$\begin{array}{l} ! "(,./001\%234\%!567\%"6859\%,::;7:<5; =>:9?578>96!"#1$\%\&! \\ '()*+\%(,!-$.&!)/+%&(!.0*\%/1+)(\&!&*+1(0*\&!*/!*$(!)+2*+%32! \\ *%31.*./0&!301!4(2.(5!&6&*(7\&!/5!83&*!9&3!":\%73\%.26!; $.03<! \\ =3:30<!301!>/\%(3,?!-%31.*./0&!(@37.0(1!.0)2+1(! \\ ;/05+).30.&7<!A3/.&7?!"-3/.&7<!301!B+11$.&7?!C:().32! \\ 3^{**}(0^*./01.&!D.E(0!*/!*$(!(@37.03*./0!/5!.1(3&!&*(77.0D15\%/7! :\%73\%6!&/+\%)(!1/)+7(0*&!".0!*%30&23*./0,!F.*$.0!*$(.\%! \\ $.&*/\%).32!301!)+2^*+%32!)/0^*(@^*&?!87:$3&*&!.&!D.E(0!*/!*$(! \\ )(0^{*}32!\%/2(!:236(1!46!1(E(2/:7(0^*&!.0!*; $.03!5/\%!*$(!$  $5/%73*./0!/5!83&*!9&.30!)+2^*+%32!E32+(&? \\ \end{array}$ 

## ! "(,.//00%2@4%897<>?:A78>9%7>%B5C59D6D%(59E:5ED!"#!

: (%./1<!301!\$/F!)/0\*(7:/%3%6!)+2\*+%(!301!&/).(\*6!\$3&! &/+D\$\*!\*/!5%((!D(01(%!(@:%(&&./0!5%/7!\*\$(!)/05.0(&!/5! 03\*./032!1.&)/+%&(?

, <>66.;867D?F!89';0N\H#"#,<!P8'0#\H#"#,<!P8'0N\H#"#, - D67<8A78>96F!C\*+1(0\*&!736!0/\*!\$/21!)%(1.\*!5/%!\*\$.&!)/+%&(! 301!89';0#\0\_!6!89';0N\0\_!6!89';0N\H#!6!P8'0#\H#!6! P8'0N\H#?

 $\begin{array}{l} ! "(,.3MH0%234% > C&A6\%9\%B5C59D6D\%,:;7: < D\%59?\% \\ \# > A&D7 \ !"#!$%&!C(7.03\%iA.&) + &&./0,! - $.&!) / + && (!(@37.0(&! 3!E3\%.(*6!/5!*/:.)&!.0!=3:30(&(!;+2*+\%(!301!C/).(*6?!-/:.)&! && (2()*(1!)$30D(!5\%/7!6(3\%!*/!6(3\%!3)) / &%1.0D!*/!.0&*\%+)*/\%! \\ 301!&*+1(0*!.0*(\%(&*&?!h / &&.42(!*/:.)&!736!.0)2+1(!*$(! 1(E(2/:7(0*!/5!0*(2()*+32!)+2*+\%(!.0!-/1+D3F3!=3:30!)) \\ + && (d(0) + &&$ 

, <>66.;867D?F!89'; QN\RO"#,1c!P8'Q#\ROiN\RO"#,?
- D67<8A78>96F!C\*+1(0\*&!736!0/\*!\$/21!)%(1.\*!5/%!\*\$.&!)/+%&(!
301!P8'Q#\RO?

- DG:8687D%, >:<6D6F!d!)%(1.\*!\$/+%&!.0!83&\*!9&.30!;+2\*+%(&!) )/+%&(&!"/%!(L+.E32(0\*,<!/%!:(%7.&&./0!/5!\*\$(!.0&\*%+)\*/%! W:%(%(L+.&.\*(\*&,X?

## ! " ( , .3MH/%234%\$ID% " ED%>0%7ID%#5K : <58!"#!\$%&!

$$\begin{split} & \mathsf{C}(7.03 \$iA.\&) + \& ./0, !\mathsf{fC37} + \$3.\mathsf{f!}/5^{*}(0!(\mathsf{E/I}(\&!30!.73D(!/5!3!\mathsf{F3}), /\$!(0^{*}\$30)(1!.0!^{*}(!\mathsf{B}+\&\$.1/!)/1(<! \$(316!^{*}/!)/77.^{!}; \$3\%31.\&.!^{+}:/0!)/77301?!^{-}\$.\&!)/+ \$\&(!1(76\&^{*}.5.(\&!\&^{+})\$!30!3)^{*}\%3!\&^{*}\%/+ 01.0D!^{-}3:30!\&!\mathsf{F3}\%./\$!)23\&\&!46!(@:2/\%.0D!^{*}(.\%!\%6!(!))^{*}(.\%!\%.0)!^{-}3:30!\&!\mathsf{F3}\%./\%!)23\&\&!46!(@:2/\%.0D!^{*}(.\%!\%.0)!^{*}(.\%!\%.0)!^{-}3:30!\&!\mathsf{F3}\%./\%!)23\&\&!46!(@:2/\%.0D!^{*}(.\%!\%.0)!^{*}(.\%!\%.0)!^{-}3:30!\&!\mathsf{F3}\%./\%!)23\&\&!46!(@:2/\%.0D!^{*}(.\%!\%.0)!^{*}(.\%!\%$$

, <>66.;867D?F!89'; QN\RH"#,!c!P8'Q#\RH"#,iN\RH"#,? - D67<8A78>96F!C\*+1(0\*&!736!0/\*!\$/21!)%(1.\*!5/%!\*\$.&!)/+%&(! 301!89'; QN\RH!6!P8'Q#\RH!6!P8'QN\RH?

-DG:8687D%, >:<6D6F!P8'QR\RH!/%!89';QR\RH!/%!

: (%7.&&./0!/5!\*\$(!.0&\*%+)\*/%!W:%(%(L+.&.\*("&,X?

, <>66.;867D?F!89'; QN\#H"#,!301!P8'Q#\#H"#,iN\#H"#,? - D67<8A78>96F!C\*+1(0\*&!736!0/\*!\$/21!)%(1.\*!5/%!\*\$.&!)/+%&(! 301!P8'Q#\#H?

-DG:8687D%, >: <6D6F!d!)%(1.\*!\$/+%&!.0!83&\*!9&.30!;+2\*+%(&!

.0&\*%+)\*/%I301!7((\*!/0!3!%(D+23%!43&.&!\*/!1.&)+&&!\*\$(!\*/:.)&! )/E(%(1!\*\$(%(.0?

- D67<8A78>96F!KO&\*%+)\*/%!h(%7.&&./0!P(L+.%(1?

! " ( , .1MON%234%\$>C8A6%89%R : ??1867%, :;7:<D%59?%

, <>66.;867D?F!89';0#\O^"#,I301!P8'0#\O^"#,IN\O^"#,?
- D67<8A78>96F!A(:3%'7(0'!h(%7.&&./0!P(L+.%(1?!C\*+1(0'&!
736!0/\*!\$/21!)%(1.\*!5/%!\*\$.&!)/+%&(!301!89';0#\O^!0!
P8'0#\O^!0!P8'0N\O^?

! " ( , .1M/3%234% ) D9?D<%59?%#DL:5;87\%89% , 189D6D%

, <>66.;867D?F!89'; 0N\H#"#,<!P8'0#\H#"#,<!P8'0N\H#"#, - D67<8A78>96F!C\*+1(0\*&!736!0/\*!\$/21!)%(1.\*!5/%!\*\$.&!)/+%&(! 301!89';0#\O\_!0!89';0#\H#!0!89';0N\O\_!0!P8'0#\H#!0! P8'0N\H#?

 $\begin{array}{l} ! "(,.1MH0%234%$>C8A6%9%B5C59D6D%,:;7:<D%59?% \\ \#>A8D7 \ !"#!$%&!C(7.03%iA.&)+&&./0,!-$.&!) / +%&(!(@37.0(&! 31E3%.(*6!/5!*/:.)&!.0!=3:30(&(!;+2*+K(!301!C/).(*6?!-/:.)&! 4(2()*(1!)$30D(!5%/7!6(3%!*/!6(3%!3))/%1.0D!*/!.0&*%+)*/%! 301!&*+1(0*!.0*(%(&*&?!h/&&.42(!*/:.)&!736!.0)2+1(!*$(! 1(E(2/:7(0*!)+3(1+2)+2*+K(!.0!-/1+D3F3!=3:30! "Hd000H^g^,<!*$(!K/2(!/5!F/7(0!.0!=3:30(&(!)+2*+K(<!C$.0*/! "f*$(!F36!/5!*$(!D/1&f,!*$/+D$*!301!:%3)*.)(<!301!*$(! & (3%)$!5/%!.1(0*.*6!.0!7/1(%0!=3:30?!-$.&!)/+&&(!736!4(! *31(0!5/%!))(1.*!7/%(!*$30!/0)(<!F.*$!:(%7.&&./0!/5!*$(! .0&*%+)*/%? \\ \end{array}$ 

, <>66.;%67D?F!89';0#\RO"#,!c!P8'0#\ROiN\RO"#,?
- D67<%A7%>96F!T/0/+%&!e/%7!P(L+%(1?))

- DG: 8687D%, >: <6D6F!d!)%(1.\*!\$/+%&!.0!83&\*!9&.30!;+2\*+%(&!)/+%&(&!"/%!(L+.E32(0\*,<!/%!:(%7.&&./0!/5!\*\$(!.0&\*%+)\*/%!) )/\*%(%(L+.&.\*("&,X? ! " ( , .1MH/%234%\$ I D% " ED%>0%7 I D%#5 K : <58!"#!\$%&!

$$\begin{split} & \mathsf{C}(7.03 \$iA.\&) + \& \& ./0, !\mathsf{fC37} + \$3.\mathsf{f!}/5^*(0!(\mathsf{E/I}(\&!30!.73D(!/5!3!\\ & \mathsf{F3\%}./\$!(0^*\$30)(1!.0!^*(!\mathsf{B}+\&\$.1/!)/1(<!\$(316!^*/!)/77.*!\\ & \$3\$31.\&.!+:/0!)/77301?!-\$.\&!)/+\$\&(!1(76\&^*.5.(\&!\&+)\$!30!\\ & 3+\$3!\&+\$!/+01.0D!=3:30!\&!\mathsf{F3\%}./\$!)23\&\&!46!(@:2/\%.0D!^*(.\%!\\ & \&(!5\%/7!T(.30!^*(7:2(!\&(\$E30^*\&!^*/!C(0D/I+!\mathsf{F3\%}/\%1\&!301!\\ & *\&(0!^*(.\$1532!5\%/7!81/!=3:30!\&!.0^*(2!)+32\&!301!\\ & 4+\$(3+)\$3^*\&!^*/!^*(!\$(327\&!/5!^*(!1(\&^*.+*(?!C/+\$)(\&!.0)2+1(!\\ & 37+\$3.!3+*/4./D\$3:\$.(&<!^*(.\%!.0^*(2!)+32!\&)$/238\&::<!301!\\ & \&((\&(0^*3'./0\&!/5!&37+\$3.!.0!)/0^*(7:/\$3\%6!:/:+23\%!)\\ & ) +2^*+\$(?) \end{split}$$

, <>66.;867D?F!89';0#\RH"#,!301!P8'0#\RH"#,iN\RH"#,?
- D67<8A78>96F!T/0/+%&!e/%7!P(L+%(1?!C\*+1(0\*&!736!0/\*!
\$/21!)%(1.\*!5/%!\*\$.&!)/+%&(!301!89';0#\RH!0!P8'0#\RH!0!
P8'0N\RH?

- DG:8687D%, >:<6D6F!89'; iP8'QR\RH!301!:(%7.&&./0!/5! \*\$(!A(:3%\*7(0\*!;\$3.%!":%(%(L+.&.\*("&,%?

 $\label{eq:second} \begin{array}{l} \label{eq:second} & \label{eq:second} \\ \label{eq:second} & \label{eq:second} & \label{eq:second} \\ \label{eq:second} & \label{eq:second} \\ \label{eq:second} & \label{eq:second} & \label{eq:second} & \label{eq:second} \\ \label{eq:second} & \$ 

, <>66.;87D fr!89 ; u# \#H #,13011P8 u# \#H #,1N\#H #,? - D67<8A78>96F!T /0 /+%&!e /% 7 !P (L+.%(1?!C\*+1(0\*&! 7 36!0/\*! \$/21!)%(1.\*!5/%!\*\$.&!) /+%&(!301!P8 'QN\#H? - DG : 8687D% , > :<6D6F!d!)%(1.\*!\$/+%&!.0!83&\*!9&.30! ; +2\*+%(&! ) /+%&(&!" /%!(L+.E32(0\*,!/%!:(%7.&&./0!/5!\*\$(!.0&\*%+)\*/%! W:%(%(L+.&\*("&,X?))

 $\begin{array}{l} ! "(,.1M3H%234%$>C&A6%9%, 1&9D6D%97D;;DA7:5;%59?%\\ ,:;7:<5;%[&67><\!'#1$%&!C(7.03%iA.&)+&&./0,!-$,&!)/+%&(!\\ (@:2/%(&!3!E3%,(*6!/5!*/:)&!.0!; $,0(&(!.0^*(2!()^*+32!%(01&!.0!); $,03<!:36.00!&:().5.)!3**(0^*./0!*/!$/F!*$(6!F(%(!&$3:(1!))); $,03<!:36.00!&:().5.)!3**(0^*./0!*/!$/F!*$(6!F(%(!&$3:(1!))); $,03<!:36.00!&:().5.)!3**(0^*./0!*/!$/F!*$(6!F(%(!&$3:(1!))); $,03<!:36.00!&:().5.)!3**(0^*./0!*/!$/F!*$(6!F(%(!&$3:(1!))); $,03<!:36.00!&:().5.)!3**(0^*./0!*/!$/F!*$(6!F(%(!&$3:(1!))); $,03<!:36.00!&:().5.)!3**(0^*./0!*/!$/F!*$(6!F(%(!&$3:(1!))); $,03<!:36.00!&:().5.)!3**(0^*./0!*/!$/F!*$(6!F(%(!&$3:(1!))); $,03<!:36.00!&:().5.)!3**(0^*./0!*); $,03<!:301!%(2.D.+&!!); $,03<!:301!*(0^*.32!:1), $,03<!:303!; $,03<!:303!:1, $,03<!:303!; $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!:1, $,03<!:303!$ 

, <>66.;867D?F!89'; Q#\#R7D?F

7 /%(!31E30)(1!2(E(2?!C\*+1(0\*&!&\$/+21!)/0&+2\*!\*\$(! 1(:3%\*7(0\*!%(D3%1.0D!:/\*(0\*.32!/55(%.0D&!.0!3!D.E(0!6(3%? ,**<>66.;**&67D?F!89';0#\_\0"#,!301!P8'0#\_\0"#,iN\_\0"#,?