!F+6:C!:=7!:B!7-'%!%"=AA:6(()%%G!\*!#)(('B)6!)(I:'(%!8-=68-+:)6%!7:!,::@!A)/:(;!
7-)'6!; 'BB)6)(8)%!\$(;!86)\$7)%!\$!%9\$8)!'(!C-'8-!; 'BB)6)(8)!8\$(!A)!8\$%7!\$%';)\*!\*B6)&1!\$!,:(+7'&)!&)&A)6!!
:BB)6);!\$!%'&',\$6!\$88:=(7!:B!P\$'6<')C]!Fj=6!\$996:\$8-!'%!<)6/!&=8-!,'@)!!pR:;!,:<)%!/:=mV)\$<)!\$,,!
7-\$7!:7-)6!%"=BB!\$7!7-)!;::6Km E7%!\$!;'<)6%)!9,\$8)!!A=7!C)!;:(%7!+)7!-=(+!=9!:(!7-\$7!:7-)6!A\$++\$+)\*G!!
5:+)7-)6!!7-)%)!\$88:=(7%6)<)\$,!7-)!F%7/,)G!:B!P\$'6<')C\*!V'B)!'(!P\$'6<')C!8:(%'%%''(!7-)!!\$\*\%+,")-(
:B!\$77)(7':(!\$C\$/!B6:&!6\$8'\$,!;'BB)6)(8)&\$C\$/1!\$%!\*B6)&!9=7!'7!B6:&!F7-\$7!:7-)6!A\$++\$+)\*G!!P\$'6<')C!
96:<';)%!6)B=+)!B6:&!;'<'%':(!\$(;!A6'(+%!8-=68-+:)6%!7:+)7-)6!7:!B:8=%!:(17-)'6!B\$'7-\$!5-'%!%7/,)!
H;)B,)87':(1!6)96)%)(7%!\$(!=(;)6%\$(;'(+!:B!F-:C!C)!;:!7-'(+%!-)6)G!7-\$7!7')%!7:+)7-)6!7-)!\$87'<'7')%!

| 1; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; | 16; |

^: C!; '; !7-)!96)%=6)%!: B!; '<)6%'7/!96: ; =8)!7-'%!%7/,)`!?!8: (<)6%\$7': (!C'7-!L\$%7: 6!#) (('B)6!

: BB)6); !\$!C'(; : C!'(7:!7-)!)<: ,=7': (!: B!; )B,)87': (!'(!P\$'6<')C\(\delta\)E(!7-\$7!8: (<)6\(\delta\)7': (1!C)!7\$,@); !\$A: =7!

%)<)6\$,!: B!7-)!F,: C!9: '(7\(\delta\)!(!-)6! & '('\%76/!I: =6()/\(\delta\)5-'\(\delta\)!\$88: = (7!: B!#) (('B)6\(\delta\)!; )\(\delta\)6'97': (!: B!\$!,: C!

9: '(7!; 6\$C\(\delta\)!: (!B'),; (: 7)\(\delta\)!C6'77) (!\$B7)6!7-)!8: (<)6\(\delta\)57': (]!

K&0\$(1). (6\$&/!()\*(L3\*&%(6. -9\$/(\$0\$-,'M(; \$##2(56\$-(1). (&//"0\$(&,(,6\$(!"--\$/2(\$0\$/1)-\$(9\$,'(&(#",,#\$(,89:(C-!2('&12(',5)(4\$)4#\$(9\$,(&(\*. ##(!"--\$/2(\*"0\$(4\$)4#\$(9\$,(%\$&,(&-!(/"+\$2(\*"\*,1(4\$)4#\$(N. ',(/"+\$2(&-!(\$0\$/1@)!1(\$#'\$(9\$,'(-),6"-9:(7,8'('.44)'\$!(,)(@\$(/\$4/\$'\$-,&,"0\$()\*(6)5(\*))!("'(!"',/"@.,\$!("-(,6\$(5)/#!:(7,8'(&(#\$'')-()-("-\$F. &#",1:(C-15&12(7(,/"\$!(",(

C,(,6\$(,"%\$2(7(5&'(,6"-A"-92(G; 61(&/\$(4\$)4\$(9\$,,"-9(')(%&!(&@).,(,6"MH(P.,(#&,\$/2(7(/\$\*#\$+,\$!(&-!(/\$&#\*Q\$!(,6&,(
')%\$()\*()./(%\$%@\$/'(/\$&##1(!)-8,(-\$\$!(&(#\$'')-()-("-\$F.&#",1:(B\$0\$/&#()\*()./(%\$%@\$/'(\*/)%(R&(4))/(&-!(@#&+A(
-\$"96@)/6))!("-(P)',)-\$(@/"-9(,6\$"/(A"!'(,)(+6./+6(\$0\$-,'(\*)/(&(!\$+\$-,(%\$&#:(D6\$1(5\$/\$(%&!(@\$+&.'\$(,6\$1(!"!-8,(-\$\$!(
&(#\$'')-()-(!"0"'")-(&-!("-\$F.&#",1:(7(5"'6(78!(,6).96,()\*(,6&,(@\$\*)/\$(6)',"-9(,6\$(!"--\$/:(; \$(!)-8,(-\$\$!(,))(/\$6&'6(,6\$(
!"0"'")-':(7(/\$%"-!(%1'\$#'()\*(,6&,(&##(,6\$(,"%\$:(

P6: &!7-'%!\$88: = (7!!C)!,)\$6(!7-\$7!#)(('B)6!76'); !7: !B\$8','7\$7)!\$!8: (<)6%\$7': (!\$A: =7!'()Y=\$,'7/!'(!\$! 6\$8'\$,,/!; '<)6%)! 8: (+6)+\$7': (!! \$(;!7-\$7!-)6!)BB: 67%! 96: &97); !\$(+)6!\$&: (+!8-=68-+:)6%! C-:%)!

; 'BB)6)(7!8,\$%%!H\$(;!'(!7-'%!8: (7)X7!!6\$8'\$,I!A\$8@+6: = (; %!%-\$9); !7-)'6!)X9)6')(8)!: B!7-)!; '(()6\*!O: 7'8)1!

B'6%7!!-: C!7-'%!)9'%:;)!6)96)%)(7%!\$!8-: '8)!A)7C))(!6\$8'\$,!7)(%': (!\$(;!-\$6&: (/]!-)6)!!#)(('B)6!8-:%)!

A)7C))(!\$!; '(()6!C'7-!: 6!C'7-: =7!; 'BB'8=,7!8: (<)6%\$7': (%!\$A: =7!6\$8)!\$(;!'()Y=\$,'7/\*!O: 7'8)!\$,%: !-: C!

7-)!B\$,,; =7!B6: &!#)(('B)6!%!8-: '8)!%)7!P\$'6<')C!: (!7-)!9\$7-!7: C\$6; !7%!%/,)!A/!6)&'(;'(+!#)(('B)6!7-\$7!

7-)/!F;: (\(7!())); !7: !6)-\$%-!7-)!; '<'%': (\%G!5-'\%18: &&'7&)(7!'\%17-)!)\(%)(8)!: B!; )B,)87': (> !

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!E7!'%!9: %%'A,)!7-\$7!#) (('B)6!B),7!7-)%)!96)%=6)%!&: 6)!\$8=7),/!\$%!\$!C-'7)!9\$%7: 6¾^: C)<)61!E!B: =(;!7-\$7!

9\$%7: 6½!: B!8: ,: 6!B\$8); !%'&',\$6!96)%=6)½!; =6'(+!&/!B'),; C: 6@ДP: 6!'(%\$(8)1!: ()!A,\$8@!9\$%7: 6!%-\$6); !

7-\$7!-)!-\$; !A)) (!B'6); !B6: &!\$!96)<':=½!; '<)6%)!8-=68-!B: 6!F%9)\$@'(+!7::!&=8-!\$A:=7!J,\$8@!V'<)½!

\$77)6G!\$(;!(:C!8-:%)!7:!%\$/!\$C\$/!B6: &!6\$8'\$,,/D8-\$6+);!'%=)½!'(!8-=68-½|S-=68-+:)6½!: B!8: ,: 6!

6)B)6) (8); !½'&',\$6!96)%=6)½!'(!8: (<)6%\$7': (½!\$(;!'(7)6<')C%!P: 6!'(%\$(8)1!C-)(!E!\$@); !C-/!6\$8)!C\$½!

\$(;!^'\%9\$('8!6)96)\%)(7\$7': (!: (!7-)!8-=68-!8: = (8',g!7-)!8-=68-!: BB'8)!\%'+(!6)\$;\%!F[),8: &)q!V)7\\%!

5\$,@G!'(!\*(+,'\%-1!M9\$('\%-1!\$(;!0')7(\$&)\%)g!\$(;!7-)!8,)6+/!\%:,'8'7!6)Y=)\%7\\!B: 6!8=,7=6\$,!)<)(7\\!B: 6!)\$8-!

+6: =9! H,\$\%7! /)\$6\\\!)<)(7\\!B: 6! '(\%7\$(8)!! '(8,=;);!\$! ^'\%9\$('8! ^)6'7\$+)! . : (7-! FL\$'(7! O'+-7!G! \$! O')7(\$&)\%)!; '\%76'87!B'),; 76'91!\$(;!\$!M7\!L\$76'8@\\\!Q\$/!A6=(8-1\!

5-)%)!: A%)6<\$7': (%!6)<)\$,!7-)!%7/,)!: B!M7¾#: %)9-!L\$6'%-¾V'B)!\$7!M7¾#: %)9-!8) (7)6%!: (!4&/",1bb 7-)!8-=68-!9,\$8)%!)Y=\$,!<\$,=)!: (!\$,,!6\$8'\$,!+6: =9%!'(!7-)!8: (+6)+\$7': (¾5-'%!%7/,)!\$,,)<'\$7)%!7-)!96)%=6)%!
: B!6\$8'\$,!; '<)6%'7/!'(!7-)!8: (+6)+\$7': (]!A/!7) (; '(+!7:!)\$8-!6\$8)!'(!)Y=\$,!&)\$%=6)!!7-)!8-=68-!\$<: '; %!7-)!
7) (%': (%!7-\$7!&'+-7!\$6'%)!B6: &!7-)!96': 6'7'W\$7': (!: B!%: &)!+6: =9%!: <)6!: 7-)6%!

'&9\$67);!,)%: (%!\$A: =7!F-: C!7-'(+%!\$6)!;: ()G!\$7!M7\fmunthfty#:%)9-!L\$6'%-]!,)%: (%!C-'8-!8\$97=6)!7-)!)7-: %!
:B!7-)!8-=68-1!\$(;!C-'8-1!\$%!C',,!E!\$6+=)!()X71!8: (%76\$'(!;),'A)6\$7': (!\$(;!9:,'7'8\$,!\$87': (!\$A: =7!'%=)%!
6),\$7);!7:!6\$8)\$!

FB2!42,-#2&' %52!' /7!C. ,-% (' ,!8. /\$2G32/(2\$!. 0!420,2(%. /!' /7!C' &-%6!

a9!7:!(: C1!E!-\$<)!; )%86'A); !-: C!6\$8'\$,!; '<)6%'7/!96:; =8); (!\$\*\$; ")-!' (!P\$'6<') C!\$ (; !4&/",1!' (!M7\#: %)9-\text{\tex

(:7! &)\$('(+B=,,/!)X9:%);!7:!7-)!9)6%9)87'<)%!:B!7-)!,)%%!96'<',)+);!6\$8'\$,!+6:=9%!'(!7-)!8-=68->!

Q)B,)87': (1!7-) (1!8: (%76\$'(%!;),'A)6\$7': (!\$(;!9:,'7'8\$,!\$87': (!7-\$7!;6\$C!: (!7-)!9)6%9)87'<)%!\$(;!
)X9)6')(8)%!:B!;'BB)6)(7!6\$8)%!

j A%)6<\$7': (%!B6: &!M7\\\#: %)9-!L\\$6'\%-!7),,!\\$!\%\&',\\$6!\%7: 6/\\M)<)6\\$,!\&: (7-\%!'(7: !\&/!B'),; C: 6\@1!E! \$66'<); !A)B: 6)!7-)!\%)6<'8)!7: !\&))7!C'7-!P\\$7-)6!. =69-/1!\\$(; !7: !,)\\$6(!\\$A: =7!7-)!\@'(; \\%!: B!8: (<)6\\\$7': (\\%! -)!-\\$; !C'7-!8-=68-+: )6\\![-)(!E!\\$\\@); !'B!8-=68-+: )6\\!6\\"\); !7: 9'8\\!6),\\$7); !7: !6\\$8)!: 6!9: ,'7'8\\!P\\$7-)6!

?7!7-'%! 9: '(7!! -: C)<)6!!7-)! C: 6@!: B!7-)! 8-=68-! '%! 8: &9,)7)]! 8-=68-+: )6%! 6\$'%); !8: (8)6(%!!8,)6+/!
,'%7)(); !7:!)\$8-!+6: =91!\$(;!(:!B=67-)6!; '%8=%%': (!7\$@)%!9,\$8)>!

L\$6'7/!'(!M7\frac{4}#: %)9-!L\$6'%-1!7-)(1!8: &)%!\$7!7-)!8: %7!: B!;),'A)6\$7': (!\$(;!9:,'7'8\$,!\$87': (!\$A: =7!
6\$8)]!7-)!8-=68-!-)\$6%!B6: &!)\$8-!+6:=9!:B!8-=68-+:)6%!A=7!()<)6!A6'(+%!7-)'6!;'BB)6)(8)%!:6!
9)6%9)87'<)%!'(7:!8:(<)6%\$7':(\frac{4}{5})

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; '<)6%'7/1! A=7!, '&'7! &/!\$A','7/!7:!+) ()6\$,'W)!7:!:7-)6!9:9=,\$7': (%!\$%:8'\$7': (%!\$(;!;'<'%': (%!5-)%)!
,'&'7\$7': (%!%=++)%!7C:!\$<)(=)%!B:6!B=7=6)!

! 2d

'(<)%7'+\$7)!7-)!6:,)!:B!,: (+D7)6&!'(%7'7=7': (\$,!%=99:67!B:6!;),'A)6\$7': (!\$(;!;)8'%': (D&\$@'(+1!%=8-!\$%!8'<'8!);=8\$7': (!H?,,)(!23''\q!?,,)(!\$(;!1';;!23221>!

5-)%)!\$<\)(=)%!B: 6!B=7=6)!6)%)\$68-1!7-) (1!8: &96'%)!\$(!\$+)(;\$!7-\$7!7\$@)%!=9!7C:!'(7)606),\$7);!

Y=)%7': (%! P'6%7!! C-\$7! \$6)! 7-)! A\$66')6%! 7:!; ),'A)6\$7': (!\$(;!9:,'7'8\$,!\$87': (!\$A: =7! 6\$8)! '(!;'<)6%)!

\$\%\%: 8'\$7': (\%`!?(;!\%)8: (;1!-: C! &'+-7!7-)\%)! A\$66')6\%! A)!: <\)68: &\)`! 5-'\%!\%7=; /!: 9) (\%!=9!\$!,'()!: B!

'(Y='6/!'(7: !B'6\%7!Y=)\%7': (1!'(!7-)!-: 9)!7-\$7!B=7=6)!6\%)\$68-!&'+-7!&: 6)!B6='\%7B=,,/!)X9,: 6)!7-)!\%8: (;\%!\%1.5)

- ?,,)(!!Q\$('),,)!!\$(;!Q\$<';!I ';; \(\delta\)2322\(\delta\)\$6('(+!B: 6!7-)!2"\(\delta\)!S)(7=6/]!Q'\(\delta\)(7\$(+,'(+!7-)!F5-'(G! \)\$(;!F5-'8@G! \(^1\),)\(\delta\)(7\(\delta\)!S'<'8!E;)(7\(^1\)7\(\delta\)!S'<'8!V)\(\delta\)('(+\(\delta\)!E((\(\L3^\*)/!(\K\(^1\)))A()'(

- \$6\$&)6!! I \$7-)6'()\ddot 233\_\ddot D&#A"-9(&@).,(T)#","+'X(7-\*)/%&#([/).4'(&-!(B)+"&#(7!\$-,",1("-(C%\$/"+&-(="\*\$:!
  a('<)6%'7/!: B!\$-'8\$+: !L6)\%\ddot
- \$6\$&)6!! I \$7-)6'()\delta 23"2\delta FL=77'(+!E()Y=\$,'7/!E(!E7\delta!L,\\$8)]! i =6\$,!\$: (\delta':=\delta()\delta!\\$(;!7-)!L:C)6!:B! L)6\delta 9\87'<)\delta G!C\delta\s''+&-(T)\p'', "+&\p'(B+"\s-+\s'(Y\s'0"\s5!''3\H41]0''ZD042\delta!
- Q) ('%!#)BB6)/\dd3''O\dds: (7\\$87!5-): 6/!'(!\\$!M\&\\$,,D5: C(!M)77,)6DS: ,: ('\\$,!S: (7)X7]!5-)!i )96: ; =87': (!

  : B! V\\$'\%)\WDP\\$'6)! i \\$8'\&! '(! E(; '+)(: =\D[ -'7)! S\\$(\\$; '\\$(! i ),\\$7': (\%G!C\%\"+\&-( B)+")\#)9"+\&#(

  Y\\$0"\\$5!d3\H''\]2"\db2\_2\dds!
- Q: =+-)67/1!1 )<'(1!. \$6@!S-\$<)%!\$(;!. '8-\$),!\*&)6%: (½2323½Fi \$8'\$,!Q'<)6%7/!'(!aM!S: (+6)+\$7': (%!"ffdb23"f%!V)./-&#(\*)/(,6\$(B+"\$-,"\*"+(B,..!1()\*(Y\$#"9")-!0flL]\0"b\2½!
- P=(+1!?68-: (½2334½F?%: 8'\$7': (½\$(;!Q)&: 86\$8/]!J)7C))(!5-): 6')%!^: 9)%!\$(;!i )\$,'7')%G!C--. &#(
  Y\$0"\$5()\*(B)+")#)91!2f]0''0D4f½
- \*; C\$6; %!! : 6') \text{233d}\(D6\(\text{O}\(\text{#. '"0}\(\text{W}\\ \&\) \(\text{M}\(\text{D6}\(\text{T}\)) 5\(\text{/}\(\text{\*}\(\text{"-(\chi.\#,\"\&\+\\&\#\(\text{E6.}\)/+6\\$':(

## j /\$@\$C\$1!. '8-),,)\text{23"f\text{Fi \$8'\$,!i }8: (8','\$7': (!\$\!\\$!M=996)\\'\<)!P6\$\\\)!'(!\*<\\$(+),'8\\$,!. =,7'6\\$8'\\$,! S-=68-)\\G!B)+")\(\frac{9}{3}\]-!\(\d3\\\_1\]\_f\\D0"Z\!

L)77'+6)C1!5-: &\$%!"ffd\fe(7)6+6: =9!S: (7\\$87!5-): 6/\frac{1}{5} -: &\frac{1}{5} -: &\frac{1}

- 5)6(=,,:1!M7)9-\$(') $\pm$ 2322 $\pm$ FpEK&!O:7!M=6)![ -\$7!7:!J),')<)KJ!. ); '\$!Q'%76=%7!\$(;!j 9'(': (!P:6&\$7': (!F:6\*\*)); '\$!Q'%76=%7!\$(;!j 9'(': (!P:6\*\*)); '\$!Q'%76=%7!\$(': (!P
- 56) C1! I \$6) (\(\frac{1}{3}\) FS\$7-: ,'8DL6: 7) \(\pi\\$\) (7! S: (7\$87! '(! O: 67-)6(! E6),\$(; \(\delta\)! E(! E)-,&+,(&-!(E)-\*#"+,("-( 7-,\$/9/). 4(O-+).-,\$/'\(\delta\)^\) (\(\Delta\)!. ',)\(\delta\)! = 9)67!J6: C(!\(\delta\); \(\delta\)],\(\delta\) (\(\delta\).
- $5:8Y=)<',,)1!?,)X'%!;)*!"d40*!W$%)+/&+1("-(C%$/"+&*!^$69)6!L)6)(('$,*!$
- o)6A\$1!M'; ()/1!^)(6/!J6\$; /1!\$(;!I\$/!V)-&\$(!M8-,: W&\$(\foldsymbol{!}"ff0\foldsymbol{!} <)"+\$(&-!(OF. &#',1)(E"0"+(<)#.-,&/"'%(
  "-(C%\$/"+&-(T)#","+':(^\$6<\\$6;!a('<)6\'7/!L6)\%!
- O)6A\$1!M'; ()/1!\$(;!O:6&\$(!O')\!'\fZ2:(T&/,"+"4&,")-("-(C%\$/"+&X(T)#","+&#(W\$%)+/&+1(&-!(B)+"&#(OF. &#",1:!\
  ^\$69)6!\$(;!i:C\!
- [ \$; %C: 67-1! O\$(8/\delta 23"3\delta FJ6'; +'(+! i \$8'\$,! S-\$(+)]! L: ,'7'8\$,! j 6') (7\$7': (%! '(! 7-)! a ('7); ! M7\$7)%!

  \*<\$(+),'8\$,!. =,7'6\$8'\$,!S-=68-!. :<)&) (7\script !T)#","+'(&-!(Y\ship")")-!4\h41]\_4fD\d\d!
- [ \$66) (1!. \$6@\\delta233''\delta\W\\$\\)\+/&\+1(&-!(C'')\+"&\,")\-\delta\L6'(8)7: (!a('<)6\\%7/!\L6)\\\delta