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#05/&\*\*\*% )<<1<<213/&.:&/81&Y=0@7/?&"3803N1213&&#@03

O.!=&!>.1:0&%&9!=\*!%4&10&K&/88)(1\$5,11)%%&&P

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Q571;&61<N579/7:3&.:&/81&73<7&=70@7/?&"3803N1213/&#@03

"#\$%#&\$!#"&&'()\*+!#,.-W/!Y'\$,)\*+! d(%\$(0-&-(^3,\$(!6#0'/-/#(!)1/\*!@)&-!d5-1!)(!  
"#,.-!Z[ @dH"!/\*'2-(^W/!/'00-//9!T6\*-1!\$!\*%1:+- \$1!31#0-//!\$(2!3'1/')(.)!3!\*!61#&!  
&',\*)3,- !\*\$U-%#2-1/!(0,'2)(.!0#&&'()\*+!&-&4-1/7!6\$0',\*+7!/\*\$667!\$(2!/\*'2-(^7!""7!  
)2-(^6)-2!\$25/)(.!31#0-//!\$(2!\$(!#1)-(\*\$\*)#(!0#1/-!\$!)(\*-15-(^)#(!\*#!\$//)\*!%-&!)(!  
&-\*)(.!\*%-!6#,#D)(.!#\$/h!

12 [ @dH"!/\*'2-(^/!D),!4-0#&-!-(.\$-2!D)\*%!6\$0',\*+!)(!\$!D-,,2-/-).(-27!D-,, :  
#10%-/\*1\$\*-2!\$25/)(.!3,\$(!\*%\$\*!,-\$2!/\*#!/\*'2-(^/'00-//9

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32 [ @dH"!/\*'2-(^/!D),!4-0#&-!\$0\*')5-,+!-(.\$-2!)(!%-)1!-2'0\$\*)#(!4+!0#&3,-\*)(!\$!  
1-5)\*\$,)e-2!#1)-(\*\$\*)#(!0#1/-!D)\*%)(!%-!6)1/\*!ME!%#1/!#6!-(1#,,&-(\*!\$!""9

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42 [ @dH"!/\*'2-(^/!D),!4-! 1-\$)(-2!61#&!/&-/\*-1!#(-!\*#!/-&-/\*-1!\*D#!\$(2!\*%1#'.%#\*!  
\*%-)1!0\$1--1/!\$\*!""!%1#'.%!0#&&-0-&-(\*9

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@#!-/'1-!\*\$%\*-/-!.\$\$/!\$1-!&-\*7!\*%-!0#,,.-!%\$/!0#&&)\*-2!/.)(6)0\$(\*!%'&\$(!  
1-/#'10-!/\$2!31#6-//)#(\$,!2-5-#3&-(\*,\*1\$)().9!""W/!Ydb!D),!4-!\$//-- 2!/)(!2\$\*\$!  
61#&!&',\*)3,-!\*##,/)!(0,'2)(.!+=""7!A-(e\$4\$17!"#1/-!(1#,,&-(\*!Z"\$5\$!/\$2!  
.1\$2-/7![ @dH"!/\*'2-(^!-(1#,,&-(\*!1-3#1\*7!\$(2!HbdOB!1-\*(^)#(!1-3#1\*/9!

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@%-!)(/\*)\*\*#(W/!)(\*-15-(^)#(!6#1!\$(!-(%\$(0-2!\$25/)(.!31#0-//!\$(2!#1)-(\*\$\*)#(!0#1/-!  
\$1-)(\*-(2-2!\*#!)&31#5-!1-\*(^)#(!\$(2!/\*'2-(^!-(.\$-&-(\*!\$(2!31#&#\*-'/'00-//!\$(2!  
0#&3,-\*)#(9!

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T9

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9,\*%+;%)&+"#077\*!\$O4&!;0/\$!4/,!%4&!#03=,&9!,-::.(%!8!)\$,%)%-%).\$/0!  
>.\$,%)%-&\$-9&,  
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@%-!Ydb!B\*--1)(.!"#&&)\*--!4-.\$(!%-)1!D#1U!(!B-3\*-&4-1!#6!M^EX9!@%)!/)(\$,!1#3!  
#6!IM!&-&4-1!)(0,'2-2!2-3\$1\*&-(\*!0%\$)1/7!2)1-0\*#1/7!2-\$/7!6\$0',\*+!&-&4-1/7!\$(2!  
/\*2-(\*!9!O'1)(.!"#&&)\*--!4-.\$(!%-)1!31#0-//!#6!2)/0#1+7!\*%-.!1#3!1-5)-D-2!3-1\*)(-(\*,)\*-1\$\*1-!#(!  
/\*2-(\*!1-\*-(\*)#(!\$(2!0,#/-,+!1-5)-D-2!)(/\*)\*\*#(\$,!2\$\*\$!#2-\*1&)(-!%-!.1-\$\*-/!\$1-\$!#6!  
/\*2-(\*!(-29! !

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@%-!0#,,--!0#(2'0\*-2!\$/15-+!\$(2!0#,,-0\*-2!#5-1!a^^!1-/3#(/-!61#&!/\*2-(\*!7!6\$0',\*+!  
\$(2!/\*\$66\$(2!0#&&'()\*+!&-&4-1!61#&!%-)1!/-15)0-!\$1-\$9!@#,-!-!)(0,'2-2!5\$1)#/!  
&-&4-1!#6!\*%-!0\$&3'/!0#&&'()\*+!2'1)(.!"#&&)\*--!4-.\$(!%-)1!2-5-,#3&-(\*!#6!\*%-!Ydb!\*#3)0!\$(2!)(!%-!  
)(\$,!/\*\$.-!#6!\*%-!3,\$(W/!2-5-,#3&-(!9!

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T0\$2-&)0!1-31-/-(\*\$\*)#(!#(!%-!Ydb!@-\$&!)/01#//!2)0)(\$1+!\$(2!)(0,'2-!  
1-31-/-(\*\$\*)5-!61#&!.-(-1\$,!2'0\$\*)#(!2)/0)3,)(-7!%-,\$,%!/0)-(0-7!D#1U6#10-!

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4!"  
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#\$%&'()\*'+,-.\*!/01 "

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0#'1/-!2#-!/#\*!&-\$/'1-!D%-\*%-1!\*%-'/'2-(\*!/D-1-!\$0\*)5-,+!-(.\$.-2!)(\*%-)1!-2'0\$\*)#(!#1!  
D%\$!\*%--+!,-\$1(-2!)(\*%-!0#'#/-9  
!

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42"  
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#\$%&'()\*'+,-.\* /01 "

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\*%\$\*)/!3\$1\*!#6!\*%#!Ydb!31-/-(\*-2!\*#!\*%#!-5\$,'\$\*#1/9!T!\$!1-/'\*7!)\*%#(l)!&)//)(.!  
#33#1\*!()\*-!/\*#!\$//!/\*'2-(\*,-\$1)(.!\$/\*%#!)(/\*)\*\*#(!4-.)(/!#3),#\*!-,&-(/\*!#6!\*%#!  
Ydb9!

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@%K( :B)\*-!L-\$66)1&\$\*)#(!"#&&)\*--!)(\*-15)-D-2!\*%#!Ydb!0#&&)\*--!/\*#2)/0//!2-\*\$),!  
#6!\*%#!Ydb!\$//!/&-(/\*3,\$(9!@%-!)(/\*)\*\*#(!)(2)0\$\*!2%\$!>4)&<)\$!%4&!2(&ZT@O)!  
2\$\*\$!D\$!/-2!\$!4\$/-,)(-!2\$\*\$!\$(2!%\$!1-0-(\*,+\$'(0%-2!\*%#11-\$)%!5.00&&!L-(<&\*!  
.8!L%-9&\$%!B\$/'&1&\$%Bbd]9!!?#\*%\$1-!01-2)4,-!&-\$/'1-!\$(2!D),,+)-,2!\$331#31)\$\*-!  
2\$\*\$!\*#14-\*\*-1!6\$0,)\*\$\*!%\*%#!\$//!/&-(/\*%#!Ydb9

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T,\*%#!.%!\*%#!)(/\*)\*\*#(!)(2)0\$\*-2!\*%\$!\*%#!-1!6#0!/D\$!/\*'2-(\*!/'00-//!)(!)-!#6!/\*'2-(\*!  
,-\$1)(.7!4+!5)1\*!-!#6!(0,'2)(.!\$(!#1)-(\*\$\*)#(!0#1/-7!/\*'2-(\*,-\$1)(.!/%#,2!4-!  
\$//!/-29!!?+!\$//!//)(.!D%\$!\*%#!)(/\*)\*\*#(!-!3-0!/\*'2-(\*!/\*'4-!\$4,-!#!2#7!\*%#)7!#1!  
U(#D!\$!\$!1-/'\*!#6!0#&3,-\*)(!%#!-!#1)-(\*\$\*)#(!0,\$//7!\*%#!)(/\*)\*\*#(!D),!4-!\$4,-!#!6',,+!  
2#0'&-(/\*'2-(\*!/'00-//!\$(2!\$0%)5-&-(!\$!)!1-,\$\*-!/\*%#!-1!Ydb9

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<b>T a</b>		<b>QEP,</b>	<b>C</b>	<b>a</b>	<b>R c</b>	<b>a</b>	<b>:</b>
<b>R c</b>	<b>a</b>	<b>2: T</b>	<b>C</b>	<b>c</b>	<b>a</b>		

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\$\*-(\*)#(!\$(2!\$/))/\*\$(0-!(--2-2!\$!\*%\*-!4-.)((.(!#6!\*%\*-)1!0#,-.-!0\$1--19!T22)\*#(\$,!\$/'1\$(0-!  
6#,,#D/!\$!\*%\*-!(2!#6!\*%\*-!1-.)/\*1\$\*)#(!3-1)#2!D%-(!/\*2-0%W2',-/\$1-!1-5)-D-2!\*#!-(/'1-!\*\$\*!  
\*%+!\$1-!)(!%\*-!0#11-0\*!0#1/-/9!@%-!/\*-3!/31#5)2-!\$!0,-\$1!3\$\*%(!6#\*!&2\*!\*%\*-)1!.\$\$,/9!  
T//-(.!)%\*-!/'00-!!#6!\*%\*-!(%\$(0-2!\$25)/)(.!)31#\*#0#,!D),,!31)&\$1),+!4-!4\$/-2!#(!%\*-!1-3#1\*!/!#6!  
\*%\*-!/\*2-(\*W!\$25)(!&--\*)(./9! !

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@%-!1-5)/-2!#1)-(\*\$\*)#(!0#1/-7!JJB!EVEE7!)/!\*\$.%\*!4+!6\$0',\*+!&-&4-1!/D%#!%\$5-!3\$1\*)0)3\$\*-2!)(!  
/3-0)6)0!\*1\$)(.!)#\*!\*\$0%!\*%\*-!0#1/-9!@%-!1-5)/-2!#1)-(\*\$\*)#(!0#1/-!D),,/-15-!#\*!/'33#1\*!\*%\*-!  
-(%\$(0-2!\$25)/)(.!)31#\*#0#,!\$(2!31#5)2-!/\*2-(\*!D%!)\$22)\*#(\$,!/'33#1\*!)(!\$1-!/'0%!\$!  
(\$5).\$\*)(!%\*-!J)41\$1+7!0\$1--!13,\$(())(.7!6)(\$()0\$!,!3,\$(())(.7!)(!\$()0\$2!\$//)/\*\$(0-7!0#,,.-!  
/'00-!!/U),,/7!\$(2!.1#3!D#1U9!T//-(.!)%\*-!/'00-!!#6!\*%2-(\*!)(!%\*)/!0#1/-!)/!0'11-(,\*+!4\$/-2!  
31)&\$1),+!#(!%\*-!/\*2/W!.1\$2-/9

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@%-!3,\$(!\*#!)&3,-&-(\*!%\*-!Ydb!4-+#(2!\*%\*-!)(\*)\$,!&#&-(\*!&3%\$/-!\$33-\$1!/!1#(!!\$!%\*-!  
0#,,.-!0#(\*)('!/\*#!%#2!&--\*)(./!6#1!\*%\*)/!/3-0)6)0'3'13#/-9!@%-!-(%\*/)\$&!\$(2!2-2)0\$\*)#(!\*#!  
/\*2-(\*!/'00-!!/!%)4)\*-2!4+!\*%\*-!)(\*)\*\*#(W!/b1-)/2-(\*7!6\$0+7!\$(2!/\*\$66!)/!0,-\$1,+!-5)2-(f9!!

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\*\*!9),(#\$,-!%'(!.%#)(',\$&/(\$&%&!(\$!^PXA!(\$!5\*22%(((\$!#-!(\$!9\*1\*.%&! ;)//\$'(%\*&F !

- E9 "#((-0\*\$!(2!0,-\$1,+!\$1\*)0',\*\$-!%#D!T0%-5)(.!%\*-!O1-\$&!2\$\*\$!D\$!/-2!\*#!  
2-\*1&)(-\$!(2!)(6,'-(0-!%\*-!Ydb!\*#3)09!!
- M9 "#((-0\*\$!(2!0,-\$1,+!\$1\*)0',\*\$-!%\*-!T0%-5)(.!%\*-!O1-\$&!2\$\*\$!\*#!%\*-!Ydb!  
\$//-&-(/\*!#6!\*%\*-!(%\$(0-2!\$25)/)(.!)31#0-!!\$(2!\*%\*-!1-5)/-2!#1)-(\*\$\*)#(!0#1/-9
- V9 T22!8'/\*)#(!\*#!%\*-!/'1/-!d5\$,'\$\*)#(!\*#!\$//!!/\*2-(\*,-\$1)(.!\$(2;#1!  
/\$\*)/6\$0\*)#(!D)\*%!\*%\*-!1-5)/-2!#1)-(\*\$\*)#(!0#1/-9!
- \_9 T22!\$(!T25)/(![--24\$0U!'15-+!\*#!.\$)(!)(.)\*#!#(!/\*2-(\*,-\$1)(.!\$(2!  
/\$\*)/6\$0\*)#(!D)\*%!\*%\*-!(-D!31#0)!
- I9 j/-!0'11-(\*"B Bd!2\$\*\$!\$!/\$!4\$/-)(-!\*\$!\$//!!/\*2-(\*(-.\$-&-(\*!)(!%\*-!  
\$25)/)(.!)31#0-!!\$(2!\*%\*-!#1)-(\*\$\*)#(!0#1/-9!

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O.!=&!>.1:0&%&9!=\$!%43!0\$&!K&/88)(1%)\$.5.11)%%&&P

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H6!\$(!)(/\*)\*\*#(!1-0-5-!/@%#)1\$1\*+!"#&&-(\*7!\*%\*-!)(/\*)\*\*#(!%\$!\$(!#33#1\*')\*+!\*#1-3#(2!\*#!  
\*%#-!0#&&-(\*!\$!(2!\*%\*-!K(B)\*-!L-\$66)1&\$\*)#(!"#&&)\*-!1-5)-D!\*%\*-!1-3#(-!\$!3\$1\*!#6!)\*!  
0#&31-%-/)5-!-5\$,\$\*)#(!#6!\*%\*-!)(/\*)\*\*#(9!!

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@%-!"#&&)\*-!/%#2!0%-0U!#(-!#6!\*%\*-!6#,,#D)(.h

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