#+, *2//&

 $\%G2\&(\)^*+, \&\%.\ /0\&1, \ +^*2\& > 23\&3G+,\ DCG,\ D3\&3G2\&1.\ N\&TUTU\&32+>\&.\ @5\&].\ @D.\ +0\&TUT;\ 0\&83\&+2K)2L25\&^*,\ @^*2+@/\&3G.\ 3\&G.\ 5\&L22@\&I+,\ DCG3\&A,\ +L.\ +5\&I\ 0\&>2>I\ 2+/\&,\ A\&.\ ^*.\ 52>)^*\&/3.\ AA\&L)3G)@\&3G2\&1.\ ^*DNB)2/\&3,\ \&3G2\&\$AA)^*2\&,\ A\&3G2\&\#+,\ K,\ /3\&[\ \&7)^*2:\ \#+)@^*)?.\ N\&M4^*.\ 52>)^*Y\&.\ @5\&3,\ \&(\ 4^\%&3,\ \&5)/^*2+@\&G,\ L\&I\ 2/3\&3,\ \&.\ 55+2//\&3G2/2\&^*,\ @^*2+@/\&.\ C.\)@/3\&3G2\&I.\ ^*05+,\ ?\&,\ A\&3G2\&A,\ NN,\ L)@C\&A.\ ^*3,\ +/V\&$

*. @5)5. 32/0k 43k 3G2k /. >2k 3)>2Jk >. @0& *. @5)5. 32/k *, DN5& I 2k /D**2//ADN& 2K2@k \bot 3G, D3& 3G2k 52A2++. NOK (, +2, K2+Jk , K2+k 3G2k N, @C2+k 32+>k . & 52A2++. NoK *. @&. AA2*3& *. +22+k ?+, C+2//), @Jk /. N. +UJk . @5& ?2@/), @0k %G2+2A, +2Jk I 2A, +2&52*)5)@C&3, &52A2+Jk*. @5)5. 32/k/G, DN5&G. K2&3G2&*G. @*2&3, &5)/*D//k3G2&>. 332+k \bot 3Gk 3G2)+&6G.)+&3, &2E?N, +2& \bot G23G2+&3G2&52A2++. NOK)&@2*2//. +Q&. @5&3, &D@52+/3. @5&3/k*, @/2SD2@*2/0X%G2&.)>&)/AA, +&3G2&*. @5)5. 3288, &>. 02& &ADNOX)@A, +>25&52*)/), @0X%G2+2\(\)/\&@, &, I\(\)C. 3), @&, &&G2&*. @5)5. 3288, &>)/*D//&?2+/, @. Not >. 332+/\&)@&523.)\(\)NOKCG)\(\)1283G2&52*)/), @&3, &52A2+&+2. ??,)@3>2@3&, +&32@D+2&>. O&I 2&5)/*D//25&. @5&

- $0^{-1} = 0$
- 10 +2/3+)*325&. **2//&3, &+2/2. +*G&A. *)N3)2/J&/)32/J&, +&, 3G2+&+2/, D+*2/&
- *0 /N, L25&)@A+. /3+D*3D+2&52K2N, ?>2@3&@2*2//. +Q&3, &*, @5D*3&+2/2. +*G&W)@*ND5)@C&)@/3. NN. 3), @J&+2?.)+/J&. @5&*, >>)//), @)@C&, A&2SD)?>2@3Y&
- 50 52N. Q25k?+, *D+2>2@3X. *SD)//3), @k, Ak>. 32+). N/Jk2SD)?>2@3Jk/?2*)>2@/k
- 20 +25D*25&. I)N3Q&3, &*, @5D*3&*, NN. I, +. 3)K2&L, +0&5D2&3, &. **2//&+2/3+)*3), @/&3, & (*M)N&A. *)N3)2/J& ?. +3@2+&A. *)N3)2/J&A)2N5&N, *. 3), @/J&23*0&
- A0)>?. *3&, A&3+. K2Nk+2/3+)*3), @/&, @&?2+A, +>. @*2&, A&5D3)2/\$N)020J&3, &, 3G2+&1, *. 3), @J&, +&I. *0&3, &(*M)NV&
- CO 52?. +3D+2/&, A&C+. 5D. 32&/3D52@3/&)@&MCG3&, A&6\$789:; <&
- G0 A2L2+&, ??, +3D@)3)2/&A, +&+2/2.+*G&52K2N, ?>2@3J&*, W. I, +.3), @J&.@5X, +&5)//2>)@.3), @& W20C0J& *. @*2M25&*, @A2+2@*2/&, +&+2/2.+*G&L, +0/G, ?/`&N. *0&, A&K2@D2/&3, &?+2/2@3&+2/2.+*G`&52N. Q25& ?DIN)*.3), @/Y&
-)0)>?. *3&, A&+2>, 32&32. *G)@C&W>, +2&3)>2:)@32@/)K2&3, &?+2?. +2J&?, 32@3). N& 2AA2*3&, @&/3D52@3&2K. ND. 3), @&/*, +2/Y&
- a0)@.I)N3Q&3,&*.++Q&,D3&D/D.N&+2/2.+*GJ&20CU&A.*2:3,:A.*2&L,+O&L)3G&GD>.@&?.+3)*)?.@3/J&2@C.C2>2@3N)@&?DIN*&?2+A,+>.@*2/&
- 00 ?2+/, @. N&G2. N&G4*, @5)3), @/&3G. 3&>)CG3&G. K2&+2SD)+25&/?2*). N&?+2*. D3), @/J&+25D*)@C&. I)N)3Q&3, & *. ++Q&, D3&. *. 52>)*&L, +O&
- NO G2. N3G&) > ?. *3/&q&)@*ND5)@C&>2@3. N&G2. N3G&)>?. *3/&q&, A&6\$789:; <&
- >0 2E?. @525&5D3)2/&3G. 3& >. Q& G. K2& I 22@&+2SD)+25&5D+)@C&3G2&?. @52>)*&?2+), 5& W20CU&@2L& W2.52+/G)?&+, N2/J&2E*2?3), @. N&32. *G)@C&5D3)2/J&. 5525&C+. 5D. 32&. @5&D@52+C+. 5D. 32&> 2@3, +/G)?&+2/?, @/)I)N3)2/J&/D??, +3&C)K2@&, &, 3G2+&*, NV2. CD2/&3, &. //)/3&L)3G&G2&>, K2&3, &+2>, 32&32. *G)@CYJ&>)@5ADN&, A&3G2&?, 32@3). NVQ&5)/?+, ?, +3), @. 32&)>?. *3/&, @&. *. 52>)*&/3. AA&LG, &. +2&>2>I 2+/&, A&D@52++2?+2/2@325&. @5&2SD)30:/220)@C&C+, D?/&
- @0 +25D*25&5D3)2/&3G. 3&>. 0&G. K2&I 22@&. ++. @C25&L)3G&. &92?. +3>2@3&5D+)@C&3G2&?. @52>)*&?2+), 5& W20CU&/, >2&92?. +3>2@3/&G. K2&52*)525&. /&. &D@)3&3, &M)>)3&3G2&/2+K)*2&+2/?, @/)I)M3)2/&, A&?+2: 32@D+2&*, M2. CD2/&5D+)@C&3G)/&?2+), 5Y&
- , 0 @2 L&, +&)@*+2. /25&A, +>/&, A&L, +0&3. 02@&D?&, @&. **, D@3&, A&?. @52>)*&*, @5)3), @/J&?. +3)*DN. +NQ&3, & /D??, +3&*, NI2. CD2/J&/3D52@3/&, +&3G2&D@)3X1. *DNSQX^@)K2+/)3Q&. /&. &LG, N20&

 $4*.52>)*\&/3.\ AA\&5, \&@, 3\&@225\&3, \&?+, K)52\&/D??, +3)@C\&2K)52@*2\&A, +\&. @O\&, A\&3G2\&A. *3, +/\&*)325\&.\ I, K2\&W20CU\&>25)*.\ N\& @, 32/\&, +\&. 332/3. 3), @/\&/G, L)@C\&*. @*2N25&*, @A2+2@*2\&, ??, +3D@)3)2/YO&!. 3G2+J&)3\&)/\&. \&>. 332+\&, A&2E?N.)@)@C&L)3G&/, >2\&/?2*)A)*)3O\&. @5\&523.)N&G, L&. @O&A. *3, +/&*)325&L, DN5&G. K2&+25)+2*325J&+2/3+)*325J&, +&. DC>2@325&. *. 52>)*&5D3)2/O&B@5225J&/, >2&, A&3G2&A. *3, +/&*)325&L I, K2&L)NMO@K, NK2&5)/*N, /D+2&, A&G)CGNO&/2@/)3)K2&)@A, +>. 3), @0&92*)/), @&>. 02+/&A, +&+2.??,)@3>2@3J&32@D+2J&?+, >, 3), @J&. @5&>2+)3&. +2&. N+2.5O&I, D@5&3, &3+2.3&)@A, +>. 3), @&+2*2)K25&3G+, DCG&3G2/2&?+, *2//2/&)@&/3+)*3&*, @A)52@*2*&/D*G&/&2/?2*). MO&3G2&*. /2&A, +&@A, +>. 3), @&5)/*N, /25&3, &/G, L&G, L&?2+/, @. N&*)+*D>/3. @*2/&. AA2*325&. *. 52>)*&?2+A, +>. @*2&5D+)@C&3G2&?. @52>)*O&$

by 1, +&6G.)+/&

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&g&G. K2&@, 3&*G. @C250&\, L2K2+J&A, +&3G, /2&

A

^{*,} NN2. CD2/&LG, /2&L, +0&L. /&. 5K2+/2NQ&. AA2*325&1 Q&6\$789:; <&)@&. &/)C@)A)*. @3&L. QJ&. //2//>2@3&/G, DN5&*2@3+2&, @&3G2&SD2/3), @V&C G. 3&