

!*+, - (.% '! !

Y0? .!59.77:!!" IIV!!Y7=*,7+!Y0? .!59.77:!0+!Y7=*,7+! T 5!

<454!W! - .) 609/!:!>+?0+)) (0+?!%RRR! T 0**0**0 ' '0!5,/,)!F+0G)(*0,H!

T 454!W! - .) 609/!:!>+?0+)) (0+?!%RRV! T 0**0**0 ' '0!5,/,)!F+0G)(*0,H!

J .424!W! - .) 609/!:!>+?0+)) (0+?!%RRN! T 0**0**0 ' '0!5,/,)!F+0G)(*0,H!

)

)

/!0! - / , 1). ' (! / !0 (0)

!

TH!(*)/(9.!. (=*,!0*!,.)!60+060Z/,07+!P7(!):060+/,07+Q!78!0+C=*,(0/!:D/*,)*1!0+9:=C0+?! ./Z/(C7=*!

%R "I!&!%R%%!&! T) 6 [](!F+0G)(*0,H!F+C)(?(/C=/,)! -=((09=:=6! - 7 6 60,,))!EF!
!
%R "N!W!%R% "I!&! - . /0(!OC 60**07+*! - 7 6 60,,)!EF!
!
%R "N!&!%R% "I!&!F+C)(?(/C=/,)!S)* / (9 . !OCG0*7(H!<7/(C!EF!
!
%R "#!W!%R%R!&!

%R "K!&! - . /0(!OCG/+9)*!0+! - /,/:H*0!*)**07+!/,!,.)!OL - .>!*' (0+?!97+8)()+9)!0+!Y7=* ,7+!_ b!
!
%R "M!&!_)9 . +09/ :!OCG0*7(\$5/8),H! - 7+*=: ,/+,!87(!OL - .>! T0CC:)!>/*,!S)?07+/:! - .) 6>! - /(!
- 7 6 '),0,07+!0+!</ . (/0+!
!
%R "M!&! - . /0(!OL - .>!5=* ,/0+ / [0:0,H!>+?0+)) (0+?!37(= 6 !/+C! / (!' :)+ / (H!*)**07+!
!
%R "M!&! - . /0(!OCG/+9)*!0+! - /,/:H*0!*)**07+!/,!,.)!OL - .>!*' (0+?!97+8)()+9)!0+!O=* ,0+!_ b!
!
%R "M!&! - 7W - . /0(! - .) 6 09/ :!/+C! - /,/:H,09! - 7+G) (*07+*!/+C!J(79)**)*!87(!S)+)D/ [:)!3=)C*,79A*!
*)**07+!/,!,.)!/+ += / :!OL - .>!97+8)()+9)!0+!5/ : ,!E/A)! - 0,H!F _!
!
%R "U!&!E/ 6 /(!F+0G)(*0,H!5,(/ ,)?09!J: /+ +0+?! - 7 6 6 0,,)!
!
%R "U!&!F+0G)(*0,H! T)(0,!OD/ (C!PE/ 6 /(!F+0G)(*0,HQ!
!
%R "U!&! - 7W - . /0(!OL - .>!5=* ,/0+ / [0:0,H!>+?0+)) (0+?!37(= 6 !!
!
%R "U!&! - . /0(!O \ - 5! `)D!F*)*!87(!B:H9)(7:!*)**07+!!
!
%R "V!&! - . /0(!L+,)?(/ ,)C!_ .) (6 7W - .) 6 09/ :!/+C!<079 .) 6 09/ :!J(79)**0+?!87(!S)+)D/ [:)!3=):*!
/+C! - .) 6 09/ :!*)**07+!/,!,.)!/+ += / :!OL - .>!97+8)()+9)!0+!5/ +!3(/+90*97! - O4!
!
%R "V!&! - 7W - . /0(!S)97G)(H!78! a / : =)W0CC)C! - 7WJ(7C=9,*!8(7 6 !<07()80+)(H!S)*0C= / : *!/+C!
>88=: +,*!/,!,.)!/+ += / :!OL - .>!97+8)()+9)!0+!5/ +!3(/+90*97! - O4!
!
%R "%!&! - . /0(!57=, .)/* ,!_)X/*!OL - .>! : 79/ :!*)9,07+!
!
%R "%!&! - 7W - . /0(!L+,)?(/ ,)C!_ .) (6 7W - .) 6 09/ :!/+C!<079 .) 6 09/ :!J(79)**0+?!87(!S)+)D/ [:)!3=):*!
/+C! - .) 6 09/ :!*)**07+!/,!,.)!/+ += / :!OL - .>!97+8)()+9)!0+!J0,* [= (? . !J O!
!
%R ""!&! - . /0(! `)D!F*)*!87(!B:H9)(7:!*)**07+!/,!,.)"R% !O 6)(09/+! \ 0: ! - .) 6 0* ,*^!5790),H!
97+8)()+9)!0+! - 0+90++ / ,0! \ Y!
!
%R "R!&! - 7W - . /0(!<07()80+)(H!&!<079 .) 6 09/ :! - 7+G) (*07+!/+C!<07 6 /**S)9/ : 90,(/ +9)!*)**07+!/,!,
,.)!O 6)(09/+!L+*,0,=,)!87(! - .) 6 09/ :!>+?0+)) (*!/+ += / :!97+8)()+9)! .) :C!0+!5/ : ,!E/A)! - 0,H!
F _!
!
%R "R!&! - 7W - . /0(! `)D!F*)*!87(!B:H9)(7:!*)**07+!/,!,.)"R" !O 6)(09/+! \ 0: ! - .) 6 0* ,*^!5790),H!
97+8)()+9)! .) :C!0+!J . 7)+0X!OS!
!
%RRI!&! - 7W9 . /0(!B())+! - .) 6 0* ,(H!* ')90/ :!*)**07+!/,!,.)"RR !/+ += / :!O 6)(09/+! \ 0: ! - .) 6 0* ,*^!
5790),H!97+8)()+9)! .) :C!0+! \ (: / +C7!3E!
!
%RRN!&!L+C=* ,(0/ : ! \ 0: !J(7C=9,*!20G0*07+!5,=C)+,!OD/ (C!87(!, .)!O 6)(09/+! \ 0: ! - .) 6 0* ,*^!5790),H!
!
!
!

- Y> `!KVU#!&!OCG/+9)C!_.) (67CH+/ 609*!P5 ' (0+?!h"%!&!h"#1!5 ' (0+?!h" I!&!h% "Q!
- Y> `!MVR"!&!

!

!

#

T/X0+)!@7+)*!PT 5FQ!! <),./+H!_ .76 '*7+!PT 5FQ!! ! _(/H!O9.7(+!PT 5FQ! !
f /,(0+!/J/(A)(PT 5FQ!! @/(C!30*.)!(PT 5FQ! ! ! O:0*7+!37(A*!PT 5FQ! !
<(0,,7+!>H:)*!PT 5FQ! ! !
! ! ! !
!

4 / - * + - (!)0 (+ * ! ' (0)C?@)#%0() *%, (% / - (!)0) " ! ' (% / ! *!
)

S/80o!L*:/ 6!PJ . 2Q!&!20**)(,/,07+!_0,:)!iYHC(7,/:90,)\$E0?/+C! - /,/:H*,*!87(!,.)!37(6/,07+!78!
B:H9)(7:W8(!)!<07C0)*):!8(7 6!E0'0C! \ 0!:3))C*,79A*!F*0+?!20 6),.H: - /([7+/,)k!PB(/C=/,)C!T /H!
%R"VQ!
!

m0* . /+!p . /+?!PJ . 2Q!&!20**)(,/,07+!_0,:)!i5H+,.) *0!78!` 7G):! - /,/:H*,*!87(!,.)!_0(87(60+?!
- 7+G)(*07+!78! - /([7+!207X0C)k!PB(/C=/,)C!2)9!%R"UQ!
!

T C4!>(8+!/S/0. /+!PJ . 2Q!i - 7 6 ' (.) +*0G)!J/(/C0? 6!87(! - 7+G)(0+?! 1 / *,)! - /([7+!207X0C)! ,7!
a /:=)!OCC)C! - .) 609/:*k!PB(/C=/,)C!T /H!%R"#Q!
!

f/(0* . 6!/J0:)(!PJ . 2Q!i5H+,.) *0!/+C!T /,)(0/:! - ./(/9,)(0Z/,07+!78!_0 \ !&!5 1 - ` _!
` /+797 6 '7*0,)*!/+C!_ .)0(!O' ':09/,07+!+!J . 7,79/,/:H,09! - 7+G)(*07+!78! - /([7+!207X0C)! ,7!
F*)8=:!YHC(79/([7+*k!PB(/C=/,)C!2)9!%R"IQ!
!

E0+ . !27+!PJ . 2Q!i>* ,0 6 /,0+?!_ .)(67CH+ / 609!J(7 ')(0)*!87(!,.)!S) 6 7G/:!78!Y%5!F*0+?!O 60+!)
/+C!L7+09!E0o=0C!O [*7([+ , *!87(!T0C*, (/ 6!J(79)**)*k!PB(/C=/,)C!2)9!%R%RQ!
!

OC . 0* . !5/A),. !T /C=?=:!iJ)(87(6 /+9)!78!>97+7 609!T 7C):!J(C09,0G)! - 7+, (7:17+!O [*7(' ,07+!
/+C!OC*7(' ,07+!</*)C! - \ ! - / ' ,=(!)!/+C!5,7(/?)!T), . 7C*!8(7 6!5, /,07+/(H!3=):! - 7 6 [=*,07+!
57=(9)*!0+!S)80+)(0)*k!PB(/C=/,)C!2)9!%R%Q!
! ! !

m7?) * . ! f=(!)!PT 5Q!&!_ .) *0!_0,:)!iJ(79)**!2)G):7' 6)+, !87(!_0/9H: ? :H9)(7: - 7+G)(*07+!,7!/
B:H9)(7:W8(!)!<078=):k!PB(/C=/,)C!2)9!%R""Q!
!

_ .7 6 /*!p /9. / (0/!PT 5Q!&!_ .) *0!_0,:)!i T =:,0W 6), /: ! ` /+7' / (,09:)! - /,/:H*,!5H+,.) *0!F*0+?!
S)G)(*!)T 09)::)!_ 9. +0o=)k!PB(/C=/,)C!2)9!%R"%Q!
!

Y/H/,!S/Z/!PT 5Q!&!_ .) *0!_0,:)!iO* ')+!50 6 =:/,07+!78!YHC(7,.) (6 /: !E0o=)8/9,07+!J(79)**!87(!
,.)! - 7+G)(*07+!78!O: ? /)! ,7!S)+D/ [:)!3=):*!/+C! - .) 609/:*k!PB(/C=/,)C!T /H!%R"UQ!
!

f . /:)C!O: / 6 (!PT 5Q!&!_ .) *0!_0,:)!iS) /9,7(!2)*0?+!/+C! \ ' ,0 6 0Z/,07+!87(!J . 7,79/,/:H,09!
- 7+G)(*07+!78! - /([7+!207X0C)k!PB(/C=/,)C!O=?!%R"UQ!
!

@7* . =/!<7,(7+!PT 5Q!&!_ .) *0!_0,:)!iJ / (/ 6), (09!5,=CH!8(7!_0/Z/ [09H9:7C)9)+)! - /,/:HZ)C!<078=):!
F*0+?!Y0? . !3(!)!3/ ,H!O90C!3))C*,79A*k!PB(/C=/,)C!2)9!%R"UQ!
!

f)HG/+!T 7: /)0/+!PT 5Q!&!_ .) *0!_0,:)!iE/H)(C!2 7=[:)!YHC(7X0C)! - /,/:H*,!87(!,.)! - 7+G)(*07+!
78! - (=C)!a)?, / [:)! \ 0*:! ,7! /!5=* ,/0+ / [:)!<078=):k!PB(/C=/,)C!T /H!%R"MQ!
!

!

M4!DA?EF?7)(4!Y)(+/+C)Z!S4!3()+9.1! 1 4_4!O::)H!>4B4!/+C!Y7:6)*1! 1 4>4!P%RRIQ!i>:=90C/,07+!
78!,.)! - /,/:H,09! - (/9A0+?!J/, .D/H!87(!F+*/,=(/,)C!T7+7W!20W!/+C!_(0/9H:?:H9)(0C)*!7+!
Y p5TW

"M4!p ./+?!m4!p ./+?!54!B7**/?)!@4!E7=!Y4!DA?EF?7) (G5G!P%R"UQ!i_.) (67CH+/ 609!O+/:H*0*!
78!_(0W())87(60+?!S)/9,07+*!,7!J(7C=9)!5H+?/*!k!>+)(?H! ; !3=):*!%N!%#"#!&!%#%K4!
... 'j\$S'=[*4/9*47(?\$C70\$"R4"R%"\$)8MRRRNU 6!

!
"K4!p ./+?!m4!p ./+?!54!B7**/?)!@4!E7=!Y4!DA?EF?7) (G5G!P%R"UQ!iO! - 7+9) ',=/:!2)*0?+[H!
L+,) ?(/,0+?!5,) / 6!S)87(60+?!/+C!2(H!S)87(60+?! - 7=':)C!D0, .!J/(,0/;! \ X0C/,07+!78! T), ./+)!
J(79)**)*!87(! - \ !> 60**07+!S)C=9,07+!k! - .) 609/!>+?0+)) (0+?! ; !_)9. +7:7?H!V#!"UIV!&!"UII4!
... 'j\$S7+0+):0[(/H4D0:)H497 6 \$C70\$/"R4"RR%\$9)/,4%R"URR"V%\$/[*,(/9,!

!
"#4!3/+?!m4!S/*):! T 4O4 f 4!DA?EF?7) (G5G!S09. 67+C!J4 - 4!P%R"UQ!i `7G):!Y/+C*W7+! 1 /,)(!
\ G)(8:7D!5L5!>X') (06)+, !0+!F+C)(?/C=,)!J(79)**! - 7+, (7:IE/[7(/,7(H!k! - .) 609/!>+?0+)) (0+?!
>C=9/,07+! a UI!V#!&!UK4!!

!
"N4!p ./+?!m4!p ./+?!54!DA?EF?7) (G5G!P%R"MQ!iO! - 7+9) ',=/:!2)*0?+[H!L+,) ?(/,0+?!206), .H:!
>,.) (P2 T>Q!J(7C=9,07+!D0, .!_(0W())87(60+?!J(79)**!87(! - \ !> 60**07+!S)C=9,07+!k!3=):!
J(79)**0+?!_)9. +7:7?H!"V"!#!&!"V4!
!... 'j\$SDDD4*90)+9)C0()9,497 6 \$*90)+9)\$/(,09:)\$'00\$5RV#NVN%R"URRU#V"!

!
"I4!! T 7:./)0/+! f 4! 1)0!54!L*/ 6! T 4S4!209A)(*7+!<4!Y7: 6)*! 1 4>4!DA?EF?7) (G)5G!P%R"KQ!
i 2)G):7' 6)+, !78!/+! \ +:0+)!S/ 6 /+!O+/:H*0*!_)9. +0o=)!87(! T 7+0,7(0+?!, .) !J(7C=9,07+!78!
<078=):*k!O - 5!>+)(?H! ; !3=):*!VR!PMQ!U""%WU""#4!
... 'j\$SCX4C7047(?\$"R4"R%"\$/9*4+)(?H8=):*K[RRV"V!

!
%R4!O? [(7A7! \ 4! 1 4!J0:)(! f 4!DA?EF?7) (G)5G!P%R"#Q!iO! - 7 6' (.) +*0G)!S)G0)D!78!Y 5!
59/G)+?)(!_)9. +7:7?0)*!8(7 6! \ 0:!/ +C!B/*!5,() / 6 *!k! - .) 6 <07>+?!S)G0)D*!U!"!&!%#%4!
... 'j\$S7+0+):0[(/H4D0:)H497 6 \$C70\$/"R4"RR%\$9)+4%R"KRRR%K!

!

!

""

%M4!J0:)(1! f 4! 1 /,,)(*!@4!DA?EF?) (G5G!P%R%RQ!i</+C!B/ '!_+=0+?!78!_0\ !` JW5 1 - `_!
` /+797 6 '7*0,)!T /,) (0/:*!F*0+?!5=(8/9,/+,!5H+,.) *0!_)9. +0o=)*k!T /,) (0/:*!E),,)(*!%#N!
"%NU"R4!... '*j\$C7047(?S"R4"R"KSe4 6 /.:).4%R%R4"%NU"R!

U4! !%K! @=+)! %RR%! &! iL++7G/,0G)! OC*7([+,*! 87(!,.)! 2) .HC(/,07+! 78! >,. /+7:k! &! J()*+),)C! ,.)!
()*=,!*78! 6 / *,)(^*!,.) *0*! '(7e)9,! /,!,.)!"N !O++=/:!L+),(+/ ,07+/:!3=):!>,. /+7:! 1 7(A* .7 '! /+C!
_(/C)* . 7D!0+!5 '(0+?80):C!LE4!!!

!

M4!!%M! T / (9 . !%RRV!&! i 5) ' / (/ , 07+! 78! > , . / +7 : ! 8 (7 6 ! 3) (6) + ,) (! > 88 : =) + , * k ! &! J () *) + ,) C ! 0 + 87 (6 / , 07+!
7+!,.)! '(79)**!78!C0*,0:./,07+!/ +C!C) .HC(/,07+!78!8)(6)+,)C!),. /+7:!/ ,!,.)!%RRV! T 0**0**0 ' ' 0!
<07 6 / **! - 7+8)(+9)!0+!@/9A*7+!T *4!

!

K4! ! " I ! ` 7G) 6 [] (!%RRV!&! i 2) G) : 7 ' 6) + , ! 78! `) D ! O C * 7 (' , 07+! T / ,) (0 / : * ! 87 (! , .) ! 2) . H C (/ , 07+! 78!
> , . / +7 : k ! &! J () *) + ,) C ! () * = , * ! 8 (7 6 ! 6 / * ,) (^ * ! , .) * 0 * ! ' (7 e) 9 , ! / , ! , .) ! % R R V ! O + + = / : ! O L - Y > !
97+8)(+9)!0+!5 / +!3(/+90*97! - O4!

!

#4!!I! ` 7G) 6 [] (!%RRU!&! i J(7C=90+?!>:)9,(09!J7D)(!8(7 6 ! < (7 0 :) (! E 0 , ,) (k ! &! J () *) + ,) C ! / , ! , .) ! % R R U !
O++=/:!OL - Y>!97+8)(+9)!0+!O=*,0+!_ b4!

!

N4!!"! ` 7G) 6 [] (!%RRM!&! i J(7C=9,07+!78!<07C0)*):!8(7 6 ! E 0 ' 0CWS09 . !L+C=*(,0/:! 1 / *,) ! 5 , () / 6 * k ! &!
J () *) + ,) C ! / , ! , .) ! % R R M ! O + + = / : ! O L - Y > ! 97 + 8) (+ 9) ! 0 + ! - 0 + 90 + + / , 0 ! \ Y 4 !

!

I4! "M! ` 7G) 6 [] (!%RRK!&! i

!

"V!

%I4!!"M!@=+)!%R"R!&!i 2)G):7' 6)+,!78!/+/!LC)/:YHC(7,(+)/,0+?! - /,/:H*,!87(!,.)! - 7+G)(*07+!78!
J.7*' .7:0'0C*!,7!<078=):*4k!!J(*)+),)C!/,!,.)!%" !L+),(+/ ,07+/:!5H 6 '7*0=6!87(!- .) 609/!:!
S)/9,07+!>+?0+)))(0+?!0+!J .0:/C):' .0/!!JO4!

!

VR4!I!` 7G!%R"R!&!i J(7C=9,07+!78!<07C0)*):!F*0+?!206), .H:- /([7+/,)!/*!,.)!T), .H:/,0+?!O?)+,j!!
O!B:H9)(7:W8())!<078=):k!J(*)+),)C![H!?(/C=/,)!*,=C)+,!T09./):!T0?=>Z!/,!,.)!%R"R!/++=/:!
OL - Y>!97+8)(+9)!0+!5/!,!E/A)! - 0,H!!F_4!

!

V%4!V!T /H!%R" "!"&!i O:.)(+/,)!T), .H:/,0+?!O?)+,!0+!J(7C=90+?!B:H9)(7:W8())!<078=):k!J(*)+),)C!
/,!,.)!"R% !/++=/:!O \ - 5!97+8)(+9)!0+! - 0+90++/,0!! \ Y4!

!

V%4!"N! \ 9,!%R" "!"&!i L+!*0,=!3_LS!5,=CH!87(!_ (0WS)87(60+?!S)/9,07+k!J(*)+),)C![H!?(/C=/,)!
,=C)+,!m0 . /+!p . /+?!/,!,.)!/+ +=/:!OL - .>!97+8)(+9)!0+! T0++)/ '7:0*!T ` 4!

!

VV4!"I! \ 9,!%R" "!"&!i 2)G):7' 6)+,!78!` /+7' /,(09:)! - /,/:H*,!87(!,.)!_ (0)87(60+?!78! - \ WS09. !3:=)!
B/*)*k!J(*)+),)C!/,!,.)!/+ +=/:!OL - .>!97+8)(+9)!0+! T0++)/ '7:0*!T ` 4!

!

VU4!"I! \ 9,!%R" "!"&!i F+0o=)!J(79)**0+?! - 7+*0C)(/ ,07+*!87(!,.)!_ (0)87(60+?!78! - \ !,7!5H+?/*k!
J(*)+),)C!/,!,.)!/+ +=/:!OL - .>!97+8)(+9)!0+! T0++)/ '7:0*!T ` 4!

!

VM4!!%N! T /(!%R" "%!&!i 3(7 6!` /+7W - /,/:H*,!7!_ (0)87(60+?!J(79)**j!>+?0+)))(C! - \ ! - 7+G)(*07+k!
J(*)+),)C!/,!,.)!O - 5!O++=/:!5 '(0+?!97+8)(+9)!0+!5/+!20)?7!! - O4!

!

VK4!"!O' (!%R" "%!&!i S)G0G0+?!/!27(6/+,!5)9,07+j!O! - /*)!5,=CHk!J(*)+),)C!/,!,.)!OL - .>!E79/!:!
5)9,07+!E)/C)(* .0'! 1 7(A* .7' !0+!Y7=* ,7+!_ b4!

!

V#4!%V!O=?!%R" "%!&!

!

"M!

U%4!"!` 7G!%R"%!&!

MU4!!I!`7G!%R"M!&!

KK4!"N!@=:H!%R" I!&!i>X':7(0+?!,.)!B=:8!78!T)X097!5=[W5)/!3:77(!/*!/*!50+A!87(! 1 /*,)!- \ lk!
J(*)+),)C!/,!,.)!- /([7+!T /+/?) 6)+,! - 7+8)(+9)!0+!Y7=* ,7+!_ b4!
!
K#4!"%!` 7G!%R" I!&!i F+0o=)!J() ' /(/,07+!78!_0 \ !&!5 1 - ` _!` /+797 6 '7*0,)*!87(!,.)!

#N4!%#! T/(4!%R%U!&!iS7:!)78!`7+/o=)7=*!O60+)*!87(!J7,) +,0/!:- \%! - / ' ,=(!)57:G)+,*k!J(*)+,)C!
/!,,)!OL- .>!5 '(0+?!-7+8)(+9)!PJ(*)+,)C![H!O0* .D/(H/!S7H!&!T5!5,=C)+,Q4)

!
!
)
)

#%0(!/)#/!0!'(-(.%'0)

!

"4!@7+)*! T4!(<)+*7+! _4!/+C!B)7(?)! -4!P%RR%Q!i>,. /+7:j!3=)!87(!,.)!`)D! T0:.)++0=64k!
J(*)+,)C!/!,,.)!" !/+ += /: !>W I))A!'7*),(976 ') ,0,07+! /, ! T0**0**0' '0!5,/,)!F+0G)(*0,H4!

!

%4! 560,.! _4!(<)+*7+! _4!/+C!B)7(?)! -4!P%RRVQ!i>,. /+7: ! 2) .HC(/,07+! F*0+?! <076/**!
OC*7([)+,*4k!!J(*)+,)C!/!,,.)!% !/+ += /: !>W I))A!'7*),(976 ') ,0,07+! /, ! T0**0**0' '0!5,/,)!
F+0G)(*0,H4!

!

V4!(<)+*7+! _4!p/' '0! T4!/+C!3)+9. ! _4!P%RRUQ!iJ():060+/(H!O**)**6)+,!78!,.)!_)9. +09/!/+C!
>97+7609! a0/[0:0,H! 78! J(7C=90+?! <07?/*! /, ! T5! <(70:)(! J7=:(H! S/0*0+?! \ ')(/,07+*4k!!
J(*)+,)C!/!,,.)!57=,.)(+!<07WJ(7C=9,*!-7+8)(+9)!0+!<0:7X0! T54!

!

U4!(<)+*7+! _4!/+C!B)7(?)! -4!P%RRUQ!i-)::=:7*!</*)C!OC*7([)+, ! T/,)(0/:*!87(!,.)!2) .HC(/,07+!
78!>,. /+7: ! F*0+?! _.) (6/:!5D0+?!OC*7(' ,07+4k!!J(*)+,)C!/!,,.)!N !/+ += /: !3=+C/6)+, /: *!78!
OC*7(' ,07+!0+!5)C7+! !Op4!!

!

M4! Y/(,)+[7D)(! <4!(<)+*7+! _4!/+C! p/' '0! T4! P%RRMQ!i T),. /+)! B)+)(/,07+! 8(76! <(70:)(!

!

"I!

!
"4!<)+*7+!_4@4!/ +C!L*/ 6! TC4!S4!P%R"VQ!i5H+,.) *0*/ +C! - ./(/9,)(0Z/,07+!78!B=/+0C0+)!</*)W
3=+9,07+/:0Z)C! T ?\$O:! E/H)()C! 27=[:)! YHC(7X0C)*k! J(*)+,)C! ,.)! `7(,!! O6)(09/+!
5H6 '7*0=6!7+! - .) 609/:(S)/9,07+!>+?0+)) (0+?!0+!Y7=*,7+!_ b4!!

!
"%4! ! p . /+?! m4! - (=Z! @4! <)+*7+!_4@4! P%R"VQ! i 2)G):7' 6)+,! 78! /! S)G)(*! T09)::)! - /,/:H*!
5H+,.) *0*! T),. 7C!87(!J(7C=90+?! T=:.0W T),/,:! ` /+7W5,(=9,=())*!7+!/_0 \ %!O+/,/*)!5=' '7(k!
J(*)+,)C!/,!,.)!%R"V!/++=/:!OL - .>!97+8)()+9)!0+!5/+!3(/+90*97! - O4!

!
"V4!<)+*7+!_4! S/Z/! Y4! S7()(*! B4 1 4! 37(,0)(! T4 \ 4! 5,/??W 1 0::0/ 6 *! 54T4! 5,=(6! <454T!
P%R"VQ!iO*')+!506 =:/,07+!87(!,.)!YHC(7,.) (6 /:!E0o=)8/9,07+!78!O:?!),7!B+)(/)!3=):*!/+C!
- .) 609/:*k!J(*)+,)C!/,!,.)!%R"V!/++=/:!OL - .>!97+8)()+9)!0+!5/+!3(/+90*97! - O4!

!
"U4!S/0. /+! TC4!>4!/ +C!<)+*7+!_4!P%R"MQ!iS)/9,7(!506 =:/,07+!78!J . 7,79/,/:H,09! - /([7+!207X0C)!
- 7+G)(*07+!<H!5/,=(/,)C!5,)/ 6!7G)(!_0 \ %k!J(*)+,)C!/,!,.)!%R"M!/++=/:!OL - .>!97+8)()+9)!
0+!5/,:!E/A)! - 0,H!PJ(*)+,)C![H! TC4!>(8/+!S/0. /+WJ . 2!5,=C)+,Q!

!
"M4!O?[(7A7! \ 4! T7::/)/0/+! f 4!Y7: 6)*! 1 4!<)+*7+!_4@4!P%R"MQ!i \ +:0+)!S/ 6 /+!5 ')9,(7*97 'H!
O+/:H*0*_)9. +0o=)!87(! T7+0,7(0+?! <078=):!S)/9,07+! F*0+?! Y,)(7?)+)7=*!E/H)()C! 27=[:)!
YHC(7X0C)! - /,/:H*,k! J(*)+,)C! /,!,.)! %R"M! /++=/:! OL - .>! 97+8)()+9)!0+! 5/,:! E/A)! - 0,H!
PJ(*)+,)C![H! \ [7A7()!O?[(7A7WJ . 2!5,=C)+,Q!

!
"K4! J0:)(! f 4! <)(++/ZZ/+0! J4! </.(06! - 4! <)+*7+!_4@4! P%R"KQ! i `7G):! - /,/:H*,*! 87(!
J . 7,79/,/:H,09! - 7+G)(*07+! 78! - \ \$Y

% "4! J0:)(! f 4! /+C! <)+*7+! ! _4@4!P%R"NQ! i 5):8WO**) 6 [:H! 78! 5 ')90809! ` /+7+*, (=9,=() *! 7+! - /, /: H, 09!
5= ' ' 7(, *! F*0+?! S)G)(*! T 09)::)*k! J(*)+), C! /, !, .)! "R ! O++= /: ! OL - . >! 57=, . D)*, ! J(79)**!
_)9 . +7: 7?H! - 7+8)(+9)! 0+! B /: G)*, 7+! ! _ b ! P J(*)+), C! [H! f / (0* . 6 /! J0:)(WJ . 2! 5, =C)+, Q!

!

%%4! S7H! ! O0* . D / (H / ! T / C = ? =: / ! ! O4 - 454! ! / +C! <)+*7+! ! _4@4!P%R%UQ! iLC)+, 0809 /, 07+! 78! ` 7+W Oo=) 7=*!
57: G)+, *! 87(! J / 0(0+?! D0, . ! O 6 0+)W, H')! - \ %! - / ' , = () ! 5H*,) 6 *k! L+,) (+ /, 07+ /: ! 2 / H! 78! 1 7 6)+!
/ +C! B0(: *! 0+! 590)+9)! ! <) / = 6 7+, ! ! _ b ! P J(*)+), C! [H! O0* . D / (H / ! S 7H! & ! T 5! 5, =C)+, Q!

!

!

, % " " . ((! !) " ! " D ! /) 2 % /) 4 / - * + - (!) 0 (+ * ! ' () / ! 0 ! - / , 1)

)

S7X / ++)! J / C: / +! P T 5Q! i 5H+, .) *0*! / +C! - . / (/ 9,) (0Z /, 07+! 78! E / H) () C! 2 7 = [:) ! YHC (7X0C) *k!
2) 8) + C) C! %R "R!

!

- . / (:) +) _ / H: 7 (P T 5Q! i > :) 9, (79 .) 6 09 / : ! L 6 ') C / + 9) ! 5 ') 9, (7 * 9 7 ' 09! - . / (/ 9,) (0Z /, 07+! 78! - / ([7+!
- 7 / ,) C! 5 =: 87 + / ,) C! J 7: H, ,) (/ W 3 =: 7 (7) , . H:) +) ! < / *) C! L 7+! - 7 + C = 9, 7 (k! 2) 8) + C) C! %R "R!

!

> 6 () ! O, / [] H! P T 5Q! i 3 =: 7 () * 9) +, ! > :) 9, (7 * ' = +! J 7: H G 0 + H: ! O: 97 . 7: ! ` / + 797 6 ' 7 * 0,) ! 30 [] (*! D0, . !
- C 5) x p + 5! c = / +, = 6 ! 2 7, *k! 2) 8) + C) C! %R "R" !

!

@ = (0! 5): 0? ! P J . 2 Q! i - 7 6 [= *, 07+! 5H+, .) *0*! 78! _ .) (6 7):) 9, (09! \ X0C) *k! 2) 8) + C) C! %R "R" !

!

O0* . / ! E) . ! P J . 2 Q! i 5, = CH! J / (/ 6) ,) (*! - 7+, (7: : 0+?! 2 (7 ' ! O C .) *07+!, 7! 5 = (8 / 9) *k! 2) 8) + C) C! T / H!
%R "R" !

!

@ / . = / ! p . = ! P J . 2 Q! i L+,) ? (/ ,) C! ` / + 797 6 ' 7 * 0,) *! _ 7 D / (C! > :) 9, (79 .) 6 09 / : ! > +) (? H! 5, 7 (/ ?) ! / + C!
> + G 0 (7 + 6) +, / : ! S) 6) C 0 / , 07+ k! 2) 8) + C) C! %R "R" V!

!

J () , 0! B / + ? / C . / (/ +! P J . 2 Q! i 5 = *, / 0+ / [0: 0, H! 78! 5H+ ? / *! - 7+G) (*07+! _) 9 . + 7: 7 ? 0) *k! 2) 8) + C) C! T / H!
%R "R" V!

!

f / 0! E 0 / + ? ! p .) + ? ! P J . 2 Q! i L + 97 (' 7 (/ , 0+ ? ! 5 = *, / 0+ / [0: 0, H! 0+, 7!, .) ! > / (: H! 2) *0? + 15, / ?) ! 78! - .) 6 09 / : !
J (79) ** W S) / 9, 07+ ! J / , . D / H! 5):) 9, 07+ k! 2) 8) + C) C! T / H! %R "R" V!

!

5 (=, . 0! _ / C / A / 6 / : : / ! P T 5Q! i J 7: H / + 0: 0+) ! 5, / [0: 0Z) C! T / ? +) , 09! ` / + 7 ' / (, 09:) *! S) 0+ 87 (9) C! > ' 7XH!
` / + 797 6 ' 7 * 0,) *! / + C! 3: / 6) ! S) , / (C / +, ! > ' 7XH! S) *0+! ` / + 797 6 ' 7 * 0,) *k! 2) 8) + C) C! O = ? ! %R "R" V!

!

< / [/ A! S / 80) ! ` 0 / ! P T 5Q! i B / *! 5) ' / (/ , 7 (! T 0* , ! > : 0 6 0+ / , 7 (! 1 0 () *W E 0o = 0C! O C .) *07+! F *0+ ? ! , .) !
-) +, (08 = ? / : ! O C .) *07+! < / : / + 9) k! 2) 8) + C) C! 2) 9! %R "R" V!

!

<) : 0+ C / ! T 7: 0+ / ! P T 5Q! i O: A / : 0! J (7 6 7 ,) C! T 7: H [C] + = 6 ! 2 0 * =: 80C) ! < / *) C! - / , /: H*, *! 2) G): 7 ' 6) +, !
/ + C! - . / (/ 9,) (0Z /, 07+! 87 (! O: 97 . 7: ! 5H+, .) *0*! 8 (7 6 ! - / ([7+! T 7+ 7X0C) ! / + C! YHC (? ?) + k! 2) 8) + C) C!
2) 9! %R "R" V!

!

_ * / O W ` / +! T / 0! P T 5Q! i O! T 7C): 0+ ? ! / + C! > X ') (0 6) +, / : ! 5, = CH! 78!, .) ! f 0+) , 09*! 78! L+, (/ 9): =: / (!
5H+, .) *0*! 78! 50: G) (! ` / + 7 ' / (, 09:) *! F *0+ ? ! - . : / 6 HC 7 6 7+ / *! S) 0+ . / (C 00k! 2) 8) + C) C! @ = +) ! %R "R" #!

!

% " !

!
T7+0o=)! 1 0:[=(+!PJ . 2Q!i T), . /+!) \ X0C/,07+! \ G)(!/+C!5=:8=(!L+,)(/9,07+*!D0, .!JCSJ,!
<06),/::09! - /,/:H*,*k!2)8)+C)C!2)9!%R"#!PF+0G)(*0,H!78!Y7=* ,7+Q!
!
T):/+0)!Y/Z:),,!PJ . 2Q!i f 0+),09!/+C! T)9 . /+0*,09!5,=CH!78! - \ !/+C!YHC(79/([7+! \ X0C/,07+!/+C!
` \ X! \ X0C/,07+!/+C!S)C=9,07+! \ G)(!J,WJC! - /,/:H*,*k!2)8)+C)C!2)9!%R"#!PF+0G)(*0,H!78!
Y7=* ,7+Q!
!
m/+!3/+?!PJ . 2Q!i J(79)**!5/8),H!O' ':09/,07+*!78!J:/+!,2 - 5!2 /, /!/+C! \ ')(/ ,0+?!J(79)C=())!
O+/:H*0*!D0, .!S0*A!O**)** 6)+,k!2)8)+C)C!O=?!%R"N!
!
OC/(.*!</8/+!PJ . 2Q!i ` /+7 6 /,)(0/:*j!5H+, .) *0*!15=* ,/0+/[0:0,H!/+C!O' ':09/,07+*k!2)8)+C)C!
O=?!%R" I!
!
5 .0* .0(!f = 6 /(!PJ . 2Q!i 5=* ,/0+/[:)!T09(7D/G)!5H+, .) *0*!78!L+7(?/+09!` /+7' /,(09:)*!/+C!_ .)0(!
O' ':09/,07+k!2)8)+C)C!O=?!%R" I!
!
O* .0?=(!S/ . 6 /+!PJ . 2Q!i <07*H+, .),09! - 7+G)(*07+!78!O? !,7! - 7::70C/::H!5,/[:)!OB !
` /+7' /,(09:)*![H! j!O! T)9 . /+0*,09! a0)D!78!, .)!E0? . ,WL+C=9)C!
5H+, .) *0*!J(79)**!/+C!, .)!L 6 ' /9,!78!, .)!>X,(/9)::=:/(!J7:H 6)(09!5=[*,/+9)*!7+!, .)!5,/[0:0,H!78!
, .)!` /+7' /,(09:)*k!2)8)+C)C!2)9!%R" I!
!
O+0A),!f . /C)!i - 7+C0,07+! T7+0,7(0+?!D0, .!T /?+),09!5)+*7(*!87(!J(7?+7*0*!/+C!S)C=9)C!
T)9 . /+0* 6!2)G):7' 6)+,!87(!O 6 6 7+0/W` /,=(/:!B/*! - 7W30(0+?k!2)8)+C)C! T /H!%R% " !
!
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