

# HYi fYf'A YfWXYg]b' ? i XXYk ÒfXY [ Yghc \ `Yb' `Dc`nY]`V]hhYh'i a ` < ]bk Y]gY

⊕' ? i XXYk ÒfXY `k i fXY`Y]b`[ fUi Yf'A YfWXYg`5A ; `ZØf  
&%\$"\$\$\$ `9i fc`[ Yghc \ `Yb" `Dc`nY]`gi W`h`NYi [ Yb`bUW`XYa  
b`ÀW`h]W`Yb`9]bVfi W`"

⊕`XYf`VYgW`Ui `]W`Yb` ; Ya Y]bXY` ? i XXYk ÒfXYž`X]Y`]a ` ? fY]g  
< Yfnc [ hi a ` @Ui YbVi f [ ` [ Y`Y [ Yb` ]ghž` \ Uh`g]W` `Y]b`gdY`\_hU`\_i `ÀfYf  
8]YVghU` \ `ni [ YhfU [ Yb" `⊕`XYf`B UW`h]j cb`GcbbhU [ `Ui Z`A cbhU [   
k i fXY`Y]b`Ui Z`À` ] [ Yf` [ fUi Yf'A YfWXYg`5A ; `a ]h`C`XYg`cYf  
? YbbnY]W`Yb`]a `K Yfh`j cb`gW`Àhni b [ gk Y]gY` &%\$"\$\$\$ `9i fc  
[ Yghc \ `Yb" `8 Yf`J cfZU` `k YW`\_h`b]W`h`bi f`XUg` ⊕`hYfYggY`XYf`Dc`nY]ž  
gcbXYfb`gc f [ h`Ui W` `ZØf` ; Ygd f`ÀW`gghc Z`i bhYf`XYb`5bk c \ bYfb"

Ni `XYa `J cfZU` ` `Ua `Ygž`U`g`i bVY`\_UbbhY`H`ÀhYf` [ Yk U`hgUa `]b`Y]b  
ZfØ`YfYg` ; i hg \ Ui g`Y]bXfUb [ Yb" `8 cfh`Xi fW`gi W`hYb`g]Y  
gmghYa Uh]gW`X]Y`F`Ài a `]W`\_Y]hYbž`i a `YhnhYbX`]W`XYb  
: U \ fnYi [ gW` `ØggY` `XYg`hYi fYb`Gdcfhk U [ Ybg`ni `ghY` \ `Yb" `B UW`XYa  
g]Y`XUg`GW` `ØggY`ghØW`\_Ub`g]W` [ YVfUW`h` \ UhYbž`a UW`hYb`g]Y`g]W`  
a ]h`XYa `i i f]ØgYb` : U \ fnYi [ `XUj cbž`XUg`j cf`XYa ` ; i hg \ Ui g  
UV [ YghY` `h`k Uf" `Hfch`n]bhYbg]j Yf`9fa ]h`i b [ Yb`ZY` \ `h]j cb`XYb  
H`ÀhYfb`YXY`Gdi f`i bX`X]Y`Dc`nY]`ghY` \ `h`bi b`Ui Z`XYf`Gi W`Y`bUW`  
NYi [ Yb"

## 8]Y`Gi W`Y`bUW` `NYi [ Yb

8]Y`Òfh]W`Yb`9fa ]hhYf`V]hhYb`X]Y`6Yj Ò`\_Yfi b [ `i a `i bhYfghØhni b [ "  
>XYf`<]bk Y]g`\_ØbbhY`YbhgW`Y]XYbX`gY]bž`i a `X]Y`ZØW`h] [ Yb`8]YVY  
ni `ZUggYb" `C Vk c \ `]b`XYf`F Y [ ]cb` ? i XXYk ÒfXY`Y]bY` [ Yk ]ggY  
F ci h]bY` \ YffgW`h`i bX`gc`W`Y`J cfZ`À`Y`Y` \ Yf`gY`hYb`g]bXž` \ Uh`X]YgYf  
8]YVghU` \ `ZØf`i bfi \ Y` [ Ygc f [ h" `8 Yf` \ c \ Y`K Yfh`XYg` [ Yghc \ `YbYb

A YfVWXYg'5A ; 'a UWxh'X]Y'GUWXY'bcWx'vf]gUbhYf'i bX'n]Y\h'X]Y  
5i Za Yf\_gUa \_Y]h'XYf'A YX]Yb'Ui Zg]Wx "

8Yf'8]YVghU\`X]YgYf'5fh'j cb '@ l i gZU\fnYi [ Yb']gh'b]Wx'h'bi f'Y]b  
J Yf'i gh'ZØf'XYb': U\fnYi [ VYg]hnYf"Gc`Wx'Y'HUHyb'\_ØbbYb'Ui Wx'XUg  
G]WxYf\Y]hg[ YZØ\`XYf'; Ya Y]bgWxUZh'VYY]bhfÅWxh][ Yb"K Yf']b'XYb  
'YhnhYb'HU[ Yb'j YfXÅWxh][ Y'DYfgcbYb'cXYf': U\fnYi [ Y']b'XYf  
l a [ YVi b[ '[ YgY\Yb'\Uhž'k ]fX'Y]bXf]b[ `]Wx' [ YVYhYb'ž'g]Wx  
i a [ Y\YbX'a ]h'XYf'Dc`nY]`j b'J YfV]bXi b[ `ni`gYhnYb"9g' [ ]Vh  
]a a Yf'X]Y'A Ø[ `]Wx\_Y]hž'XUgg'gY'Vgh'XYf'\_Y]bghY'<]bk Y]g'XYb  
9fa ]hh'Yfb'\Y'ZYb'\_ØbbhYž'XYb': U``gWx'bY``Ui Zni \_`ÅfYb"

6]g'Ub[ '\Uh'X]Y'Dc`nY]`nk Uf'NYi [ YbVYZfU[ i b[ Yb'Xi fWx [ YZØ\fhž  
'YXcWx'\_cbbhYb'\_Y]bY'bYbbYbgk YfhYb': cfhgWx]hY'Yfn]Y`h  
k YfXYbž'i a`X]Y'HAhYf'ni`]XYbh]Zn]YfYb"8]Y'9fa ]hh'Yf'g]bX'g]Wx  
VYk i gghž'XUgg'[ YfUXY' ]b'XYf'B UWx hž'U'g'XYf'8]YVghU\` [ YgWxU\ž  
a Ø[ `]WxYfk Y]gY'UbXYfY'5bk c\byf'cXYf'DUggUbhYb' ]b'XYf'BÅ\Y  
k UfYb"8U\Yf'gWxY]bh'X]Y'Ni gUa a YbUfVY]h'XYf'; Ya Y]bgWxUZh  
VYgcbXYfg'k ]Wxh][ ž'i a`@]Wx'h]bg'8i b\_Y`ni`vf]b[ Yb"

⇒ XYb`YhnhYb`J\Yfb'Yf'YVYb'j ]Y'Y'FY [ ]cbYbž'Y]bgWx`Y»`]Wx'XYg  
<Yfnc[ hi a g'@Ui YbVi f[ žY]bYb'5bgh]Y[ ]j cb': U\fnYi [ X]YVghÅ\Ybž  
]bgVYgcbXYfY'k Ybb'Yg'g]Wx'i a`cWxk Yfh][ Y': U\fnYi [ Y'\UbXY`h"  
9l dYfhYb'k UfbYbž'XUgg'X]Y'dfcZYgg]cbY`Y'J cf[ Y\Yb'gk Y]gY' ]b  
j ]Y'Yb': Å`Yb'XUfUi Z'\]bXYi hYhž'XUgg'Yg'cf[ Ub]g]YfhY'; fi ddYb  
gY]b'\_ØbbhYbž'X]Y'a ]h'[ i hYa`hYWx'b]gWxYb'K ]ggYb'i bX'[ Yn]Y'hYf  
D'Ubi b[ 'U[ ]YfYb"8U\Yf']gh'X]Y'5i Z\_`Åfi b[ `gc`WxYf'GhfUZhUHyb  
VYgcbXYfg'\YfUi gZcfXYfbX'i bX'YfZcfXYfh'cZhi a ZUb[ fY]WxY  
9fa ]hhi b[ gfYggci fWx'b"

8]Y'6YhfcZZYbYb'g]bX'g]Wx'Y]b][ .`Gc`Wx'Y]b'J cfZU``hf]Zhi'b]Wx'h'bi f  
XYb'X]fY\_hYb'9][ YbhØa Yf'XYg': U\fnYi [ gž'gcbXYfb'\Uh'Ui Wx  
5i gk ]f\_i b[ Yb'Ui Z'XUg'G]WxYf\Y]hgVYk i gghgY]b' ]b'XYf  
B UWxVUfgWxUZh"8Yf'[ fUi Y'A YfVWXYg'5A ; ']gh'b]Wx'h'bi f'Y]b  
Gma Vc`XYg'K c\`ghUbXgž'gcbXYfb'Ui Wx'Y]b'; Y[ YbghUbXž'XYf'ZØf  
j ]Y'Y'A YbgWxYb'Y]bYb'VYgcbXYfYb'Ya ch]cbU'Yb'K Yfh'XUfghY`h"  
8Yb\_Y'bi f'Ub'X]Y'5VYbhYi Yfž'X]Y'a Ub'a ]h'Y]bYa`gc`Wx  
'Y]ghi b[ gghUf\_Yb'5i hc'Yf'YVYb'\_ØbbhY"

8]Y'9fa ]hh'i b[ Yb'XUi Yfb']bXYg'Ub"K Å\fybX'X]Y'Dc`]nY]k Y]hYf\]b  
bUW' bØh`]WYb'<]bk Y]gYb'gi W'hž'V`Y]Vh'UVni k UfhYbž'cV`X]Y  
9fa ]hh'Yf'VU`X'Ui Z'bYi Y'Gdi fYb'ghc»Yb"8]Y'<cZbi b[ ]ghž'XUgg  
g]W'X]Y'HÅhYf'b]W'h`Ub[ Y]ja`I bhYf[ fi bX'j YfghYW\_Yb'\_ÖbbYb'i bX  
XYf': U``ni`Y]bYa`dcg]hj Yb'5VgW`i gg\_ca a Yb'k ]fX"

8YhU]`g

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