

9bhXYW_Yb'G]Y'A U`hUg'_i`]bUf]gWXY GWXÀhnY.'A Àf_hY'i bX'`c_U`Y ? Ògh`]WX_Y]hYb°

9bhXYW_Yb'G]Y'X]Y'_i`]bUf]gW\Yb'<][\`][\hg'A U`hUg. K cW\Yba $Af_hY\check{z}$ `c_U`Y'DfcXi nYbhYb'i bX'5_h]j]hAhYb'Ui Z ; cnc' $Z\emptyset f = AfYb'I f`Ui V'&$&$) "



JU``YhhUž'A U`hU'!'A U`hU']gh'Y]b'VY`]YVhYg'FY]gYn]Y`ž'XUg'b]W\h'bif ZØf'gY]bY'UhYa VYfUi VYbXYb'@UbXgW\UZhYbž'gcbXYfb'Ui W\'ZØf gY]bY'j]Y`ZÀ`h][Y'_i`]bUf]gW\Y'GnYbY'VY_Ubbh']gh"'8]Y'?ØW\Y'XYf a U`hYg]gW\Yb'\bgY`b'j YfY]bh'9]bZØggY'Ui g'5Zf]_Už'XYa 'Cf]Ybhž G]n]`]Ybž':fUb_fY]W\'i bX'9b[`UbX"'8]YgY'_i `hi fY``Y'A]gW\i b[gd]Y[Y'h'g]W\']b'XYb'nU\`fY]W\Yb'; Yf]W\hYb'i bX'Ni hUhYb'k]XYfž X]Y'X]Y'`c_U`Y'?ØW\Y'dfÀ[Yb"'6YgcbXYfg'gdUbbYbX'g]bX'X]Y K cW\Yba Àf_hYž'X]Y'Y]bY'k]W\h][Y'5b`Ui ZghY``Y'ZØf'Zf]gW\Yž``c_U`Y DfcXi_hY'XUfghY``Yb"

8]Y'K cWXYba Àf_hY']b'A U`hU'g]bX'`YVYbX][Y

; Ya Y]bgW\UZhgnYbhfYb \check{z} 'X]Y'Ui h\Ybh]gW\Y'9]bV`]W_Y']b'X]Y'`c_U`Y ?ØW\Y'V]YhYb''G]Y'g]bX']XYU` \check{z} 'i a 'gU]gcbU`Y'DfcXi _hY'k]Y'Zf]gW\Yg ; Ya ØgY'i bX':]gW\'ni 'Yfk YfVYb \check{z} 'i bX'i bhYfghØhnYb'[`Y]W\'nY]h][`c_U`Y'@UbXk]fhY''=a 'JYf[`Y]W\'ni '\Yf_Òa a `]W\Yb'Gi dYfa Àf_hYb V]YhYb'X]YgY'A Àf_hY'cZh'VYggYf'Zf]gW\Y \check{z} Ei U`]hÀh'i bX'DfY]gY'' 6YgcbXYfg'Ya dZY\`Ybgk Yfh'g]bX'X]Y'Zc`[YbXYb'A Àf_hY.

K]WX h][Y K c WX Y ba Àf_hY]b A U hU

- = `A cbh] `]b `J U``YhhU. `9]b `VY`]YVhYf `GcbbhU[ga Uf_hž `XYf @YVYbga]hhY`ž `? `Y]Xi b[`i bX '< Ui g\U`hg[Y[YbghÀbXY V]YhYh"
- <]ghcf]gWX Y 'A Uf_h\ U``Y ']b 'J U``YhhU. '<]Yf'Z]bXYh'a Ub Zf]gWX Y '@YVYbga]hhY`']a 'I bhYf[YgWXcgg'i bX'GbUW_g'gck]Y K Y]b']a 'C VYf[YgWXcgg"</p>
- :]gWX a Uf_h']b'A UfgUI `c__.'HÀ[`]WX'[YÒZZbYhž'a]h Y]bYa 'VYgcbXYfYb': c_i g'Ui Z':]gWXj Yf_Ui Z'Ua 'GcbbhU["

9bhXYW_ib[icb; cnc

8]Y'_`Y]bYfY'GWkkYghYf]bgY`; cnc'hfà[h'ni f'_i`]bUf]gWkYb'J]Y`ZU`h A U`hUg'VY]'i bX'V]YhYh'Y]bY'`ÀbX`]WkY'5ha cgd\àfYž
VYY]bXfi W_YbXY'GhfàbXY'i bX'6i WkhYb": À\fYb'j cb'A Y``]Y\U'bUWk; cnc'a UWkYb'Yg'Y]bZUWkž'X]Y'\DgY`'ni 'Yf_i bXYb"'Ni 'XYb
5_h]j]hÀhYb'nÀ\`Yb'? U'U_ZU\fYbž'5b[Y`hci fYb'i bX
FYghUi fUbhVYgi WkYž'X]Y'VYgcbXYfg'ZØf']\fY'gWka UW_\UZhYb
:]gWk[Yf]WkhY'VY_Ubbh'g]bX"

9]b k Y]hYfYg <][\`][\h']gh XUg HU A YbU K Y]b[i hž XUg gUa ghU[g

: Ø\fi b[Yb'Xi fW\'gY]bY'K Y]bVYf[Y'i bX'C`]j Yb\U]bY'UbV]YhYh'': Øf
K UggYfgdcfh`]YV\UVYf'g]bX'GW\bcfW\Y`!'i bX'HUi W\hci fYb']b'XYb
_`UfYb'; Yk AggYfb'fi bX'i a '; cnc'VYgcbXYfg'Ya dZY\`Ybgk Yfh''I a
X]Y'a U`hYg]gW\Y'? ØW\Y'bcW\'VYggYf'_YbbYbni `YfbYbž'`Y[h'C`UZ
8Y\UfXY'Y]bY'_i `]bUf]gW\Y'FY]gY'bUa Ybg' #\g'5```5Vci h: ccX
Ui ZžX]Y'h]YZYfY'9]bV`]W_Y']b'X]Y'`c_U`Yb'9gg_i `hi fYb'V]YhYh''

6Y] XYf J cfVYfY]hi b['Ui Z'Y]bYb '5i ZYbh\ U`h']b 'A U`hU'g]bX F YnYdhY ZØf 'hfUX]h]cbY``Y'; Yf]W\ hY 'k]Y'[Y[f]``hYg'? Ub]bW\ Yb 'Y]bY]bhYfYggUbhY 'A Ò[`]W_Y]hž'g]W\ 'Ui Z'XUg'VYj cfghY\YbXY _i `]bUf]gW\ Y'9f`YVb]g'Y]bni ghY``Yb"'9]bY'I bhYf_i bZh'a]h'? ØW\ Y']gh Ya dZY\`Ybgk Yfhž'i a 'X]Y'Zf]gW\ Ybž'fY[]cbU`Yb'Ni hUhYb'cdh]a U` bi hnYb'ni '_ÒbbYb"

A U`hUgʻ@YVYbga]hhY`a Àf_hYʻi bXʻX]YʻXUa]hʻj YfVi bXYbY
_i`]bUf]gWXYʻJ]Y`ZU`hʻg]bXʻgca]hʻY]bʻA i ggʻZØfʻYXYbʻ6Ygi WXYfžʻXYf
X]YʻUi h\Ybh]gWXYbʻ; YgWXa ÀW_YfʻXYfʻ\bgY``Yf`YVYbʻa ÒWXhY''
6Ygi WXYbʻG]YʻX]YʻA Àf_hYžʻdfcV]YfYbʻG]Yʻ`c_U`YʻDfcXi _hYʻi bX
YbhXYW_YbʻG]YʻX]YʻZUgn]b]YfYbXYbʻ9]bZʻØggYžʻX]YʻX]Yʻa U`hYg]gWXY
? ØWXYʻUi gnY]WXbYb''

: $\emptyset f'k Y]hYfY' = DZcfa Uh]cbYb'ni 'XYb' <][\ '][\ hg'XYf'a U'hYg]gWkYb ? <math>\emptyset WkY'k YfZYb'G]Y'Y]bYb'6']W_Ui Z'X]Y'XYhU]'`]YfhY 6Yf]WkhYfghUhhi b['j cb'FY]gYfYdcfhYf'i bX'YbhXYW_Yb'G]Y'X]Y J]Y`ZÀ'h][_Y]h'XYf'A Àf_hY'VY]'C \ 'A m'A U'hU"$

8 Y hU]`g	
Cfh	J U``YhhUž'A U`hU
Ei Y``Yb	k k k "fY]gYfYdcfhYf"XY
	• c∖a ma U`hU"Wca "a h

6 Ygi WX Yb G]Y i bg Ui Z Y]bY!fY]gY "XY