

9f`YVYb'G]Y'?Uh\]':U`_.'5_i gh]gW\Y ?`Àb[Y'Ui Z'XYa '6YfbUi Yf'A Uf_hd`Uhn

9f`YVYb`G]Y`?Uh\]`:U`_g`U_i gh]gW\Y`?`Àb[Y`Ua`&("`5i[i gh Ui Z'XYf`A Uf_hd`UhnVØ\bY`]b`6YfbUi``'9]bhf]hh`ZfY]°'6Y]`FY[Yb]a `FUh\Ui g"

5a '&("'5i [i gh']gh'Yg'YbX`]WX 'gck Y]h '8]Y 'GhUXh'6YfbUi 'k]fX'j cb XYb'? `Àb[Yb'XYf'hU`Ybh]YfhYb'? Øbgh`Yf]b'? Uh\]': U`_'j YfnUi VYfh'' 5V'%\$"' \$'I \f'Yf_`]b[h'X]Y 'gWX ÒbY 'Gh]a a Y': U`_g'Ui Z'XYf'6Ø\bY Ua 'A Uf_hd`Uhnž'k c'g]Y'a]h']\fYf';]hUffY'X]Y'Ni \ÒfYf']b']\fYb'6Ubb n]Y\Yb'k]fX"

A I $G = ? -A ? C F 6. 9]b '_Y]b Yg : Ygh]j U ZØf U Y$

 $8]Y'JYfUbghU'hib['hfÀ[h'XYb'_`Ub[jc``Yb'BUaYb'Aig]_']a'?cfVibX'`ÀXh'U``Y'Aig]_']YV\UVYf'Y]bž'Y]bYb'ibjYf[Ygg`]WXYbJcfa]hhU['ni'jYfVf]b[Yb'''?Uh\]':U`_'k]fX'UV'%$'''$'I\f'UiZ'XYf60\bY'ghY\Yb'ibX']\f'DiV`]_ia'a]h'`Y]XYbgWXUZh`]WXYbJcfghY``ib[Yb'VY[Y]ghYfb'''9[U`ž'cV'aUb'Y]bZUWX'bif'`UigWXYbžYbhgdUbbYb'cXYf'a]hZØ\`Yb'aÒWXhY''\]Yf']gh'ZØf''YXYb'YhkUgXUVY]''$

8 Ugʻ6YgcbXYfYʻUbʻX]YgYaʻ9j Ybhʻ]ghʻb]Wkhʻbi fʻX]YʻA i g]_ʻgYʻVghž gcbXYfbʻUi WkʻX]Yʻ9]bʻUXi b[ʻUbʻUʻʻYžX]Yʻ[YfbYʻa UʻʻYhk UgʻBYi Yg YfʻYVYbʻa ÒWkhYb"·8 Yfʻ9]bhf]hhʻ]ghʻZfY]žʻgcXUggʻYXYfʻX]Yʻ7\UbWY\Uhžʻg]Wkʻj cbʻXYfʻhUʻYbh]YfhYbʻ? ØbghʻYf]bʻa]hfY]» Ybʻni ʻʻUggYbž c\bYʻX]YʻGWkYi j cfʻ\c\Ybʻ9]bhf]hhgdfY]gYb"·8]Ygʻ]ghʻY]bY[fc» Ufh][Yʻ; YʻY[Yb\Y]hži a ˈg]Wkʻ]bʻXYfʻ; Ya Y]bgWkUZhʻni j YfgUa a Yʻbʻi bX'[i hYʻA i g]_ʻni [Yb]Y» Yb"

: Øf`XYb`: U``ž`XUgg`XUg`K YhhYf`b]W\ha]hgd]Y`Yb`gc``hYž'[]Vh`Yg Y]bYb`D`Ub`6.`6Y]`FY[Yb`k]fX`X]Y`JYfUbghU`hi b[`]bg`: cmYf`XYg BYi Yb`FUh\Ui gYg`6YfbUi 'j Yf`Y[h"`8Ua]h`V`Y]Vh`XYf`a i g]_U`]gW\Y ; Ybi gg`ZØf`U``Y`[Yk À\f`Y]ghYhži bUV\Àb[][`j cb`XYb K YhhYfVYX]b[i b[Yb"

9]b HU`Ybh'Ui g XYf FY[]cb

? Uh\]: U`_ž'VY_Ubbh'ZØf']\fY'VYY]bXfi W_YbXYb'5i Zhf]hhY'i bX']\fY : À\][_Y]hž'a]h']\fYf'A i g]_'X]Y' < YfnYb'XYf'A YbgW\Yb'ni 'YffY]W\Ybž\Uh'b]W\h'bi f'`c_U`Y'5bYf_Ybbi b['[YZ bXYb"' \Rightarrow fY']bhYfbUh]cbU`Y \Rightarrow gd]fUh]cb'gd]Y[Y`h'g]W\']b']\fYb'8UfV]Yhi b[Yb'k]XYf"'G]Y'Vf]b[h b]W\h'bi f'Gcb[g'Ui Z'X]Y'6Ø\bYž'gcbXYfb'Ui W\'Y]bY'[Yk]ggY A U[]Yž'X]Y'XUg'Di V`]_i a ']b']\fYb'6Ubb'n]Y\h'

8]Y'?ca V]bUh]cb'Ui g']\fYf'ghUf_Yb'Gh]a a Y'i bX'XYb\Ufa cb]gW\Yb';]hUffYb_`Ab[Yb'gW\UZZh'Y]bY'5ha cgd\AfYž'X]Ygck c\`'VYfi\][YbX'U`g'Ui W\'UbfY[YbX']gh"'8Ug'a UW\h']\fY5i Zhf]hhY'Y]bn][Ufh]["'CV'a Ub': Ub']\fYf'Aig]_']gh'cXYf'b]W\hž'Ygk]fX'YXYa '`Y]W\hZU``Ybž'g]W\'a]h'XYb'9a ch]cbYb'ni 'j YfV]bXYbžX]Y'g]Y'Xi fW\']\fY'Aig]_'hfUbgdcfh]Yfh"

8]Y J YfUbghU`hi b['k]fX 'Ui WX 'Y]bY'; Y`Y[Yb\Y]h'ZØf'X]Y; Ya Y]bgWX UZh'gY]bž'g]WX 'ni 'j YfgUa a Y`b'i bX'[Ya Y]bgUa 'Y]bY gWX ÒbY'NY]h'ni 'Yf`YVYb'' '9g']gh'Y]bY'\Yfj cffU[YbXY'A Ò[`]WX_Y]hž']bXUg'_i `hi fY``Y'@YVYb'XYf'GhUXh'Y]bni hUi WXYb'i bX'`c_U`Y'HU`YbhYni 'i bhYfghØhnYb'' '9]b'Y]bZUWXYg'5i ZY]bUbXYfhfYZZYb'j cbAYbgWXYbž'X]Y'X]Y'A i g]_'a Ò[Yb'i bX'[YfbY'NY]h']a ': fY]Ybj YfVf]b[Ybž'_Ubb'Ui WX'ni 'Y]bYf'ghÀf_YfYb'Ni gUa a Yb[Y\Òf][_Y]hZØ\fYb"

8 Ugʻ9j Ybhʻk]fX`b]W\hʻbi fʻX]YʻGhfU» Ybʻj cbʻ6YfbUiʻa]hʻAig]_
ZØ``YbžʻgcbXYfbʻUi W\ʻX]Yʻ< YfnYbʻXYfʻA YbgW\YbʻVYfØ\fYb"'? Uh\]
: U`_'nY][hž'k]Y`k]W\h]['_i `hi fY``Y`J YfUbghU`hi b[YbʻZØfʻXUgʻgcn]U`Y
@YVYbʻg]bXʻi bX`k]YʻAig]_'U`gʻi b]j YfgY``YʻGdfUW\Y`U``Yʻj YfV]bXYb
_Ubb"

? Uh\]:: U`_. '9]b B Ua Yž XYf V`Y]Vh

 $8 \ Yf'5i \ Zhf]hh'j \ cb'? \ Uh']: \ U`_'Ua' \ \& ("'5i \ [i \ gh'Ui \ Z'XYa' A \ Uf_hd`Uhn k \]fX'nk Y]ZY``cg'Y]b' <][\ '`][\ h']b' XYf'6YfbUi Yf'A i g]_gnYbY'gY]b i bX']gh'Y]b' \ Yfj \ cffU[YbXYg'6Y]gd]Y`'XUZØfž'k]Y'`c_U`Y'? Øbgh`Yf'X]Y ? fYUh]j]hÀh'i bX'XUg'_i `hi fY``Y'5b[YVch'XYf'GhUXh'VYfY]W\ Yfb''' \ fY : \ A\][_Y]hž'a]hfY]» YbXY'i bX'[YZØ\`j c``Y'A i g]_'ni 'a UW\ Ybž'k]fX g]W\ Yf`]W\ ']b'9f]bbYfi b['V`Y]VYb''$

GY]X'Ui Z'YXYb': U```XUVY]ž'k Ybb'X]YgY'hU`Ybh]YfhY'A i g]_Yf]b'X]Y $6\emptyset \setminus bY' \lor YhfYhYb'k$]fX"'9g'[]Vh'_Y]bY'9bhgW\ i `X][i b[ž'g]W\ XUg Ybh[Y\Yb'ni ``UggYb''?ca a h'j cf\YY]'i bX'[Yb]Y\ h'Y]bYb'A cf[Yb j c``Yf'A i g]_ž': fYi XY'i bX'; Ya Y]bqW\UZh"

VYf? Uh\]: U`_'i bX']\fY'_Øbgh`Yf]gW\Y 9bhk]_`i b[

? Uh\]: U`_'\Uh'g]W\']a '@Ui ZY 'XYf'\\J\fY 'Y]bYb'BUa Yb']b'XYf A i g]_gnYbY'[Ya UW\h"'\=\fY'a i g]_U`]gW\Y'FY]gY'VY[Ubb']b'XYf \\ \implie [Yb\X\overline{\text{Zhf}}]hhY']b'`c_U`Yb'7UZ\overline{\text{Ag'\UhhY''8]YgY}} \\ Zf\O\Yb'\9fZU\fi b[Yb'\U`ZYb']\f\overline{\text{Zhf}}]hhY']b'`c_U`Yb'7UZ\overline{\text{Ag'\UhhY''8]YgY}} \\ Zf\O\Yb'\9fZU\fi b[Yb'\U`ZYb']\f\overline{\text{Zhf}}]Y'6\Overline{\text{NY}}U\overline{\text{Zhf}}U\overline{\text{Qg'}}U\overline{\text{Zhf}}U\overline{\text{NY}}U\overline{\text{Zhf}}U\overline

 $: U`_']bhYfdfYh]Yfh'A Y`cX]Yb'Ui g'j YfgWX]YXYbYb'A i g]_[YbfYgž'j cb: c`_'ØVYf'Dcd'V]g'\]b'ni '6`i Yg'''8]YgY'J]Y`ZU`h'nY][h'g]WX'Ui WX']b XYf'5i gk U\`']\fYf'7cj Yfg'''A]h''YXYa '5i Zhf]hh'Vf]b[h'g]Y']\fY dYfgÒb`]WXY'BchY']b'VY_UbbhY'Gcb[g'Y]bž'k Ug'g]Y'ni 'Y]bYf$

8]Y 6YXYi hi b['j cb '@]j Y!A i g]_ ']b 'XYf ; Ya Y]bgW UZh

Ni gàhn`]WX 'XUni '\Uh'XUg'; YbfY 'XYf'U_i gh]gWX Yb'A i g]_']b'XYb
'YhnhYb'&U\fYb'Ub'6YXYi hi b['[Yk cbbYb"'9g'VYhfUWXhYh'X]Y

FØW__Y\f'ni 'XYb'K i fnY`b'XYf'A i g]_'i bX'`Y[h'XYb': c_i g'Ui Z'X]Y

J YfV]bXi b['nk]gWX Yb'?Øbgh`Yf'i bX'Di V`]_i a "'8]Yg'g]WX Yfh'b]WX h

bi f'X]Y'K YfhgWX Àhni b['ZØf'hfUX]h]cbY``Y'A i g]_Zcfa Ybž'gcbXYfb

V]YhYh'Ui WX'Y]bY'D`UhhZcfa 'ZØf'`c_U`Y'HU`YbhY''

FY[]cbU`Yg'?i `hi fUb[YVch

8]Y'JYfUbghU`hi b['j cb'?Uh\]': U`_']gh'HY]`'Y]bYg'VfY]hYfYb?i hi fUb[YVchg']b'6YfbUi "'8]Y'GhUXh'\Uh']b'XYb'`YhnhYb'\\Y\fYb\nU\`fY]W\Y'\=\b]h]Uh]j Yb'[YghUfhYh\z'i a '`c_U`Y'?Øbgh`Yf'ni i bhYfghØhnYb'i bX'Y]b'fY]W\\U`h][Yg'_i `hi fY``Yg'@YVYb'ni 'ZÒfXYfb'' 8Uni '[Y\ÒfYb'b]W\h'bi f'?cbnYfhY\z'gcbXYfb'Ui W\?i bghUi gghY``i b[Yb'i bX'h\YUhYfd\AXU[c[]gW\Y'Dfc'Y_hY''8]YgY6Ya Ø\i b[Yb'g]bX'YbhgW\Y]XYbX'ZØf'X]Y': ÒfXYfi b['XYg'_fYUh]j Yb5i ghUi gW\g']bbYf\U`V'XYf'; Ya Y]bgW\UZh''

6YgcbXYfg'VYa Yf_Ybgk Yfh']gh'X]Y'6YXYi hi b['gc`WXYf
J YfUbghU`hi b[Yb']b'NY]hYbž']b'XYbYb'X][]hU`Y'9f`YVb]ggY'XYb
5``hU['Xca]b]YfYb"'8]Y'A Ò[`]WX_Y]hž'A i g]_'`]j Y'ni 'Yf`YVYb'i bX
X]fY_h'a]h'XYb'?Øbgh`Yfb'ni ']bhYfU[]YfYbž'V]YhYh'Y]b
i bYfgYhn`]WXYg'9f`YVb]gž'XUg'XYb'[YgY``gWXUZh`]WXYb

8 Y hU]`c

6 Ygi WX Yb 'G]Y 'i bg 'Ui Z. 'b!U["XY