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"#\$%&' (#%)!* +!, -. /!0!2-34!" /560, 7/68!-, 9!&:. !-!1/, 0; 6!</44; =!->!>5/!?! /, >/6!<; 6!

26/109/, >0-4!\$0!>; 6+!->!@; 3>5/6, !* />5; 90!>!A, 0B/610>+C!

D' EFF@)!G, 9!&:. !D/, !D, ; >>1C!&!-. !-!40/3>/, -, >!H; 4; , /48!6/>06/98!<6; . !>5/!A@C!G06! ; 6H/8!

-, 9!=044!J/!>-4K0, 7!>; 9-+!-J; 3>!1; . /!; <! . +!/LM/60/, H/1!-1!-!90M4; . ->!0, !>5/!

<; 6. /6!@; B0/>!A, 0; , C!

"#\$%&' (#%)!?!- , !+; 3!J/70, !J+!9/1H60J0, 7!+; 36!M6; </110; , -4!J-HK76; 3, 9!-, 9!5; =!+; 3!

J/H-. /!0, >/6/1>/9!0, !%3110-!-, 9!?! /, >6-4!G10-N!

D' EFF@)!0/-5C!&!-H>3-44+!J/H-. /!0, >/6/1>/9!0, !%3110-8!#36-10-8!-, 9!?! /, >6-4!G10-!/B/, !0, !

/4/. /, >-6+!1H5; ; 4!J/H-31/!. +!<->5/6!=-1!-!M6; </11; 6!->!>5/!>0. /!0, !>5/!P; 3010-, -!

@>->/!A, 0B/610>+!1+!>/ . !Q->! ' ; 6>5=/1>/6, !@>->/!A, 0B/610>+!0, !' ->H50>; H5/1R8!-, 9!5/!

-H>3-44+!>6; >/!501!. -1>/6:1!>5/101!; , !>5/!6/4->0; , 1!J/>=//, !>5/!@; B0/>!A, 0; , !-, 9!

?50, -8!2/; M4/:1!%/M3J40H!; <!?50, -C!!

"#\$%&' (#%)!@; !+; 3!76/=!3M!0, !-, !-H-9/. 0H!/, B06; , . /, >!-!40>>4/!J0>C!!

D' EFF@)!0/18!B/6+!. 3H5!1; C!GH>3-44+8!. +!<->5/6!=-1!-, 9!6/>06/9!-1!-!M6; </11; 6!0, !

P; 3010-, -C!* +!. ; >5/6!=-1!-, !/4/. /, >-6+!1H5; ; 4!>/-H5/6!0, !, ; 6>5/6, !P; 3010-, -C!!

"#\$%&' (#%)!G, 9!5; =!909!+; 36!M6; </110; , -4!J-HK76; 3, 98!H-6//6!1>-6>!-, 9!9/B/4; MN!

D' EFF@)!* +!<061>!M6; </110; , -4!0, >/6-H>0; , !; 6!1>39+!; <!%3110-!-H>3-44+!>-1!-1!-!H-9/>!->!>5/!

A@C!G06! ; 6H/!GH-9/. +C!G, 98!-1!+; 3!. -+!K, ; =8!-44!H-9/>1!-6/!6/S306/9!>; !>-K/!-!

<; 6/07, !4-, 73-7/!C!* +!<->5/6!5-9!-46/-9+!/ , H; 36-7/9!. /T 5/!1-098!U0; 3!H-, !>-K/!

! 6/, H5!; 6!@M-, 0158!QVV)VW)VVR!40K/!. -, +8!; 6! (/6. -, C!" 3>8X!5/!1-098!U=5+!9; , >!+; 3!

H5-44/, 7/!+; 361/4!>- , 9!>-K/!/0>5/6!%3110-, !; 6!?50, /1/8!<; 6!/L-. M4/N!&! . 075>!H; . /!



0, !5-, 9+!4->/6!; , CX!G, 98!-!10, !. ; 1>!>50, 718!. +!<->5/6!=-!B/6+!H; 66/H>!>5->!0>!

H/6>-0, 4+!5/4M/9!. /!0, !. +!M6; </110; , -4!H-6//6!-, 9!. +!G06!I ; 6H/!H-6//6!4->/6!; , C!

"#\$%&' (#%)!G, 9!>5/,



F6-, 14->0; , 1CX!G, 9!=5->! = /!909! = -! = /! = ; 3498!0, !1; . /!H-1/18!/B/, !13J1H60J/!>; !

@; B0/>!. 040>-6+!M3J40H->0; , 18!-, 9! = /! = ; 349!6/-9! = 5->!>5/+! = /6/!15; =0, 7!>



9-+8!&1-09!>; !?; 4; , /4!P; >d8!&! =; 349!40K/!B/6+!. 3H5!>; !J/H; . /!-, !G06!I ; 6H/!-6/-!
 1M/H0-401>!-, 9!7; !>; !>5/!1M/H0-401>!M6; 76-. 8!=50H5!=-1!-!>=; [+/-6!. -1>/6:1!M6; 76-. !
 ->!>5/!' -B-4!2; 1>76-93->!/!@H5; ; 48!<; 44; =/9!J+!>5/!G6. +:1!Z/</, 1/!P-, 73-7/!
 &, 1>0>3>/!0, !* ; , >/6/+c!@; !&! =-1!<; 6>3, ->/8!-, 9!5/!1- =!>5->!&!7; >!>5->!; MM; 6>3, 0>+c!
 @; 8!<6; . !\]_]!>; !\]]\8!&!J/H-. /!-!@; B0/>!1M/H0-401>c!

G, 9!1; . /!; <!+; 36!B0/= /6!M6; J-J4+!-MM6/H0->/!>5018!>5->!-</6!>5/!G06!I ; 6H/!
 . -9/!. /!-!@; B0/>!1M/H0-401>8! =5->!909!>5/+!9; !=0>5!. /!J3>!-1107, /9!. /!<; 6!-!; , /[
 +/-6!6/. ; >/!Q>; 36R!0, !>5/!%/M3J40H!; <!D; 6/-8!1; . /=5/6/!=5/6/!&!5-9!-J1; 43>/4+!, ; !
 1M/H0-4>+!>6-0, 0, 7c!@; !>5->:1!0, >/, 9/9!-1!-!M; 40>/!e-J!->!Q>5/R!G06!I ; 6H/!-, 9!
 7; B/6, . /, >!0, !7/, /6-4c!!

" 3>!/B/6+!>0. /!&!7; >!-!H5-, H/!>; !>-4K!>; !-, +J; 9+!G06!I ; 6H/!H-6//6[=01/8!&!
 =; 349!M3>!0, !-!J098!UZ; , >!<; 67/>8!&!1M/-K!%3110-, c!&!1M/-K!%3110-, !=/44c!&:. !-, !-6/-!
 1M/H0-401>c!&! =; 349!40K/!B/6+!. 3H5!>; !7; !>; !* ; 1H; =!; 6!1; . /M4-H/!/41/!0, !>5/!<; 6. /6!
 @; B0/>!A, 0; , cX!G, 9!/B/, >3-44+8!&!7; >!>5->!H5-, H/c!QVV)\V)VVR!&, !\]]b8!-</6!&!H-. /!
 J-HK!<6; . !D; 6/-8!&!7; >!>5/!H5-, H/!>; !J/!-, !-1101>- , >!-06!->>-H5g!0, !* ; 1H; =c!!

' ; =8!0, !. +!M6/M-6->0; , !>0. /8!-, 9!-1!M-6>!; <!. +!->>-H5g!>6-0, 0, 7!<; 6!
 * ; 1H; =8!0!>36, /9!; 3>!>5->!>5/!G06!I ; 6H/!, //9/9!-!>/ . M; 6-6+!M/61; , !>; !7; !>; !A@c!
 #. J-11+!0, !* 0, 1K8!" /4-631c!G, 9!&!e31>!5-MM/, /9!>; !J/!=-4K0, 7!>56; 375!>5/!
 -9. 0, 01>6->0B/!; <<0H/!=5/, !>5/!. -, !0, !H5-. 2406015\V\0B/!0B/!0B1. 92485 2460. 2-0. 4(!-1)0. 2(>T



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026/109/, >R!@5



"#\$%&' (#%)!@; !>5/, !+; 3!7; !<6; . !* 0, 1K!>; !* ; 1H; =C!Y 5->!=-1!* ; 1H; =!40K/!->!>5->!>0. /8!
 -, 9!5; =!909!0>!H; . M-6/!>; !+; 36!>0. /!0, !* 0, 1KN!!

D' EFF@)!F5/6/!/=6/!-!4; >!; <!10. 04-60>0/18!J3>!>5/!M; 40>0H-4!-, 9!. 040>-6+!->. ; 1M5/6/!0, !
 * ; 1H; =!=-1!H/6>-0, 4+!1; . /=5->!90<</6/, >!>5-, !0, !* 0, 1K!G>!>5/!>0. /8!-1!+; 3!
 K, ; =8!=5/, !&!<061>!7; >!>5/6/8!" ; 601!0/4>10, !=-1!1>044!0, !H5-67/C!G, 9!" ; 601!0/4>10, !
 H/6>-0, 4+!=-1!0VV)_VVR!. ; 6/!40K/4+!>; !H; ; M/6->!/!=0>5!/B/, !' GFE!-, 9!=0>5!>5/!
 A, 0>/9!@>->/1!>5-, !501!13HH/11; 6!23>0, !=; 349!J/H; . /C!G, 9!1; !>5/6/!=-1!->0. /!
 >5->!0>!4; ; K/9!40K/!>5/6/!=-1!-!H5-, H/!>; !5-B/!1; . /!->!4/-1>9/. ; H6->0H[4/-, 0, 7!
 7; B/6, . /, >!-, 9!M; 40H0/1!<6; . !>5/!%3110-, !!0, !>5/06!; =, !H; 3, >6+C!#B/, !->!>5/!>0. /8!
 &!5-9!. +!9; 3J>1!>5->!0!>=; 349!0, !>5/!/ , 9!>36, !; 3>!=/448!J3>!<; 6!-!=504/!0>!4; ; K/9!
 40K/!0>!. 075>C!!

"#\$%&' (#%)!G, 9!=5->!=-1!* ; 1H; =!40K/!->!>5->!>0. /!-1!<-6!-1!H0>+!1/6B0H/18!40B0, 7!
 H; , 90>0; , 18!>5->!>+M/!; <!>50, 7N!

D' EFF@)!* +!; =, !M/6!; , -4!40</!=-1!B/6+!90<</6/, >!<6; . !. -, +!G. /60H-, !90M4; . ->!10, !>5->!
 &!, /B/6!40B/9!; , !>5/!90M4; . ->0H!H; . M; 3, 98!>5/!/. J-11+!H; . M; 3, 9C!&!40B/9!-=-+!
 <6; . !>5/!/. J-11+C!G>!<061>8!&!=-1!, ; >!136/!&!>=; 349!40K/!>5->8!J3>!-1!0>!>36, /9!; 3>8!&!
 B/6+!. 3H5!/, e; +/9!>5->C!&!40B/9!0, !-, !-M-6>. /, >!J30490, 7!; 3>!; , !D3>3d; B1K00!
 26; 1M/K>!; , 4+!-!H; 3M4/!; <! . 04/1!<6; . !>5/!/. J-11+8!, ; >!/B/, !S30>/!>=; !. 04/1C!&!>=-1!
 -, !-M-6>. /, >!H; . M4/L!>5->!=-1!<; 6!/0>5/6!90M4; . ->!1!; 6!J310, /11!M/; M4/C!G, 9!1; !0>!

83-Ka0N!(..C-QRR5 5 5 6' (&.(&4 (#3-)6#\$:ROPO<RPWR 4 B.(-S&1/S4,- '#1')C.,#1-S/)%&.)SS3--,&R 4 B.(S<<SC)#C9)-S3@S&,1)S



!>5/6!5-, 98!&K, /!=5/, /B/6!&!
 =-!19/-40, 7!=0>5!* 0, 01>6+!; <!Z/</, 1/!M/; M4/!; 6!%3110-, !. 040>-6+8!>5/+!=/6/!>5/6/!
 -, 9!>5/+!=/6/!7; 0, 7!>; !-H>10, !>5/06!; =, !1/4<[0, >/6/1>8!-, 9!&!<344+!/LM/H>/9!>5->C!!
 "#\$%&' (#%)!@>-+0, 7!; , !>5->!>; M0H8!909!+; 3!/B/6!5-B/!-!63, [0, !=0>5!>5/!4; H-4!M; 40H/!; 6!
 -, +>50, 7!=5/6/!>5/+!>60/9!>; !7/>!+; 3!0, !-!>; 375!10>3->0; , !; 6!-, +>50, 7!40K/!>5->N!
 D' EFF@)!F5/!15; 6>!-, 1=/6! =; 349!J/!+/!8!J3>! , ;>50, 7!>5->! =-!1, ;>!1; . />50, 7!>5->!&!
 H; 349!5-, 94/!->! . +!4/B/4C!F5/6/! =/6/!-!H; 3M4/!; <!>0. /1!>5->!&!7; >!M344/9!; B/6C !Y /!
 5-9!90M4; . ->0H!M4->/1C!F5/+!K, /!=!/L-H>4+! =5; !=!/ =/6/!J/H-31/! =!/ =/6/!6/S306/9!
 >; !>6-B/4!0, !H/6>-0, !B/50H4/1! =0>5!90M4; . ->0H!M4->/1C!@; !<6; . !>0. /!>; !>0. /8!/B/, !>5/!
 4; =/6[4/B/4!M; 40H/8!>5/! 8! =; 349!1//8!U\$/+8!+; 3:6/!-!90M4; . ->C!&. !7; 0, 7!>; !
 15; =!+; 3! =5; :1!J; 11CX!G, 9!+; 3! =; 349!63, !0, >; !-!10>3->0; , !40K/!>5->C!G>1!; . /!M; 0, >8!
 -<0/6!>6+0, 7!>; !J/!H0B04!>; !50. T -4. ; 1>!-4=-+1!-!50. h!&!>50, K!&!6/. /. J/6!; , /!
 </ . -4/T 0<!&!5-9!>; 8!&! =; 349!M344!; 3>!. +!90M4; . ->0H!M-11M; 6>!-, 9!1-+8!UP; ; K8!+; 3!
 /0>5/6!4/>!. /!7; !; 6!H-44!>5/!G. /60H-, !/. J-11+8!-, 9!>5/+;44!H; . /!>-4K!>; !+; 3CX!" 3>!&
 -4=-+1!5-, 94/9!0>!J/<; 6/!&!5-9!>; !H-44!>5/!/ . J-11+!-, 9!-1K!<; 6!>5/06!-1101>- , H/C!!
 "#\$%&' (#%)!i 501!M/60; 9!0, !%3110-!0!6/. /. J/6/9!; ; =!-1!>501!>/660J4/!/H; , ; . 0H!901-1>/6C!
 Y 5->! =/6/!>5/!40B0, 7!H; , 90>0; , 1!40K/!<; 6!-B/6-7/!%3110-, 1!>5/6/N!QVV)Wb)VVR!Z09!
 +; 3!1//!-!4; >!; <!15; 6>-7/1!; 6!-, +!>+M/!; <!>50, 7!40K/!>5->N!
 D' EFF@)!&!H/6>-0, 4+11- =!15; 6>-7/1C!&! =-1!H-6/<34!0, !5; =!&!0, >/6-H>/9! =0>5!H; . . . ; , T &!
 9; , >!. /-, !>5->!-!19/>60. /, >-48!J3>! =0>5!-B/6-7/T !%3110-, !M/; M4/!J/H-31/!&!909!

! ; \$6! d 1#..-!&B-L,1.)1.,#1&99B!:#.#!C399)/!#)\$AN!4)&1,1:!.(&!.())!_#-'#5!C#9,')!C399)/!(,4!#*)\$!@1#5,1:!.(&!.())!5&-!&!/,C9#4&.A!1#!.!(&!.())!5&-!.\$B,1:!.#!:.).!C399)/!#*)\$6!!



"#\$%&' (#%)!Y 5->!0113/1!909!+; 3!=; 6K!; , !=504/!+; 3!=/6/!>5/6/8!J3>!-41; !=5->!=/6/!>5/!



! ?5/6, ; . +690, C!\$/!=-1!K0, 9!; <!>5/!H; 3, >/6M-6>!>; !>5/!AC@C!>5/, !j 0H/!26/109/, >!G4!
 (; 6/C G, 9!>5/+!5-9!-!1/60/1!; <!. //>0, 718!5/49!. -0, 4+!0, !* ; 1H; =8!>5->!=/6/!>5/!1; [
 H-44/9!(; 6/[?5/6, ; . +690, !>-4K1C!G, 9!-!13J1/>!; <!>5->!J/H-. /!=5->!=-1!H-44/9!
 >5/->/6!. 01104/!9/</, 1/C!G, 9!&!J/H-. /!>5/!M; 0, >!M/61; , !<; 6!; 36!; <<0H/!-H>3-44+!<; 6!
 J; >5!; <!>5; 1/C!&T -7-0, 8!<6; . !. +!B-, >-7/!M; 0, >8!-, 9!, ; , /!; <!>5; 1/!5075[6-, K0, 7!
 M/; M4/! =; 349!/B/, !6/. /. J/6!. /!M6; J-J4+T J3>!&!5-9!>5/!<-1H0, ->0, 7!/LM/60/, H/!
 ; <!. //>0, 7!260. /!* 0, 01>/6! ?5/6, ; . +690, C!&!1M; K/!1/B/6-4!>0. /!1; , /[; , [; , /!=0>5!
 j 0H/!26/109/, >!(< 6/T <; 3, 9!50. !>; !J/!-!B/6+!-<<-J4/!-, 9!B/6+!-MM6; -H5-J4/!
 M/61; , 8!J+!>5/! =-+C!&!=-1!, ; >!-!>6-0, /9!>6-, 14->; 68!J3>!&! =; 349!; <>/, !J/!31/9!
 3, ; <<0H0-44+!-1!->6-, 14->; 68!/B/, !-, !0, >/6M6/>/6C O; 3!5-B/!>; !J/!B/6+!H-6/<34!; <!>5->8!
 J/H-31/!. +!%3110-, !->!>5/!>0. /!=-1!B/6+!7; ; 98!J3>!-7-0, 8!&! =-1!, ; >!-!>6-0, /9!
 0, >/6M6/>/6C!F5/6/! =/6/!-!H; 3M4/!; <!>0. /18!-, 9!&! =-1!74-9!>; !9; !0>8!J3>!j 0H/!
 26/109/, >!(< 6/!-H>3-44+!-1K/9!. /!-!H; 3M4/!; <!>0. /1!>; !>6-, 14->/!<; 6!50. C!G, 9!
 <; 6>3, ->/4+!<; 6!. /8!&!909!, ; >!/. J-66-11!. +1/4C * ; 6/!0. M; 6>-, >4+8!&!909!, ; >!
 /. J-66-11!>5/!A, 0>/9!&>->/1C!&!5-MM/, /9!>; !6/. /. J/6!->!>5/!6075>!>0. /!-44!>5/!
 90M4; . ->0H!4-, 73-7/!>5->!&!, //9/98!>5/!>/6. 1!>5->!&!, //9/98!-, 9!909!, ; >!. -K/!-!
 <; ; 4!; <!. +1/4<8!<; 6! =50H5!&! =-1!B/6+!QVV) `W)VVR!74-9C!G, 9!-7-0, 8!G4!(< 6/! =; 349!, ; >!
 6/. /. J/6!. /!<6; . !G9-. 8!J3>!0>! =-1!->1H0, ->0, 7!/LM/60/, H/!<; 6!-!1>044[H-M>-0, !0, !
 >5/!G06!! ; 6H/!>; !5-B/!-!H5-, H/!>; !. //>!>5/1/!7/, >4/. /, C!

G, 9!>5/, !<; 6!>5/!>5/->/6!. 01104/!9/</, 1/8!0! =-1!>5/!AC@C!WV>5!G06!! ; 6H/!>5->!
 =-1!>5/!. -0, !3, 0!>5->! =-1!0, B; 4B/9!<6; . !>5/!AC@C!109/8!-, 9!&!7; >!>; !J/!>5/!1H; 6!<
 <; 6!>5/!WV>5!G06!! ; 6H/!9/4/7->0; , !>5->!B010>/9!1; . /!; <!>5/!&>6->/70H!%; HK/>!1 ; 6H/1!



J-1/1!0, !%3110-!-, 9!7; >!-!H5-, H/!>; !7; !0, 109/!>5/06!. 01104/!104; !H; . . -, 9!H/, >/618!
 7; >!-!H5-, H/!>; !1//!1; . /!; <!>5/06!104; !10, !M/61; , C!&!-41; !7; >!-!H5-, H/!>; !1//!1; . /!; <!>
 >5/06!1/H360>+8!=50H5!=-1!0, !1; . /!H-1/1!6->5/6!-4-6. 0, 7!J/H-31/!&&J; >5!-1!-!H-9/>!
 -, 9!4->/6!-1!-, !; <<0H/68!5-B/!B010>/98!J//, !-!73/1>!->8!A@C!G06!I ; 6H/!. 01104/!
 H; . M4/L/18!-, 9!4/>!. /!e31>1-+!>5->!>5/!A@C!1/H360>+!=-1!. 3H58!. 3H5!J/>>/6!>5-, !
 =5->!&!1-=-!->!1; . /!%3110-, !<-H040>0/1C!

"#\$%&' (#%)!G>!>501!M; 0, >8!=5->!=-1!>5/!A@C!>6+0, 7!>; !9; !=0>5!. 01104/!9/</, 1/!0, !>5/!
 . 09[, 0, />0/1N!!

D' EFF@)!F5/!A@C!109/!=-1!>6+0, 7!>; !7/>!-1!. 3H5!H; ; M/6->0; , !-1!M; 110J4/!<6; . !>5/!
 %3110-, !I /9/6->0; , C!&!H/6>-0, 4+!6/-40d/98!-, 9!&!>50, K!QVV)`b)VVR!>5->!>5/!A@C!
 , /7; >0->; 61!6/-40d/98!>5->!>5/!%3110-, 1!=/6/!6/-44+8!/B/, !->!>5->!M; 0, >8!/B/, !3, 9/6!
 O/4>10, 8!=/6/!1>044!; , 4+!=0440, 7!>; !7; !1; !<-6!-1!>5/06!H; ; M/6->0; , !=-1!H; , H/6, /9C!



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D' EFF@)!&!7; >!-!H5-, H/!>; !1M/-K!=0>5!50. !-!</=!>0. /18!J3>!0>!=-1!, /B/68!=0>5!50. 8!; , !-!
 6/-44+!0, <; 6. -4!J-101C!@; !>5/!; , 4+!>0. /1!>5->!&!=-1!6/-44+!-6; 3, 9!50. !=-1!=5/, !
 <; 6. -4!>-4K1!-, 9!, /7; >0->0; , 1!QVV)_)VVRI!="/6/!7; 0, 7!; , T =5/, !+; 3! =; 349!/LM/H>!
 50. !>; !5-B/!501!U; <<0H0-4!<-H/CX!!

E, !>5/!; >5/6!5-, 98!&!7; >!-!H5-, H/!>; !J/!=0>5!j 0H/!26/109/, >!(<; 6/!; , !-!
 H; 3M4/!; <!0, <; 6. -4!; HH-10; , 1!-, 9!/B/, !7; >!-!H5-, H/!>; !H50>[H5->!>0>5!50. !-!</=!
 >0. /18!=50H5!-7-0, !=-1!<-1H0, ->0, 7!>; !. /C!@; !&!909, :>!7/>!-!H5-, H/!6/-44+!>; !-11/11!
 ?5/6, ; . +690, !-1!<-6!-1!501!0, <; 6. -4!1/4<C!

"#\$%&' (#%)!Y 5->!-J; 3>!501!M; 10>0; , !0, !>5/!%3110-, !7; B/6, . /, >N!\$; =!0, <43/, >0-4! =; 349!
 +; 3!1-+!5/! =-1N!

D' EFF@)!G>!>5/!>0. /8!. +!0. M6/110; , !=-1!01!>5->!5/! =-1!S30>/! =/44[M4-H/9!-, 9!S30>/!
 M; =/6<34C!* +!0. M6/110; , !0, !4; ; K0, 7!J-HK!01!>5->8!<; 6!/L-. M4/8!-1!j 4-90. 06!23>0, !
 6; 1/!0, !1>->36/8!&!>50, K!>5->!H/6>-0, 4+!>?5/6, ; . +690, !-, 9!; >5/61!>5->! =/6/!
 H; . M/>0, 7!/ , >0>0/1!>; !23>0, !90. 0, 015/9!0, !1>6/, 7>5!-, 9!M; =/6C!

"#\$%&' (#%)!0; 3!. /, >0; , /9!>5/!2-6>, /6150M!<; 6!2/-H/8!-, 9!H-, !+; 3!/LM4-0, !-!40>4/!J0>!
 5; =!>5/!2-6>, /6150M!<; 6!2/-H/! =-1!6/4->/9!>; !' GFE!/LM-, 10; , N!\$; =!909!+; 3!1//!0>!
 0, !>5/!J6; -9/6!AC@C[%3110-, !6/4->0; , 150MN!!

D' EFF@)!EK-+C!"; >5!; <<0H0-44+!-, 9!3, ; <<0H0-44+8!>5/!2-6>, /6150M!<; 6!2/-H/! =-1!-! =-+!<; 6!
 >5/!A, 0>/9!@>->/1!-, 9!' GFE!>; !7/>!0!1!<; ; >!0, !>5/!9; ; 68!1; !>; !1M/-KC!G1!-, !/L-. M4/8!
 =5/, !&! =-1!0, !"/4-6318!&!0, >6; 93H/9!>5/!M; 110J040>+T &!>50, K!M/65-M1!/B/, !
 G. J-11-9; 6!@ =-6>d!J/<; 6/!. /T J/<; 6/!&!7; >!>5/6/T 5-9!0, >6; 93H/9!>5/!M; 110J040>+!

!

!

!



"#\$%&' (#%)!G, 9!&!>50, K!1; . /!1H5; 4-6!5-B/!M; 6>6-+/9!2-6>, /6150M!<; 6!2/-H/!-1!>501!

-4>/6, ->0B/!>5->!>5/!A@!7; B/6, . /, >H; 349!5-B/!0, B/1>/9!0, !. ; 6/!0, 1>/-9!; <!>5/!

M->5=-+!>; =-69!' GFE!/LM-, 10; , !Z09!+; 3!/B/6!1//!0>-1!-, !-4>/6, ->0B/8!; 6!<=6/!

>5/+!J; >5!90<</6/, >8!; 6T N!

D' EFF@)!&!73/11!&!909, :>1//!0!0, !>5->!M/61M/H>0B/8!J3>!&!H-, !1//!=5/6/!1; . /J; 9+!, ; >!

906/H>4+!0, B; 4B/9!<=; 349!5-B/!>5->!B0/=!&!9; , >!/B/, !K, ; =T &!H; 349!, ; >!901M3>/!

906/H>4+!0<!M/; M4/!J-HK!0, !Y -150, 7>; , !; 6!0, !; >5/6!' GFE!H-M0>-41!<=; 349!, ; >!5-B/!

>5->!1-. /!K0, 9!; <!; M0, 0; , !&:. !e31>!, ; >!M; 10>0B/!; , !>5->@!!

P/>:1!4; ; K!->!>5/!/L-. M4/!>5->!01!B/6+!. 3H5!0, !>5/!, /=1!, ; =8!AK6-0, /!&>!= -1!

B/6+!0, B; 4B/9!0, !2-6>, /6150M!<; 6!2/-H/!&@!-MM40/9!<; 6!<344!' GFE!. /. J/6150M!<G1!-!

6/>06/9!; <<0H/68!&!<=044!1-+8!&!<-. !136/!>5->!; , /!; <!>5/!6/-1; , 1!>5/!A, 0>/9!@>->/!<-, 9!

; >5/6!' GFE!H; 3, >60/1!5/10>->/9!>; !-MM6; B/!<344!. /. J/6150M!<=-1!>5/!</-6!>5->!

/L-H>4+!<=5->!1>-6>/9!5-MM/, 0, 7!0, !WV\b!-, 9!5-1!J//, !/LM-, 9/9!-4. ; 1!>-!+/-6!<7; !

, ; =!<=; 349!5-MM/, !QVV)bb)VVR!G, 9!-1!<-, +J; 9+!<=5; !5-1!1>390/9!2-6>, /6150M!<; 6!

2/-H/!<-, 9!' GFE!K, ; =18!>5/6/:



2/, 0, 134-!G, 9!>5/, !J-HK!J/+; , 9!>5->8!0, !VVV_8!%3110-!. 040>-604+!0, B-9/9!>5/!

?-3H31/1!H; 3, >6+!; <!(/; 670-8!-, 9!. -, +!(/; 670-, 1!90/9!0, !>5->!0, B-10; , C!!

@; 8!' GFE!/LM-, 10; , !5-1!-4=-+1!J//, !1; . />50, 7!>5->!>5/!A@!-, 9!; >5/6!

' GFE!H; 3, >60/1!=/6/!B/6+!0, >/6/1>/9!0, !M6; . ; >0, 78!J3>!>5/+!-41; !5-9!>; !H; , 109/6!



D' EFF@)!F5!/AC@c8!&!>50, K8!=-1!B/6+!. 3H5!<; 6!0>8!J3>! =0>5!1; . /!H; , H/6, 18!-1!&!e31>!

/LM6/11/98!-1!<-6!-1!AK6-0, /!0!H; , H/6, /9C! I 6; . !>5!/!%3110-, !M/6!M/H>0B/8!=5/, !&!

=-1!>5/6/8!<6; . !Q\]R] b!>; !:] f8!=0>5!%3110-!3, 9/6!O/4>10, T &.: !M6/>>+!136/!QVV)b_)VVR!

0, !50!5/-6>!; <!5/-6>1!>5->!"; 60!O/4>10, !=-1!; , 4+!=0440, 7!>; !7; !1; !<-6!-1! GFE!

/LM-, 10; , !=-1!H; , H/6, /9C!&!9; 3J>8!3, 4/11!5/!1-=-!-!1M/H0<0H!-9B-, >-7/!<; 6!%3110-!>; !

J/!M-6>!; <! GFE8!>5->!5/! =; 349!/B/6!5-B/!-76//9!<; 6!>5!/!%3110-, !! /9/6->0; , !>; !

<; 6. -44+!e; 0, !' GFEC!a31>8!>; !. /8!0>!J/77-61!>5/!0. -70, ->0; , C!" 3>! =5+!9; !+; 3!

9/</, 9!-7-0, 1!>5/!H; 3, >6+!>5->!0!+; 36!, 3. J/6[; , /!>56/->N!&!9; , >:K, ; =C!&:9!5-B/!

>; !7; !J-HK!0, !50!>; 6+8!-, 9!>5/6/!-6/!M6; J-J4+!; >5/6!/L-. M4/1!>5->!>36, /9!; 3>!; K-+C!!

#B/, !3, 9/6!O/4>10, 8!0, !. +!B0/=8!>5!/!%3110-, 1!H/6>-0, 4+!5-9!>5/06!. 0170B0, 718!

>5/06!40. 0>->0; , 1!-1!>; !5; =!<-6!>5/+! =; 349!H; ; M/6->/C!G, 9!4/>!. /!70B/!+; 3!-, !

/L-. M4/!>5->8!/B/, !=5/, !>5/+!1-09!>5/+! =/6/!H; ; M/6->0, 78!>5/6/! =/6/!1/B/6-4T

; K-+8!4/>!. /!J-HK!3M!-, 9!/LM4-0, !J60/<4+C!A@c!->>-H5g18!-, 9!; >5/6!H; 3, >60/1!:

->>-H5g18! =; 349!6/S3/1>!<; 6!B010>1!>; !%3110-, !. 040>-6+!J-1/18! =; 349!6/S3/1>!>; !

->>/, 9!>5!/!%3110-, !-06!15; =!>5->!31/9!>; !J/!M6; . ; >/98!. -+!1>044!J/8!; , !-, !-, , 3-4!

J-10!C!* -, +!>0. /18!->!4/-1!>-!9; d/, !>0. /18!&! =; 349!J/!; , !->6-B/4!>/-. C!Y /! =; 349!

M3!>; 7/>5/6!-, !0>0, /6-6+C!QVV)cV)VVR!Y /! =; 349!7; !<6; . !; 36!; <<0H/!-, 9!0, >6; 93H/!0>!

; <<0H0-44+! =0>5!-!6/S3/1>!>; !>5!/!%3110-, !* 0, 01>6+!; <!Z/</, 1/C!@/B/6-4!>0. /18!>5/!

* 0, 01>6+!; <!Z/</, 1/!0, !* ; 1H; !=! =; 349!1-+8!UO/18!+; 3!. -+!7; !-, 9!B010!>50!!

0, 1>-44->0; , CX!!

G4. ; 1!>5!>5; 3>!<-048! =5->! =; 349!5-MM/, !01!>5->!>5/!A@c!->>-H5g1! =; 349!

>6-B/4!>; !>5/!J-1/!0, 1>-44->0; , !0, !S3/1>0; , 8!-, 9! =/! =; 349!7/>!>36, /9!9; =, !->!>5/!



4-1>!. 0, 3>/8!1; . />0. /!1; , !>5/!. ; 6, 0, 7!; <!>5/!B010>C!G, 9!>5/!M56-1/!>5->!=/! =; 349!
 -4. ; 1>!-4=-+1!5/-6!->!>5/!; >5/6!/ , 98!>5/!B; 0H/!->!>5/!; >5/6!/ , 9!; <!>5/!>/4/M5; , /!
 40, /8! =-18!U CX!G, 9!<; 6!-, +!, ; , [%3110-, !1M/-K/68!
 >5->!018!UA, <; 6>3, ->/4+8!>5/6/!-6/!H; . M40H->0; , 1CX!G, 9!>5->!= -1!<; 44; =/9!J+8!
 UA, <; 6>3, ->/4+8!+; 3!H-, , ; >!B010>!>; 9-+C!&<+; 3!H-, !H; . /!J-HK!0, !>=; !; 6!>56//!9-+18!
 ; 6!M/65-M1!, /L>! =//K8!M/65-M1! =/!H-, !4/>!+; 3!B010>!>5/ , CX!@; !0, !* ; 1H; =8!>5/+!
 =; 349!-MM6; B/!0>8!-, 9!+; 3! =; 349!7/>!>; !>5/!9/1>0, ->0; , !-, 9!+; 3! =; 349!7/>!>36, /9!
 9; =, C!!

' ; =8!/B/6+!; , H/!0, !-!=504/8!+; 3! =; 349!13HH/11<344+!B010>!-, !0, 1>-44->0; , 8!J3>!
 >5/ , !>5/+! =; 349!313-44+!15; =!+; 3!; , 4+!>5; 1/!>50, 71!>5->!>5/+! =-, >/9!+; 3!>; !1//!
 -, 9!-4. ; 1>!, /B/68!; <!H; 361/8!>5/!>50, 71!>5->!+; 3! =; 349!40K/!>; !1//T >5/06!J/1>
 >/H5, ; 4; 7+!3M!H4; 1/C!F; !J/!<-068!&:. !M6/>+!136/!>5->8!; , !>5/!A@C!109/8! =/! =; 349!
 H/6>-0, 4+!40. 0>!>5/06!->--H5g1!-HH/118!>; !1; . /!9/76//!->!4/-1>C!" 3>!-1!<-6!-1!&!K, ; =8!
 ->!4/-1>!->!>5->!>0. /8!QVV)cW)VVR!>5/!%3110-, !->--H5g1! =/6/!-44; =/9!>; !1//!-, 9!
 -44; =/9!>; !B010>!; , !-!. 3H5!. ; 6/!6/734-6!J-101!>5-, !>5/!A@C!->--H5g1!-1107, /9!>; !

* ; 1H; =C!Y /!<6; . !#. J-11+!* ; 1H; =! =; 349!H; . M4-0, !-J; 3>!>5->!J-HK!>56; 375!
 H5-, , /41!>; !Y -150, 7>; , 8!ZC?C!-, 9!1-+8!UY 5+!9; , >!+; 3!40. 0>!>5/!%3110-, !
 I /9/6->0; , !->--H5g1!. ; 6/!>5-, !+; 3!9; NX!@; . />0. /!>5/+!9098!J3>!&!9; , >!>50, K!>5->!
 >5/+! =/6/!/B/6!40. 0>/9!-1!. 3H5!5/6/!-1! =/! =/6/!0, !%3110-C!!

"#\$%&' (#%)!G, 9!1; !/B/ , !0<!>5/!%3110-, 1! =/6/!>-4K0, 78!0<!>5/6/! =/6/!1; . /!H; , B/61->0; , 18!
 =50H5!&!>50, K!>5/6/! =/6/!->!4/-1>!0, !>5/!4->/6!, 0, />0/1!-J; 3>!. -+J/!%3110-!e; 0, 0, 7!



' GFE



D' EFF@)!F5/!15; 6>!, 1=/6!01!+/1C!Y /!K, ; =T 0>!01!M3J40H0d/9!, ; =T >5->!5/!=-!-!

M6; </110; , -4!; <<0H/6!; <!>5/!D (" 8!?!; . . 0>>/!<; 6!@>->!@/H360>+c!QVV)cF)VVR!\$/!

/B/, >3-44+!J/H-. /!>5/!5/-9!; <!>5/!D (" C !G>!1; . /!M; 0, >8!&!909!J/H; . /!-=-6/!; <!>

50. 8!J/H-31/!&!=-!-!A@C!0, >/4407/, H/!; <<0H/68!-, 9!="/K, /="!>; !1; . /!9/76//!-J; 3>!

>5/!M/61; , -40>0/1!; <!; 36!M; >/, >0-4!-9B/61-60/1C!/?/6>-0, 4+8!="/5, !5/!=-!1J6; 375>!>; !

* ; 1H; =!-, 9!1>-6>/9!>; !601/8!>5/, 8!="/0>50, !H4-110<0/9!K, ; =4/97/8!-, 9!>5/, !M3J40H4+8!&!

</-6/9T &!/LM/H>/9T >5->!5/!="; 349!->!4/-1>!J/!-!M; >/, >!-9B/61-6+c!#B/, !&!909!, ; >!

<; 6/1//!>5->!5/!="; 349!J-10H-44+!J/H; . /!>5/!76/->!>56/->T >5/!-H>0B/!>56/->T >5->!

5/!01!, ; =!>; !#36; M/-, !1/H360>+c!!

"#\$%&' (#%)!Y 5/, !0/4>10, !/4/B->/9!50. 8!-, 9!-1!5/:!1!6010, 7!>56; 375!>5/!7; B/6, . /, >!1; !

6-M094+!-</6!Q\]R] f[] ^8!="/5->!=-!1!+; 36!0. M6/110; , !-J; 3>!="5+!0/4>10, !="/19; 0, 7!

>5->N!

D' EFF@)!0/4>10, 8!>; !1; . /!9/76//8!H/6>-0, 4+!="/-1!4; ; K0, 7!<; 6!-J4/!40/3>/, -, >18!-J4/!

13J; 690, ->/!1; , !="/5; . !5/!H; 349!9/M/, 9C!&!9; , >!K, ; =!, ; =8!-, 9!&!9; , >!K, ; =T &: . !

M6/>>+!136/!>5->!1; . /="/5/6/!="/0>50, !A@C!0, >/4407/, H/T =50H58!0, !. +!; M0, 0; , 8!01!>5/!

J/1>!0, !>5/!="; 649T &: . !136/!>5->!1; . /J; 9+!5-1!-!M6/>>+!7; ; 9!09/-!->!="/5->!M; 0, >!

0/4>10, !1>-6>/9!>; !H; , 109/6!23>0, !-1!501!13HH/11; 6C!&!9; !, ; >M/61; , -44+!K, ; =!>5->C!!

F; !>6+!>; !-, 1="/6!+; 36!S3/1>0; , 8!-1!23>0, :1!M6; <04/!6; 1/8!QVV)c_)VVR!&!K, /="!

>5->!5/!="; 3498!-7-0, 8!J/!->!4/-1>!-, !0, >/4407/, >8!1-BB+!4/-9/6C!Y 5->!&!909!, ; >!

!
+!G1!83--,&1!d " E!-.&1/ -!+#\$? '@-#*A '), 40+)*#(('-\$B#C'DO)*(')*-A!#S!D#4 4,...)!#1!2.&.)!2)'3\$, .B6! I+.)\$!. ()!
/,-#93.,#1!#+. ()!0228A!. ()!d " EK-!-3' ')-#S!#S: &1,[&.,#1!%)' &4)!. ()!E#4#+03F(0-0\$)3, C"BO\$B#C'DO)*(')*-!b2EaA!
#\$. ()!b/) \$&9!2)'3\$, .B!2)\$*, ')6!73.,1!5&-!&!9,3.)1&1.! #9#1)9!,1!. ()!d " E!&1/!%)' &4)!. ()!&/!#+. ()!b2E!,1!<==>6!



Q</9/6->0B, -0-!1; >10-401>0H5/1K-0-!%/1M3J40K-8!; 6!1 /9/6->0B/!@; H0-401>!%/M3J40HR!
 3, 9/6!>5/!@; B0/>!A, 0; , C!Y /!909!; ; >!/LM/H>!50. !>; !; B/6-44!; 6!; B/6, 075>!J/H; . /!-!
 Y /1>/6, [1>+4/!40J/6-4!9/. ; H6->C!&!M/61; , -44+!, /B/6!/LM/H>/9!"; 60!O/4>10, !>; !J/!-!
 <-6[4/>!40J/6-4!9/. ; H6->C!" 3>!->!4/-1>!5/!909!-HH/9/!>; !9/. ; H6->0H[1>+4/!/4/H>0; , 18!
 -, 9!&!>50, K!5/!=-1!/4/H>/98!6//4/H>/9!. -0, 4+!4/7-44+C!' ; =8!>5/!1-. /!H-, , ; >J/!1-098!
 -1!J/1>!&!H-, !>/448!<; 6!1; . /!; <!>5/!6//4/H>0; , 1!; <!M/; M4/!40K/!j 4-90. 06!23>0, !-, 9!
 M6; J-J4+!H; 3, >4/11!; >5/61!->!6/70; , -4!-, 9!4; H-4!4/B/41C!" 3>!&!>50, K!>5->!O/4>10, !=-1!
 6//4/H>/9!; , !-!<-064+!4/7-48!Y /1>/6, [1>+4/!J-101C!@; !-7-0, 8!>; !-, 1=/6!+; 36!13J[
 S3/1>0; , 8!5/!=-1!-!K, ; =, !/, >0>+!>5->!=/!>5; 375>!=/!H; 349!9/-4!=0>58!-, 9!=/!
 >5; 375>!5-9!-!M6/>>+!7; ; 9!H5-, H/!QV)VW)VVR!<; 6!J/0, 7!6//4/H>/9C!!

"#\$%&' (#%)!@; !=5; !909!+; 3! =; 6K! =0>5!0, !>5/!A@C!#. J-11+!0, !* ; 1H; =N!

D' EFF@)!, !* ; 1H; =8!-7-0, 8!&! =-1!>5/!-110!>-, >!-06!->>-H5g8!J3>!&!5-9!>5/!76/->!

/LM/60/, H/T <061>!; <!-448!4/>!. /!1-+!>5->!&!H-, , ; >!>50, K!; <!. -+J/!J3>!; , /!; 6!>=; !
 @>->/!Z/M-6>. /, >!M/; M4/!>5->!&! =; 6K/9! =0>5!0, !>56//!90<</6/, >!/. J-110/1!>5->!&!
 =; 349!M6/</6!; , >!>; !5-B/! =; 6K/9! =0>5C! * ; 1>!; <!>5/!@>->/!Z/M-6>. /, >!M/; M4/T >5/!
 B-1>!. -e; 60>+!; <!>5/!@>->/!Z/M-6>. /, >!M/; M4/! =0>5! =5; . !&! =; 6K/9! =/6/!0, H6/90J4+!
 K, ; =4/97/-J4/!-, 9!B/6+!M6; </110; , -48!>; !M/65-M1!31/!>5->!; B/631/9! =; 698!J3>! =/6/!
 /LH/44/, >!M6; </110; , -41!0, !=5->!>5/+!909C!

G!H; 3M4/!; <!M/; M4/!&! =; 349!1M/H0<0H-44+!. /, >0; , T &! =; 6K/9!3, 9/68!

0, 906/H>4+8!<; 6!G. J-11-9; 6!F; . !20HK/60, 7!0, !* ; 1H; =C!&!K, ; !=!>5->!5/!5-9!J//, !-!
 A@!-. J-11-9; 6!0, !->!4/-1!>=; !; >5/6!H; 3, >60/1!J/<; 6/!-, 9!0, H4390, 7!->!4/-1!>; , /!
 * 09/-1>!H; 3, >6+C!&!5-9!>5/!; HH-10; , !>; ! =; 6K!906/H>4+! =0>5!G. J-11-9; 6!20HK/60, 7T



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! ; 6!Q=5->R!J/H-. /!! @" T 1/>[3M8!/, >6-M. /, >8!0, !; >5/6!=; 691C!&! . -9/!0>!H4/-6!>5->!&!
K, /!=5/6/!>5/!40. 0>1!=/6/!-, 9!>5->!&!=-1, :!7; 0, 7!>; !9; !>5->C!G, 9!M6; J-J4+!
J/H-31/!-41; !&!=-1!>631>/9!J+!>5/!; <<0H/!>5->!5-9!1/, >!. /!>; !* 0, 1K8!>5/+!13MM; 6>/9!
. +!7; 0, 7!>; !* ; 1H; !=-1!-, !3, . -660/9!; <<0H/6C!!
" 3>!; K-+8!>; !=; 6K!J-HK8!+; 3!=/6/!-1K0, 7!=5->!-6/!1; . /!; <!>5/!M4-H/1!>5->!&!
5-9!-!H5-, H/!>; !7; !>; C!&!=/, >!>; !9; d/, 1!; <!M4-H/18!/B/, !0, !-, !; <<0H0-4!H-M-H0>+C!G, 9!



-J; 3>!0>c!" 3>!>; !=-4K!; 3>!; , !>5->!J-+!<6; d/, !; B/6!=-1!-, !0, H6/90J4/!/LM/60/, H/C @; !
>5; 1/!=/6/!1; . /!; <!>5/!M4-H/1!&!7; >!-!H5-, H/!>; !1/!C!!

* +!J077/1>!901-MM; 0, >. /, >T &!; /B/6!7; >!-!H5-, H/!>; !7; !>; !j 4-90B; 1>; K8!-, 9!
&!=-, >/9!>; !7; !>; !j 4-90B; 1>; K!<; 6!-!, 3. J/6!; <!6/-1; , 1C!!

' ; =8!; , !-!M/61; , -4!J-1018!&!>6-B/4/9!>; !. -, +!; >5/6!M4-H/1C!&!=/, >!1/B/6-4!
>0. /!1>; !@>c!2/>/61J367!-, 9!=/, >!>; !>5/!\$/6. 0>-7/8!<; 6!/L-. M4/C &!=/, >!>5/6/!

M6; J-J4+!-!5-4<!9; d/, !>0. /!C!0V\)\W)VVR!&, !\]]c!=5/, !&!=-1!5-4<=-+!>56; 375!. +!
>; 36T &!M-09!<; 6!1; . /!; <!0>8!. +!M-6/, >!M-09!<; 6!1; . /!; <!0>8!J3>!&!J6; 375>!>; !%3110-8!

1M; , 1; 6/9!>5/. !>; !H; . /!>; !%3110-T . +!<->5/68!. +!. ; >5/68!. +!+; 3, 7/1>!J6; >5/6!
-, 9!101>/68!-, 9!. +!9-375>/6!-44!H-. /!>; !* ; 1H; =c!Y /!>6-B/4/9!>; !-!</=!M4-H/1!

-6; 3, 9!* ; 1H; =8!0, H4390, 7!-!H; 3M4/!; <!>5/!. ; , -1>/60/1!-, 9!>5/!1; [H-44/9! (; 49/, !
%0, 7C G, 9!>5/, !>5/!. ; 1>!<-1H0, ->0, 7!>50, 7!>5->!&!-, 9!=/!909T =/!>6-B/4/9!<6; . !

* ; 1H; =!>; !&6K3>1K!; , !>5/!F6-, 1[@0J/60-, !%-04=-+c!G, 9!=/!1>; MM/9!0, !&6K3>1K8!-, 9!
=/!1>-+>9!>=; !9-+1!-, 9!, 075>1!; , !-!5; >/4!; , !P-K/!" -0K-48!-, 9!>5/, !=/!<4/=!J-HK!

<6; . !&6K3>1K!>; !* ; 1H; =c!&



! ; 361/4<CX!" +!>5/!>0. /!>5->!5/!5-9!9; , /!>5->!-J; 3>!-!9; d/, !>0. /18!5/!4/-6, /9!5; =!
>; !1-+!Q>5/!0, >6; 93H>0; , !0, !%3110-, R8!U

CX!(QV\)\b)VVR!" 3>!/B/6+!; >5/6!>0. /!>5->!5/!1>3. J4/98!5/! =; 349!4; ; K!>; !. /8!
-, 9!&! =; 349!J/!50!0, >/6M6/>/6C!@; !>5->! =-!<-1H0, ->0, 7!<; 6!. /!-, 9!<; 6!. +!<->5/68!
J3>!. +!. ; >5/6! =-!>/660<0/98!J/H-31/!15/! =-!J-HK!; , !>5/!>6-0, 8!-, 9!15/! =-!<
>/660<0/9!>5->!. +!<->5/6! =; 349!K//M!>-4K0, 7!1; !4; , 7!>5->!>5/!>6-0, ! =; 349!7; !; <<- , 9!
4/-B/!318!-, 9!15/! =; 349!J/!; , !>5/!F6-, 1[@0J/60-, !=0>5!, ; !/1H; 6>8! =0>5!>5/!K0918!-, 9!
=0>5!, ; J; 9+!>; !>6-, 14->/!<; 6!5/6C!G, 9!1; 8!>=; !; 6!>56//!>0. /18!15/! =; 349!<311! =5/, !
=!/7; >!J-HK!0, !>5/!>6-0, !H; . M-6>. /, >!-, 9!1-+!>; !. +!<->5/68!UZ; , >!+; 3!9; !>5->!
-7-0,



!;
 1; . /!; <!>5/!M/; M4/8!0, H4390, 7!; , /!=5; !01! , ; =!0, !M601; , !>5/6/8!<; 6. /6!. 040>-6+ T
 >5/!H5-, H/1!; <! . /!7/;>>0, 7!<6-. /9!QV)\f)VVR!<; 6!1; . />50, 7! =; 349!J/!M6/;>>+!76/->8!
 -, 9!0>:1! , ; >! =; 6>5!>5/!601K8!3, <; 6>3, ->/4+c!

"#\$%&' (#%)!&!>5/6/!-, +>50, 7!>5->!+; 3!90140K/9!-J; 3>!40B0, 7!0, !%3110-!; 6!>5->!+; 3!
 =; 349, :>T =5->!=-1!>5/! =; 6!>!>50, 7!-J; 3>!40B0, 7!>5/6/N!!

D' EFF@)!P/>!. /!1-+8!<061>!; <!-44T &!B/!H/6>-0, 4+!70B/, !>5/!0. M6/110; , 8!&!5; M/T J3>!&!B/6+!

. 3H5!/ , e; +/9!0, >/6-H>0, 7!; , !-!9-04+!J-101! =0>5! =5->!&44!H-44!>5/!-B/6-7/!%3110-, 8!
 >5/! , ; , ; <<0H0-4!M/6!; , C!Y 5->!&! =044! , ; >!. 011!>5/! . ; 1>!01!>5/!09/-!>5->!+; 3:6/!-4. ; 1>!
 -4=-+1!J/0, 7! =->H5/98!1; . />0. /!1/B/, !0, !-!1/. 0[>56/->/, 0, 7!10>3->0; , C!&!
 9/B/4; M/9!-!, /7->0B/!B0/ =!>; =-69!. ; 1>!; <!>5/!%3110-, !. 040>-6+!; <<0H0-4! =0>5! =5; . !
 &!0, >/6-H>/9!<; 6!>5/!6/-1; , 1!&!B/!>; 49!+; 3C!Y /! =; 349!1/>!3M!-!B010>8!-, 9!+ />!&!76/ =!>; !
 /LM/H>!>5->!0>! =-1!M5; , +8!>5->!0>! =; 349!7/>!H-, H/4/9!->!>5/!4-1>!. 0, 3>/C!G, 9!. ; 6/!
 ; <>/, !>5-, !, ; >8!>5->:1! =5->!5-MM/, /9C!@; !&!9; , ; >!. 011!>5->C!!

F5/!; >5/6!>50, 71!&!9; , ; >!. 011! =/6/!1; . /!; <!>5/!>50, 71!>5->!&!1-09!J/<; 6/8!
 =/6/!1; . /!; <!>5/!1-99/1!>50, 71!&!1- =T 1; . /!; <!>5/!B/6+!M; ; 6!M/; M4/8!/1M/H0-44+!
 >5/!49/64+! =; . /, 8!>5->!6/. 0, 9/9!. /!; <! =5->! . +!76-, 9. ; >5/6!. 075>!7; !>56; 375!
 0, !-!10. 04-6!10>3->0; , C!F; !. /8!>5->! =-1!M-6!>; <!>5/!1-99/1!>50, 71!>5->!&!1- =!0, !
 %3110-T =/6/!>5/!B0H>0. 1!; <!>5/!601/!; <!>5/!%3110-, !/H; , ; . +C!F5/!M60H/1! =/6/!13H5!

++!^)\$)!J .6!D#%!d1#...-!,-!\$)+\$\$,1: !.#!7&39! \ ()9&1A!&!+#\$4)\$!0626! _&\$,1)!&\$\$)-.) /!,1!83--,&!,1!OP<>!&!/'!#1*,'.)/!



>5->!>5/IM/, 10; , 1T >5/IM/; M4/!=5; !=/6/!6/>06/9T >5/+!H; 349!, ; >!5; M/!>; !J3+!/B/, !

J-10H!H; . . ; 90>0/18!<; ; 9!; 6!15/4>/6C!QV)_)VVR!

"#\$%&' (#%)!* ; B0, 7!-!40>>4/!J0>!>; !>5/!/ , 9!; <!+; 36!>0. /!0, !%3110-!-, 9!>5/, !-</6!<6; . !-!

M; 40H+!M/61M/H>0B/T ; , /!; <!>5/!7; -41!; <!>5/!M6; e/H>!01!4; ; K0, 7!->!5; =!>5/!M/61; , -4!

6/4->0; , 1!J/>=//, !M6/109/, >1T G. /60H-, !M6/109/, >1!-, 9!%3110-, !M6/109/, >1T

--</H>!; 6!9; , :!-<</H>!>5/!J6; -9/6!A@C[%3110-, !6/4->0; , 150M@Y 5->!=-1!+; 36!

0. M6/110; , !; <!26/109/, >!?40, >; , :!6/4->0; , 150M!=0>5!26/109/, >!0/4>10, !->!>5/!>0. /!

-, 9!0>1!0. M-H>!; , !A@C[%3110-, !6/4->0; , 1!. ; 6/!J6; -94+8!/0>5/6!<; 6!7; ; 9!; 6!<; 6!044N!!

D' EFF@)!&!5-9!-!H5-, H/!>; !1/!/26/109/, >!?40, >; , !Q; , R!>56//!1/M-6->/!; HH-10; , 18!0<!&!

6/. /. J/6!H; 66/H>4+C!F; !-, 1=/6!+; 36!S3/1>0; , 8!&!>50, K!>5->!26/109/, >!?40, >; , !=-1!



!
=/4H; . /98!&!>50, K8!>5/!<-H>!>5->!->!4/-1!O/4>10, !=-1!=0440, 7!>; !7; !>; !<-064+!

9/. ; H6->0H[1>+4/!/4/H>0; , 18!<; 6!/L-. M4/C!!

&! = ; 349!-41; !1-+!&!5-9!>5/!; HH-10; , !/B/, !. ; 6/!<6/S3/, >4+!>; !=->H5!>5/, !!



D' EFF@)G7-0, 8!&!=-1!, ; >!0, !>5!/90M4; . ->0H!H06H4/18!-, 9!1; !&!909!, ; >!1//!26/109/, >!" 315!

M/61; , -44+!-1!&!909!26/109/, >!?40, >; , C!" 3>!&!H-, !>/44!+; 3!<6; . !-!. 040>-6+!; <<0H/6:1!

1>-, 9M; 0, >!-, 9!=0>5!90M4; . ->0H!J-HK76; 3, 98!&!>5; 375>!>5->!26/109/, >!(/; 67/!Y C!

" 315!5-9!-!B/6+!6/-40!>0H!-MM6; -H5!>; !9/-40, 7!=0>5!%3110-, !; <<0H0-41T J+!>5/, 8!

j 4-90. 06!23>0, C!



; <!0>5/6!26/109/, >!740, >; , !; 6!26/109/, >!(/; 67/!Y C!" 3158!J/H-31/!="/!, ; =!1//!

B0B094+! =5->!j 4-90. 06!23>0, !, ; >!; , 4+!M; >/, >0-44+!H; 349!J/8!J3>!5-1!J/H; . /C!G, 9!-6/!

>5/6/!>50, 71!>5->!1; . /J; 9+!H; 349!5-B/!9; , /!-4; , 7!>5/!=-+!>; !, /7->/!>5->N!

2/65-M1C!2; 110J4+C!" 3>!&!9; 3J>!0>8!J/H-31/!5/!5-1!15; =, 8!/1M/H0-44+!0, !501!0, B-10; , 1!

; <!AK6-0, /8!e31>!5; =!H6-11!-, 98!<6-, K4+8!/B04!5/!01C!QV\Wf)VVR!

"#\$%&' (#%)!G!14; , 7!-1!="/:6/!>-4K0, 7!-J; 3>!>5/!" 315!-9. 0, 01>6->0; , 8!>5/!J077/1>!/B/, >; <!

>5/!4-1>!H; 3M4/!9/H-9/1!-, 9!H/6>-0, 4+!; <!>5/!" 315!-9. 0, 01>6->0; , !=-1!]n\8!-, 9!&!

3, 9/61>- , 9!>5->!+; 3!="/6/!-H>3-44+!="; 6K0, 7!0, !>5/!2/, >-7; , !->!>5/!>0. /C!Y ; 349!

+; 3!. 0, 9!>/40, 7!31! =5->!>5->!9-+! =-1!40K/!-, 9! =5->!5-MM/, /9!-, 9!+; 36!

/LM/60/, H/N!

D' EFF@)!0/18!&!H; , 109/6!. +1/4!-H>3-44+!S30>/!<; 6>3, ->/!>5->!&!-. !; , /!; <!>5/!; , /! =5; !

=-4K/9!; 3>!3, 536>!<6; . !>5/!2/, >-7; , !>5->!9-+C!&&!->!>5/!>0. /8! =-1!-!J6-, H5!H50/<!-1!

-, !G06!I ; 6H/!40/3>/, -, >!H; 4; , /48! =; 6K/9!<; 6!a; 0, >!@>-<<!0, >/4407/, H/!; , !-!9-04+!J-101C!

#0>5/6!&!-, 9n; 6!1; . /!; <!. +!13J; 690, ->/!1! =; 349!J60/<!>5/!>=; [1>-6!-9. 06-48!->!>5->!

M; 0, >8! =5; !=-1!>5/!a; 0, >!@>-<<!0, >/4407/, H/!; <<0H/6C!G, 9! =/! =; 349!5-B/!J60/<0, 71!

/-H5!9-+!->!-J; 3>!<0B/!; :H4; HK!0, !>5/!. ; 6, 0, 7C!F5->! =; 349!J/!>5/!1>-6>; <!501!9-+C!

\$/8!>5/!0, >/4!H50/<! =; 349!>5/, !7; !-, 9!J60/<8!J-1/9!; , !501!M6/B0; 31!J60/<0, 78!>5/!

H5-06. -, !; <!>5/!a; 0, >!750/<1!; <!@>-<<C!G, 9!1; !>5->:1! =5/6/!&! =-1!-, 9! =5+!&! =-1!>5/6/!

0, !>5/!2/, >-7; , 8!0, !>5/!J-1/. /, >!; <!>5/!2/, >-7; , 8!; , !\!@/M>/. J/6!; <!QWVRV\!

&, !50, 91075>8!H/6>-0, 4+!; , /!; <!>5/!>50, 71! =/!5-9!J//, !H; , H/6, /9!-J; 3>! =-1!

M; >/, >0-4!>/66; 601>!->>-HK18!J3>! =/!5-9!; , >!-, >0H0M->/9! =5->!5-MM973T mlT f[(QWV)1(R)]T JET Qq



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Y 5/, !>5/!-06H6-<0!>5->!50!>5/!2/, >-7; , !-H>3-44+!50>8!&!909!, ; >!</4!0>8!/B/, !
 >5; 375!&!=-1!, ; >!>; ; !<-6!<6; . !>5/!M; 0, >!<!0. M-H>C!&!01!13H5!-!. -110B/!J30490, 7C!&!
 909!, ; >!</4!0>C!G!+; 3, 7!4-9+!=5; !=; 6K/9!<; 6!. /8!-!H; 44/-73/8!6-, !0, >; !>5/!<<0H/!
 1M-H/C!@5/!1-098!UF5/!J30490, 7:1!; , !<06/8!>5/!J30490, 7:1!; , !<06/C!Y /:B/!7; >!>; !7/>!; 3>!
 ; <!5/6/CX!F5->!=-1!. +!<06!>!0, 90H->0; , !>5->!>5/6/!=-1!-!906/H!>56/->!>; !31C!" 3>!
 -7-0, 8!=/!909!, ; >!K, ; =!0. . /90->/4+!>5->!-, !-06H6-<0!>5-9!50!>5/!2/, >-7; , C!Y /!
 1; ; , !<0736/9!; 3>!>5->!01!=5->!5-MM/, /9C!!

&!=-1!M; 10>0B/4+!0. M6/11/9!=0>5!>5/!=-+!>5->!/B/6+J; 9+!-6; 3, 9!. /!>5->!&!
 1-=!M/6!; , -44+T 5; =!>5/+!H; , 93H>/9!>5/. 1/4B/1C!F5/+!909!, ; >!M-, 0HC!F5/+!909!, ; >!
 7; !J-440!>0HC!F5/+!909!, ; >!1-+8!UP/>:!17/>!>5/!5/HK!; 3>; <!5/6/CX!* +!<06!>!H; , H/6, T
 oY 5/6/!01!/B/6+J; 9+N!Z; !=/!K, ; !=5/6/!/B/6+J; 9+!01NX!G, 9!=/!K, /!=5/6/!-44!
 J3>; , /!M/6!; , !=-1C!G, 9!0!>36, /9!; 3>!4->/6!5/!=-1!-H>3-44+!; , !4/-B/!>5->!9-+8!-, 9!&!
 5-9!, ; >!J//, !=-6/!; <!>5->C!Y /8!0, !-, !; 69/64+!. -, , /68!J3>!=0>5; 3>!9/4-+8!01/H36/9!
 H4-110<0/9!1M-H/1!-, 9R!1>-6>/9!7/>>0, 7!3M!>5/!1>-06H-1/1!>; !>5/!76; 3, 9!4/B/4C!!

@; . />50, 7!/41/!>5->!1>- , 9!; 3>!0, !. +!. /. ; 6+T -, 9!0V\`W)VVR!&!9; , >!1//!
 . +1/4!-1!-, +!5/6; !0, !9; 0, 7!>501T J3>!>5/6/!=-1!-!4-9+!=5; !=-!10, !-!=5//4H5-068!=/!
 =/6/!H; , H/6, /9!>5->!15/!H; 349!, ; >!7/>!3M!>5/!/1H-4->; 61C!Y /!909, >!= -, >!5/6!>; !31/!
 >5/!/4/B->; 61C!@; 8!-H>3-44+8!>5/6/!=/6/!-J; 3>!<; 36!M/; M4/!1>-, 90, 7!-6; 3, 98!
 0, H4390, 7!-' -B+!73+!>5->!&!K, />8!>5->!&!>; 6K/9!>5!<-064+!; <0/, C!&!1-098!UP; ; K8!4/>:1!
 e31!-44T =/!=044!H-66+!5/6!>; 7/>5/6!3M!>5/!1>/M1C!P/>:!17/>!5/6!3M!>5/!1>/M1C!&!909, >!
 -1K!>5/!4-9+!5/6!, -. /8!-, 9!&!9; !, ; >!K, ; =!0>8!J3>!>5->!1!1; . />50, 7!>5->!&!6/. /. J/6!
 J/H-31/!=/!909!7/>!5/6!3M!>; !>5/!76; 3, 9!4/B/48!-, 9!1; . /5; =!1; . /J; 9+!7; >!



! ; >5/6! = 5//4H5-06!<; 6!5/68!7; >!5/6!0, !>5/! = 5//4H5-068!-, 9!-!1/H360>+!M; 40H/. -, !
M315/9!5/6!; 3>109/!>5/!J30490, 7C!@; !=/!1-!=!>5->!15/!5-9!7; >>/, !1-</4+!; 3>8!-, 9! = /!
= /6/!>6+0, 7!>; !7/>!/B/6+J; 9+!/41/!; 3>8!>; ; C!!
Y /! = /6/! = ; , 9/60, 7! = 5; !=/6/!>5/!3, 43HK+!; , /18!J/H-31/! = /!K, / = !>5->!0, !-!
J30490, 7!>5->!10d/! = 0>5!1; !. -, +!>5; 31-, 91!; <M/; M4/!0, !>5/6/!>5->!1; . /J; 9+!5-9!
90/9C!Y /!909!, ; >!K, ; = !>5->!3, >04!4->/60. 5 (=)0. 240601. 92cBT 50-0. !>5->!34



1-098!U@068!M4/-1/!>36, !; , !>5/!Fj C!O; 3

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-MM6; L0. ->/4+8!M/65-M1!4; , 7/6NX!&!1-098!UP/>!. /!. -K/!-!H; 3M4/!; <!M5; , /!H-4418!J3>!

. +!>/, >->0B/!-, 1=/6!01!+/18X!-, 9!/B/, >3-44+8!. +!<; 6. -4!-, 1=/6!=-1!+/1C!!

&>!=-18!0, !1; . /!=-+18!/B/, !. ; 6/!-. -d0, 7!>5-, !J/0, 7!0, !* 0, 1K!; 6!* ; 1H; =C!

&:B/!>6-B/4/9!>56; 375!9/1/6>1J/<; 6/8!J3>8!<; 6!1; . /J; 9+!=5; !9; /1!, ; >K, ; =8!

G157-J->!01!; , !>5/(QV)bV)VVR!/97/T -, !/97/T ; <!>5!/D-6-K3. !Z/1/6>C!G, 9!1; !<; 6!-!

+/-6!&!40B/9!0, !-!9/1/6>!-, 9!; , 4+!-J; 3>WV!; 6!1; !. 04/1!-=-+!<6; . !&6-, 8!; 6!->!4/-1!>5/!

J; 69/6!=0>5!&6-, C!&! =; 6K/9!<; 6!-!B/6+!H-M-J4!/A!@!- . J-11-9; 68!J3>!>5!/A!@!C!

- . J-11-9; 6!5-9!90<</6/, H/1!=0>58!901M3>/1!=0>5!>5!/Z/M-6>. /, >!; <!Z/</, 1/C!

" /H-31/!5/!5-9!901-76//. /, >!>5!>5!/Z/M-6>. /, >!; <!Z/</, 1/8!5/! =; 349!, ; >!

-44; =!. /!>; !40B/!; , !>5/!90M4; . ->0H!H; . M; 3, 9C!@; !&!40B/9!0, !-, !-M-6>. /, >T 0, !-!

5; >/4T 6075>!-H6; 11!>5/!1>6//>!<6; . !>5!/A!@!90M4; . ->0H!H; . M; 3, 9C!@; !&!5-9!1; . /!

; <!>5!/J/, /<0>1!; <!>5/!4; H->0; , 8!J3>!&!909!, ; >5-B/!>5/!1/H360>+8!<; 6!/L-. M4/8!>5->!

M/; M4/! =5; !40B/9!; , !>5/!H; . M; 3, 9!5-9!J/;>>/6!>5-, !&!909C!

G, ; >5/6!>50, 7!>5->! =-1!<-1H0, ->0, 7!-J; 3>J/0, 7!0, !G157-J->T >5/!M6/109/, >!

; <!F36K. /, 0!>- , !->!>5/!>0. /! =-1!26/109/, >!Q@-M-6. 36->R! 0+-d; BC!\$/!H-44/9!

50. 1/4<!Fq6K. /, J-r+8 !=50H5!. /-, >!U>5/!5/-9!; <!>5/!F36K. /, CX!&, !15; 6>8!>5/!

M; 40>0H-4!->. ; 1M5/6/!0, !F36K. /, 0!>- , !=-1!; , /!; <!5/6; !=; 6150M8!H34>!; <!>5/!

M/6!; , -40>+C! I 6; . !\] \!>; !\] W8!&!5-9!1/6B/9!-!; , / [+/-6!6/. ; >/!Q>; 36R!0, !A!@!C! I ; 6H/1!

0, !D; 6/-C !&!1- =!QV)bW)VVR!; , !-!9-+ [>; [9-+!J-101!. ->>/61!6/4->/9!>; !>5/!H34>!; <!>5/!

M/6!; , -40>+!; <!D0. !&!@3, 7C!" -10H-44+8!+; 3!5-9!>5/!1-. /!K0, 9!; <!M; 40>0H-4!

!
+#!7\$#1#31')/!LF3\$@4)1%&-(&,N!

+^!01,.) /!2.&.)-!b#\$')-!d#s)&! 02bda!,-!.()e#,1.!()&/g3&\$.)\$-!+#\$! I 4)\$, '&1!+#\$')-!,1!2#3.(!d#\$)&6!!



9/B/4; M/9!-!H4; 1/6!6/4->0; , 150M!=0>5!>5/!; =, /6!; <!>5/!H-. /48!-, 9!&! =; 349!
1; . />0. /!17; !-, 9!B010>!>5/06!M4-H/8!-, 9!&! =; 349!M-+!<; 6!1; . /!; <!>5/!<; ; 9!-, 9!
3MK//M!; <!a; /C!G, 9!&!/B/, !=-1!-44; =/9!>; !>-K/!a; /!; , !-!H; 3M4/!; <!M/6!; , -4!609/!
QV)b_)VVR!-, 9! = /, >!>; !-!H; 3M4/!; <!M-6K1!>5->! = /6/! , ; >!>; ; !<-6!<6; . !G157-J->!-, 9!
M6; J-J4+!7; >!M6/>>+!H4; 1/!>; !-!H; 3M4/!; <!M4-H/1!>5->!&! = -1, :>!6/-44+!13MM; 1/9!>; !J/C!
" 3>!&! = -1!e31>!; 3>!6090, 7!. +!H-. /48!+; 3!K, ; =N!&!7; >!-!H5-, H/!>; !7/>!>; !K, ; =!>5/!
; =, /6!<-064+! = /44!-, 9!1//!501!K091!-, 9!501!<- . 04+8!-, 9!>5/+!>5; 375>!0>! = -1!S30>!
-. 310, 78!&: . !136/8!>5->!>5/+! = /6/!310, 7!>501!A@c!



! ; M/, /9!-1!. -, +!9; ; 6!<; 6!. /!-1!+; 3!H-, !0. -70, /C!@; !G. J-11-9; 6!@H5=-6>d!=-1!
 =; , 9/6<34!>; !QV\cV)VVR!J/!-6; 3, 9!-, 9!>; !=; 6K!<; 68!-, 9!&!4/-6, /9!-!4; >!<6; . !50. C!
 \$/!4->/68!&!>50, K8! =/, >!; , !>; !J/!0, !H5-67/!; <!1; . /!, /7; >0->0; , 18!&!J/40/B/!/B/, !
 6/4->/9T &!<; 67/>!>5/!1M/H0<0H!>0>4/8!J3>!5/! =/, >!; , !>; !>5/6!0. M; 6>-, >!<; 6-8!4/>:1!M3>!
 0>!>5->! =-+C !

\$0!19/M3>+! =-1!-!. -, !, -. /9!(/; 67/!D6; 48!-, 9!(/; 67/8!-1!&! =-1!4/-B0, 78!
 -H>3-44+!7; >!-!B/6+!, 0H/!M6/1/, >; !<; 6!. /!-, 9!5-9!-!40>>4/!M4-S3/!M3>!; , !0>!) * +!
 , -. /T 00>R!1-098!U! 061>!9/</, 1/!->>-H5g!>; !* 0, 1K8X!K, ; =0, 7!>5->! =-1!, ; >!0. +R!
 ; <<0H0-4!0>0>4/R8!J3>!0! =-1!-!, 0H/!>50, 7!>5->! (/; 67/!909C! (/; 67/8!&!J/40/B/8! =/, >!; , !>; !
 J/!-, !-. J-11-9; 6T J3>!&:. !, ; >!136/! =5/6/T -, 9!&:. !136/!5/! =/, >!; , !>; !J/!-!
 9/M-6>. /, >!5/-9!0, !>5/!@>->!/Z/M-6>. /, >8!-, 9!5/!. -+!J/!/B/, !5075/6!>5-, !>5->!
 , ; =C !" 3>! (/; 67/!D6; 4! =-1!-, ; >5/6!B/6+!K, ; =4/97/-J4/8!50754+!M6; </110; , -4!@>->!/Z/M-6>. /, >!M/61; , !>5->!&! =; 6K/9! =0>5C!!

F5/!; >5/6!M/61; , !>5->!&! =; 349!. /, >0; , !=; 349!J/8!34>0. ->/4+8!G. J-11-9; 6!
 F->0-, -!(<; /44/6C!&!<061>!/ , H; 3, >/6/9!5/6! =5/, !15/! =-1!-!M; 40>0H-48!&!>50, K8!1/H>0; , !
 5/-9!0, !* ; 1H; =8!>5/, !=; 6K0, 7!<; 6!* 6C!" 36, 1C!G, 9!>5/, !F->0-, -8!->!>5/!1-. /!>0. /!
 >5->!&! =-1!-1K/9!>; !7; !9; =, !>; !J/!>5/!. 040>-6+!->>-H5g!0, !G157-J->8!15/!J/H-. /!>5/!

! +% !b\$# 4!OPP<!.#!OPPYA! I 4 %6!2.5 \$\$. [!()&/) /!. ()! f \$: &1, [, &., #1!+#!\$2) '3\$, B!&1/!D##C)\$&., #1!, 1!M3\$#C)! ^ f 2DMa!
 _ , --, #1!.#! _ #9/ #* &6! (..C-RRR%9#: -69& 5 \$) 1')6/3R1) 5 -ROPPWRPHR+#\$4) \$\$& 4 %&-&/#SS/.-'3--)-S)&-.) \$1S
)3\$#C) j MO j >P j ==-S j MO j >P j =D31+, 1, -()/S%3-, 1)-- j MO j >P j =; S, 1S9& 5 \$) 1')S31, *) \$-, .BS, 1.) \$1&., #1&9S
 \$)9&., #1-S-)\$, -S9)'. 3\$)6(. 4 96!
 +&! ")#\$:)! d\$#9!-) \$*) /!&-!. ()! 0626!& 4 %&-&/# \$!.#!E)9&\$3-A! 0 [%] @, -. &1A!&1/!d&[&@(-.&1/3\$ 1:!. ()! ")#\$:)! \ 6!E3-(A!
 E&\$&' @! f %& 4 &A!&1/! ; #1&9/!F\$3 4 C!&/ 4, 1, -. \$&., #1-6!^)!5 &-!&9-#!. ()! /, \$)'. # \$!# +!. ()! 2.&.)! ;)C&\$ 4) 1.K-! f ++, ')!# +!
 83--,&1! I ++&, \$-A! 4, 1, -.)! \$! #31-) 9#\$!+#\$!C#9, .., ' &9!++&, \$-!&!. ()! 0626!) 4 %&-&-B!, 1! _ #- '# 5 A!&1/!) C3.B!&-,-.&1!
 -) '\$) .&SB!# +!-.&.)!+#\$!. ()! E3\$)&3!# +!2#3. (!&1/!D) 1.&9! I -, &1! I ++&, \$-6!



9/M3>+8!; 6!>5!/H5-67g!9:-<<-06/18!0, !G157-J->C!@5/!34>0. ->/4+!=/, >!; , !>; !J/!-!A@c!
 -. J-11-9; 68!&!J/40/B/!0, !D+67+d1>- , C!G, 9!15/:1!-, ; >5/6!e31>!; 3>1>- , 90, 7!@>->/!
 Z/M-6>. /, >!M6; </110; , -4!>5->!&!5-9!>5!/H5-, H/!>; !=; 6K!<; 6!-, 9!=0>5!QV\cW)VVR!=5; !
 =/, >!; , !>; !J077/6!-, 9!J/>>/6!>50, 71C! ! 6; . !. +!M/61M/H>0B/8!0>!. -9/!, ; !90<</6/, H/!
 >5->!15/!=-1!-!15/8!-!</ . -4/8!J3>!&!>5; 375>!0>!=-1!/1M/H0-44+!0. M6/110B/!>5->!15/!
 . 075>!5-B/!J//, T >5/6!/H/6>-0, 4+!=/6!/M/; M4/!0, !F36K. /, 01>- , !-, 9!; >5/6!M4-H/1!0, !
 ?/, >6-4!G10-!>5->!&!. !136/!5-9!9; 3J>1!-J; 3>!5/6!H-M-J040>0/1!J/H-31/!15/!=-1!-!
 =; . -, C!&!>50, K!15/!-, 9!; >5/6!15-B/!M3>8!H-1>!-44!>5; 1/!9; 3J>1!-109/!, ; =8!15; =0, 7!
 =5->!-!H; . M/>/, >!-, 9!B/6+!1. -6>!-, 9!H-M-J4/!G. /60H-, !90M4; . ->!15/!=/, >!; , !>; !
 J/C!G, 9!&!5-9!>5/!M4/-136/!; <! =; 6K0, 7!=0>5!5/6!0, !* ; 1H; =!-, 9!>5/, !=; 6K0, 7!<; 6!
 5/6!0, !G157-J->C!!

G, 9!>5/6/! =/6/!; >5/6!1!>; ; C!G. J-11-9; 6!* 0H5-/4!?; >>/6!0, !G157-J->!=-1!
 >; M[, ; >H5C!&:1!e31>!>5->!5/!5-9!, /7->0B/!B0/=1!-J; 3>!>5/!Z/M-6>. /, >!; <!Z/</, 1/8!
 -, 9!>5->:1!>5/!6/-1; , !5/! =; 349!, ; >!-44; =!. /!>; !40B/!; , !501!90M4; . ->0H!H; . M; 3, 9C!
 "3>!-1!<-6!-1!J/0, 7!-, !-. J-11-9; 6!-, 9!9; 0, 7!-!76/->!e; J8!&!H; . . /, 9!50. !<; 6!>5->C!

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END FA DI IDE FILE

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