

I b]gk Ud`I d[ fUXYg`Ui Z`j ( .`8 Ug`]gh`bYi

: Ø\ fYbXYg`8 9L! Dfchc\_c``fB YW`bhfU`nYX`9I W`Ub[ YŁ`  
I b]gk Ud`\_ØbX][ hY`gY]b`I d[ fUXY`Ui Z`Ub`I b]gk Ud`j ( `Ua`  
8]YbghU[ `j YfØZZYbh`]W`h`i bX`Vf]b[ h`Y]bY`J]Y`nU\`  
UbdUggVUfYf`i b\_h]cbYb`]b`XUg`Dfchc\_c``"8 Ug`HYUa` \`Uh  
Ui W`X`Yb`7cXY`Ybhk`i fZ`XYg`Dfchc\_c``g`U`g`C`dYb!Gci fW`!  
@Øgi b[ `VYfY]h[ YghY``hž`i a` `YXYb`Y]bni`UXYbž`]bbYf\U`V  
gY]bYg`^2 \_cgmghYa`g`ni`VUi`Yb``I b]gk Ud`j ( .`K Ug`]gh`Xf]b`3`5`g  
[ YhY]`h`j`cb`I b]gk Ud`@Ui`h`@UVg`]gh`X]Y`<Ui`dh]bbc`j`Uh]cb`XYg  
I d[ fUXYg`X]Y`9]bVYn]Y\`i b[ `j`cb` `<cc\_g`ž`VYgW`f]YVYb`U`g  
J`Y`fhfÅ[ Yž`X]Y`Ub`j`YfgW`]YXYbYb`Di`b\_hYb`XYg`@YVYbgnm`\_i`g  
Y]bYf`Dcc`!5\_h]cb`Ui`g[ YZØ\fh`k`YfXYb` " `#`I b]gk Ud`X`XYf  
@]ei`]X]hÅhgdcc``\Uh`Y]bYb`@YVYbgnm`\_i`gž`]b`XYa` `Y]bY  
GhUbXUfX[ YVØ\ fYbghi`ZY`YfghY``hž`@]ei`]X]hÅh`]\bni`[ YZØ[ h`i`bX  
YbhZYfbh`k`]fX`i`bX`6Ybi`hnYf`Hc`\_Yb`Ui`ghUi`gW`Yb``<cc\_g  
Yfa`Ø[ `]W`Yb`Y]bY`VYggYf`/`Ua`d`^Y``]d/



: Ø\ fYbXYg`8 9L! Dfchc\_c``fB YW`bhfU`nYX`9I W`Ub[ YŁ`I b]gk Ud`  
\_ØbX][ hY`gY]b`I d[ fUXY`Ui Z`Ub`I b]gk Ud`j ( `Ua`8]YbghU[  
j YfØZZYbh`]W`h`i bX`Vf]b[ h`Y]bY`J]Y`nU\`UbdUggVUfYf`i b\_h]cbYb`]b

XUg'Dfchc\_c`''

8 Ug'HYUa '\Uh'Ui W\XYb'7cXYYbhk i fZ'XYg'Dfchc\_c`g'U`g'CdYb!  
Gci fW!@Øgi b[ 'VYfY]h[ YghY`hž'i a 'YXYb'Y]bni 'UXYbž']bbYf\U`V  
gY]bYg'² \_cgmghYa g'ni 'VUi Yb''

### I b]gk Ud'j ( . 'K Ug']gh'Xf]b 3

5`g'[ YhY]'h'j cb'I b]gk Ud '@Ui h'@UVg']gh'X]Y' < Ui dh]bbcj Uh]cb'XYg  
I d[ fUXYg'X]Y'9]bVYn]Y\i b[ 'j cb' <cc\_g ž'VYgWf]YVYb'U`g  
J YfhfÀ[ Yž'X]Y'Ub'j YfgW]YXYbYb'Di b\_hYb'XYg'@YVYbgm\_`i g'Y]bYf  
Dcc`!5\_h]cb'Ui g[ YZØ\fhk YfXYb "

≠'I b]gk Ud'XYf'@ei ]X]hÀhgdc`'\Uh'Y]bYb'@YVYbgm\_`i gž']b'XYa  
Y]bY'GhUbXUfX[ YVØ\fybghi ZY'YfghY`hž'@ei ]X]hÀh'\]bni [ YZØ[ h'i bX  
YbhZYfbhk ]fX'i bX'6Ybi hnYf'Hc\_Yb'Ui ghUi gWYb''

<cc\_g'Yfa Ø[ '\]WYb'Y]bY'VYggYf'UbdUggVUfY'@ei ]X]hÀh']bbYf\U`V  
XYg'Dcc`gž']bXYa 'g]Y'7cXY'Ub[ YVYbž'i a 'Ub'VYgh]a a hYb'Di b\_hYb  
XYg'@YVYbgm\_`i g'A U» bU\ a Yb'ni 'Yf[ fY]ZYbž'VY]gd]Y`gk Y]gY'j cf  
cXYf'bUW'Y]bYa 'Gk Ud'cXYf'Y]bYf'YbXYfi b[ 'XYf'@D!Dcg]h]cb'' ≠  
I b]gk Ud'j ' 'gU[ hY'X]Y'C f[ Ub]gUh]cbž'XUgg'X]Y'@YVYbgm\_`Yb  
[ Y\_cddY'h'i bX']b'Y]bYf'gY\ f'ghfYb[ Yb'F Y]\YbZc`[ Y'Ui g[ YZØ\fh  
k i fXYb''

9bhk ]W`Yf'\_ØbbYb'XUfØVYf'\]bUi g'≠bcj Uh]cbYb'Ybhk ]W\_Y`b  
I b]gk Ud' 8]Y'@ei ]X]hÀh'i bX'G]WYf\Y]h'XYg'Dfchc\_c`g'Yfa Ø[ '\]W h  
X]Y'9fghY`i b[ 'a U» [ YgW.bY]XYfhYf'5A A !Dcc`g'Xi fW' <cc\_gž'X]Y  
g]W' ]b'X]Y'Ga Ufh'7cbhfUW'g'j cb'j ( ' ]bhY[ f]YfYb'`UggYb ž'gWf]YV  
Yf'I b]gk Ud''

8]Y'A Ø[ '\]W\_Y]hYb'gc`WYf'J YfhfÀ[ Y'g]bX'j ]Y`ZÀ'h][ "'I b]gk Ud  
gU[ hYž'Yg'd`UbY'bi bž'a ]h'Y]bYa ' nY]h[ Yk ]W hYhYb  
Xi fW.gW.b]h]WYb'A Uf\_Yh'A U\_Yf' fHK 5A A ě'ni 'YI dYf]a Ybh]YfYbž  
XYf'Yg'6Ybi hnYfb'Yfa Ø[ '\]W hž'Y]bY'?Ui ZcfXYf'ØVYf'Y]bYb'`Ub[ Yb  
NY]hfUi a 'ni 'j YfhY]'Yb''9g'À\bY'h'XYf'Ui hca Uh]gWYb'A ]hhY'i b[  
XYf'8c`Uf\_cghYb' 'Y]bYf'5b`U[ YghfUhY[ ]Y'ni f'J YfhY]'i b[ 'XYf

Y][ YbYb`? fmdhc! ðj Ygh]h]cbYb`ØVYf`Y]bYb`Àb[ YfYb`NY]hfUi a ži a  
g]W`[ Y[ Yb`j cfØVYf[ Y\YbXY`Jc`Uh]`]hÀhni`gW`ØhnYb`"

## 8 Yf`< ]a a Y``]gh`X]Y` ; fYbnY

Ni`XYb`k Y]hYfYb` : i b\_h]cbYb` [ Y\ØfYb`XmbUa ]gW`Y` ; YVØ\fYbž`C b!  
7\U]b!@]a ]h]CfXYfg`i bX`X]Y`9]bnU\`i b[ `j cb`@]ei ]X]hÀh`Ui » Yf\U`V  
XYg`6YfY]W`g`]b`?fYX]hdfc`c`c`Y`"

5VYf`Y][ Ybh]W`g]bX`\_Y]bY` ; fYbnYb` [ YgYhnh ž`gW`f]YV`Yf  
I b]gk Ud` 8U`YXYf`Dcc`Yhnh`Xi fW`a Y\f`U`g`bi f`X]Y`Hc`\_Yb`i bX  
X]Y` ; YVØ\fYbghi ZY`XYZ]b]Yfh`k ]fXž`k YfXYb`k ]f`Dcc`g`]b`U`Yb  
: UfVYbž` : cfa Yb`i bX` ; fØ» Yb`gY\Yb`"

I b]gk Ud`\Uh`VYfY]hg`Y]bY`FY]\Y`j cb`ni f`J YfZØ[ i b[  
[ YghY`h`A i ghYf!<cc`\_!J Yfhf`À[ Y`i a`9bhk ]W`\_Yfb`ni`\Y`ZYbž`XUg  
<cc`\_! : fUa Yk cf`\_ni`j YfghY\Ybž`i bX`hY]`hY`X]Y`ZfØ\Y  
⇒ d`Ya Ybh]Yfi b[ `XUj cb`a ]h`7cXY`"

8]Y`?cghYb`ZØf`X]Y`Dcc`YfghY`i b[ `VYhfU[ Yb`I b]gk Ud`j ( `k ]fX`Yg  
Ui W`g]b`fYXi n]Yfh`i a`-`-`i ž`XU`U`Y`Dcc`g`]b`Y]bYa`Y]bn][ Yb  
J YfhfU[ `YVYb`"

⇒ `5df]ž`I b]gk Ud`cZZ]n]Y`VYghUbXYb`%ž) `6]`]cbYb`I G!8c`Uf  
<UbXY`gj c`i a Yb`"

...

8 YhU]`g

6Ygi W`Yb`G]Y`i bg`Ui Z.`\_fmdhc!bYk`g`Uh