#\$%&' ( &) '" \*+,&-+.&" /%0l2" l+3 '" &%" /%-3" /+&)" 4567" &%" .-'8&'" .%9,+,&'9.:"+9" -';'-'9.'," &%" <' =>1%: ' '?"&)-%0@)%0&"&) ' "8-&+.1'A"

# !"#\$"%&'()\*+,(-\*.',/,&0\*!#1))2\*3,4(\$,#(\* 5',(,''2\*6\$)7)4''2\*()\*!''#\$''%&'()\*+,(-\*8&''#1&\$4\*944)#,''(,)'\* **9**\$(,#2&\*:;<\*=%72)-&&\*>&'&/,(4\* ?@2-\*AB<\*ABA:\*C3,4(\$,#(\*\$&47)'4&\*()\*!+89\*7\$)7)4''2\*)/\*D''-\*:A<\*ABA:E\*

# <u>9F85+G=\*:;\* $H^*$ =D6GIJ==\*>=K=L58!\*</u>

### :;\!:" N&''2(1\*5'4@\$'''#&\*

7>>-%>-+8&'"+9.0-89.'".%B'-8@'":%-"'=>1%:''.C2'>'92'9&."/+11"D'">-%B+2'2"D:"&)'" \*+,&++.&" / +&)"%>&+%9,"8B8+18D1'''&%"' =>1%:'',C2'>'92'9&,"8&"&)'+-"'E>'9,''&%",O+&"&)'+-" >8-&+.018-"9''2,F""7&"1'8,&"&/%"GHI".8--+'-,"%;"=8J%-"='2+.81">-%@-8=,"/+11"D'" 8B8+18D1'F'''K > %9'+9+4+81'' = >1% := '94''8. )''09+4'' = '=D'-''/+11''D'''9%4+:+'2''%:'4)'''8B8+18D+1+&: "%;") '81&) "892"+9,0-89. '"D'9'; +&, ".%9&8+9'2"+9"&)+, "8-&+.1'F"""

!LF!F!" 6)''\*+.&+.&'892"4567"8@-'''&'9'@%&18&'"+9"@%%2":8+&)''&''::'.&08&'''%9"%-'D':%-''M01:" !\"HO!P\".)89@',"&%"&)'")'81&)">189".%9,+,&'9&"/+&)"&)+,",'.&+%9F"6)'"Q%8-2",)811">-%B+2'" 811" '1+@+D1'" '=>1%: '', "/+&)"8".)%+. '"%;"&) '"R8+, '-"S189"892"8"=0&0811: "8@-''2"0>%9" 81&'-98&+B''>189G, IN'' / )+. )"+, ".0-'9&1:"T'81&)" \$'&F''40==8-:">189''2',.-+>&+%9, "%; "&)'' <u>) '81&)'>189;" / +11"D'"+9,102'2"+9"7>> '92+E"UF"6) '"1'B'1"%;"D'9';+&,"%;"&) '">189"G'F@F"%0&"</u> %:">%.3'&"=8E|=0=.N".%N>8:='9&.N".'-B|.'.".%B'-'2N"9'&/%-3"..%>'N"'&.FIN"/)'9" <u>'B8108&'2"+9"&)'"8@@-'@8&'N"=8:"9%&"D'"-'20.'2N"892"&)'">-%B+2'-,"=8:"%91:"D'".)89@'2</u>" &)-%0@)"=0&081"8@-''='9&"%;"&)'">8-&+',F"6)'">8-&+',"8@-'''&)8&"89:",8B+9@,"&)8&"-',01&" ;-%="=83+9@".)89@',"&%")'81&)">189,"%-"+9"&)'"-'20.&+%9"%;")'81&)">189".%,&,"/+11"D'" 8>>1+'2"&%"&)'".' &+:+.8&'2"D8 @8+9+9@"09+&F"6)'">8 &+'." / +11"9'@%&+8&'")% / "&%"8>>1:"&%" <u>\$}`'"D8\_@8+9+9@"09+&"89:",0,)",8B+9@,"8,)+'B'2"D:"\$)'"\*+,&+.&F"48B+9@,",)811"D'"2':+9'2</u>"

- "

## :;MA" <u>3&'(''2\*5'4@\$'''#&</u>\*

!LFHF!" 6) '"Q%8-2", )811">-%B+2 '"811" '1+@+D1 '"' =>1% : ' ', " / +&) "8";011 : ">8+2"2 '9&81">189F""6) '"Q%8-2" ,)811">8 : "%9 '")092- '2"G !00XI"%; "&) '">- '=+0=".%, &, ";%-"'1+@+D1 '"2 '>'92 '9&, F""6) '">189, " %;; '-'2", )811"D '"&) '".0--'9&"; 'V;%-V, '-B+. '">189"892"=8 : "+9.102 '"8">- 'V>8+2"2 '9&81">189" G+F 'FN"8"2 '9&81"T ] ^I"0>%9" =0&081", '1'.&+%9"8990811 : "D : "&) '">8-&+', F" 7 ",0==8-: ">189" 2 ', .-+>&+%9" / +11"D '"+9.102 '2"+9"7>> '92+E"UF"

# :;∦;" <u>O,4,) '\*+''\$&</u>\*

!LFLF!'' = 6)'''Q%8-2'', 811''>-%B+2''''=>1%:'', ''/+&)''&)'''.0--'9&'';''V;%-V

 $\begin{array}{c} \vdots \\ & & & \\ & & \\ & & & \\ & & \\ & & & & \\ & & & \\ & & & & \\ & & & \\ & & & & \\ & & & \\ & & & & \\ & & & \\ & & & & \\ & & & \\ & & & & \\ & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ &$ 

#### $:: ||\underline{U}|| = 2, V, W, 2, (-*/)$

- $$\begin{split} !LF_{cF\_PFL}" & [=>1\%:', ', ')\%"8-'"'1+@+D1'"092'-"\&)'".\%92+\&+\%9, ', '\&';\%-\&)"+9"4'.\&+\%9"!LFcF!"\%;"\&)+, "\\ & 7-\&+.1'"892"/)\%"8-'">8-&+.+>8\&+9@"+9"\&)'"'8-1:"-'&+-'='9\&"+9.'9\&+B'">189"8, "2', ..+D'2"+9"\\ & SVL^0_"\%;"\&)'"Q\%8-2\&, "S\%1+..+', "892"Q:18/, N"8, "82\%>\&'2"\%9"M01:"!0N"!cYP"*+,&+-.&">\%1+..:N" \end{split}$$

-'&+-''"%>&,"&%">8:"&)'">-'=+O=";%-",8+2"D'9';+&F"

!LF<del>!Oc</del>FHFH"6)+, "D'9'; +&", )811"D'"8B8+18D1'"&%"&)''-'&+-'2"'=>1%:''d, ",>%0, '"892"2'>'92'9&, "+;"&)'"

 $B_{+},+\%9">\%-\&+\%9"\%;"\&)'">8.38@'"\&)'=,'1B',F"$ 

<u>!LFcFH</u>" \* '9&81Cg+,+%9Ch+; '"Q'9';+&,"

 8&"8@'"`0"8&"1'8,&"!Z": '8-, "%;".%9, '.0&+B'", '-B+. ''&%"&)'"\*+,&+.&"+9"&)'"4567" D8-@8+9+9@"09+&f"

- 8å"8@'"Zc"8å"1'8,å"!`":'8-,"%;".%9,'.0å+B'",'-B+.'"å%"å)'"\*+,å-+.å"+9"å)'"4567" D8-@8+9+9@"09+åf"
- 8&" 8@ ' "ZP" 8&"1 ' 8, &" ! Y" . %9, ' . 0&+B '" : '8-, "%;", '-B+. ' &%"&) '" \*+, &+. &"+9"&) '" 4567"
  D8-@8+9+9@"09+&f"
- D8-@8+9+9@"O9+&f" • 8&"8@'"ZP"8&"1'8,&"!Y".%9,'.O&+B'":'8-,"%;",'-B+.'"&%"&)'"\*+,&++.&"+9"&)'"4567"
- D8-@8+9+9@"O9+&f" • 8&"8@'"ZY"8&"1'8,&" !P": '8-, "%;".%9, '.O&+B'", '-B+. '"&%"&) '" \*+,&++.&"+9"&) '"4567"
- D8-@8+9+9@"09+&f" • 8&"8@'"Z`"8&"1'8,&"!c".%9,'.0&+B'":'8-,"%;",'-B+.'"&%"&)'"\*+,&++.&"+9"&)'"4567"
- 8&"8@'"ZZ"8&"1'8,&"HO".%9,'.0&+B'":'8-,"%;",'-B+.'"&%"&)'"\*+,&+.&"+9"&)'"4567"

/ +11"9''2"&%")8B'"&)'";%11% / +9@e"

K9+&"='=D'-,"/+&)"1',,"&)89"!Z":'8-,"%;",'-B+.'"&%"&)'"\*+,&-+.&"8,"%;"MO1:"!N"HO!O"/+11" )8B'"&)-''":'8-,";-%="&)8&"28&''&%" aO81+;:";%-"&)'".O--'9&"!OV:'8-"-O1'F"7;&'-"MO1:"!N" HO!LN"8,"&)'"S8-&+',"8@-'''811"&'8.)'-,"+9"%-2'-"&%"D'"'1+@+D1'";%-"-'&+-''')'81&)"D'9';+&,"

+;"&)'",>%0,'"%>&,"&%">8:"&)'">-'=+0=";%-",8+2"D'9';+&F"

 $\begin{array}{l} 6) ''Q\%8-2"8@-'', '\&\%''>8: '\&) ''= '2+.81"+9, 0-89. ''>-'=+0=, '';\%-'\&'8.)'-, ''/)\%'')8B''-'\&+-'2"\\ \%9\%-''8;\&'-''M8908-: ''!N''!cY_N''8;\&'-'-'8.)+9@'\&) ''>'-=+, +B''', \&\&''-'\&+-'='9\&''8@'N'>-\%B+2'2''\\ ,8+2"'=>1\%: '''')8, '', '-B'2''\&'9'' 6!OI''. \%9, '.0\&+B''': '8-, ''\%; '', '-B+. '''+9''\&)'''*+, \&+-\&''\\ +=='2+8\&'1:''>-+\%-''\&\%''-'\&+-'='9\&N''''E.'>\&''&)8\&''+9''.81.018\&+9@''>-'B+\%0, '', '-B+. '''89''\\ '=>1\%: ''''/)\%''-', +@9, ''892''+, ''-''=>1\%: '2''/+\&)+9''\%9'''6!I'': '8-'', )811''D'''. \%09\&'2F''''7''\\ Q\%8-2V8>>-\%B'2'''8B''', )811''. \%9, &+&0\&''8'': '8-''\%; '', '-B+. ''';\%-'\&)'''>0->\%, ''\%; ''1+@+D+1+\&: '';\%-'''\\ &)+, ''D'9'; +&F''''6)+, ''D'9'; +&'', )811''. \%9\&+90'''&''D'''8B8+18D1'''&''89'''1+@+D1''', 0-B+B+9@'', >\%0, 'N''' \\ \end{array}$ 

!LF := 0 cF!" [=>1%:''"[1+@+D+1+&:"]

F&(,\$&&\*N&''2(1\*>& ' &/,(4\*

:;∬<u>:BX</u>\*

!LF<del>!O</del><u>c</u>FHFL"6)+,"D'9';+&",)811".%9&+90'"&%"D'"8B8+18D1'"&%"89"'1+@+D1'",0-B+B+9@",>%0,'"+;"&)'",>%0,'" %>&,"&%">8:"&)'">-'=+0=";%-",8+2"D'9';+&F"

!LF"!Oc

"

>8:"-8&'", )811"D'"'9&+&1'2"&%"'=>1%:''V>8+2")'81&)N"2'9&81N"892"B+,+%9"D'9';+&,",ODJ'.&"&%" %>'9"'9-%11='9&'-'aO+-'='9&,F""4OD,&+&O&',"=0,&"-'=+&"&)'".%=>1'&'">-'=+O=">8:='9&  $\frac{1}{2} = \frac{1}{2} = \frac{1}$ 

# :;<sup>||</sup>:Q!L" <u>8)(''2\*+)%7&'4''(,)'\*L@'04</u>"

...

b%-"!cc0Vc!"892"&)'-'8;&'-"091',,"&)+,",'.&+%9"+,"2'1'&'2N";092,"-'a0+-'2"&%">8:"899081"

OF" S8: "8, "o%0" j %"892" 722+&+%981"S- 'V:092+9@e"\9"822+&+%9"&%". %9&+90 '">8: +9@" &) ''=%9&)1:C899081''. % . & . "%;") '81&) ''+9. O-89. ''D'9';+& . ";%-"'1+@+D1''-'&+-''." G>8: "8, ": %0"@%IN"&) ' " \* +, &-+. &" / +11". %9&-+D0&' "89"822+&+%981"%9' "892"%9' V) 81;" >'-.'9&"G!FZXI"%:'&)''&%&81">8:-%11":%-"D8-@8+9+9@"09+&"<del>'=>1%:''-</del>"='=D'-." ()+.)", 811"D'">18.'2"+9"&)'"J%+9&1:V82=+9+.&'-'2" i 740":092F"6)'".%9&++DO&+%9N" / )+.)",)811"%..0-"%9"%-"8D%0&"M8908-:"!"%;"'8.)":'8-N",)811"D'" .81.018&'2"%9"&)''&&&81'>8:-%11":%-"D8-@8+9+9@"09+&".'-&+:+.8&'2"'=>1%:''."+9" &) ''>-'. '2+9@":+, .81": '8-N" / )+. )"'92, "M09'"L0 F"6) '"\*+, &++.&"=8:", 0, >'92" *k*)+,">8: = '9*k*"+;"+9"*k*) '">-'. '2+9@": '8-ℕ"*k*) '"\*+.*k*-+.*k*"'92."*k*) '": '8-"+9"89" %>'-8&+9@"2':+.+&N"8,"',&8D1+,)'2"+9"&)'"899081"802+&'2":+989.+81",&8&'='9&N"%-" +;"&) '"D02@'&"+,"+9"<a081+;+'2?"%-"<9'@8&+B'?",&8&0,F"

5%9& + DO& + %9%; [20.8&%-,e"5% = = '9.+9@"/+&)'&)'"HO! V!Z"HO!cVHO",.)%%1" : '8-N"<del>4567"= '=D'-,</del>"09+&"= '=D'-,", )811".%9&-+D0&''<del>& / '9&: "2%118-,</del>"& / %" ) '81&) 'D '9 ':+& F" 79: ".8B+9@. "8. "8"- '.01&"%: "&) '"2'.-'8. '"+9"&) '"D02@'&'2".%&" %;">-%B+2+9@"D'9';+&,"&%"-'&+-'',",)811"D'">18.'2"+9"&)'"J%+9&1:V82=+9+,&'-'2" j 74Q";092F"

7F" >'-. '9&"%;"&) '"09+&"='=D'-W,"=%9&)1:",818-:">8+2"'8.)"=%9&)"&%";092"-'&+-''"

\9"822+&+%9\"&) ''>8-&+', "8@-'''&\"&) '';%11% / +9@'' / &) ''-'@8-2"&%''-'&+-''') '81&) ''+9.0-89. '' D'9';+&,e"

6)'">8-&+',"-'.%@9+k'"&)'"+=>%-&89.'"%;"&)'"\*+,&+.&"+9")%9%-+9@"&)'"\*+,&+.&W," .% = +& = '9&"&%"O>)%12" > -% = +, ', "&%" > -%B+2 '") '81&)"+9, 0-89. '"D'9'; +&, "&%"a081+; +'2"-'&+-'',"/)%'>-%B+2'2"2'.82',"%;",'-B+.'"&%"&)'",&O2'9&,"%;"48.-8='9&%F"6)'">8-&+'," 8@-'''&)8&"'B'-:"-'8,%98D1'"';;%-&"/+11"D'"=82''&%"1%/'-">-'=+0="+9.-'8,',";%-" .0--'9&">189,"/+&)%0&"2+=+9+,)+9@"D'9';+&,"%-"+9.-'8,+9@".%V>8:,"'E.'>&"8,"=0&0811:" 8@-''8D1'F""79:"-'.% = = '928&+%9,"-'18&+B''&%"/%-3+9@".%92+&+%9,"/+11"D'",0DJ'.&"&%" &) '"507F"

6)''>8-&+', "-', %@9+k''&)''+=>%-&89.''892"B810''%;")'81&)'892"/'1:8-''D'9':+&, "892" 8-'".%9.'-9'2"8D%0&"-+,+9@".%,&,"892"09;092'2"1+8D+1+&:F"""

## :: N:U:T\* L@'0, 'V\*/) \$\*\$&(.\$&&\*1&''2(1\*, '4@\$'' '#&\*W& '&/,(4\*

 $!LF!YF!F!F!'6)''S8-\ell+', "8@-'''\ell\%"; \%-="8"J\%+9\ell". \%=+\ell\ell'''\ell\%"/\%-3"\%9")'1>+9@"\ellb)''>8-\ell+', "-', >\%92"\%B'-"$ &) '"1%9@"&'-="&%".%9&+90+9@"+9.-'8,',"+9"='2+.81".%,&,F"

## $D\&0,\#''2^*+)4(4^*)$

D'9'; +&, F'''6)''', &= = +&&''d, "-', &= = '928&+%9, ", )811''D''', ODJ', &``&%'' 0'' 0'' 0'' 0'''' 6)'''' 6)''''>8-&+', "/+11".%9,01&"+9"8".% = =+&&'''-'@8-2+9@";-+9@'"D'9';+&, ";%-"-'&+-'',F"

 $\frac{8981:.+,"\%;"\&)''*+,\&+.\&W,"^{S}[Q"1+8D+1+\&:"892"+9.102+9@"\%>\&+\%9,";\%-"-'20.+9@"\&)'"}{+9.-'8,'2".\%,\&,"\%;"892"'B'9\&0811:";011:";092+9@"\&)+,"09;092'2"1+8D+1+\&:F"}$ 

"