! "#\$\$%!#"&' ("") * ((+&!%, - . #& !"#\$%&&'(!%) *+,*-.%/."0*-+",1% !"#\$\2.34"*+\!5##\&6&&\ 27-**.".8+9%:+1.7;-<.<3+%=**>#1%+7-**.".8+?#".>+%@<+.*4%<.%A)B! B*7.3-*(D''+73++''<.9) *4.*+451+E&9E6G&9E6B@ \$H\$IH+1.7;-<.<3+%4"+73++"<.%0"5%J<<\$%K-<\$%E9E'@\$G&9F6@\$L%% % D-WN < +*@:) #<45-0 %P:9%: . \$ <#%D3..5% A.#".*%AKK"7*%T<3-+9%) *4.*+451+%&9F6GF9F6%@\$U%P:3-+451+%E&966GE966%@\$%5.4%V1%5@@.M% "# $\frac{8}{8}$ "!(' $\frac{8}{9}$ ")*+)#,! P:"+%7<3-+*%+3-0*1+%,:*%7*..-5#%.43+.-"5#%.*7:.<#<8"75#%5*+.:*."7%5.4%4*<#<8"75#% 4*0*#<@\$*..+\".\,;*\;"+,<-1\<K\7#5++"75#\T<##1=<<4\7".*\$5\\X"0*.\,:*\8#<V5#\@-<\$".*.7*\ 5.4%".K#3*.7*%<K%T<##1=<<4%7".*\$5%%\$37;%<K%.:*%7<3-+*%="##%V*%K<73+*4%<.%.:*% *+.5V#"+: \$ * ..\<K\.: *\T<#1=<<4\+.34"<\+1+.* \$ \5.4\".+\\$5.1\.-5.+K<-\$5."<.+\<0*-\.:*\ 7<3++*%<K%,;*%&6,;%7*.,3-1%) *%="##%V*8".%=",;%5.%5.5#1+"+%<K%,;*%<-"8".+%<K%,;*% \$*4"3\$% 5.4%",+%@#57*%".%: \$*-"75.%73#,3-*%5,%,;*%,3-.G<KG,;*G7*.,3-1%) *%="##%,;*.%*Y5\$".*%,;*% 4*0*#<@\$*..\<K\.5--5."0*\7".*\$5."7\+.5.45-4+\5.4\.:*\-"+*\5.4\7<.+<#"45."<\\K\.:*\ T<##1=<<4\h+,34"<\h+1+,*\$\%@51".8\%7#<+*\5,.*.."<.\\.<\8*.-*\\+.5-4<\$\\\$5->*.".8\\5.4\ 4*0*#<@\$*.,+%+37;%5+%,;*%7<\$".8%<K%+<3.4%5.4%,;*%*\$*-8*.7*%<K%="4*+7-**.%7".*\$5%%=*% ="##\5#+<*Y@#<-*\+<7"5#\5.Y"*."*+\5V<3.\7".*\$51+*KK*7.+\\.:*\".+.".3."<.\<K\:*\^-<437."<.\ <4*\\\5.4\\,:*\7<\$@#*Y\-*#5,"<.+;"@\<K\T<##1=<<4\K"#\$\.<\>*1\+<7"5#\7-"+*+\IP;*\ $D^{*}@^{*++}<.W$)) \\W`7 5-,:1"+\$W "0"#% a"8:,+L%<K%,:*%@*-"<4)W% ١ ".0*+,"85.*+%.;*%\$*.;<4+%5.4%"4*<#<8"75#%"++3*+%<K%K"#\$%;"+.<-"75#%-*+*5-7;%\$<-*%V-<54#1\%% \.\\$544"."<.\\\$51\\V*\3.4*-+.<<4\".\.:*\

7<.,*Y,%<K%: \$*-"75.%K"#\$%;"+,<-1

%

'' # \$ %& ' !+ ' >+&!

%

! "#\$%&*" '(*

<u>"#\$%&'!%'?\$)%'@',+&!:;A!B%C(),B!B\$)('9),'&!</u>

%

 $\label{eq:solution} $$ $$ -15646E:56-;9%2,34*.,+85-*%; 8;#1%*.7<3-58*4%,<85,,*.4%5.4%,<805-,"7"@5,*%".%,;*% = **>#1%J<< $GV5+*4%7#5++%4"+73++"<.+%5,%E9E'%@ $%<.%) *4.*+451+%%(K%1<3%75..<,%5,,*.4%<.*%<-%$<-*%<K%,;*+*%4"+73++"<.+%5,%E9E'%@ $%<.%) *4.*+451+%%(K%1<3%75..<,%5,,*.4%<.*%<-%$<-*%<K%,;*+*%4"+73++"<.+%5,%E9E'%@ $%<.%) *4.*+451+%%(K%1<3%75..<,%5,,*.4%</td>

$< *%<-% $<-*%<K%,;*+*%4"+73++"<..+%5,%E9E'%@ $%<.%) *4.*+451+%%(K%1<3%75..<,%5,,*.4%</td>

$< *%<-% $<-*%<K%,;*+*%4"+73++"<..+%5,%E9E'%@ $%<.%) *4.*+451+%%(K%1<3%75...<,%5,,*.4%</td>

$< *%<-% $<-*%<K%,;*+*%4"+73++"<..+%5,%E9E'%@ $%<.%) *4.*+451+%%(K%1<3%75...<,%5,,*.4%</td>

$< *%<-% $<-*%<K%,;*+*%4"+73++"<..+%5,%E9E'%@ $%<.%) *4.*+451+%%(K%1<3%75...<,%5,%*.4%</td>

$< *%<-% $<-*%<K%,;*+*%4"+73++"<..+%5,%E9E'%@ $%<.%) *4.*+451+%%(K%1<3%75...</td>

$< *%</td>
$< *%</td>

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 $\begin{aligned} &*: E1/! C006<; = 1; 50\% D3^{-} . 8\%, ;*\%, *- $\%1/3\% = "##%K<73+\%1<3-\%, =<\% =-"," . 8\%5++"8 . $* .,+\%<.\% \\ &4-".K"# $\% $54*\%" . \%, ;*\% / . ",*4\% 2.5,*+\%, ;5,\%"+\%#"+,*4\%<.\%, ;*\%5++"8 . $* .,\%+;**,\\\\\\P; *\\\\#",*\\\", 7#34*+\\\K"#$+\\;5,\\"="##\-43.V*\\+7-** . *4\\". \\?#$5,\\",5,\\"+\\#"+,\\"3,\\;5,\\5-\\\",**105..\\,,<\\;,*\\<0*-5##\?<3-+*\\$5,\\"="##\\V*\\4-5= . \\\K-<$\\\,;*\\@*-"<4\\<K\\EZ& i GEZ [E\\\\\ d<3\\5-**.7<3-58*4\\,,<\\$**,\\=",;\\$*\\I0"-,35##1L\\5V<3,\\,;*+\\5++"8 . $* .,+\\5.1\\\,<\?5,\\"5,\\"+\\#",*\\$,\\5.1\\\@<".\\\\P; *\\,=<*2.5.1\\\@<\\\\\P$,\\$.1\\\?%$

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%

C44 - = -A:5

 $\begin{aligned} +<&3-7*\$4<73\$*.,+\$".\$,;*\$-*K*-*.7*\$45,5V5+*\$K<-\$,;*\$@3-@<+*\$<K\$4*,*7,".8\%@\#58"5-"+\$\%<K\$\\ @5@*-+\$+3V+*b3*.,\#1\$+3V\$",,*4\$,<\$,;*\$+1+,*\$\\ W\$/+*\$<K\$,;*\$+*-0"7*\$"+\$+3VR*7,\$,<\$,;*\$\#7*.+".8\%\\ 58-**\$*.,\$\%73--*.,\#1\$V*,=**.\$P;*\$/."0*-+",1\$<K\$))*+,*-.\$A.,5-"<\$5.4\$P3-.",".M7<\$\\ ;,,@9CC===\$,3-.",".M7<\$ \end{aligned}$

- •! @#*5+*%3+*%1<3-%7<\$@3,*-%5.4C<-%#5@,<@%"K%@<++"V#*%I5+%<@@<+*4%,<%5%7*##%@;<.*%<-%,5V#*,L%
- •! *.+3-*%,;5,%1<3%5-*%".%5%@-"05,*%#<75,"<.%,<%@-<,*7,%,;*%7<.K"4*.,"5#",1%<K% 4"+73++"<.+%".%,;*%*0*.,%,;5,%5%7#5++%4"+73++"<.%4*5#+%=",;%+*.+","0*%<-%@*-+<.5#% \$5,*-"5#%
- •! ,<\\\$"."\$"0*\\V57>8-<3.4\\.<"+*\\\>".4#1\\\$3,*\\1<3-\\\$"7-<@;<.*\\K<-\\,;**.,"-*\\7#5++\\ 3.,"#\1<3\\5-*\\".0",*4\\,<\\+@*5>\\\3.#*++\\4"-*7,*4\\<,;*-="+*\
- •! e+388*+,*4%K<-%7#5++*+%#5-8*-%;5.%F6%+,34*.,+f%\.%<-4*-%,<%8"0*%3+%<@,"\$3\$% V5.4="4,;%5.4%=*V%b35#",1%%@#*5+*%,3-.%<KK%1<3-%0"4*<%75\$*-5%K<-%;;*%*.,"-*%7#5++% 3.#*++%1<3%5-*%".0",*4%,<%+@*5>%
- •! e+388*+,*4%K<-%75+*+%=;*-*%0"4*<%"+%3+*4f%@#*5+*%V*%@-*@5-*4%,<%,3-.%1<3-%0"4*<% 75\$*-5%<KK%5,%,;*%".+,-37,<-j+%-*b3*+,%"K%,;*%".,*-.*,%7<...*7,"<.%V*7<\$*+%3.+,5V#*%
- •

<u>B%C(),B!"%)+'%)C</u>! !

<u>Ci!IZLWJLLN8</u>!

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