

# K Ug`XYf`J Uh]\_Ub`i bX`X]Y`? fmdhc!6fØXYf [ Ya Y]bgUa ` \UVYb

5a Yf]\_Ub]gWXY`<YX[ YZcbXg!? c fmd\ÅYb`UggYb`g]W  
bcfa U`Yfk Y]gY`b]W`h`j`ca`DUdgh`]bgd]f]YfYb`"5VYf`U`g`  
:]bUbn]Yfg`X]YgY`K`cWXY`]b`@cg`5b[ Y`Yg`ni`f`A`]\_Yb`ϕgh]hi`hY`  
;`cVU`7cbZYfYbW`ni`gUa`a`Yb\_Ua`Ybž`k`Uf`XYf`J`Uh]\_Ub`Y]b`  
i`bYfk`UfhYhYg`H\Ya`U`XYf`8]bbYf!8YVUhhY`"?i`fn`j`cf`6Y[ ]bb`  
XYf`?`cbZYfYbn`\_ØbX][`hY`XYf`<Y`][`Y`Ghi` \`D`ÅbY`Ubž`b]W`h`  
Ž`b[ ]V`Y`Hc`\_Yb`Ui`Z`XYf`6`c`W`W`U]b`Ui`gni`[`YVYb`/`N]Y`gY`Ygž`  
X]Y` \]ghcf]gWXY`?i`bghgUa`a`i`b[ `XYg`J`Uh]\_Ubg`ni`  
XYa`c`\_fUh]g]YfYb`ž`]bXYa`A`YbgWXYb`Ui`Z`XYf`[`UbnYb`K`Y`h`  
Ni`[`Ub[ `ni`XYb`;`Ya`Å`XYb`j`YfgW`UZZh`k`YfXY`"fk`]Y`[`YbUi`  
XUg`Ž`b`\_h]cb]YfYb`k`]fXž`V`Y]Vh`UVni`k`UfhYb`"Ł`:`Øf`Y]b][`Y`XYf`  
A`]\_Yb!HY`]bY\`a`Yf`k`Uf`X]Yg`Y]b`NY]WXYb`XUZØfž`XUgg`X]Y`  
6`c`W`W`U]b!HYW`bc`c[ ]Y`Y]bY`A`UW`hj`YfgW`]YVi`b[ `VYk`]f`\_h`  
;`YbUi`Yf`[`YgU[`hž`X]Y`XYYž`X]Y`?fmdhc!9j`Ub[ `Y`]ghYb`  
VY[ `Y]ghYfh`/`Ua`d`^`Y`d`/`

5a Yf]\_Ub]gWXY`<YX[ YZcbXg!? c fmd\ÅYb`UggYb`g]W  
bcfa U`Yfk Y]gY`b]W`h`j`ca`DUdgh`]bgd]f]YfYb`"5VYf`U`g`  
:]bUbn]Yfg`X]YgY`K`cWXY`]b`@cg`5b[ Y`Yg`ni`f`A`]\_Yb`ϕgh]hi`hY`  
;`cVU`7cbZYfYbW`ni`gUa`a`Yb\_Ua`Ybž`k`Uf`XYf`J`Uh]\_Ub`Y]b`  
i`bYfk`UfhYhYg`H\Ya`U`XYf`8]bbYf!8YVUhhY`"

?i`fn`j`cf`6Y[ ]bb`XYf`?`cbZYfYbn`\_ØbX][`hY`XYf`<Y`][`Y`Ghi` \`D`ÅbY`  
Ubž`b]W`h`Ž`b[ ]V`Y`Hc`\_Yb`Ui`Z`XYf`6`c`W`W`U]b`Ui`gni`[`YVYb`/`N]Y`gY`  
Ygž`X]Y` \]ghcf]gWXY`?i`bghgUa`a`i`b[ `XYg`J`Uh]\_Ubg`ni`  
XYa`c`\_fUh]g]YfYb`ž`]bXYa`A`YbgWXYb`Ui`Z`XYf`[`UbnYb`K`Y`h`  
Ni`[`Ub[ `ni`XYb`;`Ya`Å`XYb`j`YfgW`UZZh`k`YfXY`"fk`]Y`[`YbUi`XUg`  
Ž`b`\_h]cb]YfYb`k`]fXž`V`Y]Vh`UVni`k`UfhYb`"Ł`

:`Øf`Y]b][`Y`XYf`A`]\_Yb!HY`]bY\`a`Yf`k`Uf`X]Yg`Y]b`NY]WXYb`XUZØfž`

XUgg`X]Y`6`c`W`W`U]b!HYW`bc`c[ ]Y`Y]bY`A UW`hj YfgW`]YVi b[  
VYk ]f`\_`h"; YbUi Yf`[ YgU[ hž`X]Y`⇒XYŽ`X]Y`? fmdhc!9j Ub[ Y`]ghYb  
VY[ Y]ghYfh`fk ]Y`g]Y`\\`Äi Z[ ]j cb`@Yi hYb`k ]Y`DYhYf`H\]Y`ž`XYa  
`]VYfh`ÄfYb`⇒b] Yghc`f`Ui g`@5ž`XUf[ Y`Y[ h`k ]fXŁž`]ghž`XUgg`X]Y  
6`c`W`W`U]b`XUg`J Yfgd`fYW`Yb`Y]bYf`XYnYb`hfU`]g]YfhYb`K Y`h`V]YhYhž  
]b`XYf`BYhmk Yf`\_`Y`j cb`[ Yk Ò\`b`]W`Yb`A YbgW`Yb`\\YfUi gZcfXYfb  
\_`ÖbbYb`9`]hYb` `df]YghYf`]W`cXYf`UbXYfk Y]h[ "

Gc`h`Yb`k ]f`UbXYfYb`XUg`[ `Ui VYb3`B UW`X`Y`a` `fa UbW`a U`a ]h  
`YW`YfY`a` `K Y]b`[ YgØ» hYbŁ`? fmdhc!< mdY`V]b`]W`g]W`h`]W`nYff]ggYb"  
9g`]gh`b]W`h`bi`f`Y]bY`8YVUhY`nk ]gW`Yb`XYb`? fmdhc!9j Ub[ Y`]ghYb  
fk ]Y`H\]Y`Łž`X]Y`[ `Ui VYbž`XUgg`XUg`6`c`W`W`U]b!@YX[ Yf`Y]bY  
fYj c`i`h]cb`ÄfY`HYW`bc`c[ ]Y`]ghž`i bX`gc`W`Yb`k ]Y`XYa` [ YZY]YfhYb  
⇒b] Yghc`f`K UffYb`6i ZZYhž`XYf`Yfk ]XYfh`\\Uhž`XUgg`6]hW`]b`Y]b  
; `ØW`ggd]Y`[ Yf`Äh`ž`Y]bY`DmfUa ]XY`]gh`GW`Ya U`i bX` F UhhYb[ ]Zh`"

8 Ug`UbXYfY`DfcV`Ya` ]gh`X]Y`?`i Zh`nk ]gW`Yb`F`\\Y`hcf]\_`i bX`FYU`]h`Äh"  
8]Y`A YbgW`Yb`ž`X]Y`g]W`\\Yi hY`]b`XYf`? fmdhc`k Y`h`Yb[ U[ ]YfYbž  
cdYf]YfYb`a` ]h`Y]bYa` `Ui g[ YdfÄ[ hYb`GW`ÖdZi b[ ga`m\cgž`XYf`j ]Y`Y  
K ]XYfgdfØW`Y`Yb`h`Ä`h`"

8]Y`Y]bY`XfY`h`g]W`i`a` `X]Y`⇒XY`XYg`X][ ]hU`Yb`; Y`XYg`": Øf`X]Y  
a`Y]ghYb`Ni`gW`Ui`Yf`]gh`X]Yg`XUg`A`Yf`\_`a` U`ž`XUg`? fmdhc  
i`bj`Yfk`YW`gY`VUf`a` UW`h`GW`]Y»`]W`k`Uf`Yg`6]hW`]b`ž`XUg`XUg  
?`cbnYdh`XYf`6`c`W`W`U]b`dcdi`Äf`[ Ya` UW`h`\\Uhž`Ui`W`k`Ybb`X]Yg  
]bnk ]gW`Yb`Ui`ZUbXYfY`6YfY]W`Y`k ]Y`X]Y`?i`bgh`ØVYfhfU[ Yb`k`i`fXY"  
⇒`K ]f`\_]W`\_`Y]h`\\UVYb`X]Y`a`Y]ghYb`j`cb`i`bg`gY]h`Δ\`fYb`X][ ]hU`Y  
6Ub`\_\_`cbhYb`ž`k`Ybb`Ui`W`]b`]: ]Uh`K`Ä`fi`b[ "8]Y`? fmdhc`k`Y`h`VYXfc`h  
XUg`bcfa`U`Y` ; Y`X`gh`Äb`X][ ž`]bXYa`Yg`fY]b`X][ ]hU`]ghž`UVYf  
`YhnhYfYg`]gh`Zi`hi`f]gh]gW`Yf`i`bX`gW`bY`Yf`[ Yk`cfXYb` `j`ca  
a`cV]Yb`6Ub`\_]b[ `V]g`ni`a`NU`\\i`b[ gj`Yf`\_`Y`f` `U`g`X]Y`a`Y]ghYb  
A`YbgW`Yb`g]W`XUg`j`cf[ YghY`h`\\UVYb`"

9]b`nk`Y]hYg`DfcV`Ya` `VYhf]Zhi`X]Y`5bcbma` ]h`Äh`c`XYf`[ YbUi`Yf`[ YgU[ h  
X]Y`DgYi`Xcbma` ]h`Äh`8]Yg`k`]fX`c`Zi`U`g`Y]b`VYgh]a`a`YbXYg`A`Yf`\_`a`U`  
j`cb`? fmdhc`VYhfUW`hYh`i`bX`XUZØf`\_`f]h]g]Yfhž`?`f]a` ]bU`]h`Äh`ni  
Yfa`Ö[ `]W`Yb`"5VYf`]b`XYb`BYVYb`f`Äi`a`Yb`XYf`A`]`\_`Yb!`?`cbZYfYbn  
\\ÖfhY`]W`i`bhYfbY`a`Yf`VYgW`fY]VYbž`k ]Y`g]Y`j`Yfgi`W`Yb`ž`VYggYfY

K Y[ Y'ni 'Z]bXYbž'i a 'X]Y'⇒Ybh]hÀ'hj cb'6Ybi hnYfb'ni 'VYghÀh][ Yb"  
6YfUHYf'k ]Y'7\U]bU'mg]g'g]bX'cZYZbVUf'gc' [ i h'XUf]bž  
i bXi fW'g]W'h][ Y'? fmdhc'ghfÒa Y'ni 'j YfZc'[ Ybž'XUgg'Yg'ZØf'X]Y  
GhfUž] YfZc'[ i b[ gVY\ÒfXYbž'Y]bgW'Y]Y»' ]W'XYg': 6 ž'Y]bZUWYf'gY]b  
\_Ubbž'?f]a ]bY''Y'a ]h'? fmdhc'ghUhh'a ]h'6Ub\_bchYb'Ui Zni gdØfYb"  
6Uf[ Y'X' ]ghUbcbma Yf ž'gU[ h'a ]f'Y]b'GdØf'i bX"

8 Ubb '[ ]Vh'Yg' <YX[ ]b[ "'5b[ Yg]W'hg'XYf'ZU''YbXYb'5\_h]Yba Āf\_hY  
k Uf'Y]b'\Y]»Yg'H\Ya U'VY]'A ]\_Ybž'k ]Y'5b'Y[ Yf']\fY'DcfhZc']cg  
UVg]W'Yfb'\_ÒbbYb"'5'g'5bhk cfh'dfĀgYbh]YfhYb'? fmdhc!  
9bh'i g]UghYb'Hc\_Yb'k ]Y'6]hW' ]b"'5VYf'Yg'gW'Y]bh'Yhnhž'XUggž'gc  
k ]Y'ØVYfgW'Øgg][ Y'@]ei ]X]hÀ'h]b'XYf'J Yf[ Ub[ Yb\Y]h'XYb'DfY]g'ZUgh  
U''Yf'J Yfa Ò[ Ybgk YfhY' ]b'X]Y'<Ò\Y' [ Yhf]YVYb'\Uhž']\f'F ØW\_ni [ ]  
]bYb'U''Yb'gW'UXYb'\_ÒbbhY' 'Y]bgW'Y]Y»' ]W'?' fmdhc"

8 ]Y'Yb][ Ybž'X]Y'B: Hg'UbdFY]gYbž'cVYb'g]Y'U'g'k Yfhj c''ž'k Y]'g]Y  
\_bUdd'i bX'i bj YfĀbXYf']W'g]bX"'5VYf'k ]Y'FYW'hgYI dYfhYb'k ]Y  
8]bi g\U'A YbX]g'j cb'XYf'6ci fbYa ci h\l' b]j Yfg]hmi bX'ε\_c  
A Uf]bchh]j cb'XYf'ϕX]UbU'l b]j Yfg]hmUf[ i a Ybh]Yfh'\UVYbž'k ]fX  
XYf'; fUXž']b'XYa 'Y]b'ϕj Yghc'f'Y]bYb'Hc\_Yb' VYg]hnh ž  
cfXbi b[ g[ Ya Ā» j cf'; Yf]W'h[ YdfØZh"'l bX'XYf'? bUdd\Y]hgUgdY\_h  
\_c''X]Yfh'a ]h'XYf'HUhgUW'Yž'XUgg']a a Yf'k ]YXYf'bYi Y'Hc\_Yb  
[ YgW'UZYb'k YfXYb"

GW'Y]Y»' ]W'ghY''h'g]W'X]Y': fU[ Y'XYf'8YnYbhfU']g]Yfi b[ "'8]Y  
i fgdfØb[ ' ]W'Y'GW'ÒdZ' b[ ga mh\c'c [ ]Y'ZØf'6]hW' ]b'k Uf'Y]b  
K \]hYdUdYfž'XUg'j cb'XYa 'a mghYf]ÒgYb'GUhcg\]'BU\_Ua chc  
[ YgW'f]YVYb'k i fXY'i bX'Y]bY'K Y'h'ZcfXYfhYž'X]Y'Ui Z'DYYf!hc!DYYf  
cXYf' j YfhY]'hYa 'J YfhfUi Yb'VUg]Yfh"'8]Y'J ]g]cbž'X]Y'H\]Y'g'5i [ Yb  
ni a '@Yi W'hYb'Vf]b[ hž']gh'Y]bYž']b'XYf'Y]b' [ Ya Y]bgUa Yg  
7ca di hYfVi W'Yg'A YbgW'Yb'Yfa Ò[ ' ]W'hž'; YgW'ĀZhY'c\by  
hfUX]h]cbY''Y' 'X'\ ]YfUfW' ]gW'Y' 'ϕgh]hi h]cbYb'UVni gW'Y]Y»' Yb"  
GcVU'X'Y]b' [ Ya Y]bgUa ' [ Ybi hnhYg'7ca di hYfVi W'YfghY''h'k i fXYž  
gc'XUg'5f[ i a Ybhž'\_ÒbbhYb': fYa XY'g]W'Yf'a ]hY]bUbXYf'; YgW'ĀZhY  
hÀh][ Ybž'c\by'ØVYf\Ui dhinYbhfU']g]YfhY'ϕgh]hi h]cbYb'ni  
VYbØh][ Yb"

8 Ug'a U[ 'ni a 'HY]'bcW'gh]a a Yb"'5VYf'k ]Y'7\Uf'Yg'<cg\_]bgcbž

Y]b'6`c\_W\W U]b!D]cb]Yfž`XYf`Yhnh`Y]bYb`YfZc`[ fY]W\Yb'6Yhf]YV`Ui Z  
XYf`7UfXUbc!D`UhhZcfa`Ui ZVUi hž'a ]f`]b`@5`gU[ hY.`8]Y  
ØVYfk ]Y[ YbXY`A Y\ f\Y]h]j cb`K YV` `QYž`V`c\_W\W U]bQ  
5bk YbXi b[ Yb`g]bX`nYbhfU`]g]Yfž`b]W\h`XYnYbhfU`]g]Yfh" `8Ug`]]Y[ h  
ni a`HY]`XUfUbž`XUgg`Yg`g]W\`VY]`XYb`<Ui dhVØW\Yfb`cZhi a  
gc[ YbUbbhY` Df]j UhY`7\U]bg`cXYf`7`i Vg`bi f`ZØf`A ]h[ `]YXYf  
\UbXY`hž`X]Y`j cb`ϕgh]hi h]cbYb`k ]Y`DA cf[ Ub`cf[ Ub]g]Yfh`k YfXYb"  
5VYf`Yg`]]Y[ h`Ui W\`XUfUbž`XUgg`Y]bY`bYi`Y` ; YbYfUh]cb`j ]fhi Y`Yf  
6ØfgYb`YbghgUbXYb`]ghž`i a`XYb`<UbXY`i bX`X]Y`J Yfk U\fi b[ `j cb  
?fmdhc`ni`cf[ Ub]g]YfYb"

I bX`k Ybb`Y]bY`9]bf]W\hi b[ `k ]Y`XYf`J Uh]\_Ub`B: Hg`\YfUi g[ ]Vhž`]gh  
Yg`X]Y` ; `Ui Vk ØfX][ \_Y]h`X]YgYf`ϕgh]hi h]cbž`X]Y`hY]`k Y]gY`J YfhfUi Yb  
]b`X]YgY`J Yfa`Ø[ Ybgbk YfhY`gW\UZZh"5i W\`k Ybb`XUg`K cfh  
8YnYbhfU`]g]Yfi b[ `VY]`A ]`\_Yb!5VYbXYggYb`a ]h`K Y]b  
\Yfi bhYf[ YgdØ`h`k ]fXž`hUi W\Yb`<]YfUfW\]Yb`]a`a Yf`k ]YXYf`Ui Z  
gi Vh]`Y`i bX`a UbW\`a U`i bXi fW\g]W\h][ Y`K Y]gY`Ui Z"

≠W\`VY\Ui dhY`b]W\hž`XUgg`X]YgY`ϕ`\_cbg]ghYbnYb`XYb`[ UbnYb  
?fmdhc!HfUi a`VYXYi hi b[ g`cg`a UW\Yb"8]Y`6fUbW\Y`Ybhk ]W`\_Y`h  
]bhYfYggUbhY`HYW\bc`c[ ]Yb`i bX`≠XYbž`X]Y`ni a`A U]bgfhYUa  
k YfXYb`\_ØbbhYb`i [ YfUXY`k Y]`g]W\`ϕgh]hi h]cbYb`Yb[ U[ ]YfYb"

5VYf`XYf`YbhgW\Y]XYbXY`Di b`\_h]gh`Zc`[ YbXYf.`K Ug`]b  
?fmdhc k`Å\fi b[ Yb`K Yfh`gW\UZZhž`]gh`X]Y`5bbU\`a`Y`Y]bYg  
nk Y]XYi h][ Yb` ; `Ui VYbgž`VY]`XYa`X]Y`F`Y`hcf]\_`cZhi a`]h`XYf`FYU`]h`Åh  
\_`c``X]Yfh"ϕgcZYfb`a UW\h`XYf`GW\f]h`XYg`J Uh]\_Ubg`Xi fW\Ui g  
G]bb"

: c`[ Yb`G]Y` ; ]`]Ub`Ui Z`Hk ]hhYf`4 [ ]`]Ub`hYhh`i bX`a U]`Yb`G]Y`]f  
Ub [ ]`]Ub`"hYhh4 Zh`W`a

: c`[ Yb`4 : HA U[ `Ui Z`Hk ]hhYfž`i a`ni Yfgh`ØVYf`i bgYfY`bYi YghYb  
; YgW\]W\hYb`ni`YfZU`fYb

E i Y`Y.: ]bUbW]U`H]a Yg

8YhU]`g

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