



N>1!. )991(!,9!D>, \*>!D1!<(1<)(1!12-\*)+,89)5!<1(089915!,0!,948(. 12!7=!1,: >+!10019+,)5!  
)++(,7-+100!

PB 190-(,9: !+>)+!<(8: (). 0!)(1!E98D512: 167)0120!

RB A,1D,9: !12-\*)+,89)5!<1(089915!)0!51)(91(03!,9\*5-2,9:!)!48\*-0!89!21\*890+(-\*,9:!  
<)0+!1; <1(,19\*10!)0!51)(91(0!,9!\*8-(01D8(E!)92!4,152!1; <1(,19\*10!)92!

21A158<,9:!)<<(8<(,) +1!E98D512: 1!84!+>1!\*89+19+)92!2,0\*8-(01!84!+>1!

2,0\*,<5,910!+8!71!+) -: >+0!

\$B \*89+1; +- )5!)92!\* -5+-( )5!0190,+,A,+=0!

SB 4)\*,5,+) +,9: !,9?-,(=!)92!(1451\*+,893!,813!<(8A,2,9: !0+(-\*+-(

#) 92,2)+10!(1<)(12!,9!1)(5=!\*>,52>882!21: (11!(8: () . 0!-921(0+)92!+>)+!\*>,52!8701(A)+,893!  
 28\*- . 19+)+,893!)92!8+>1(!48(. 0!84!)00100. 19+!)(1!\*19+()5!+8!+>1!<()\*+,\*1!84!)5!1)(5=!\*>,52>882!  
 <(84100,89)50B!N>1=!E98D!)78-+!)92!-921(0+)92!+>1!: 8)503!71914,+03!)92!-010!84!)00100. 19+B!N>1=!  
 E98D!)78-+!)92!-01!0=0+1. )+,\*!8701(A)+,8903!28\*- . 19+)+,893!)92!8+>1(!1441\*+,A1!)00100. 19+!  
 0+()+1: ,10!,9!)(10<890,751!D)=3!,9!<)(+91(0>,<!D,+>!4) . ,5,10!)92!8+>1(!<(84100,89)503!+8!<80,+A15=  
 ,945-19\*1!+>1!21A158<. 19+!84!1A1(=!\*>,52B!

#) 92,2)+10!(1<)(12!,9!1)(5=!\*>,52>882!21: (11!(8: () . 0!-921(0+)92!+>)+!+1)\*>,9:!)92!51)(9,9: !D,+>!  
 =8-9:!\*>,52(19!,0!)!\*8. <51;!19+1(<(,013!)92!,+0!21+),50!A)(=!21<192,9: !89!\*>,52(19T0!): 103!  
 \*>)()\*+1(,0+,\*03!)92!+>1!01++ ,9: 0!D,+>,9!D>,\*>!+1)\*>,9:!)92!51)(9,9: !8\*\*-(B!N>1=!-921(0+)92!)92!-01!  
 <80,+A1!(15)+,890>,<0!)92!0-<<8(+,A1!,9+1() \*+,890!)0!+>1!48-92)+,89!48(!+>1,(!D8(E!D,+>! =8-9:!  
 \*>,52(19!)92!4) . ,5,10B!#)92,2)+10!E98D3!-921(0+)923!)92!-01!)!D,21!)((=!84!21A158<. 19+)5!  
 )<<(8<(,)+1!)<<(8)\*>103!,90+(-\*+,89)5!0+()+1: ,103!)92!+8850!+8!\*8991\*+!D,+>!\*>,52(19!)92!4) . ,5,10!)92!  
 <80,+A15=! ,945-19\*1!1)\*>!\*>,52T0!21A158<. 19+!)92!51)(9,9: B



- $N > 1!^* 92, 2) + 1! > 0! 8 << 8(+ - 9, +, 10! + 8! 8701(A!)) 92! < ( )^* +, * 1!, 9!) + 51) 0! + D 8! 84! + > 1!$   
 $+ > (11! . ) , 9! + = < 10! 84! 1) (5 = ! 12 - *) +, 89! 0! +, 9: 0! L 1) (5 = ! 0^* > 885! : ( ) 2! 103!^* > , 52^*) (1!$   
 $* 19 + 1(0!) 92! > 8. 103! Z 1) 2! H +) (+! < (8: ( ) . 0M!$   
 $!$

J00, : 9.  $19 + 0! < (8A, 2! 10 + - 219 + 0! D, + > ! + > 1!$

$8 << 8(+ - 9, + = ! + 8!) << 5 = !^* 89 + 19 + ! D > , 5! !, 9 + 1( )^* +, 9: ! D, + > !^* 5) 00. ) + 10! 8(!) 9) 5 = \, 9: !$   
 $8701(A) +, 890! 84!, 90 + (- * +, 89!) 92! 0 + - 219 + ! 51) (9, 9: ! 8 - + * 8. 10B! ! H + - 219 + 0!) (1! ! ; < 1^* + 12! + 8!$   
 $(141(19^* 1!^* 8 - (01! . ) + 1(, ) 50! D > , 5! ! 19: ) : , 9: !, 9!) ! + > 8 - : > + 4 - 5! 2, 0^* - 00, 89! D, + > !^* 5) 00. ) + 10! 89!$   
 $+ > 1! + 8 < , * 0! < (8A, 2! 12B!$

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$H + - 219 + 0! D, 55! < 5) 93! 2! 1A 158 < 3! ) 92! 19) * ! + > (11! 5! 10089! < 5) 90B!$

!

$H + - 219 + 0! D, 55!^* 8. < 51 + 1!) ! < 8(+ 485, 8! + > (8 - : > 8 - + ! + > 1!$

\*8 - (01B

!!

$H + - 219 + 0! D, 55! 7! 1! 1A) 5 - ) + 12! 2 - (, 9: !' ( )^* +, * - . ! / 7) 0! 2! 89! 19: ) : 1. 19 + !, 9! + > 1! 895, 91!^* 8 - (01!$   
 $) 92! 1A) 5 - ) +, 89! 84! < 1(48( . ) 9^* 1!, 9! + > 1! 4, 152! < 5) * 1. 19 + B! " A) 5 - ) +, 89! 84! < 1(48( . ) 9^* 1!, 9! + > 1!$   
 $4, 152! D, 55! 7! 1! 7) 0! 2! 89!) (+, 4) * 0! < (10! 19 + 12! , 9! + > 1! 0 + - 219 + 0! < 8(+ 485, 83! 0 - ** 1004 - 5!$   
 $* 8. < 51 +, 89! 84! ' J N! N) 0E! P3! ) 92! + > 1!. 19 + 8(! + 1) * > 1(T0! 1A) 5 - ) +, 89! 84! + > 1! 0 + - 219 + !, 9! + > 1!$   
 $4, 152! 0! +, 9: B! !$

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PB!!  $N > 1! C( ) . 1 D 8(E! 48(! N 1) * > , 9: ! ! J! 28^* - . 19 + ! 4(8. ! + > 1! ] ) 9, 15089! ^ (8 - < 3! N > 1!$   
 $C( ) . 1 D 8(E! 48(! N 1) * > , 9: !, 0!) ! (101) (* > 67) 0! 2! 0! 1 + ! 84!^* 8. < 89! 19 + 0! 84!, 90 + (- * +, 893!$   
 $) 5: 9! 2! + 8! + > 1! / I N J H # ! 0 + ) 92) (203! ) 92! : (8 - 92! 2!, 9!) !^* 890 + (- * +, A, 0 + ! A, 1 D! 84!$   
 $51) (9, 9: ! ) 92! + 1) * > , 9: B!$

RB!!  $I ) +, 89) 5! J 008^* , ) +, 89! 48(! + > 1! " 2 - *) +, 89! 84! K 8 - 9: ! # > , 52(19! Y! H + ) 92) (20! 48(!$   
 $' (84! 100, 89) 5! (1 < ) +, 89! (8: ( ) . 0! N > 10! R & P & ! / 9, +, ) 5! H + ) 92) (20!) (1! - 0! 2!, 9!$

$I J " K # ! J ** (12, +) +, 89! 84! ) 008^* , ) + 13! 7) ** ) 5) - (1) + 13! ) 92! . ) 0 + 1(0! 21: (11! < (8: ( ) . 0!$   
 $< (8A, 2, 9: ! 21: (11!^* ) 92, 2) + 10! D, + > ! + > 1, (! 4, (0 + ! 1; < 1(, 19^* 1!) 92[8(!^* (12! 19 + , ) 5!, 9! 1) (5 = !$   
 $* > , 52 > 882! 0 + - 2, 10B! !$

\$B!!  $N > 1 ! ! " # ! J 00100. 19 + ! N) 0E! ` 1? - , (1. 19 + 0! 3!) 5: 9! 2! D, + > ! / 9 N J H # ! a 8215!$   
 $# 8(1! N 1) * > , 9: ! H + ) 92) (20! L' ] C M B! . 1) 0 - (1! + > 1!, 90 + (- * +, 89) 5!^* ) < ) 7, 5, + = ! 84! + 1) * > 1(!$   
 $* ) 92, 2) + 10! 7! 148(1!(1^* 1, A, 9: ! ) ! 5, * 190! B! N > 1!) 00100. 19 + !^* 890, 0 + 0! 84! 48 - (! + ) 0E0! b!$   
 $89! 148( . ) +, A 1!) 92! + > (11! 0 - . . ) +, A 1B! " ) * > ! + ) 0E! (1? - , (10! D(, + 19!^* 8. . 19 + ) (= ! ) 92!$   
 $0 - 7. , 00, 89! 84!) (+, 4) * + 0B! H + - 219 + 0! D, 55! ) 22(100! N) 0E! P! , 9! " # " ! $ % & ! 6! ' ( )^* +, * - . ! PB!$   
 $SB!! [ 15) D) (1! H + ) (0! 48(! " ) (5 = ! H - ** 100! , 0! ] 15) D) (1T0! C - ) 5, + = ! ' ) +, 9: ! ) 92!$   
 $/ . < (8A 1. 19 + ! H = 0 + 1. ! ! C ` / H M ) 2. , 9, 0 + 1(12! 7 = ! + > 1! ] 15) D) (1! ] 1 < ) (+ . 19 + ! 84!$   
 $" 2 - *) +, 89B! J! C ` / H! , 0!) ! . 1 + > 82! + 8!) 001003! , . < (8A 13!) 92!^* 8. . - 9, *) + ! + > 1! 5! 1A 15! 84!$   
 $? - ) 5, + = !, 9! 1) (5 = !^* ) (1!) 92! 12 - *) +, 89! ) 92! 0^* > 8856) : 1! 0! +, 9: 0B! N > 1! : 8) 5! 84! ] 15) D) (1!$

H+) (0!,0!+8!,9A10+!,9!<)(+,\*,<)+,9: !<(8: ( ). 0!+8!,9\*(1)01!) \*\*100!+8!>.: >!?-)5,+!=\*) (1!  
48(!)55!84! ] 15)D) (1T0!\*>,52(193!10<1\* ),55=!+>801!4(8. !58D6,9\*8. 1!4). ,5,10B!  
UB!! I J"K#!") (5=!d1) (9,9: !' (8: ( ). !J\*\*(12,+)+,89!H+) 92) (20!e!J00100. 19+!  
/+1. 0!!), . !+8!190-(1!+>1!?-)5,+!=!84!\*>,52(19\_0!2),5=!1; <1(,19\*10!,9!1) (5=!51) (9,9: !  
<(8: ( ). 0!) 92!+8!<(8. 8+1!<80,+A1!\*>,52!8-+\*8. 10B! I J"K#!") (5=!d1) (9,9: !  
' (8: ( ). !J\*\*(12,+)+,89!>15<0!\*(1)+1!)!-9,4=,9: !4( ). 1D8(E!84!?-)5,+!=!+>)+!,0!  
)5,: 912!D,+>!+>1!<(84100,89T0!\*8551\*+,A1!E98D512: 1!84!710+!<() \*+, \*10B!  
@B!! [15\*) (1!` 1: -5)+,890!48(!") (5=!\*) (1!) 92!"2-\*)+,89!) 92!H\*>8856J: 12!  
#19+1(0!<(8+1\*+!) 92!0-<<8(+!+>1!>1)5+>3!0)41+=3!D15571,9: 3!) 92!<80+,A1!  
21A158<. 19+!84!\*>,52(19!D>8!(1\*1,A1!\*) (1!,9!1) (5=!\*) (1!) 92!12-\*)+,89!) 92!  
0\*>8856): 1!\*19+1(OB!N>101!(1: -5)+,890!10+) 75,0>!. ,9,. -. !0+) 92) (20!+>)+5,\*19012!  
\*19+1(0!) (1!(1?-,(12!+8!48558D!d,\*19012!\*19+1(0. )=1; \*112!+>1!(1: -5)+,890!01+!  
7=!+>1!f44,\*1!84!#>,52!#) (1!d,\*190,9: !LF##dM!7=!X8,9,9: !] 15)D) (1!H+) (0!48(!") (5=!  
H- \*\*100!8(!7=!+>1!5,\*19011T0!8D9!1448(+OB!  
VB!! "9A,(89. 19+)5!` )+,9: !H\*)51!! ,0!)!4). ,5=!84!<(82-\*+0!+>)+!) (1!210.: 912!+8!  
)00100!\*19+1(67)012!!\*>,52!\* (1!<(8: ( ). 0!48(!A) (,8-0!): 1!: (8-<0!,9\*5-2,9: !,94)9+0!  
)92!+82251(OB!N>1!/94)9+[N82251(!` )+,9: !"9A,(89. 19+)5!` )+,9: !H\*)51!,0!+>1!0\*)51!!  
)<<(8<(),+!148(!-0!1,9!+>,0!<() \*+, \*- . !<5)\*1. 19+B!  
WB!! [15)D) (1!" ) (5=!d1) (9,9: !C8-92)+,8900!!/94)9+) 92!N82251(!<(8A,210!)!  
7(8)2!<,\*+-(1!84!D>)+!>)<<190!+8!\*>,52(19!)0!+>1=! : 8!4(8. !,94)9\*+=!+8!+82251(6  
>882B!#>,52(19!21A158<!0!)!(10-5+!84!+>1!. )9=!+>,9: 0!+>)+!>)<<19!D>,51!+>1=!)(1!  
,9A85A12!D,+>!+>1!)2-5+0!D>8!\*) (1!48(!+>1. B!N>1!" ) (5=!d1) (9,9: !C8-92)+,890!  
28\*- . 19+!,0!,9+19212!+8!01(A1!)0!)!D)=!48(!)2-5+0!+8!190-(1!+>)+!+>1=!)(1!. )E,9: !  
)A),5)75!)<<(8<(),+!)92!911212!) \*+,A+,10!+8!0-<<8(+!\*>,52(19T0!: (8D+>!)92!  
21A158<. 19+B!N>1!28\*- . 19+!,0!,9+19212!+8!71!-012!)0!)!7(8)2!,90+(-\*+,89)5!  
: -,21!48(!<5)99,9: !1; <1(,19\*10B!  
%B!! G921(0+)92,9: !d1) (9,9: !` 108-(\*10!  
6!!!!!!!!!!!! g5-1<(,9+!48(!` 1(089)5,\12!d1) (9,9: !,9!] 15)D) (1!  
6!!!!!!!!!!!! g588. T0!N); 898. =!  
6!!!!!!!!!!!! #5)00(88. !a)9): 1. 19+!  
6!!!!!!!!!!!! ^ (8-<!D8(E!G0,9: !\*88<1()+,A1!51) (9,9: !: (8-<0!1441\*+,A15=!  
6!!!!!!!!!!!! /9\*(1)0,9: !/9\*5-0,A,+=! ,9!+>1!#5)00(88. !  
6!!!!!!!!!!!! Z8D!' 18<5!d1) (9!  
6!!!!!!!!!!!! a 1+)\*8: 9+,89!  
6!!!!!!!!!!!! a ,924-59100!,9!+>1!#5)00(88. !  
6!!!!!!!!!!!! a 8+,A)+,9: !H+-219+0!  
6!!!!!!!!!!!! ' 1(089)5,\12!d1) (9,9: !  
6!!!!!!!!!!!! H-70+,-+,89!J-: . 19+)+,89!a 82,4,\*)+,89!` 1214,9+,89!a 8215!  
6!!!!!!!!!!!! N1\*>9858: ,\*)5!' 12): 8: ,\*)5!J92!#89+19+!h98D512: 1!  
6!!!!!!!!!!!! N1)\*>1(IN88578: !  
6!!!!!!!!!!!! i ,0-)5!d1) (9,9: !

#\$!!%&&'()\*+,-./)0-1./!+-.! 23.&&.&!'\*!4..5,6!2)&0,./\$!

