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 $\begin{array}{l} U()\,5\$)\,723.\,B\&CO7\,)\,F2\$\,87\$(\,):\$2(\,.\,J\$'\,)\$7\&83\&\$27\$\,?32\&'2\$7A3\&\$\,1\,'25+\$\$V3.\,7>A3\$27\$87\$\\ 3(45\$=7<\$'\,)\$\,(\$\&3>(\,I\,38\$\,1\,(\,:\,B\&\,1\,'25\$\,(\gg\&:\,7\,;\&\$\,(223\,)2'7\,)+\$\&\,\setminus\,)=7:\$\,(\,)\,8\$<3\$7\,)\,3\$\,1\,'25\&:7\,;\&\$\,17\&J+E^a\$ \end{array}$

053\$<3)36'2.\$76\$9')86;>)3..\$(&3\$13>>\$3.2(<'.538+\$\$D')86;>)3..\$5(.\$<33)\$

 $\begin{array}{l} 053\&3\&(\&3\&); 93\&7; .\&1\&'2')?.\&27; 2')?\&253\&(8A()2(?3.\&9')86;>)3..\&9(:\&'9')86;>)3..\&9(:\&'9')86;>)3..\&9(:\&'9')86;>)3..\&'9', 8253\&-(\&2'3.B\&()8\&253\&-(&2'3.E)&()8\&253\&-(&2'43.E)&743..\&76\&93&(2'7)\&'2.3>6+^{\#b}\&50\\ D')86;>)3..\&'.\&.&33)\&(.\&-(\&2'4;>(\&:\&)&8&63&42'A3\&67&&53>-')?\&253\&93&(27\&&33&1')9-(\&2'(&S&()&8&(A7')&S&(-&2')&(A2')&$

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f7&\$:3(&.\$@\$.2&;??>38\$27\$6(4'>'2(23\$4799;)'4(2'7)\$(.\$(\$938'(27&+\$\$@\$47;>8\$)72\$.339\$27\$5')J\$76\$253\$&'?52\$n;3.2'7)B\$;)83&.2()8\$253\$8:)(9'4.\$2(J')?\$->(43\$

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A7>;)233&\$&3=342'7)\$67&438\$ 9 3\$27\$25') J\$&33->:\$(<7;2\$ 9 :\$ 1 3(J)3..3.\$() 8\$27\$ 674;.\$7)\$>3(&)')?\$57 1 \$27\$(42;(>>:\$6(4'>'2(23\$(\$47)A3&.(2'7)+\$

 $\begin{aligned} &27\$2\&(')\$257; .()8.\$76\$938'(27\&+\$\$f7\&\$93\$()8\$253\$.2;83)2.\$\%2\&(')B\$'9-(\&2'(>'2:\$93().\$253\$93\&'(27\&\$873.\$)72\$.2(23\$253'\&$7-')'7)B\$-\&7A'83\$:;??3.2'7).B\$\\ &3A(>;(23\$253\$93\&'(27\&\$873.\$)72\$.2(23\$253'\&$7-')'7)B\$-\&7A'83\$:;??3.2'7).B\$\\ &3A(>;(23\$253\$93\&'(2.\$76\$253\$.'2;(2'7)B$23>>():7)3\$15(2\$27\$87B$7\&$-&3..;&3\$:\\.322>393)2+\$\$66\$@(9$>'.23)')?$27$3A(>;(23\$7\&\$=;8?3B$9:$9')8$1'>> -&7<39W\\ .7>A3B$()8$\&1'>>)72$<3$-&3.3)2$1'25$15(2$253:$(&3$(42;(>>:$.(:')?+$)0$9;.2$<3$-&3.3)2$8'9793)2$27$$9793)2$8;&')?$($938'(2'7)+$$D7)'27&')?$9:$257;?52.$8;&')?$($938'(2'7)$.3..'7)$.')43$<34(93$()$3..3)2'(> -(&2$76$<3')?$()$366342'A3$938'(27&+^{KK}$D:$938'(2'7)$-&(42'43$83A3>7-38$8'&342>:$(.$(&3.;>2$76$9').$9')86;>)3..$-&(42'43+$D38'2(2'7)$'.$15(2$3)(<3.$93$27<3($938'(27\&).$9').$1'25$253$938'(27\&F.$')23)2+$$

053&3\$ (&3\$6'A3\$ 938'2(2'7)\$ 9783.\$25(2\$.; --7&2\$ 9:\$ 938'(2'7)\$ -&(42'43+\$\$ f'&.28\$ @\$ 5(A3\$ (\$ 9')86;>)3..\$ -&(42'43\$ 25(2\$ ')4>;83.\$ <725\$ (\$ 8('>:\$.'22')?\$ 938'2(2'7)%74;.38%7)%253%<&3(25%()8%(%21'43\8('>:\$2&().43)83)2(>\$938'2(2'7)\$ ') 15'45 6674; 7) ($9()24(+^{K!})$ 68(9); -'k38 <: 05'45 N5(2) U()5F. (443..'<3%7%9%76%9')86;>)3..%()8%5(A3%-&3A'7;.>:%(223)838%5'.%9')86;>)3..% &32&3(2.+^{KL}\$\$S347)8B\$@\$938'2(23\$-&'7&\$27\$3A3&:\$938'(2'7)+\$\$@\$(&&'A3\$3(&>:\$27\$253\$. '23\$76\$253\$938'(2'7)\$()8\$@\$>'J3\$27\$.32\$; -\$253\$&779\$()8\$253)\$. '2\$n; '32>: \$67&\$(\$ 631\$9');23.+\$\$@\$(>1(:.\$3)8\$9:\$9')86;>)3..\$.3..'7)\$<:\$-;22')?\$9:.3>6\$(2\$(\$.-34'6'4\$-7')2\$')\$253\$938'(2'7)\$153&3\$@\$4()\$'9(?')3\$9:.3>6\$633>')?\$-&3..;&3+\$\$ S7932'93.BS@S'9(?')3S9:.3>6S.2&;??>')?S27S(.JS253S&'?52Sn;3.2'7)BS27S53>-S253S - (&2'4'-()2.\$633>\$53(&8B\$27\$83(>\$1'25\$253\$-(&2'3.F\$()?3&B\$7&\$27\$83(>\$1'25\$9:\$71)\$ 7-1, ()8; 8?93, 2.525, $(2^{(1)}, 3^{(2)}, 253)$; $(>3+550, 6^{(1)}, 8)$; $(2^{(2)}, 2^{(2)},$ ')\$25(2\$->(43\$')\$9:\$9')8\$()8\$<&3(25')?\$833->:B\$@\$(9\$(<>3\$27\$&3>(I\$()8\$C.33E\$ 9:.3>:B (8) Aq0.24m ?')m (4)m.24mm4

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 $\label{eq:starter} \begin{array}{l} -\&'7\&\$7\%(623\&\$(\$4(;4;.B\&\$\$)'J3\$27\$2(J3\$!6\$.347)8.\$27\%74;.\$7)\$9:\$<\&3(25')?\$\\ () 8\&\$3\%43)23\&\$9:.3>6\$15'>3\&\$39')?\$9:.3>6\$76\$9:\$\&7>3\$')\$253\$938'(2'7)+\$\\ & *.\$(\$67;\&25\$9783B\$()8\%6;)8(93)2(>\$27\$9:\$938'(2'7)\$.2:>3B\&\$(9\$(42;(>):\$)))$

 $\begin{array}{l} 9\,38'2(2')\,?\$\,\,1\,5'>3\$\,\,\emptyset\$\,\,9\,38'(23+\$\,\,\$\,\,S7\$\,\,6(\&\$\$\,\,\emptyset\$\,\,5(A3\$\,\,9('))>:\$\,\,8'.4;\,..38\$\,\,')23\&)\,(>\$\,\,9')\,86;>)\,3.\,._\&<3')\,?\$(\,1\,(\&3\%76\$\,\,1\,5(2\$'\,.\$?7')\,?\$^{1}\,\,'25')\,\$9\,3\$(\,.\$(\$1\,(:\&7\%97)\,'27\&\$9\,\,:\$\,'9\,\,-(\&2'(>'2:+^{Ka}\$)\,\emptyset)\,(>.7\$674;\,.\$7)\,\$4\&3(2')\,?\$(\,)\,(1\,(\&3)\,3.\,.\$76\$\,\,1\,5(2\$'\,.\$5(--3)\,')\,?\$\,(\&7\,;\,)\,8\$\,\,9\,\,3+\$\,\,\emptyset\,\,\emptyset\,\,\$5'\,\,.\$\,\,1\,(:\$\,\,\emptyset)\,\,(9\,\,\$;\,.')\,?\$\,\,<725\$\,\,')\,23\&\,(>\$\,\,(1\,\,8\$\,\,3123\&\,)\,(>\$\,67\&\,9\,\,.\$\,76\$\,\,9'\,\,)\,86;>)\,3.\,.+^{KZ} \end{array}$

-5&(.3\$,:;45\$(.\$C'2\$,7;)8.\$>'J3BE\$C:7;\$633>BE\$C67&\$:7;BE\$C0F9\$53(&')?BE\$()8\$ 9():\$7253&.\$(.\$0\$9(:\$<3\$9'.;)83&.2()8')?B\$()8\$25'.\$-&72342.\$9:\$'9-(&2'(>'2:+\$\$ 0\$&36>342B\$Ci7;\$633>\$Q()3\$5(.\$(>1(:.\$<33)\$(\$?&3(2\$97253&BE\$15'>3\$?>()4')?\$(2\$ Q()3\$27\$9(J3\$,:\$&3\$.53\$53(&8\$15(2\$1(.\$,('8+\$\$0\$17;>8\$47)2');3B\$C<;2\$'2F.\$ '9-7&2()2\$67&\$:7;\$27\$<3\$')4>;838\$')\$834'.'7)W

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4()\$253)\$.27-B\$()8\$.7937)3\$1'>>\$6'>>\$253\$?(-\$')\$253\$.'>3)43+\$\$e &\$\$\$\$4()\$(88&3..\$ 253\$;)83&>:')?\$(..;9-2'7).\$76\$253\$.2(2393)2B\$(..;9-2'7).\$\$\$17;>8\$)72\$<3\$(<>3\$ 27\$.33\$;)>3..\$\$\$13&3\$-&3.3)2\$()8\$9')86;>:\$-&3-(&38\$27\$&36>342+\$

053&3\$(&3\$9;>2'->3\$(..;9-2'7).\$1'25')\$0(93.F.\$.2(2393)2\$6'&.2B\$25(2\$%'>>\$;)83&.2778\$ 253\$ 47)2&(42+\$ \$ \$347)8B\$ 25(2\$ %'>>\$ ()8\$ Q(93.\$ 5(A3\$ 253\$.(93\$;)83&.2()8')?\$76\$253\$47)2&(42+\$\$05'&88\$25(2\$'2\$1(.\$.'9->3\$67&\$%'>>\$27\$67>>71\$253\$ 47)2&(42+\$\$ f')(>: B\$253&3\$'.\$()\$(..; 9-2'7)\$25(2\$;)83&.2()8')?\$253\$47)2&(42\$ 17;>8\$3(8\$27\$67>>71')?\$'24\$05'.\$'.\$(\$4799;)'4(2'7)\$J)72\$.'9'>(&27\$25(2\$(&?3\$ <(>\$76\$2()?>38\$479-;23&\$1'&3.\$()8\$3>342&7)'4\$47&8.\$25(2\$13\$(>\$5(A3\$')\$(\$<7I\$ 7&\$8&(13&\$.793153&3\$')\$7;&\$5793.+\$\$053\$938'(27&F.\$=7<\$'.\$27\$;)2'3\$253\$J)72\$ <: \$6(4'>'2(2') ?\$253\$47) A3&. (2'7) +\$\$053.3\$(..; 9-2'7) .\$(&3\$(>>\$Q(93.F.\$;)(.J38\$ n; 3.2'7).B; (J385<34(;.35253:5(&35-5&(.385)3..525())8'&342:5')525367&9576(44; (2'7).\$25(2\$(&3\$)72\$(>1(:.\$3(.:\$67&53(&53(&53(&52)))83&2()8+\$5623&9:\$ &36>342'7)\$ @\$ 4()\$ (.J\$ % '>>B\$ CO3>>\$;.\$ 97&3\$ (<7;2\$:7;&\$;)83&.2()8')?\$ 76\$ 253\$ 47)2&(42BE\$7&\$CM5(2\$(&3\$:7;&\$257;?52.\$(<7;2\$571\$253\$47)2&(42\$1(.\$67>>7138BE\$ 7&\$CM5:\$8'8\$25'.\$5(--3)\$6&79\$:7;&\$-3&.-342'A3BE\$7&\$CU71\$8'8\$253\$3I34;2'7)\$ 76\$ 253\$ 47)2&(42\$>77J\$ 6&79\$:7; & -3&. -342'A3qE\$ e & 0\$ 4()\$ 6'&.2\$ (.J\$ 0(93.\$ n; 3.2'7).\$25(2\$1'>>\$>'J3>:\$53>-\$%'>>\$27\$;)83&.2()8\$5'.\$47)43&).h\$CS(:\$97&3\$ (<7;2\$15:\$:7;\$633>\$%'>>\$;)83&.2778\$253\$47)2&(42F.\$-(&(9323&.BE\$7&\$CR()\$:7;\$ 23>>\$; .\$15(2\$67>>71')?\$253\$-(&(9323&.\$76\$253\$47)2&(42\$17;>8\$5(A3\$>77J38\$>'J3\$ 27\$:7;qE\$\$\$()\$25'.\$1(:B\$n;3.2'7)')?\$'.\$'J3\$25(2\$<;)8>3\$76\$47&8.\$()8\$\$\$(9\$-'4J')?\$ 7)3\$ ()8\$67>>71')?\$'2\$<:\$4577.')?\$ (\$n;3.2'7)\$6&79\$9:\$&36>342'7)+\$\$053'& (). 13&.\$1'>>\$')8'4(23\$27\$93\$15(2\$'.\$'9-7&2()2\$27\$2539\$()8\$@\$4()\$47)2');3\$27\$ &36>3428\$3I-()8\$')67&9(2'7)\$()8\$97A3\$')\$15(23A3&\$(&3(\$253:\$17;>8\$>'J3+\$\$ D38'(2'7)\$'.\$(\$-&743..B\$<;2\$'2\$'.\$)72\$)343..(&'>:\$>')3(&\$7&\$87)3\$')\$(\$.2&('?52\$) >')3+\$

$$\begin{split} &M'25\$(93.F.\$7k'?')(>\$.2(2393)2\$(<7A3B\$\$9'?52\$k36>342\$(.\$\%7k'?')(>):\$8'8B\$\\ &CS7\%7k\$:7;B\$253\$47)2\&(42\$'.\$4>3(\&B\$()8\$:7;\%33>\$\%'>>\$;)83\&.2778\$'2F.\$-(\&(9323\&.+\$))574\&:7;B\$25'.\$'.\$(<7;2\%67>71W25&7;75$()8$:7;F&3$)72$.:&k3$15:$25(2$8'8)F2$5(--3)+E$$ ($47;>8$(>23\&)(2'A3>:$.2(23$)74$(88^B$)Cf7k$:7;$25'.$'.$(<7;2$J)71>38?3$()8$k3.-7).'<'>2:$+$+$+$+$E$$053$67>71W25&7;75$7)$253$47)2&(42$1(.$3.-34'(>):$'9-7&2()2$27$:7;+E$$05'.$>3(8.$;.27($->(43$76$8'.4;..')?$253$2&;3$'..;3.r15:$1(.$67>71W25&7;75$)(8$31-342(2'7).$(8$8^1.4;..')?$253$2&;3$'..;3.+$$$

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D38'(2'7)\$'.\$)72\$(<7;2\$(.J')?\$3(.:\$7&\$')8'&342\$n;3.2'7).+\$\$02F.\$(<7;2\$

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8'663&3)2\$'65Q(93.\$5(8\$')67&938\$5'9+\$\$e &\$@\$9(:\$(.J\$Q(93.\$253\$.23-.\$253:\$13)2\$ 25&7;?5\$153)\$253:\$8'.47A3&38\$253\$3&&7&+\$\$@\$(9\$)72\$2&:')?\$27\$8323&9')3\$253\$ 2&;25\$76\$153253&\$Q(93.\$1(.\$')67&938B\$()8\$@\$(9\$)72\$=;8?')?\$253\$.2(2393)2\$(.\$;)53>-6;>\$7&\$'&&3>3A()2\$27\$2539&3(45')?\$()\$(?&3393)2+\$\$@\$(9\$')23&3.238\$')\$253\$ 4799;)'4(2'7)F.\$8:)(9'4.\$()8\$253\$')67&9(2'7)\$3(45\$.'83\$'.\$.33J')?+\$\$@\$(9\$ 17&J')?\$27\$3I-()8\$')67&9(2'7)\$()8\$53>-')?\$2539&8'.4;..\$253\$'..;3.+\$\$07\$87\$.7\$<3?').\$1'25\$9:\$')23)2\$27\$.2(:\$-&3.3)2\$1'25\$253'&\$4799;)'4(2'7)\$()8\$@\$;.3\$ &36>342'7)\$(.\$253\$'9-32;.\$27\$(45'3A3\$25(2\$7<=342'A3+\$

 $\begin{array}{l} (<7; 2\$+\$+\$+E\$27\$J33-\$9:\$n; 3.2'7).\$7-3)+\$\$N723\$571\$253\$n; 3.2'7)\$4()\$<3\$2('>7&38\$ 27\$<3\$4>7.38\$(.\$27\$: <=342+\$\$06\$0\$(.J\$4>7.38\$N3)838\$n; 3.2'7).\$.33J')?\$(\$:3.\$7\&\$) 7\$().13\&B\$0\$1'>>\!\!87&223\$57k23\&\$().13\&B\$>'9'2')?\$253\$83-25\$()8\$<&3(825\$76\$():\$-7...'<3\&36>342'7)+\$\$02$'.$'9-7&2()2$27$J33-253n; 3.2'7).$7-3)$3)838B$()8$(>.7\$ 27$<3$1'>')?$(253$$1'>')?$(.J$253$.'9-7&2()2$27$J33-$253$n; 3.2'7).$7-3)$3)838B$()8$(>.7\$ 27$<3$1'>')?$(253$$1'>')?$(.J$253$.'9-7&2()2$27$J33-$253$n; 3.2'7).$7-3)$3)838B$()8$(>.7\$ 27$<3$1'>')?27(.J253.'9->3$n; 3.2'7).+$$053$$97&3$-3&6342$$02$&:$27$$9(J3$253$)$

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 $\begin{array}{l} S7932'93.\$257.3\$n;3.2'7).\$(\$3\$<3223\$\$(.J38\$')\$4(;4;.B\$83-3)8')?\$7)\$571\$\\9;45\$2\&;.2\$5(.\$<33)\&<;'>2\$')\$253\$8779+\$ \end{array}$

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$$\begin{split} & S347) \, 88\% (4'>'2(2'A3\$9 \, 38'(2'7)\$', \$) \, 72\$; \, .2\% 74\$ - (\&2'3.\$157\$1() 2\$27\$5(A3\$())\$') \, 23\&3.2 \mathbb{W} < (.38\$) \, 3?72'(2'7) + \$, .>3) \, 2.\$ \, 76\$ \, 9 : \$ \, 9 \, 38'(2'7) .\$') \, A7>A3\$ - 7 . '2'7) \, (> \$) \, 3?72'(2'7) + \$ \, (>3\%) \, 23\&3.2 . \$27\$53> - \$ - 37 - .>3\% 633> \$53(\&8B\$27\$53> - \$3(45\$, .'83\$8323\& 9') \, 3\$15(2 \& 53 \$ - 1()) \, 2 \& 27\$31 - () \, 8 \& 53\$ - '3\$1 \, '25\$47>> (<7\&(2'A3\$, 7>; 2'7) . B\$ \, () \, 8 \& 27\$53> - \$253 \, 9 \, \$9 \, (J3\$ \, 9 \, 7\&3\$ - 3\&.; (.'A3\$7663\& . B'2'2' . \$; - \$27\$3(45\$, '83\$571 \, \$253 : \$ \, 17; >8\$>'J3\$27\$ \,) \, 3?72'(23+\$ \, 17; >88) \,) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 17) \, 3?72'(23+\$ \, 38) \, 3?73'(23+3) \, 3?72'(23+\$ \, 17) \, 3?72'(23+8) \, 3?73'(23+3) \,$$