DYbX`Yf`]b`GUW gYb!5b\U`h.
8i fW gW b]hh`]W Yf`5fVY]hgk Y[`&+ž*
?]`ca YhYf

⇒ `X\ f`&\$&\$`j Yf\_ØfnhY`g]W`XYf`Xi fW gW b]hh`]W Y
5fVY]hgk Y[`]b`GUW gYb!5b\U`h`Ui Z&+ž* `? ]`ca YhYfž`Ui h
GhUh]gh]gW Ya `@UbXYgUa h"

9bhk]W_`i b[ `XYf`DYbXY`k Y[Y`]b`GUW gYb!
5b\U`h`fYZ`Y\_h]Yfh`5fVY]hga Uf_hXmbUa]_

8]Y`J Yf`ÄbXYfi b[Yb`XYf`Xi fW gW b]hh`]W Yb`5fVY]hgk Y[Y`]b
GUW gYb!5b\U`h`V]YhYb`k Yfhj c``Y`9]bV`]W_Y`]b`X]Y`fY[ ]cbU`Yb
5fVY]hga Uf_hVYX]b[i b[Yb`i bX`XYb`5`hU[`XYf`6YgW`ÄZh][ hYb`" ⇒
X\ f`&\$&\$`VYhfi [`XYf`Xi fW gW b]hh`]W Y`5fVY]hgk Y[``Ui h`XYa
GhUh]gh]gW Yb`@UbXYgUa h`i&+ž* `? ]`ca YhYfž`k Ug`Y]bY``Y]W hY
J Yf_Øfni b[`j cb`\$ž `? ]`ca YhYfb`]a `J Yf[`Y]W`ni a `J cf`U\ f
XUfghY``h"

9f\YVi b[`XYf`DYbX`YfdUi gW U`Y`i bX`XYfYb
6YXYi hi b[

⇒g[YgUa h`a UW hYb`]a `X\ f`&\$&\$`Yhk U`(` ` "\$\$\$`5fVY]hbY\`a Yf
j cb`XYf`DYbX`YfdUi gW U`Y`; YVfUi W`"8]YgY`Yfa Ò[ `]W h`Ygž`X]Y
?]`ca YhYf`j cb`XYf`K c\bi b[`ni f`YfghYb`5fVY]hggh`ÄhhY`]b`XYf
GhYi YfYf_`Äfi b[ `U`g`K YfVi b[g_cghYb`UVni gYhnYb`"8]Y`8UhYb
nY][Ybž`XUgg`X]Y`<`Ä`ZhY`XYf`6YgW`ÄZh][hYb`Y]bY`8]ghUbn`j cb`%,
?]`ca YhYfb`cXYf`k Yb][ Yf`Ub[]Vh`8]YgY`⇒Zcfa Uh]cbYb`g]bX
YbhgW Y]XYbX`ZØf`X]Y`GhYi Yf`dc`h]\_`i bX`nY][ Yb`Ui Zž`k ]Y`X]Y
DYbX`YfdUi gW U`Y`j ]Y`Yb`5fVY]hbY\`a Yfb`Z]bUbn]Y``ni [i hY`ca a hž
]bgVYgcbXYfY`VY]`Ub[Yb`5bZ\ fhYb"

I bhYfgWx]YX`]Wx Y`K Y[Y`]b`5V\`Àb[ ][\_Y]h`j ca
9]b_ca a Yb

èhYfYggUbh`]gh`Ui Wx`XYf`Ni gUa a Yb\Ub[`nk ]gWxYb`XYf`@Àb[ Y`XYg
5fVY]hgk Y[g`i bX`XYa `9]b\_ca a Yb"5fVY]hbY\`a Yf`a ]h`Y]bYa
6fi hhcUfVY]hg`c`b`nk ]gWxYb`) "\$\$\$\$`i bX`%\$"\$\$\$`9i fc`\UhhYb`a]h
&- ž`-`?`]`ca YhYfb`XYb`Àb[ghYb`5fVY]hgk Y[ "`a `; Y[ YbgUhn`XUni
`Y[ hYb`DYfgcbYb`a ]h`Y]bYa `9]b\_ca a Yb`j cb`&\$"\$\$\$`9i fc`cXYf
a Y\`f`bi f`Xi fWxgWx`b]h`]Wx`&&ž`(`?`]`ca YhYf`ni fØW`"8]YgY`8]ZYfYbn
j cb`%-`DfcnYbh`i bhYfghfY]Wx hž`XUgg`\Ø\YfY`9]b_ca a Yb
hYbXYbn]Y``_ØfnYfY`DYbXY`k Y[Y`\UVYbž`k Ug`a Ò[ `]WxYfk Y]gY`Ui Z
Y]bY`I fVUb]g]Yfi b[ `cXYf`X]Y`K U\`j cb`5fVY]hgd`ÀhnYb`]b`XYf`BÀ\Y
Y]bYg`K c\bcfhg`\]bk Y]gh"

6YhfUWx hi b[`XYf`9]b_ca a YbggdUb b Y

5i Wx`5fVY]hbY\`a Yf`a ]h`Y]bYa `]U\`fYgj YfX]Ybghj cb`k Yb][ Yf`U`g
%\$"\$\$\$`9i fc`\UhhYb`Y]bYb`VYUWx`h]WxYb`5fVY]hgk Y[`j cb`&*ž+
?`]`ca YhYfbž`k Ug`nY][hž`XUgg`Ui Wx`Y]b\_ca a YbggWx`k ÀWxYfY
; fi ddYb`Yf\YV`]WxY`5bZU\fhgnY]hYb`]b`?Ui Z`bY\`a Yb`a ØggYbž`i a
]\fYa `6Yfi Z`bUWx`ni [ Y\Yb`"8]YgY`8UhYb`k YfZYb`:`fU[Yb`ni f
gcn]U`Yb`A cV`]h`Àh`i bX`XYb`@YVYbgi a gh`ÀbXYb`XYf
; Yf]b[j YfX]YbYf`Ui Z"

K]Wx h][_Y]h`XYf`ghYi Yf`]Wx Yb`9f\`YVi b[ `ZØf
X]Y`Ni _i bZh

8]Y`Yf\`cVYbYb`8UhYb`ghUa a Yb`Ui g`XYf`@c`\b!`i bX
9]b_ca a YbghYi YfghUh]gh]_ž`Y]bYf`GY`\_i bX`ÀfghUh]gh]_ž`X]Y`X]Y
9f[YVb]ggY`XYg`ZYgh[YgYhnhYb
9]b_ca a YbghYi Yfj YfUb`U[ i b[ gj YfZU\`fYbg`Ui gk YfhYh`"5i Z[fi bX
XYf`Ub[ Yb`6YUfVY]hi b[gXUi Yf`XYf`GhYi YfYf`\_`Àfi b[Yb`g]bX`X]Y
F Ygi `hUhY`ZØf`&\$&\$`Yfgh`Yhnhj YfZØ[ VUf`"8]YgY`GhUh]gh]\_Yb`g]bX
k]Wx h][ž`i a `X]Y`k ]fhgWxUZh`]WxYb`FU\`a YbVYX]b[i b[Yb`i bX`X]Y
9bhk]W`\_i b[ `XYg`5fVY]hga Uf`hg`]b`GUWx`gYb!5b\`U`h`_cbh]bi]Yf`]Wx
ni `UbU`mg]YfYb`i bX`Ubni dUggYb"

⊕g[YgUa h'nY][Yb`X]Y`HfYbXg`]b`XYb`DYbXY`k Y[Ybž`k ]Y`j]Y`ZÀ`h][
X]Y`<YfUi gZcfXYfi b[ Yb`ZØf`X]Y`5fVY]hbY\ a Yf`]b`GUW`gYb!5b\U`h
g]bX`i bX`k]Y`k ]W`h][`X]Y`dc`]h]gW`Yb`A U» bU\ a Yb`]a `6YfY]W`XYg
J Yf_Y\fg`i bX`XYf`GhYi Yfdc`]h]_`g]bXž`i a `X]Y`A cV`]`hÀhi bX
@YVYbgei U`]hÀh`XYf`6YgW`ÀZh][hYb`ni `j YfVYggYfb"

8YhU]`g

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