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	! ''#\$%&' () *+, #(- ''.(/01/(
23''&'' 4'&5(*&6(7'&*&3, (! ''#\$%' () *+, #(8, #% 5(! "#\$%&\$' ()* +,%+)-+. (,+\$&/)!!0"%)2\$3&,%4()! %52\$+6+)+67)! -+,\$(1)8(9+) "#\$%&'()#! (#! '*+!, -!.)/#'0(+12! 3+01(1'+#4+! ! 6'0/4'/0&%70+&81!)
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A ('\$7)#, /% #, 4-'3#., % &()\$#\$3(, 2(% #\$% .4% #, 3()(\$3% 3.% 8.3"% '2'1(+#2\$% :3.% (\$3'8-#\$"% 3"(% (+&#)#2'-%)(-(<', 2(% .4%1#44()(, 3%3"(.)(3#2'-% + .1(-\$E%\$72"%'\$%3"(%G"#--#&\$%27)<(% .)%OK 5 I% + .1(-\$;%', 1% + ., (3')9%'73".)#3#(\$%:3.%', 2".)%(*&(23'3#., \$%#, % .)1()%3.%-.L()%&()\$#\$3(, 2(% ', 1%)(172(%3"(% .73&73%2.\$3\$% .4%1#\$#, 4-'3#., ;D%U#/ "%&()\$#\$3(, 2(% +#/"3%)(\$7-3E%4.)%#, \$3', 2(E% 4). + %&)#2(%', 1%L'/(%)#/#1#3#(\$%:5'-]%', 1%5()3-()E%>???;E%.)%4). + %3"(%-'2J% .4%3)', \$&')(, 29% .4%1+., (3')9%&.-#29%: ^'-\$"E%BCC6;D%

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2.))(\$&.,1#,/% \$780\$'+&-(\$E% 3"()(89% .83'#,#,/% (<#1(,2(% .4% \$#/,#4#2',3% 2"',/(\$% #,% &()\$#\$3(,2(%'2).\$\$%2.7,

Oi`+'3.% (3% '-D% :BCC6;% ',1% Oi`+'3.% ',1% 5 ')(/, ',#% :BC>@;% (\$3#+'3(1% "#/"% #,4-'3#.,%&()\$#\$3(,2(%#,%`)/(,3#,'D%%`% L#1()% \$3719% 89% H'&#\$3)j,%',1%_'+.\$0P)',2#'% :BCC[;%)('2"(1% \$#+#-')% 2.,2-7\$#.,%4.)% '% L#1(%)',/(% .4% S '3#,%`+()#2',%2.7,3)#(\$D% P#, '--9E%M\$.')1#%',1% 5#-0`-', '%:BC>?;%4.7,1% (<#1(,2(% .4%-.,/0+(+.)9%#,%3"(%#,4-'3#.,%)'3(%#,%`)/(,3#, '% 89% '&&-9#,/%4)'23#.,'--9% #,3(/)'3#.,%+(3".1\$% 3.% 8.3"% +.,3"-9% ',1%

`\$% 4.)% 3"(% `4)#2',% 2.,3#,(,3E% h9.,#% :BC>T;% +.1(--(1% 3"(% <.-'3#-#39% .4% 3"(% +.,3"-9%#,4-'3#.,%)'3(%#,% d#+8'8L(%.<()%3"(%&()#.1%4).+%=7-9%BCC?%3.%=7-9%BC>T%',1% 4.7,1%3"'3%',% `_%:>;% f%M5 `_HU%:>E%>;% \$&(2#4#2'3#.,% #\$%3"(% +.\$3% '&&).&)#'3(N% 3"(9% ')/7(1% 3"'3% 3"#\$% (<#1(,2(% .4% &()\$#\$3(,2(% \$".7-1%8(% 3'J(,% #,3.% '22.7,3%89% +.,(3')9% '73".)#3#(\$%3.%1(\$#/,% '&&).&)#'3(%&.-#2#(\$D%U#/"%#,4-'3#.,%&()\$#\$3(,2(%L'\$%'-\$.\$%4.7,1%89% !7-(%(3% '-D%:BCBC;%#,%3"(%2'\$(% .4% h#/()#'%89%(\$3#+'3#,/% '%4)'23#.,'-%2.#,3(/)'3#.,% c`_%

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3"(N-'2JN.4%\$#/,#4#2',2(N.4%3"(N2.))(\$&.,1#,/N2.(44#2#(,3\$EN3"()(N#\$N,.N(<#1(,2(N.4%,.,0 -#,(')#3#(\$N#,%3"(N\$()#(\$N:'3N-('\$3N.4%3"(N4.)+%\$&(2#4#(1N'8.<(;DM

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!"()(4.)(Eh, (*3h L(h (*'+#, (h 3"(h &. \$\$#8-(h &)(\$(,2(h .4h \$3)7237)'-h 8)('J\$h 89h % &()4.)+#,/%3"(%3(\$3\$%.4%8.3"%Q'#%',1%G()).,%:BCC@;%',1%5#-0`-','%:BCCT;%4.)%+7-3#&-(% 8)('J\$E\$3"(%-'33()\$\$&(2#4#2'--9\$1(\$#/,(1\$4.)\$3"(\$2'\$(%.4\$4)'23#.,'-\#,3(/)'3#.,D\$!"(\$)(\$7-3\$ ')(\%(\$\\$(,3\#'--9\\3''(\\\$'+(\\#,\\8.3''\2'\\$(\\E\L''\#2''\\\#\\$\\,.3\\\$7)\&)\#\\$\#,/\%/\#<(,\\3''(\\&)(<\#.7\\\4\,1\\#,/\\ 3"'3%3"(%\$()#(\$%(*"#8#3%7,#3%)..3\$E%3"()(4.)(%L(%)(&.)3%.,-9%3".\$(%4.)%3"(%4#)\$3%3(\$3%#,%!'8-(% @E\L"#2"\\$\".L\$\3"(\,7+8()\.4\8)('J\$\'.1\3"(#)\1'3(\$\4.)\('2"\2.7.3)9D\!")((\8)('J\$\')() 4.7,1%#,%3"(%2'\$(%.4%M3'-9%',1%3"(%RVE%4.7)%#,%'--%.3"()%2'\$(\$D%K.+(%.4%3"(+%2.))(\$&.,1% #, %>??B\'\$%L(--\'\$\#, %H', '1'E\L"()(%M!\"'1\8((,\',,7,2(1\#,\>??>E\',1\3"(\-'7,2"\.4\ 3"(\%K#, /-(\%A')J(3\%G)./)'++(\%#, \%I7).&(\%#, \%>?TZE\%L"#2"\%+#/"3\%8(\%8("#,1\%3"(\%8)('J\$\% $1(3(23(1\%'), 7, 1\%3'')^{3})^{3} + (\%+, \%P)', 2(\%', 1\%3'-90\%M, \%5()+', 9E\%3''(\%1, ++, ', 3\%\&-'9()\%+, \%3''(\%))^{3}$ I7).&(', \(\KA...(3')9\)\K9\\$3(+\)\'22.)1#, /\(\starsymbol{\starsy .227))(1% (')-#()E% #,% >?T@E% \$".)3-9% '43()% '% ,(L% 2.'-#3#.,% /.<(), +(,3% #,2-71#,/% 3"(% $HORrHKR^{1}, 1^{O}OG^{1}(1, 1, 1) + (1^{7}, 1)^{3'}(1, (1, 1))^{3''}(1, (1, 1))^{3''}(1, 1))^{3''}(1, 1)$ 3"(%>??C\$%L()(%2"')'23()#\$(1%89%1(4-'3#.,%'43()%3"(%(2.,.+#2%8788-(%87)\$3%',1%3"(%>??B% 8) ('J\% +#/"3\%) (4-(23\% 3"'3\% 2"', /(\% #, \% (2.,.+#2\% 2.,1#3\#.,\$D\% P.)\% 3" (\% RKE\% 3" (\% 4\#)\$3\% 8) ('J\% (1%) (1%) (1%) (7, 1%3" (%3#+(%.4%3" (%\$3')3%.4%3" (%c.-2J()%+.,(3')9%) (/#+(%3" '3%7\$(1%#,3()(\$3%)))'3(\$\%3.\%2)('3(\%'\%,.+\#,'-\%',2".)\\#,\%3"(\\4.)+\%.4\\',\%(*&(23(1\\-.LE\\\$3'8-(\\%3)(,1\\#,4-'3\\+.,D\\!

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- $\begin{array}{l} Q' \# \mathbb{E} \mathbb{W} = \mathbb{D} \mathbb{W} & (1 \times \mathbb{G} \mathbb{G} \mathbb{W} : \mathbb{B} \mathbb{C} \mathbb{C} @; \mathbb{D} \mathbb{W} \mathbb{H} . + \& 73' 3 \# . , \mathbb{W}' , 1 \mathbb{W}' , '-9 \$ \# \$ \mathbb{W} . 4 \mathbb{W} + 7 3 \# \& -(\mathbb{W} \$ 3) 7 2 3 7)' \mathbb{W} 2 \mathbb{W}' \\ & + . 1 (-\$ \mathbb{D} \mathbb{W} = . 7) , '-\mathbb{W} . 4 \mathbb{W} & \& & \# (1 \times \mathbb{I} 2 . , . + (3) \# 2 \$ \mathbb{E} \mathbb{W} > \mathbb{D} \mathbb{B} \mathbb{D} \mathbb{W} \end{array}$

Q(-+.)E% KDN% _'<#2"',1)',E% HD

- O#(8.-1E% PD { D% ', 1% M, .7(E% `D% :BCC>;D% S., /% + (+.)9% ', 1%)(/#+(% \$L#32"#, /D% =.7), '-% .4% I2., .+(3)#2\$E%>CZE%>@>0>Z?D%%
- 5'-]EM =DM', 1% 5()3-()EM ADM:>???;DMM,4-'3#.,%19,'+#2\$WW%'%\$3)7237)'-%(2.,.+(3)#2%','-9\$#\$DM =.7),'-%.4%A.,(3')9%I2.,.+#2\$EWYYEWBEM>?ZOBBBDM
- 5')2]'EM =D`DM',1%G..,EM`DM:BC>?;DMM,4-'3#.,%3)(,1%%#,%`\$#'W%#+&-#2'3#.,\$%4.)%2(,3)'-% 8',J\$DM^.)J#,/%G'&()%K()#(\$EMh.%B@@TMrMO(2(+8()%BC>?D%I7).&(',%H(,3)'-%Q',JD%
- 5#-0`-', 'ENSD`DN:BCCT;DNP)'23#., '-N#,3(/)'3#.,N',1N\$3)7237)'-N8)('J\$N'3N7,J,.L,N&()#.1\$N .4N3#+(DN=.7), '-N.4N!#+(NK()#(\$N`, '-9\$#\$NB?EN>EN>[@0>TZDN

5)',/()E%HD ^ D=D%',1%U97,/E%hD

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K3.2JE%=DUD%',1%^'3\$.,E%

'>H8:!T1!*DE9;>E:D! <k!g!9b!>!89B:>?!D:EJ6@</k!g!9b!>
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#;%%%% h .%'73.2.))(-'3#.,%: ^ "#3(%,.#\$(;%					
K()#(\$%	h.%1(3()+#,#\$3#2% 3()+\$%	`,\#,3()2(&3\	`,%#,3()2(&3%',1%'%% -#,(')%3#+(%3)(,1%		
H`h`O`%	>DC>%%%%:CD?[E%%>DC6;%	TUQV!!!!ZQU[,A!!TUQ[\!	>DC@%%%%:CD?6E%%>DC?;%		
P_`hHI%	>D@>%%%%:>DCTE%%>D>?;%	TUVQ!!!!ZTUPVA!!TUV]\!	>D@C%%%%:>DB@E%%>D@T;%		
5 I_A`h %	CD??%%%%:CD?@E%%>DCZ;%	QU[X!!!!ZQU[QA!!TUQT\!	CD?Z%%%%:CD?CE%%>DC>;%		
M!`S %	>D>?%%%%:>D>BE%%>DB[;%	TUPQ!!!!ZTUTVA!!TUP,\!	>DBC%%%%:>D>@E%%>DB6;%		
=`G`h%	>D>64444::>D>>E445>DBY;4	TUT]!!!!ZTUTPA!!TUPX\!	>D>T%%%:>D>BE%%>DBZ;%		

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#;%%% h .%'73.2.))(-'3#.,%: ^ ''#3(%,.#\$(;%					
K()#(\$%	1%	$\mathbf{q}_{\%}$ %	q # [%]	q \$%	$\mathbf{q}_{\&}$ %
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K()#(\$%	h7+8()%.4%8)('J\$%	Q)('J\1'3(\$\
H`h`O`%	Y%	>?T@+ZN\$\$\$>??B+>N\$\$\$>???+TN\$\$\$BC>B+@\$
P_`hHI%		

'>H8:!X1!*DE9	; >E:D! <k!g!k<?!:>LS!D6HD> :</k!g!k<?!:>	; @8: !R9ES!>6E <l<??:8>E:G!:??<?D!</th></l<??:8>
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K()#(\$%	K80%	h.%1(3()+#,#\$3#2% 3()+\$%	`,\#,3()2(&3\	`,%#,3()2(&3%',1%'%% -#,(')%3#+(%3)(,1%
% %	>\$3%	>DCZ%%%%%:CDT6E%%>D@C;		

H`h`O`%