

: 7?!BchYb`]a `FØW_V`]W_. 5Vk Y\fdfcV`Ya Y`i bX`@]W\hV`]W_Y`]a 5b[f]ZZ

8 Y f '%": 7 '? U]gYfg`Ui hYfb`\UhhY`Ua 'j Yf[Ub[YbYb`GUa ghU[UVYbXY]b`YbhhÀi gW\YbXYg`Gd]Y``[Y[Yb`<Yfh\U`6G7žXUg`a]h`Y]bYahcffY]W\Yb`' .('YbXYhY":8]Y`5Vk Y\f`Y]ghi b['XYf`@Ui hYfYf`ghY\hXUVY]`]a 'A]hhY`di b_h`XYf`?f]h]_"`Hfchn`Y]b][Yf`dcg]h]j Yf9]bnY`U_h]cbYb`_cbbhY`X]Y`AUbbgW\UZh`b]W\h`U`g`9]b\Y]hØVYfnYi [Ybžk Ug`g]W\`]b`XYb`Gd]Y`YfVYbchi b[Yb`b]YXYfgW\`i ["

6YgcbXYfg'X]Y'5i » Ybj YfhY]X][Yf'9b[Y`'5`a Ua m'Hci fÅ'i bX'9f]_
K Y_YggYf'\UhhYb'Y]bYb'gWk YfYb'BUWka]hhU["'8]Y': Ubg'\UVYb
]\bYb'a]h'Y]bYf'8i fWkgWkb]hhgbchY'j cb'' ž-'X]Y'h]YZghY'6Yk Yfhi b[
XYg'Gd]Y`g'[Y[YVYb"'Gc`WkY'6Yk Yfhi b[Yb'8Yi hYb'Ui Z
[fUj]YfYbXY'GWk ÀWkYb']b'XYf'8YZYbg]j UfVY]h'\]bž'X]Y'Yg'XYa
; Y[bYf'Yf`Ui VhYbž'YbhgWkY]XYbXY'HcfY'ni 'Yfn]Y`Yb"'8]YgYg'A U`
_cbbhY'X]Y'CZZYbg]j Yž'cVk c\`'Yg'Y]b][Y'@]WkhV`]W_Y'[UVž'X]Y
gWkk UWkY'j YfhY]X][YbXY'DYfZcfa UbWY'b]Wkh'_ca dYbg]YfYb"

9]bnY`VYk Yfhi b[YbiibXdcg]h]j Y'5i gfY]» Yf

9]b 'Gd]Y `Yfž'XYf'ZØf'X]Y '@Ui hYfYf'Ui Z'g]WX 'Ui Za Yf_gUa 'a UWX hYž']gh : `Ø[Y`ghØfa Yf'5Ufcb'Cdc_i ž'XYf'bUWX'Y]bYf'_i fnYb JYf`Yhni b[gdUi gY'ni fØW__Y\fhY'i bX'g]WX 'a]h'Y]bYf Ui g[YnY]WX bYhYb'@Y]ghi b['VY`c\bhY''A]h'8i fWXgWXb]hhgbchYb nk]gWXYb'&ž'i bX'&ž\$'j cb'j YfgWX]YXYbYb'A YX]Yb'k]fX'Cdc_i 'U`g Y]bYf'XYf'VYghYb'Gd]Y`Yf'XYg'Gd]Y`g'UbYf_Ubbh''GY]b'Hcf'nYi [h

j cb 'gY]bYf 'GhÀf_Y 'i bX 'gY]bYa 'YggYbh]Y``Yb '6Y]hfU['ni a 'Gd]Y 'ž k Ug']\b 'ni a '<c \mathbb{Z} bi b[ghfÀ[Yf 'XYf': 7?!: Ubg'a UW\h"

9VYbZU``gʻdcg]h]jʻ\Yfjcfni\YVYbʻ]ghʻD\]`]ddʻ?`Ya Ybhž'XYfʻbUW\

ØVYfʻbYi bʻA cbUhYbʻk]YXYfʻ]bʻXYfʻGhUfhY`ZʻghY\hʻi bXʻYVYbZU``gʻY]b

HcfʻYfn]Y`Ybʻ_cbbhY"'GY]bYʻBchYbʻgWk Ub_Ybʻnk]gWkYbʻ&ž)ʻi bX

' ž\$žʻk UgʻnY][hž'XUggʻUi WkʻYfʻhfchnʻXYfʻB]YXYf`U[YʻY]bYbʻgc`]XYb

9]bXfi W_`\]bhYf`UggYbʻ\Uh"'Gc`WkYʻ@Y]ghi b[Ybʻ_ÒbbhYbʻZØfʻXYb

J Yf`Ui ZʻXYfʻGU]gcbʻj cbʻ6YXYi hi b['gY]bʻi bXʻg]bXʻYfa i h][YbXʻZØf

XUgʻHYUa "

%XcW\"]gh'_`Ufž'XUgg'X]Y'A UbbgW\UZh']bg[YgUa h'a Y\f'_cbg]ghYbhY
@Y]ghi b[Yb'nY][Yb'a i ggž'i a ']b'XYf'@][U'_cb_i ffYbnZ\\]['ni
V'Y]VYb"'8]Y'Ub[YghfYVhY'FØW__Y\f'Ub'X]Y'Gd]hnY'k]fX'Xi fW\'X]Y
gW\k UW\Y'8YZYbg]j `Y]ghi b[']b': fU[Y'[YghY``hž'i bX'X]Y'Gd]Y`Yf
k YfXYb'[YZcfXYfh'gY]bž']b'XYb'_ca a YbXYb'Gd]Y`Yb'Y]bY
XYi h`]W\Y'GhY][Yfi b['ni 'nY][Yb"

8]Y'6Yk Yfhi b[Yb'XYf'Gd]Y`Yf'nY][Yb'X]Y'[fc»Y'AY]bi b[gj]Y`ZU`h XYf': Ubgž'X]Y'i bhYf'XYa 'DgYi Xcbma' 8Yf'6YhnY'VfYbbh 'ØVYf'X]Y @Y]ghi b[Yb'X]g_i h]YfhYb"'A]h'ZUgh'' ") \$\$'UV[Y[YVYbYb'BchYbgd]Y[Y`h'g]WX'\]Yf'X]Y'AY]bi b['Y]bYf'VfY]hYb': UbVUg]g'k]XYf"

± bg[YgUa h']gh'Yg'Ub'XYf'NY]hž'X]Y'8YZYbg]j ghfUhY[]Y'XYg'%": 7?U]gYfg`Ui hYfb'ni 'ØVYfXYb_Yb"'Gc``hY'X]Y'5Vk Y\f'k Y]hYf\]bUbZÀ``]['gY]bž'_ÒbbhY'X]Yg'bY[Uh]j Y'5i gk]f_i b[Yb'Ui Z'X]Y[YgUa hY'GU]gcb'\UVYb"'8]Y'_ca a YbXYb'Gd]Y`Y'V]YhYb'X]Y; Y`Y[Yb\Y]hž'Ub'X]YgYb'GWk ÀWXYb'ni 'UfVY]hYb'i bX'XUg'HYUabYi 'ni 'Zcfa Yb"

8]Y 'GdUbbi b['V`Y]Vh'\cW\ž'i bX'hfchn'XYf'F \emptyset W_gW\`À[Y'[]Vh'Yg]a a Yf'bcW\'<c\Z\bi b['i bX'Ni j Yfg]W\h\Z\Ugg'g]W\'X]Y 'A UbbgW\UZhghUV]`]g]YfYb'i bX']\fY': cfa 'j YfVYggYfb'_Ubb"

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