

# 9!GWŁchYf'i bhYf'8fc[ YbY]bZi gg. 'Dc`]nY] ghcddh'F c`YfZU\ fYf']b' ? @

Nk Y]'9!GWŁchYf! : U\ fYf']b' ? U]gYfg`Ui hYfb'ghUbXYb'i bhYf  
8fc[ YbY]bZi gg" 'Dc`]nY]'ghY`h'5i ZZA`][ \_Y]hYb'ZYghž  
6i » [ Y`Xj YfZU\ fYb'Zc`[ h"

? U]gYfg`Ui hYfb'\Uh']b'XYf'B UWŁh'ni a '8]YbghU[ 'Y]bYb'J cfZU`  
Yf'YVhž'XYf'X]Y'Dc`]nY]j YfhfYhYf'Ui Z'XYb'D'Ub'f]YZ'Nk Y]' ^ b[ Y  
A ĀbbYfž%, 'i bX'%- 'ſ\ fY'U'hž'k i fXYb']b'XYf'6U\b\cZghfU» Y'j cb  
XYb'6YUa hYb'[ Yghcddhž'k Ā\ fYbX'g]Y'9!GWŁchYf'Z \ fYb"K Ug  
ni bĀWŁgh'k ]Y'Y]b'[ Yk Ò\b`]WŁYg'J Yf[ Y\Yb'Ui ggU\ž'Yfk ]Yg'g]WŁ  
gWŁbY`'U'g'Yhk Ug'YfbghYfYgž'U'g'X]Y'Dc`]n]ghYb'5bnY]WŁYb'j cb  
8fc[ Yb\_cbg] a 'VYa Yf\_hYb"8]YgY'?cbhfc`Y'k ]fZh: fU[ Yb'Ui ZØVYf  
X]Y'G]WŁYf\Y]h]a 'GhfU» Ybj Yf\_Y\ f'i bX'XYb'9]bZi gg'j cb'8fc[ Yb  
Ui ZXUg': U\ fj Yf\U'hYb"

⇒ XYf'J Yf\_Y\fgØVYfdfØZ] b[ 'VYa Yf\_hYb'X]Y'Dc`]nY]VYUa hYb'Ub  
XYb'VY]XYb'A ĀbbYfb'hmd]gWŁY'J Yf\U'hYbgUi ZZA`][ \_Y]hYbž'X]Y'Ui Z  
Y]bYb'a Ò[ `]WŁYb'8fc[ Yb\_cbg] a 'gWŁ`Y» Yb'UggYb"5b[ YgdfcWŁYb  
Ui Z]\f'J Yf\U'hYbž'[ YghUbXYb'X]Y'VY]XYbž'XUgg'g]Y'Ua 'HU[ 'ni j cf  
'k Y]'g'Y]bYb'æ]bh[ YfUi WŁh'\UhhYb" 'Gc`WŁY'; YghĀbXb]ggY'g]bX  
b]WŁh'bi f'VYXYb\_]WŁž'g]Y'j YfXYi h]WŁYb'Ui WŁ'Y]b'ni bY\ a YbXYg  
DfcV'Ya ž'XUg'j cf'U`Ya ']b'ghĀXh]gWŁYb'; YV]YhYb']a a Yf'k ]YXYf  
Ui Zhf]hh'XUg': U\ fYb'i bhYf'8fc[ YbY]bZi gg"

## 8]Y'fYWŁh`]WŁYb': c`[ Yb'XYg J Yf\_Y\fgj Yf[ Y\Ybg

⇒ 8Yi hgWŁ'UbX']gh'Yg'[ YgYh`]WŁ'j YfVchYbž: U\fnYi [ Y'i bhYf'XYa  
9]bZi gg'j cb'8fc[ Yb'ni 'ZØ\ fYb"8Ug[ ]'h'Ui WŁ'ZØf'9!GWŁchYfž'X]Y']b  
XYb'YhnhYb'ſ\ fYb']a a Yf'VY']YVhYf'[ Yk cfXYb'g]bX"8]Y'VY]XYb

† b[ Yb'A ÀbbYf'a ØggYb'bi b'a ]h'Y]bYa '6i » [ Y`Xj YfZU\fyb  
fYW.bYb"8 Ug\`Y]» hž'\bYb`Xfc\Yb`Z]bUbn]Y`Y`GhfUZYbž'i bX`X]Y  
: fU[ Y`XYg': Ø\fybg'j cb'9!GWčchYfb'`ÒbbhY`Ui W`fYW.h]WXY  
?cbgYei YbnYb`bUW`g]W`n]Y\Yb"6YgcbXYfg`\YfUi gZcfXYfbX`k ]fX  
Yg`ZØf`g]Yž`ZU`g`X]Y`6`i hi bhYfgi W`i b[ `bUW`k Y]gYb`gc`hYž`XUgg`g]Y  
hUhg`W`]W`i bhYf`8fc[ YbY]bZi gg`ghUbXYb"

- %, 'i bX`%- 'š\fy`U`h
- 9!GWčchYf'i bhYf`8fc[ YbY]bZi gg'[ YZØ\fh
- J Yf\_Y\fg\_cbhfc`Y`]b`XYf`6U\b`cZghfU» Yž`? U]gYfg`Ui hYfb
- ; Ygh`ÀbXb]g`ØVYf`?cbgi a `j cb`7UbbUV]g
- 6`]W\_`]b`F`]W`hi b[ `6i » [ Y`Xj YfZU\fyb

8]YgY`J cfZ`Y`k YfZYb`Y]b`@]W`h`Ui ZY]bY`]a a Yf`Xf`Àb[ YbXYfY  
H\Ya Uh]\_`A ]h`XYa `5bgh]Y[ `Ub`9!GWčchYfb`Ui ZXYi hgW`Yb`GhfU» Yb  
ghY][ h`Ui W`X]Y`J YfUbhk cfhi b[ `XYf': U\fyfž`g]W`]\fyf': À\][ \_Y]hYb  
i bX`9]bgW`f`Àb`\_i b[ Yb`VYk i ggh`ni `gY]b"8Yf`?cbgi a `j cb`8fc[ Ybž  
X`\`"Gi VghUbnYbž`X]Y`X]Y`VYk i gghY`K U\fbY\`a i b[ `i bX`X]Y  
FYU\_`h]cbgZ`À\][ \_Y]h`VYY]bhf`ÀW`h][ Ybž`\Uh`i ba ]hY`VUFY  
5i gk ]f`\_i b[ Yb`Ui Z`X]Y`G]W`Yf\Y]h`U`Yf`J Yf\_Y\fg`hY]`bY\`a Yf"8U\Yf  
]gh`Yg`i bYf`Àgg`]W`ž`XUgg`ni \_ØbZh][ Y`?Ua dU[ bYb`ni f`5i Z`Àfi b[  
ØVYf`XYb`9]bZi gg`j cb`8fc[ Yb`]a `GhfU» Ybj Yf\_Y\`f]bhYbg]j Yf  
[ YghU`hY`hik YfXYb"

9]b` , VYfV`]W\_`ØVYf`X]Y`U`\_hi Y`Y`Yb  
9b`hk ]W\_`i b[ Yb

8Yf`J cfZU`]]b`? U]gYfg`Ui hYfb`]gh`b]W`h`]gc`]Yfh"æ a Yf`a Y\`f`Gh`ÀX`hY  
i bX`; Ya Y]bXYb`VYf]W`hYb`j cb`À\b`]W`Yb`?cbhfc`Yb`i bX`XYb  
XUa ]h] YfVi bXYbYb`GW`k ]Yf][ \_Y]hYb"8]Y`Df`ÀgYbn`j cb`9!  
GWčchYfbž`X]Y`b]W`h`bi f`U`g`i a k Y`hZFYi bX`]W`Y  
: cfhVYk Y[ i b[ ga Ò[ `]W`\_Y]h[ Y`hYbž`Vf]b[ h`]\fy`Y][ YbYb  
<YfUi gZcfXYfi b[ Yb`a ]h`g]W`"æbgVYgcbXYfY`X]Y`?ca V]bUh]cb`j cb  
U`\_c`c`!`cXYf`Xfc[ YbVYY]bZi gghYb': U\fyfb`i bX`X]YgYb  
Y`Y`\_hf]gW`Yb`F`c`Yfb`\_Ubb`Yf\YV`]W`Y`F]g]\_Yb`ZØf`U`Y`]a `J Yf\_Y\`f  
XUfghY`Yb"

9]b`k Y]hYfYf`k ]W`h][ Yf`Di b`\_h]gh`X]Y`J YfUbhk cfhi b[ `XYf`5bV]YhYf

j cb'9!GWŁchYfb"8]YgY'a ØggYb'XUZØf'gcf[ Ybž'XUgg'X]Y'Bi hnYf  
ØVYf'X]Y' [ Y'hYbXYb'; YgYmY'i bX'X]Y'dchYbn]Y''Yb'; YZU\ fYb'XYg  
: U\ fYbg'i bhYf'9]bZi gg'j cb'8 fc[ Yb']bZcfa ]Yfh'k YfXYb"'9]b][ Y  
GhÅXhY'j Yfgi WYb'VYfY]hgž'Xi fWŁ' ðZcfa Uh]cbg\_Ua dU[ bYb'i bX  
\_UfY'<]bk Y]gY'Ui Z'XYb': U\ fnYi [ Yb'gY'Vghž'DfÅj Ybh]cbgUfVY]h'ni  
`Y]ghYb"

: Øf'X]Y'VY]XYb'A ÅbbYf'Ui g'?U]gYfg'Ui hYfb'VY[ ]bbh'bi b'Y]b  
DfcnYggž'XYf'a Ò[ `]WYfk Y]gY'k Y]hfY]WYbXY': c`[ Yb'ZØf']\ f  
k Y]hYfYg'@YVYb'\UVYb'\_ØbbhY"'8]Y'?ca V]bUh]cb'Ui g'5'hYfg[ fi ddY  
i bX'8 fc[ Yb\_cbg\_i a `]gh'b]WŁh'bYi ž'UVYf'k Y]hYf\]b  
VYgcf[ b]gYffY[ YbX"'5bghUhh'g]WŁ' ]b'X]Y'; YZU\ fYb'XYg  
GhfU» Ybj Yf\_Y\fg'\]bY]bn]Y\Yb'ni `UggYbž'a ØggYb'† b[ Y  
A YbgWŁYb'g]WŁ'XYf'J YfUbhk cfhi b[ 'VYk i ggh'k YfXYbž'X]Y'a ]h'XYa  
: U\ fYb'Y]bYg'9!GWŁchYfg'Y]b\Yf[ Y\h"

8]YgY'G]hi Uh]cb' ]gh'Y]b'K YW\_fi Z'ZØf'U''Y'J Yf\_Y\ fghY]'bY\ a Yf"'8Yf  
K Y[ 'ni f'G]WŁYf\Y]h]a 'GhfU» Ybj Yf\_Y\ f'ZØ\ fh'ØVYf'5i Z\_Àfi b[ 'i bX  
j YfUbhk cfhi b[ gj c''Yg'J Yf\ U'hYb"

## F Y`Yj Ubn'j cb'8 fc[ Yb'i bX J Yf\_Y\ fgg]WŁ Yf\ Y]h

ð'XYb''YmhhYb' ð\ fYb'\ Uh'X]Y'8]g\_i gg]cb'ØVYf'8 fc[ Yb'i bX' ]\ fY  
5i gk ]f\_i b[ Yb'Ui Z'X]Y'J Yf\_Y\ fgg]WŁ Yf\ Y]h]b'8Yi hgWŁ'UbX'Ub  
6YXYi hi b[ '[ Yk cbbYb"'@Ui h'XYf'8Yi hgWŁYb'<Ui dhghY''Y'ZØf  
Gi WŁhZfU[ Yb'Y"'J "'fB <GGŁ''Y[ h'XYf': c\_i g'\Ài Z][ 'Ui Z'5'\_c\c'ž  
^YXcWŁ'[ Yk ]bbYb'Ui WŁ'8 fc[ Yb'k ]Y'7UbbUV]g'ni bY\ a YbX'Ub  
F Y`Yj Ubnž']bgVYgcbXYfY'a ]h'XYf'k UWŁgYbXYb'5\_nYdhUbn'i bX  
@Y[ U'g]Yfi b[ ' ]b'Y]b][ Yb'F Y[ ]cbYb"'8]Y'?ca V]bUh]cb'j cb  
8 fc[ Yb\_cbg\_i a 'i bX': U\ fYb'ghY''h'Y]b'Yf\YV']WŁYg'F ]g]\_c'XUf"  
Ghi X]Yb'nY][ Ybž'XUgg'8 fc[ Yb'X]Y'F YU\_h]cbgnY]hYb'i bX'X]Y  
K U\ fbY\ a i b[ 'XYf': U\ fYf'VYY]bhfÅWŁh][ Yb'\_ØbbYbž'k Ug'XUg  
l bZU'f]g]\_c'g][ b]Z'\_Ubh'Yf\ Ò\h"'9g']gh'k ]WŁh][ ž'XUgg': U\ fYfž  
]bgVYgcbXYfY'j cb'9!GWŁchYfbž'X]Y'J YfUbhk cfhi b[ 'ZØf']\ fY  
G]WŁYf\Y]h'i bX'X]Y'UbXYfYf'J Yf\_Y\ fghY]'bY\ a Yf'ØVYfbY\ a Yb"

F YWŁ h`]WŁ Y'5gdY\_hY'i bX'? cbgYei YbnYb

⊕'8Yi hgW`UbX`]ghXUg: U\fyb`i bhYf'8fc[ YbY]bZi gg`Y]bY  
CfXbi b[ gk ]Xf][ \_Y]hž`X]Y`a ]h`Y]bYa `6i » [ Y`X`i bX`a Ò[ `]WYfk Y]gY  
Y]bYa `: U\ fj YfVch[ YU\ bXYh`k YfXYb`\_Ubb"; Ya `À» `XYa  
GhfU» Ybj Yf\_Y\fg[ YgYh`g]bX`: U\fyf`j YfdZ]W hYhž`]f`: U\fnYi [ `]b  
Y]bYa `j Yf\_Y\fgg]WYfYb`Ni ghUbX`ni `ZØ\fybž`k Ug`Ui W`XYb  
J Yfn]W h`Ui Z8fc[ Yb\_cbgi a `Y]bgW`Y» h`8]Y`6`i hYbhbU`a Ybž`k ]Y  
g]Y`ja `U`hi Y`Yb`: U`Xi fW [ YZØ\fh`k i fXYbž`g]bX`Y]b  
GhUbXUfXj YfZU\fybž`i a `XYb`[ YbUi Yb`8fc[ Yb[ Y\U`h]a `6`i hni  
VYgh]a a Yb`8]Y`9f[ YVb]ggY`\_ÖbbhYb`b]W h`bi f`5i gk ]f\_i b[ Yb`Ui Z  
XUg`6i » [ Y`X] YfZU\fyb`UVYbž`gcbXYfb`Ui W`Ui ZX]Y`ni \_ØbZh][ Y  
: U\fyf`Ui Vb]g`XYf`6YhfcZYbYb"

## 5\_hi Y`Y`GhUh]gh]\_Yb`ni `J Yf\_Y\fgi bZ`Y`Yb i bhYf`8fc[ YbY]bZ`i gg

8]Y`i bZU`ghUh]gh]\_XYg`6i bXYga ]b]ghYf]i a g`ZØf`J Yf\_Y`f`i bX  
X][ ]hU`Y`⊕ZfUghfi \_hi f`f`bA J ⊕`Y]ZYfh`k ]W h][ Y`9]bV`]W\_Y`]b`X]Y  
; YZU\fyb`XYg`: U\fybg`i bhYf'8fc[ YbY]bZi gg"@Ui h`XYa `6Yf]W h  
j cb`&\$&\$`k Ufyb`Yhk U`%ž%`i `U`Yf`J Yf\_Y`fgi bZ`Y`Y`]b  
8Yi hgW`UbX`Ui Z8fc[ Yb\_cbgi a `ni fØW`ni ZØ\fyb`8]YgY`NU\`  
j YfXYi h]W hž`XUgg`X]Y`DfcV`Ya Uh]\_Yfbgh[ Ybca a Yb`k YfXYb  
a i gg"⊕XYf`5`hYfg[ fi ddY`XYf`%, !V]g`&(!`À\ f][ Yb`]Y[ h`XYf`5bhY`  
bcW` \Ø\Yfž`k Ug`Ui ZY]bY`Xf]b[ YbXY`Bchk YbX][ \_Y]h`ni f  
5i Z`Àfi b[ `]bk Y]gh"

- %ž%`i `XYf`J Yf\_Y`fgi bZ`Y`Y`]b`8Yi hgW`UbX`k Ufyb`&\$&\$  
Ui Z8fc[ Yb\_cbgi a `ni fØW`ni ZØ\fyb"
- ð b[ Y`: U\fyf`f%, !&(`\U\fyf`g]bX`ØVYfdfcdfh]cbU`  
VYhfcZYb"

8]YgY`NU\`Yb`i bhYfghfY]W Yb`X]Y`6YXYi hi b[ `]cb  
J Yf\_Y`fg\_cbhfc`Yb`i bX`d`f`Aj Ybh]j Yb`A U» bU`a Ybž`i a `X]Y  
J Yf\_Y`fgg]W Yf`Y]h`ni `Yf`Ø\Yb`i bX`XUg`6Yk i gghgY]b`ZØf`X]Y  
; YZU\fyb`XYg`8fc[ Yb\_cbgi a g]a `GhfU» Ybj Yf\_Y`f`ni `gW`ÀfZYb"

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