

!*+, - (.% '! !

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

<454!W! - .) 609/!:!>+?0+)) (0+?!%RRR!! T0**0**0' '0!5,/,)!F+0G)(*0,H!

T454!W! - .) 609/!:!>+?0+)) (0+?!%RRV!! T0**0**0' '0!5,/,)!F+0G)(*0,H!

J.424!W! - .) 609/!:!>+?0+)) (0+?!%RRN!! T0**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, * [=(? . !!JO!
!
%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"#!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,:)!iT =:,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 60Z/,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\$\$'=[*4/9*47(?SC70\$"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\$7+;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\$DD4*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\$CX4C7047(?\$ "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\$7+;0+):0[(/H4D0:)H497 6 \$C70\$ / [*\$ "R4"RR%\$9 []+4%R"KRRR%K!

!

!

""

%M4!J0:)(1! f 4! 1 /,,)(*!@4!DA?EF?) (65G!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!&! i5) ' / (/ ,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! OC*7(' ,07+! T / ,)(0/:!*! 87(!,.)! 2) .HC(/,07+! 78!
>,. /+7:k! &! J()*+),)C! ()*=,!* 8(7 6! 6 / *,)(^*!,.) *0*! '(7e)9,! /,!,.)! %RRV! O++=/:! OL - 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!<(70:)(!E0,,)(k!&!J()*+),)C! / ,!,.)!%RRU!
O++=/:!OL - Y>!97+8)(+9)!0+!O=*,0+! _ b4!

!

N4! ! "I! ` 7G) 6 [](!%RRM!&! i J(7C=9,07+!78!<07C0)*):!8(7 6!E0' 0CWS09 . !L+C=*(,0/:! 1 / *,)!5,)/ 6 *k!&!
J()*+),)C! / ,!,.)!%RRM!O++=/:!OL - Y>!97+8)(+9)!0+! - 0+90++ / ,0! \ Y4!

!

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+?10+!J .0:/C):' .0/!!JO4!

!

VR4!I!` 7G!%R"R!&!i J(7C=9,07+!78!<07C0)*):!F*0+?!20 6), .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):8W0**) 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) +, 0!
!
!

%%4! S7H! ! O0* . D / (H /! T / C=?=: /! ! O4 - 454! ! /+C! <)+*7+! ! _4@4! P%R%UQ! i LC) +, 0809 /, 07+! 78! ` 7+W0o=) 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 /! S7H! &! T 5! 5, =C) +, 0!
!
!
!

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

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

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

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

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

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

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

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

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

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

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

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