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 $8 \ Ug`Dfc \Upsilon_h` \ ZYf]Yb!]b\_`i \ g]j \quad `XYf`GhYd \setminus Ubi \ g!Gh]Zhi \ b[ \ `ZOfXYfh \ ]b\_`i \ g]j \ Y`: \ Yf]YbUb[ \ YVchY`ZØf`U``Y`?]bXYf`]b`6fUbXYbVi \ f[ \ "$ 



 $\begin{array}{l} \text{HYa d']bž'8Yi hgWk'UbX'!'K Ug'XØfZYb'k } \text{fij cb'XYb'Gca a YfZYf]Yb'Yfk UfhYb3'8} \text{Y'GhYd}Ubi g!Gh]Zhi b['Vf]b[h'Zf]gWkYb'K ]bX']b'X]Y \\ \text{Yf]Ybd'Ubi b['ZØf'?]bXYf'i bX'$\delta [YbX']WkY']b'6fUbXYbVi f['''A]h \\ \text{XYa 'Dfc'Y_h' ZYf]Yb!]b_'i g]j 'a \tilde{O}WkhY'X]Y'Gh]Zhi b['g]WkYfghY''Ybž \\ \text{XUgg'U''Y''h b[Yb'AYbgWkYb']a '5'hYf'j cb'%$'V]g'&%'$JJ\fYbž'['Y]Wk \\ \text{cV'a } ]h'cXYf'c\bY'6YY]bhfAWkh][i b[ž'Ub'gdUbbYbXYb \\ \text{: Yf]YbUb[YVchYb'hY]'bY\a Yb'_\tilde{O}bbYb'''Gc'k ]fX'$\ddotb_\tilde{o}i'g]cb'']b'XYb \\ \text{: Yf]Yb'b]Wkh'bi f'[fc*[YgWkf]YVYbž'gcbXYfb'Ui Wk'[Ubn'dfU_h]gWk \\ \text{i a } [YgYhnh'''8]Y'$\ddotb]h]Jh]Jh]j Y'k ]fX'j ca''A ]b]ghYf]i a 'ZØf'6]'Xi b[ž $\delta [YbX'i bX'Gdcfh'fA 6$\delta E'6fUbXYbVi f[''[YZOfXYfh'i bX'V]YhYh ]YfUbghU'hYfb'i a ZUb[fY]WkY'I bhYfghØhni b['''] \\ \end{array}$ 

: ÒfXYfa ]hhY`i bX'GW\i`i b[Yb'ZØf'JYfUbghU`hYf

 $8 \ Ug' Dfc' Y_h'f] W h Y h'g] W 'j \ cff Ub [\ ] [\ 'Ub' X] Y'J Y f Ub ghU'h Y f'j \ cb \ : f Y] n Y] h Ub [\ Y V c h Y b' i b X' b] W h' X] f Y_h' Ub' X] Y'9 h Y f b' j \ cb \ V Y Y] b h f A W h] [\ h Y b'?] b X Y f b'' 8 ] Y g Y'_Ob b Y b'' Y X c W 'j \ cb'' X Y b \ J \ cfh Y] Y b'' d f c Z] h] Y f Y b'' 8 i \ f W X] Y'6 Y f Y] h g h Y'' i b ['j \ cb'': Of X Y f a ] h h Y' b \ k Y f X Y b'' n i \ g A h n'] W X'6 Y h f Y i Y f' [Y k \ cb b Y b z' X] Y'Y] b Y'e i U'] Z] n] Y f h Y 6 Y h f Y i i b ['X Y f' h Y]' b Y \ a Y b X Y b'?] b X Y f' [Y k \ A \ f'Y] g h Y b'' \ J Y f Ub g h U'h Y f'_Ob b Y b': Of X Y f Ub h f A [Y'[Ub n' i b_ca d'] n] Y f h' U i Z' X Y f \ K Y V g Y] h Y' \ Z Y f [Y b!] b_ i g] j "c f ['gh Y `Y b'' N i X Y a' [] V h' Y g \ _cgh Y b' cg Y z'n Y f h] Z] n] Y f h Y' G W i `i b [Y b' Z Ø f' 6 Y h f Y i Y f z' X] Y'] b' H Y a d'] b z 6 Y f'] b' c X Y f' U i W 'U'g' \ b \ c i g Y ! G W i `i b ['Ub [Y V ch Y b' k Y f X Y b''' ]$ 

9]b VYgcbXYfYg'<][\`][\h'g]bX'X]Y'GW\i`i b[Yb'i bhYf'XYf'@Y]hi b[jcb'DYhYf'K c\``YVYbž'XYf'gY`Vgh']a 'Fc``ghi \``g]mh'''9f'Vf]b[h'gY]bY 9fZU\fi b[Yb'i bX'?ca dYhYbnYb']b'X]Y'5i gV]`Xi b[Yb'XYf\_\@bZh][Yb'\b\_\i`i g]cbg\Y`ZYf'Y]bž'k Ug'ZØf'U``Y'6YhY]`][hYb'Y]bY gdUbbYbXY'gck ]Y'`Y\ffY]W\Y'9fZU\fi b['XUfghY``h'' 8]Y \\b\_\i`i g]cbg\Y`ZYf!GW\i`i b['k]fX'[i h'Ub[Ybca a Ybž'i bX'k]f'd`UbYb VYfY]hg']\fY'K Y]hYfYbhk ]\w\_\i b['\z'j Yff\h'Dfc\Y\_h\Y]hYf]b'GhYd\Ub]Y \\\h\J\X][\z'X]Y'g]\W\dUfU``Y``ni f': UW\\_fUZh'ZØf'\\b\_\i`j g]cbg!'i bX \\\\h\J\f[fUh]cbgd\hXU[c[]\_'k Y]hYfV]`XYh''

 $9]b[YYbXY5_h]j]hAhYbibX; YaY]bgWXUZhgYfYVb]ggY$ 

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8 ]Y 'I bhYf\_ØbZhY 'i bX '9]bf]W\hi b[Yb 'g]bX 'VUff]YfYZfY]'i bX 'V]YhYb ]bX]j ]Xi Y``Y '5bdUggi b[Yb 'ZØf'HY]`bY\a Yf'a ]h'VYgcbXYfYb 6YXØfZb]ggYb"'Gc'k ]fX ' $\pm$ b\_`i g]cb'U`g'[YgY``gW\UZh`]W\Yg'N]Y`'[Y`YVh

`XUVY] [ Y\h'Yg'b]W\h'bi f'i a 'X]Y'HY]`\UVYž'gcbXYfb'Ui W\'i a
[ Ya Y]bgUa Y'9f`YVb]ggYž'X]Y'ZØf'U``Y'?]bXYf'i bX'¾ [ YbX`]W\Yb
ni [ Àb[ `]W\'g]bX"'=b'Y]bYf'NY]hž']b'XYf'gcn]U`Y'=gc`Uh]cb'Y]b'[ fc» Yg
H\Ya U'XUfghY``hž'g]bX'gc`W\Y'5b[ YVchY'k]W\h][ Yf'XYbb'Y'''

9`hYfb'\_ÒbbYb'g]W\'X]fY\_h'Ub'Dfc'Y\_hdUfhbYf'i bX'JYfUbghU`hYf'k]YXYb'5``[YaY]bYb'6Y\]bXYfhYbjYfVUbX'@UbX'6fUbXYbVif['Y"J"cXYf'XUg'lakY`hnYbhfia'8fY]'9]W\Yb'kYbXYbžia'dUggYbXY:fY]nY]hUb[YVchY'ZØf']\fY'?]bXYf'ni'Z]bXYb"'Gc'k]fX'b]W\h'bif'XUg':Yf]YbUb[YVch'j]Y`ZÀ`h][Yfž'gcbXYfb'UiW\'X]Y'7\UbW'UiZ'Y]bibjYf[Ygg`]W\Yg'ibX'VYfY]W\YfbXYg':Yf]YbYf`YVb]g'XYih`]W\Yf\Ò\h"

K Yf'j cb'XYb'j ]Y`ZÀ`h][Yb'5b[YVchYb'dfcZ]h]YfYb'a ÒW\hYž'Z]bXYh k Y]hYfY' \( \frac{1}{2}\) Zcfa Uh]cbYb'i bX'I bhYfghØhni b['Ui Z'XYb'K YVgY]hYb'XYf Gh]Zhi b['gck]Y'Ui Z'ZYf]Yb!WUa dg"XYž'X]Y'YVYbZU``g']b\_`i g]j Y : Yf]YbUb[YVchY'VYfY]hghY``h"'9]b'gW\\ ObYf'GW\\f]hh']b'X]Y'f]W\\h][Y F]W\\hi b[\ž'k Ybb'Yg'XUfi a '[Y\hž'U``Yb'?]bXYfb'gdUbbYbXY K cW\\Yb']a 'Gca a Yf'ni 'Yfa \( \otag{\center}[\)]W\\Yb' 'c\bY'9]bgW\\f\\hab\_i b[Yb i bX'a]h'j]Y``: fYi XY''

8YhU]`g	
Cfh	HYad`]bž'8YihgWX`UbX
EiY``Yb	<ul><li>k k k "bcfX_i f]Yf"XY</li></ul>
	<ul><li>k k k "ghYd\Ubi g"cf[</li></ul>
	• k k k "ZYf]Yb!WUa dg"XY

6 Ygi WX Yb 'G]Y 'i bg 'Ui Z. 'bU[!VfUbXYbVi f[ "XY