

HfYddYb 'Ua '8 Y]WX ']b 'K]hhYbVYf[Y. K Ufi a 'V 'Y]VYb 'g]Y '[YgdYffh3

⇒ K]hhYbVYf[Y'g]bX'HfYddYb'\]bhYf'XYf'8Y]W\a Ui Yf
[YgdYffhž'i a '5VghØfnY'ni 'j Yf\]bXYfb"; YgdfÀW\Y'ni f
2 ZZbi b['`Ui ZYb"



K]hhYbVYf[Yž8Yi hgWX`UbX`!'\dot\K]hhYbVYf[Y`V`Y]VhX]Y
Ni [Ub[gg]hi Uh]cb`Ub`XYb`HfYddYb`\]bhYfXYf`8Y]WXa Ui Yf`Ua
9`Vi ZYf`Ub[YgdUbbh''GY]h`_i fnYa `g]bX`X]YgY`ghY]`Yb`Ghi ZYb`a]h
?YhhYb`[Yg]WXYfhžii bX`cfXYbh`]WXY`K UfbgWX]`XYf`]bZcfa]YfYb`ØVYf
XUg`Ni hf]hhgj YfVch`ZØf`I bVYZi [hY''`@Ui h`BcfX_i f]Yf`k i fXY`X]YgY
A U» bU\a Y`j ca `6fUbXYbVi f[Yf`@UbXYgUa h`ZØf`I a k Y`h`f@Zi Ł
Ub[YcfXbYhži a `5VghØfnY`ni `j Yf\]bXYfb`i bX`XYf`ZYgh[YghY``hYb
JYf_Y\fgg]WXYf\Y]h`FYWXbi b[`ni `hfU[Yb''`8]Y`GdYffi b[`]gh`]a
, Vf][Yb`Y]bY`5i ZU[Yž`X]Y`VY]`XYf`6Ui UVbU\a Y`XYf`8Y]WXa Ui Yfž
X]Y`&\$&\$#&%`ZYfh][[YghY``h`k i fXYž`ZYgh[Y`Y][h`k i fXY''

8]Y'U_hi Y``Y'G]hi Uh]cb'\Uh'XYb'CfXbi b[gUi ggW\i gg'XYf'GhUXh K]hhYbVYf[Y'Ui Z'XYb'D`Ub'[Yfi ZYbž'k c'X]Y'GdYffi b['XYf

Ni [Ub [ga Ò[`]WX_Y]hYb 'gWX UfZ'_f]h]g]Yfh'k i fXY"

C fXbi b [gUa hg`Y]hYf '@Ufg'K]fk]WX 'VYhc bhž 'XUgg'i bhYfgWX]YX`]WXY

6Yg]hnj Yf\À`hb]ggY'nk]gWXYb 'XYa '@Z 'i bX 'XYf'K UggYfghfU» Yb!
i bX 'GWX]ZZZU\fhgj Yfk U`hi b['X]Y '@U[Y'j Yf_ca d`]n]YfYb" '8Yf

8i fWX [Ub['[Y\Òfh'XYa '@Z ž'k À\fYbX'X]Y 'HfYddY'ni f'J Yfk U`hi b[

XYf'GWX]ZZZU\fh'ZØ\fh" 8i fWX 'Y]bY 'Yhk U][Y 'ÒZZYbh`]WXY 'Bi hni b[
a i qq'Y]bY'J Yf_Y\fqq]WXYfi b[qdZ]WXh'[Yk À\f`Y]qhYh'k YfXYb"

FYU_h]cbYb i bX a O[`]WXY @Ogi b[Yb

8]Y'GhUXh'\Uh'[fc»Yg'+bhYfYggY'XUfUbž'XYb'6YfY]W\'\]bhYf'XYf
8Y]W\a Ui Yf'hci f]gh]gW\'UbgdfYW\YbX'ni '\U`hYb"'5``YfX]b[g'[]Vh
Yg'XYfnY]h'_Y]bY'; UfUbh]Yž'XUgg'X]Y'?YhhYb'VU'X'YbhZYfbh'k YfXYb"
9]bY'XUi Yf\UZhY'GdYffi b['_ObbhY'bchk YbX]['gY]b ž'gU[hY'Y]b
GdfYW\Yf"': U``g'X]Y'HfYddYb'k Y]hYf\]b'[YgdYffh'V`Y]VYbž'k ÀfY'Yg
k ØbgW\Ybgk Yfhž'X]Y'G]W\Yfi b[Yb'UbgdfYW\YbXYf'ni '[YghU`hYb"

6Ui dfc^Y_hY^]b^K]hhYbVYf[Y

K À\fYbX`X]Y`GhUXh`a]h`XYf`DfcV`Ya Uh]_`XYf`[YgdYffhYb`HfYddYb _Àa dZhž'dUgg]Yfh`]b`K]hhYbVYf[Y`Ui W\`j]Y``]a `6YfY]W\`XYf JYf_Y\fg]bZfUghfi _hi f"`8Yf`6Ui `XYf`bYi Yb`9`VYVfØW_Yž'Y]b nYbhfU`Yf`6YghUbXhY]``XYf`5i hcVU\b`5`%(ž`]gh`]b`j c``Ya ; Ub[Y" 8]YgY`6fØW_Y`k]fX`X]Y``Àb[ghY`XYf`BcfXj Yf`Àb[Yfi b[`XYf`5`%(gY]b`i bX`a]h`Y]bYf`; YgUa h`Àb[Y`j cb`%"%\$\$`A YhYfb`gck c\`GUW\gYb!5b\U`h`U`g`Ui W\`6fUbXYbVi f[`a]hY]bUbXYf`j YfV]bXYb" 8Ug`6Ui fYW\h`]gh`gY]h`XYa `&("`C_hcVYf`&\$%- 'j c``n]Y\VUfži bX`XYf GdUhYbgh]W\`ZUbX`VYfY]hg`Ua `%* "`C_hcVYf`&\$&\$`ghUhhž`gc`VYf]W\hYh

8]Y 5fVY]hYb ni f'9`VYVfØW_Y`\UVYb`VYfY]hg`VYXYi hYbXY
cfhgWXf]hhY`[Ya UWXh"`Jca `&, "`V]g`' \$"`5df]``&\$&)`_cbbhY`XYf
Z]bU`Y`JcfgWXi V`XYg`, VYfVUi g`YfZc`[fY]WX`UV[YgWX`cggYb
k YfXYb"`8]YgYf`, VYfVUi ž`XYf`gY]bY`YbX[Ø`h][Y`Dcg]h]cb`YffY]WXh
\Uhž`]gh`HY]``Y]bYg`i a ZUb[fY]WXYb`6Ui dfc`Y_hgž`XUg`Ui WX`X]Y
VYghY\YbXY`9`VYVfØW_Y`XYf`6`%, - `VYfØW_g]WXh][Yb`a i ggž`X]Y`UV
&\$&*`bYi`[YVUi h`k]fX"`8]Y`; YgUa h_cghYb`ZØf`X]Y`6fØW_Y
VY`Ui ZYb`g]WX`Ui Z`Yhk U`%+\$`A]``]cbYb`9i fcž`X]Y`j c``ghÀbX][jj ca

6i bX'[YhfU[Yb'k YfXYb"'5i W.'\]Yf'k]fX'XUfUi Z'[YUWkhYhz'XUgg BUhi f!'i bX'@UbXgWkUZhggWki hn'\OWkghYb'5bgdfØWkYb'[YfYWkh k]fXz'gc'k]hhYbVYf[Y"XY"

Ni gUa a YbZUggYbX``Àggh'g]W\`gU[Ybž'XUgg'K]hhYbVYf[Y'g]W\ gck c\``a]h'XYb'<YfUi gZcfXYfi b[Yb'XYf'JYf_Y\fgg]W\Yf\Y]h']a 6YfY]W\`XYg'8Y]W\g'U`g'Ui W\`a]h'k]W\h][Yb' \oplus ZfUghfi _hi fdfc Υ _hYb Ui gY]bUbXYfgYhnh"8]Y'5bk c\bYf'i bX'6Ygi W\Yf'g]bX'[YgdUbbhž k]Y'g]W\`X]Y'G]hi Uh]cb'Ybhk]W_Y`b'k]fX' 'cV'X]Y'?YhhYb'VU`X j YfgW\k]bXYb'i bX'k Ubb'X]Y'bYi Y'5i hcVU\b'Xi fW\'X]Y'GhUXh Z \emptyset \fYb'k]fX"

| 8 YhU]`g | |
|----------|-----------------------------------------|
| Cfh | K]hhYbVYf[Yž8YihgWX`UbX |
| EiY``Yb | k k k "bcfX_i f]Yf"XY |
| | • k k k "XY[Yg"XY |
| | • k k k "k]hhYbVYf[Y"XY |

6Ygi WXYb G]Y i bg Ui Z b!U["bYh