

FUgUbhYf'5bgh]Y['XYf'D\chcjc`hU]_! 5b`U[Yb']b'8i]gVif['ibX'la[YVib[

8 i]gVi f['j YfnY]W\ b Y h'a]h'&(ž+(ı 'X]Y '\ ÒW\ ghY K UW\ ghi a gfUhY 'Ub' D\ chcj c`hU]_! 5 b`U[Y b']a F Y[]Yfi b[gVYn]f_ '8 ØggY`XcfZ'&\$&("

K UWX ghi a 'XYf'D\chcj c`hU]_!5b`U[Yb']b'XYf FY[]cb'8ØggY`XcfZ

 $8 \ Yf'FY[\]Yfib[\ gVYn]f_'8 \ \varnothing ggY`XcfZ'a\ UWXh'Y]bYb'VYXYi\ hYbXYb \\ GWXf]hh']b'F]WXhib[\ YfbYi\ YfVUfYf'9bYf[\]Yb.\ =a\ YfghYb'<U`V'U\fX]YgYg'\J\fYg'k i fXYb'\ØVYf'&' "$$$'bYi Y'D\chcj c`hU]_!5b`U[\ Yb]bghU``]Yfh"'8]Yg'Ybhgdf]WXh'Y]bYf'VYa\ Yf_Ybgk\ YfhYb'9f\O\i b['jcb\ ZUgh'%, 'DfcnYbh']a\ 'J\Yf[`Y]WX'ni\ '6Y[]bb'XYg'\J\fYg"'8]Y'5bU`mgY\ XYf'GhUXhk\ Yf_Y'8i]gVif['VYfi\h'Ui\ Z'ia\ ZUggYbXYb'8\ UhYbž\ XUfi\ bhYf'XUg'A\ Uf_hghUa\ a\ XUhYbfY[]ghYf'i\ bX'\D\Zcfa\ Uh]cbYb'XYg\ GhUh]gh]gWXYb'6i\ bXYgUa\ hYg"$

8i]gVif['U`g'JcffY]hYf

 $8] Y \cdot GhUXh^*8 i] gVi f[\cdot gh] W h^*V Y gcb X Y fg^* Y fj cf^*i b X^*j Y fn Y] W b Y h^*a] h & (\check{z} + (\cdot DfcnYbh^*X) Y \cdot V) W ghY^*K UW ghi a gfUhY^*Ub^*DJ ! 5 b^*U[Yb^*'8] Y g] gh^*HY]^*X Y g^*Y \ f[Y]n][Yb^*D^*Ubg^*X Y f^*GhUXhz^*V]g^*ni a $-$J \ f^*&$') j c^*ghAbX][$-7C & !bYi hfU^*ni gY]b^*'8] Y gY^*9 b hg W Y] X i b[`nY][h^*X U g 9 b[U[Ya Ybh^*8 i] gVi f[gz^*gY]bY^* \ \Delta Z f Ughfi _hi f^*bUW \ U^*h][`ni [YghU^*hYb^*i bX^*XYb^*, VYf[Ub[`ni Y]bYf^*i a k Y^*hZfYi bX^*] W Y f Y b 9 b Y f[] Y Y fn Y i [i b['j cf Ub ni hf Y] V Y b"$

8Yf?fY]g'K YgY`ZØ\fh'VY]'UVgc`i hYb'NU\`Yb

I bhYfgWX]YXY nk]gWXYb ?fY]gYb i bX GhÀXhYb

9]b 'Ui ZZÀ``][Yf'I bhYfgW]YX'nY][h'g]W ']b 'XYf': `ÀW Ybj YfhY]`i b[
XYf'5b`U[Yb. 'C VYf\ Ui gYb'\ Uh'(, 'DJ!5b`U[Yb'dfc
E i UXfUh_]`ca YhYfž'k À\fYbX'XYf'? fY]g'? `Yj Y'`YX][`]W '&\$'5b`U[Yb
Ui Zk Y]gh" 8]Yg'`Àggh'XUfUi Z'gW\`]Y "Ybž'XUgg'X]Y'5b`U[Yb']a
`ÀbX`]W YfYb'F Ui a 'hmd]gW Yfk Y]gY'[fÒ" Yf'X]a Ybg]cb]Yfh'g]bX'U`g
]b'ghÀXh]gW Yb'; YV]YhYb"'8 Yf'? fY]g'? `Yj Y'nY][h'XUVY]'Y]bY
Xi fW gW b]hh`]W Y'6fi hhc`Y]ghi b['j cb'%- ž&'_K d'dfc'5b`U[Yž'k Ug
X]Y'I bhYfgW]YXY'nk]gW Yb'XYb'ghÀXh]gW Yb'i bX'`ÀbX`]W Yb
FÀi a Yb'j YfXYi h`]W h"

; YgUa hV]`Ubn'XYf'FY[]cb

 $\pm g [YgUa h'k i fXYb']a FY[]Yfi b [gVYn]f_'8 \varnothing ggY`XcfZ']a YfghYb < U`V'U\f'&$$^A K d'Ub'D\chcj c`hU]_!@Y]ghi b [']bghU``]Yfh''8]Yg Yf[]Vh'Y]bY'; YgUa h!6fi hhc`Y]ghi b ['j cb'nk Y]';][Uk Uhhž'X]Y h\YcfYh]gW\Yhk U'Y`Z'DfcnYbh'XYg'\J\fYgj YfVfUi W\g'XYf'< Ui g\U`hY]a FY[]Yfi b [gVYn]f_'XYW_Yb'_\ObbhY'''8]YgY': cfhgW\f]hhY'g]bX b]W\h'bi f'VYXYi hYbX'Z\Øf'X]Y'fY[]cbU`Y'9bYf[]Yj Yfgcf[i b [ž gcbXYfb'Ui W\ k]W\h]['Z\Øf'X]Y'9ffY]W\i b ['XYf'?`]a Un]Y`Y''$

I bhYfghØhni b[XifWX GhUXhk Yf_Y 8i]gVif[

8]Y 'GhUXhk Yf_Y '8 i]gVi f['gd]Y `Yb 'Y]bY 'GW\ `ØggY `fc ``Y ']b 'X]YgYa K UW\ ghi a "'G]Y 'V]YhYb 'i a ZUggYbXY '8]Ybgh`Y]ghi b[Yb 'Ubž'X]Y 'j cb

XYf'6YfUhi b['ØVYf'X]Y'D`Ubi b['V]g'ni f'\phu\`Uh]cb'i bX'K Ufhi b[fY]WXYb"'8i fWX'j]Y`ZÀ`h][Y'5b[YVchYž'Y]bgWX`]Y»`]WX
6U`_cb_fUZhk Yf_Yb'i bX'Gc`Uf!7Ufdcfhgž'i bhYfghØhnYb'g]Y'X]Y
6Øf[Yf'XUVY]ž'Ui Z'YfbYi YfVUfY'9bYf[]Yb'i a ni ghY][Yb"'5i Z'XYf
K YVg]hY'gk Xi "XY#dj 'ghY\Yb'\phuZcfa Uh]cbYbž'Y]b'GY`VghWXYW_
gck]Y'Y]bY'8UhYbVUb_'ZØf': ÒfXYfa]hhY``ni f'JYfZØ[i b[ž'i a 'XUg
H\Ya U'D\chcj c`hU]_'i a ZUggYbX'ni [Àb[`]WX'ni 'a UWXYb"

8]Y '9bhk]W_`i b[Yb']a '6YfY]W\ 'XYf'D\chcj c`hU]_']a

FY[]Yfi b[gVYn]f_'8ØggY`XcfZ'g]bX'b]W\ h'bi f'Y]b 'NY]W\ Yb 'XYg

hYW\ bc`c[]gW\ Yb': cfhgW\ f]hhgž'gcbXYfb ii bhYfghfY]W\ Yb 'Ui W\ 'X]Y

ni bY\a YbXY'6YXYi hi b['YfbYi YfVUfYf'9bYf[]Yb'ZØf'XYb

?`]a UgW\ i hn'i bX'X]Y'`c_U`Y'K]fhgW\ UZh"'8]Y'6Øf[Yf'g]bX

ni j Yfg]W\ h`]W\ Ž'XUgg'X]YgY'HfYbXg'k Y]hYf\]b 'Ub\U`hYb'i bX

dcq]h]j Y'J Yf\ bXYfi b[Yb'a]h'g]W\ 'Vf]b[Yb'k YfXYb"

B 5:

8 YhU]`q

6 Ygi WX Yb 'G]Y 'i bg 'Ui Z. 'X]Y!bUWX f]WX hYb "bYh