!"#\$%&'#()#\*+,"\*)#

-.&"#/0"12)%"#

!"#\$%"&#'()%(#\*+,-."#"(#\$+/0".(1#\$+,,"#\*2%&#)&&)%(#3"%4".#52/3#%3\*()3(#6#&2)/(."7#8)'
&%"/#5"#3"%4"1#\$2"\*(#/3"#93"#:&/%"#;.+%5"#</%#(+,-)%(#\*)3\*#."&=\$>"1#:.+?"()3(#\*"\*#
4+/@"&"@"\*#6#,+%#\&'"\*#\*/.#&"#\*#&7

U&#4)43)#(."3("#?"+3#\*/.#&)#:.",%Q."#\$+/.\*"#"(#\$%3</)3("#?"+3#\*/.#&T)##3"\$#-35"#

\*+,,"#:.+,"@"/\*"#:+/.#\*%#(V(#5)3\*#&)#?+/.3'"7#G3#0'.%('1#&)#\$>)3\$"#&/%#\*+/.%)%(7#

W":/%\*#:.Q\*#5"#5%H#?+/.\*)0#%(&#\$A</","3(#:)\*#0/#&)#\$+/&"/.#5"#}&4"3(7#X&+.\*1#

</)35#5"\*#:%\$"\*#5"#5%H#?"+3#+/#:).;+%\*#5"#\$%3<#?"+3#A3()%"3(#5)3\*#\*)#:)/,"1#%&#"3

)0)%(#:."\*</"#&"\*#&).,"\*#)/H#M"/H7#B&\$%:"/H#"3\$+."1#&"\*#<\\$\\$\%34(\*#?"+3#5+3(#%&#

5%\*:+\*)%**(#** ' \*"3(#&/%#\*",-&)%"3(#%3"\*A,)-&"\*7#X0"\$#\$"&)1#%**&**#;"**\$**(**0**)**%&**(**)**#\* 4+.4"#5/3#0".."#5"#0%3#5"#.%Y#-+3#,j)#\$%&#&"#\*+/>)\Z#())%(\*#\*/.(+/(1#%&#:+/0)%(# )\$>"(".#/3#-+&#5!**"**##\$\$"#%&'(**%%**\*+/:"#5' +\*#5"#**F** /;P#:+/.#\*)#;",,"#,)&)5"7 # \)#;",,"#(+/\*\*)%(#5":/%\*#:&/\*#5/3#,+%\*7#D+,,"#%&\***#**\\)%"3(#\*+/0"3(#\Q"#:)\*# , '5%\$),"3(7#I"\$>3%</","3(1#%&#)/.)%(#://#.\*\#%&&\.#:+/.#)\$>"(".#/3"#+/#5"/H# 5+\*"\*1#,)%\*#%**)&**#(#;".,","3(#\$+30)%3\$/#<//3"#;+%\*#</#3#!;)%(#;/**%**#/3"#,)&)5%"# 6#\$+/:\*#5"#.",Q5"\*1#\$"**&\$**%#M#:."35#4+](#"(#."0%"3(#\*)3\*#\$"\*\*"7#\/%0)3(#\$"#:.%3\$%:"# :".\*+33"&1#%**&#30\pp\_6**(#?),)%\*#",,"3'"#\$>"Y#&"#,'5"\$%31#\*%#-%**%39#**\$%43+.)%(#(+/(# 5"#\*)#,)&)5%"7#8)%\*#6#&)#0+%.#5'\*+.,)%\*#\$+/\$>'"#6#:&)(#5+\*1#%3\$):)-&"#5"#\*"#(+/.3".1 '()%(#\$&)%.#</"#\$"&)#",:%.)%(7#!"#(**))%#**#)44.**)**0#3"#5%**Y3%**5"#?+/.\*#:&/**\*\**(1# ):. Q\*#</' "&&"#"/(#,)34 #5/#,%&&"(#,)**&**(#</%#&/%#)0)%(#\$)/\*'#/3**'**##\*'0Q." \$+3\*A:)A+37#^#\$"#,+,"3**[**&61#C%,#)0)%(#93)&","3(#:/#\*"#:.+\$/.".#/3#:"/#52).4"3(1# )\$>"(". #3#:"A(#\*)\$#5"#,%&&"(#"(#/3#;)4+(#5"#-+%\*#6#-)\*#:.%H7#\"&**+!\$#@\*#**5%."\*1#J -+33" F6F.%"31#:)3%</"**?**#\$%(#;)%(#-+/%&&%.#5)3\*#/3"**#**\$7**;**#\$#()%(#;)%-&"1# "&&"#'()%(#:."\*\*'"1#"(#&"#,%&&"(#32)0)%(#:)\*#-%"3#\$/%**\G7**#**@9"#/5(),33(1#;**J,," !K# )0)%(#\*)%\*%#5"#:&"%3"\*#:+%43""\*#5"#,%&&"(#"(#&"\*#)0)%(#"3;+/.3'"\*#5)3\*#\*)#-+/\$>"1# \$+,,"#\*%#"&&"#\$.)%43)**%**\$##@%"33"#&"#&/%#)..)\$>".7#G&&"#)0)%(#\$**26**#@*\$!%*:?#'\*</ &"\*#?+/"\*#4+3\_'"\*#\$+,,"#5"\*#:+%34\*7#!"#\*+%.#,O,"1#"&&"#4!`,#%**&%%**(0)%(#,**)&)#**6# :+%(.%3"1#\*"#\*"3()%(#+::."\*\*'"1#"(#.+/&)%(#5"\*#M"/H#\$+,,"#"3#:&"**%**3"#\$.%\*"7

S/.%"/H1#C%,#)0)%(##/.&'

J!a+3#\*)341#;",," !b#l/#(+,-"\*#,)&)5"#</)35#(/#3"#,)34"\*#:)\*1#"(#(/#(+,-"\*#
"3\$+."#,)&)5"#</)35#(/#,)34"\* !b#c/2\*(F\$"#</"#?"#\*/%\*#\$"3\*'#;)Ø#e/0."#5+3\$#&"\*#
M"/HdK#

W'\*+.,)%\*1#%&#&"#:+/0)%(#"3937#U&#:+/..)%(#,O,"#)\$>"(".#5"#&)#-+/%&&%"#:+/.#&"/.#9
(.+%\*#)3\*1#f)"@+341#</%#:&"/.)%(#5"#;)%,#:.Q\*#5"#\*)#,Q."#,)&)**507/#3/j(**:#\*?"+3#
"3#:+\$>"1#C%,#£)\$\frac{1}{2}\frac{

&"#.+34")%#(7

C%,#\*2%,,+-%&%\*)#"(1#"3#\*"#."(+/.3)3(1#):".R/(#/3#'&Q0"#5"#\$"@"#,O,"#'\$+&"#</%#
)\$\$+/.)%(7#!"#?"/3"#4).R+3#&)#8R)

J!D+,-%"3#?/\*<268\)#4)."#5"#h),5)",/3 !d!K#

D2'()%(#\*)3\*#5+/("#/3#:"3\*%+33)%."#</%#."3(.)%(#\$>"Y#&/%#:+/.#&"\*#0)\$)3\$"\*#52>%0".7
)0)%(#5]#:.'0+%.#5"#:).A.#\$"#**%**6'1#,)%\*#"3(."#&)#:&/%"#"(#\*"\*#-)4)4"\*1#%&#3"#\*)0)%(#:)\*#
\$+,,"3(#;)%."7#B/%\*#%&#)0)%(#0/#C%,1#\$+/.)3(#\*+/\*#&)#:&/%"1#\$>\*)#6'#55',%\*#/&%"
/\*'\*#"(#0O(/#52/3#>)-%(#+\$\$%5"3()&#'&%,'7

J!/#0"/H#)&&".#6#&)#4)."#5"#h),5)",/Idd!!K#

J!h"#\*+.\*#:)\*#)/?+/.5'>/%7#i"\*("#6#&)#,)%\*+31#?"#\*/%\*#(!**K**##,)&

X0)%(&&"#,/.,/.'1#&)#."\*:%.)A+3#.=:"/\*"7#\)3\*#M#:.O(".#)@"3A+31#C%,#)0)%(# .':&%</'!}#

J!a+3#\*)341#;",,"1#(/#5'&%!\df\%#?"#."\*("#&61#</%#0)#3+\df\df\df\df\.%.

U&#)0)%(#-+35%#:+/.#:).A.1#,)%\*#"&&"#)0)%(#)4%('#;)%-&","3(#&"\*#-.)\*1#\$+,,"#:+/.#&"#

."("3%.#

J!h"#:).\*#:)\* j #+/#."0%"3\*#0%("1#\*%#(/#5+}/d**X#**M#)&&".

G&&"#78}%(#)::"&#5'/3"#0+%'H(#)34&"#()35%\*#*E*%&#\*&+%43}#%(7

^#:.'\*"3(1#"3("35)3(#&' &\mathfrak{Q}\math