

; Ygi bX\Y]hgfYZcfa ']b 'XYf'?f]gY. 5dch\Y_Yf'ZcfXYfb'_`UfY'@Ògi b[Yb

9fZU\fYb G]Y]b i bgYfYa 'bYi YghYb 5fh]_Y`XYf J € € B "5

Ni _i bZhg_cbZYfYbnžk Ufi a 'XUg
6i bXYg[Ygi bX\Y]hga]b]ghYf]i a 'Y]bY Ghfi _hi ffYZcfa 'XYf
5dch\Y_Yfg]hi Uh]cb 'UV`Y\bhii bX k Y`W\Y'_f]h]gW\Yb 'Gh]a a Yb

XUni 'Ui g'XYf 6fUbW\Y'_ca a Yb"'9bhXYW_Yb 'G]Y 'X]Y
: cfXYfi b[Yb j cb '9I dYfhYb bUW\ Xf]b[YbXYb '5bdUggi b[Yb

XYf 5dch\Y_Yb\cbcfUfY i bX XYb a Ò[`]W\Yb : c`[Yb ZØf X]Y

5fnbY]a]hhY`j Yfgcf[i b[']b '8 Yi hgW\`UbX"'9]b 'k]W\h][Yf

6Y]hfU['ni 'Y]bYa 'j]Y``X]q_i h]YfhYb 'H\Ya U°



5dch\Y_Yb_f]gY. '9]bY '8]g_i gg]cb 'i a Ghfi _hi ffYZcfa Yb 'i bX 'J Yfgcf[i b[gXYZ]n]hY

 \pm 0.8 Yi hgWX `Ub X `ghY \ Yb `nU\ `fY]WX Y `5dch\ Y_Yb 'j cf`Yl]ghYbn]Y ``Yb < YfUi gZcfXYfi b[Ybž'X]Y `b]WX h'bi f`X]Y `Ni _i bZh'XYf'5dch\ Y_Yf gY`Vghž'gcb XYfb 'Ui WX 'X]Y '; Ygi bX\ Y]hgj Yfgcf[i b['XYf 6Yj Ò`_Yfi b['VYhfYZZYb" 6Y] `XYf ``YhnhYb 'J \pm 0 B "5

Ni _i bZhg_cbZYfYbnž'X]Y 'j cb'a Y\fYfYb'ZØ\fYbXYb'Cf[Ub]gUh]cbYb XYf'5dch\Y_YfVfUbW\Y'i bhYfghØhnh'k i fXYž'k i fXYb'XfUgh]gW\Y A U» bU\a Yb'gY]hYbg'XYg'6i bXYg[Ygi bX\Y]hga]b]ghYf]i a g'f6A; Ł Ub[Y_ØbX][h"'8Yf'\c\Y'8fi W_ž']bgVYgcbXYfY'Ui Z[fi bX'XYf Z]bUbn]Y``Yb'@U[Y'j]Y`Yf'5dch\Y_Ybž'`Àggh': fU[Yb'ni f'Ni _i bZh'XYg; Ygi bX\Y]hggmghYa g'Ui Z_ca a Yb"

; Ygi bX\Y]hga]b]ghYf?Uf`@Ui hYfVUW\`fGD8Łg]Y\h`g]W\ ni bY\a YbX`XYa `J cfk i fZ'Ui g[YgYhnhž`X]Y`U_i hY JYfgcf[i b[g_f]gY`]b`XYf`5dch\Y_YfgW\UZhj cfgÀhn`]W\`ni][bcf]YfYb"`5b[Yg]W\hg`XYf`a Ugg]j Yb`GW\`]Y*i b[gk Y``Y`]gh`XYf Jcfk i fZ'XYf` 9fdfYggi b[``Ui h`[Yk cfXYbž`XYb`X]Y`DcXWUghYf`Hca 6Y``Ufhn`i bX`DUhf]W_'<c``ghY]b`k À\fYbX`]\fYf`8]g_i gg]cb`]a DcXWUgh` BI F`A 5@`GC`NI A`K *GG9B `YfbYi YfhYb"`G]Y`VYhcbYbž XUgg`X]Y`J Yfgcf[i b[gXYZ]n]hY`X]fY_h`Ui Z'X]Y`J YfgÀi a b]ggY`XYf Dc`]h]_`ni f@W_ni Z@\fYb`g]bX"

8]Y'VY]XYb'DcXWUghYf'gWX`U[Yb'jcfž'XUgg'Y]b'AcfUhcf]ia
Y]b[Yf]WXhYh'k]fXž'kÀ\fYbX'XYa'5dch\Y_Yfž'X]Y'; YgYhn`]WXY
?fUb_YbjYfg]WXYfib['fl'?JŁ'ibX'XUg'A]b]ghYf]ia'[YaY]bgUa
ØVYf'X]Y'Xf]b[YbX'YfZcfXYf`]WXYb'FYZcfaYb'jYf\UbXY`b'gc``hYb"
5i »YfXYa'gc``hY'XYf'jcf\UbXYbY':cbXg'ZØf'd\UfaUnYih]gWXY
8]Ybgh`Y]ghib[Ybž'XYf'a]h'ØVYf''\$\$'A]``]cbYb'9ifc'[YZØ``h']ghž
hYadcfÀf'XUni'jYfkYbXYh'kYfXYbž'X]Y'<cbcfUfY'XYf'5dch\Y_Yf
UbnidUggYbž'ia'X]Y'5fnbY]a]hhY`jYfgcf[ib['UiZfYWXhniYf\U`hYbž

 $8]Y : YghghY``i b[\check{z}'XUgg'X]Y ?? cU`]h]cb'X]Y 'j YfgWX `YWX hYfhY ; Ygi bX\Y]hgj Yfgcf[i b['XYf'6Øf[Yf' V]``][YbX']b'? Ui Z 'b]a a hž']gh$

U`Ufa]YfYbX"'8]Yg`k]fZh: fU[Yb`bUW\`XYf'JYfUbhk cfhi b['i bX FYU_h]cbgZÀ\][_Y]h'XYf'; Ygi bX\Y]hgVY\ÒfXYb'Ui Zž']bgVYgcbXYfY]b'?f]gYbnY]hYbž']b'XYbYb'X]Y'DUh]YbhYbj Yfgcf[i b['Ui Z'XYa 'Gd]Y`ghY\h"

8]Y'8YVUhhY'nY][h'b]W\h'bi f'X]Y'U_hi Y``Y'I bni Zf]YXYb\Y]h
]bbYf\U`V'XYf'5dch\Y_YfgW\UZhžgcbXYfb'gd]Y[Y`h'Ui W\'Y]bYb
[fÒ»YfYb'HfYbX'k]XYf.'8]Y'5i gY]bUbXYfgYhni b['i a 'ZU]fY
<cbcfUfY'i bX'X]Y'JYfgcf[i b[gg]W\Yf\Y]h']gh'Y]b'nYbhfU`Yg
5b`]Y[Yb'XYf'; Ygi bX\Y]hgVfUbW\Y''8]Y'K]ggYbgW\UZh`Yf'i bX
: UW\`Yi hY'ZcfXYfb'Y]b'I a XYb_Ybž'i a 'X]Y'<YfUi gZcfXYfi b[Yb']a
; Ygi bX\Y]hgk YgYb'bUW\\U`h]['ni 'VYk À`h][Yb''

: Øf`X]Y`Ni \ÒfYf`XYg`DcXWUghg` BIF`A 5@`GC`NIA`K \oplus G9B ž`XYf YXYb`8 cbbYfghU['bYi Y`9]bV`]W_Y`V]YhYhž`Vf]b[h`X]YgY`8]g_i gg]cb k]W\h][Y` \oplus Zcfa Uh]cbYb`Ui g`YfghYf`< UbX"`K Y]hYfZØ\fYbXY \oplus Zcfa Uh]cbYb`ni f`Ni _i bZhg_cbZYfYbn`J \oplus B "5 'g]bX`Ui Z`XYf K YVgY]hY`j cb`5DC H< 9? 9`58 < C 7`Yf\À`h`]W\"

8]Y'U_hi Y``Y'G]hi Uh]cb'XYf'5dch\Y_Yb']gh'Y]b'5i Zfi Z'ni f
Xf]b[YbXYb'FYZcfa ž'i a 'X]Y'6Ug]g'ZØf'Y]bY'Zi bX]YfhY
; Ygi bX\Y]hgj Yfgcf[i b[']b'8Yi hgW\`UbX'ni '`Y[Yb"'9g'V`Y]Vh'ni \cZZYbž'XUgg'X]Y'Gh]a a Yb'Ui g'XYf'6fUbW\Y'; Y\Òf'Z]bXYb'i bX']b
n]Y`ZØ\fYbXY'A U» bU\a Yb'i a [YgYhnh'k YfXYb"

8 Y hU]`q

6Yqi WXYb G]Y i bq Ui Z. a Y]b!VYf`]b bYh