

: HL !6Ybi hnYf'gW`]Y» Yb'g]W`ni gUa a Yb.  
< UhhY'Xcfh'XUg'[ YgUa hY'J Yfa Ò[ Ybž  
I dg

: HL 'k Uf' ]b' C fXbi b[ žV]g'Yg'b]W`h'a Y\ f'gc'k Ufž'i bX'X]Y  
5b[ ghj cf'gY]bYf' bgc'j Ybn'\Uh'GW`cW`k Y`Yb'ØVYf'? fmdhc  
[ YgW`]W`hi bX'X]Y'6Ybi hnYf'\Ufh'[ YhfcZZYb"8]Y'? fmdhc!  
6ÖfgY'dUi g]YfhY'X]Y'5i gnU\`i b[ Ybž'bUW`XYa'g]Y'XYb'K Yfh  
XYg'; Y'XYg'[ YgY\Yb'\UhhY'i a' \* 'A ]`]UfXYb'8c`Uf'j Yf`UggYb  
gY]bY'D`Uhhžcfa' ]b'XYb`YhnhYb'+&'Ghi bXYb"8]Y' ]b'XYb'I G5  
UbgÄgg][ Y'D`Uhhžcfa' : HL "I G' 'Y]bY'gYdUfUhY': ]fa Už'X]Y'b]W`h  
HY]'XYg', VYfbU\`a YUb[ YVchg'gh' 'V`Y]Vh']b'6Yhf]YV'i bX  
Yf`Y]W`hYfh'5V\YVi b[ Yb"5VYf'X]Y'6Ybi hnYf'XYf': `U[ [ gW`]Z  
6ÖfgY'j cb': HL 'a ]h'<Ui dhg]hn']b'5bh][ i U'i bX'6UfVi XU'g]bX  
j cb'\fYb'; Y'XYfb'Ui g[ YgW`cggYb"A Y\ fYfY'\UVYb'g]W`Ub  
Hk ]hhYf'[ Yk UbXhž'i a / Ua d^Y`]d/

: HL`k Uf`b`C fXbi b[ žV]g`Yg`b]W h`a Y`f`gc`k Uf`ž`i bX`X]Y`5b[ gh] cf  
gY]bYf`b`gc`j Ybn`U h`GW`cW`k Y`Y`b`ØVYf`? fmdhc`[ YgW]W`h`i bX`X]Y  
6Ybi hnYf`Ufh`[ YhfcZYb`"

8]Y`? fmdhc!6ØfgY`dUi`g]YfhY`X]Y`5i gnU`i` b[ Ybž`bUW`XYa`g]Y`XYb  
K Yfh`XYg`; Y`XYg`[ YgY`Yb`UhhY`i`a`\*`A`]]UfXYb`8c`Uf`j Yf`UggYb  
gY]bY`D`UhhZcfa`]b`XYb`Y`hnhYb`+&`Ghi`bXYb`"

8]Y`]b`XYb`I`G5`UbG`agg][ Y`D`UhhZcfa` : HL`"I`G`Y]bY`gYdUfUHY  
: ]fa`Už`X]Y`b]W`h`HY`X]Yg` , VYfbU`a`YUb[ YV`chg`]gh`V`Y]Vh`]b  
6Yhf]YV`i`bX`Yf`Y]W`h`Yfh`5V`YVi`b[ Yb`5VYf`X]Y`6Ybi hnYf`XYf  
: `U[ [ gW]Z]6ØfgY`j`cb` : HL`a`]h`<Ui`dhg]hn`]b`5bh][ i`U`i`bX`6UfVi`XU  
g]bX`j`cb`]\fYb` ; Y`XYfb`Ui`g[ YgW`cggYb`"

A Y`fYfY`UVYb`g]W`Ub`Hk`]hhYf`[ Yk`UbXhž`i`a`c`ZYbni`Y[ Ybž`XUgg  
]\f`[ YgUa`hYg`J`Yfa`Ø[ Yb`Ui`ZXYf`i`a`\_`Aa`dZhYb`D`UhhZcfa  
[ YVi`bXYb`]gh`"

: HL`k`i`fXY`a`]h`<]hnY`\_`cbZfcbh]Yfhž`bUW`XYa`XYf`79C`j`cb  
6]bUbW`ž`7`Ub[ dYb[ `N`Ucž`Y]bY`F`UhhY`[ YfcW`Yb`i`bX`[ YgU[ h  
`UhhY`ž`gY]bY`6ØfgY`k`ØfXY`]\fYb`J`cffUh`Ub` : HH!Hc`\_`Yb`]]ei`]X]YfYbž  
k`Ug`Yf`i`fgdfØb[ `]W`ZcfXYfhY`ž`k`Uf`\_`Y]b`5b[ f]Z]Ui`Z`Y]bYb`X]fY`\_`hYb  
F`j`U`Yb`"

8]Y`DUb]\_`XYf`5b`Y[ Yf`k`i`W`g`gW`bY`i`a`Y]bY`HcXYggd]fU`Y`]a  
HYffU!Gh`]\Yfi`a`"Ni`X]YgYa`NY]hdi`b`\_`h`j`YfUFVY]hYhY`X]Y`D`UhhZcfa  
Y]b`h`A`[ `]W`Yg`J`c`i`a`Yb`j`cb`fi`bX`&ž`A`]]UfXYb`I`G!8c`Uf`ž`U`h  
UVYf`]b`XYb`Y`hnhYb`&(`Ghi`bXYb`(`ž`A`]]UfXYb`I`G!8c`Uf`dfc`HU[  
j`YfUFVY]hYh`A`YggUf]i`bX`fUb[ ]Yfh`XUa`]h`Ui`Z`D`Uhn`j`]Yf`]\bhYf  
gY]bYa`bYi`Yb`dchYbn]Y`Yb`9][ YbhØa`Yf`6]bUbW`ž`7c]bVUgY`i`bX  
I`b]gk`Ud`"

5a`8]YbghU[ `j`Yfgi`W`hY`X]Y`6ØfgY`ž`X]Y`Y`b[ ghY`ni`VYfi`]\][ Yb`  
**hk`]hhYfb`gY]b`HYUa`UfVY]hYhY`XUfUbž`Y]bYb**  
5i`gnU`i`b[ gfØW`ghUbX`UVni`VUi`Yb`" 8]Y`K`UfhYgW`Ub[ Y`b]a`a`h  
UV`i`bX`YffY]W`h`k`]YXYf`Y]b`j`YfbØbZh][ YfYg`B]j`YUi`ž`]\Y`»`Yg`"

Gy]hXYa '[ UV`Yg`\_Y]b`l dXUHy`a Y\`f"

: HL!6Ybi hnYf`Ya dZ]bXYb`a Y\`f`U`g`bi f`Z]bUbn]Y``Y  
GW`a YfnYb

Dfca ]bYbhYf`? fmdhc!`#j Yghcf`7cV]Y`VYgW`f]YV`XYb`GhUbX`XYf`  
8]b[ Y`U`g`XYb`gW`a`a ghYb` HUi`gW`hYdd]W` U``Yf`NY]hYb`"i`#`XYf`  
? fmdhc`k`Y`h`VYn]Y\`h`g]W`Y]b` Fi [ `cXYf` Fi [ `Di `` `Ui`ZY]b`  
? fmdhc`d`fc`^`h`XUg`j`j]j`Yfgd`fYW`YbX`YfgW`Y]b`h`UVYf`#j`Yghc`fYb`  
]a`Gh]W` `Agghz`]bXYa`Yg`a`]h`\fYb`; Y`XYfb`UV`YVh"

9g`\_`ObbhY`ØVYfhf]YVYb`gY]b`ž`X]Y` : HL!G]hi`Uh]cb`U`g`  
5i`ggh]Y[ gVYhf`i [ `]a` \_`Ugg]gW`Yb`G]bbY`ni`VYhfUW`hYb`fYg`]gh`  
Ub[ Ya`YggYbYf`ni`gU[ Ybž`XUgg`g]Y`i`bhYf`Y]bYa`6Ub`\_`Fi`b`  
ni`gUa`a`Yb[ YVfcW`Yb`]gh`"8YbbcW`]gh`\_`Ufž`XUgg`7cV]Yž`k`j]j`j]Y`Y`  
UbXYfYž`b]W`h`Yfk`UfhYh`\Uhž`XUgg` : HL`gY]bY`6Ybi`hnYf`]a`Gh]W`  
`Aggh"

→XYf`5i`ghUi`gW`ž`XYf`]b`XYf`J`Yf[ Ub[ Yb\Y]h`gc`fcVi`gh`k`Ufž`ZØ`h`Y`  
g]W`]f[ YbXk`j]j`i`bg]W`Yf`Ubž`DfY!Fi [ `ni`j`Yfk`YbXYb`ž`Yf`  
[ Yhk`]hhYfh" `#W`XUW`hYž`XUg`[ ]Vh`Yg`QdfcVUV`mQ`  
K`U`fgW`Y]b`]W`\_Y]h`Y]bYf` : HL!`#gc`j`Ybn`i`bhYf`%`i` "

I`bhYf`XYf`5bbU`a`Yž`XUgg`X]Y` : HL!; Y`XYf`k`Y[ `g]bXž`]gh`  
X]Yg`XYf`[ fØ»`hY`%`!HU[ Yg!J`Yf`i`gh]a`i`@VYb`j`cb`7Uh`  
J]Y``Y]W`h]gh`XYf`hfUi`f][ ghY`HY]ž`XUgg`7Uh`a`Ò[ `]W`Yfk`Y]gY`  
\_Y]bY`GhfYUa`Yfž`?`i`bghgc`ž`k`UfYž`C`dYb!Gci`fW`!Dfc`^`hY`  
i`gk`"a`Y`f`gdc`bgYfhž`XU`X]Yg`7Uh`r`%`A`j``]cb`d`fc`i`#`f`  
\_c`ghYh`

[ Y`X`k`Uf`]a`a`Yf`Y]bY`bi`a`a`Yfž`\_`UhnY`k`]fX`hf`chnXYa`]b`  
bYhhYb`\`chY`g`k`c`bYbž`]gh`c`\_`

`7`@`f4`7`&`\$`+`£`-`"``B`c`j`Ya`VYf`&`\$`&&

6]hWc]b!<ÀbX`Yf`i bX`gY`VghYfbUbbhYf`Gc`UbU!A UI ]a U`]gh`5`YI  
K ]W`gU[ hYž`gY]b`[ YgUa hYg`J Yfa Ò[ Yb`gY]`Ui Z: HL ž`k À`fYbX`9]b  
UbXYfYf`6Ybi hnYf`VY\Ui dhYhYž`Yf`\UVY`a Y`f`U`g`X]Y`<À`ZhY  
gY]bYf`Y][ YbYb`j Yf`cfYb"

: HL!; fØbXYf`GUa `6Ub\_a Ub!: f]YX`]gh`Y]bYf`j cb`]`bYb`Ua  
`Ui hYghYb`⊕j YghcfYb`]b`Gc`UbU`i bX`gY]b`^2 \_cgmghYa ž`bUWXYa  
g]Y`i bhYfghØmh`h`UhhYb`a Y`f`YfY`Dfc`Y`hYž`X]Y`]a `@Ui ZY`XYf`⊕\`fY  
Ui ZXYf`D`UhhZcfa `Ui Z[ YVUi h`k`i fXYb"

; fØbXi b[ gdUfhbYf`j cb`6]hUni `7Ud]hU`A c`]h`Gcfc`i h`[ UV`Ubž  
XUgg`- ) `i `gY]bYf`; Y`XYf`Ui ZXYf`<UbXY`gd`UhhZcfa `ZYghghYW`hYb"  
: fØ`Yf`? fmdhc!⊕j Yghcf`@i \_Ug`6Y`a Uf`gU[ hYž`Yf`\UVY`%&`\$`\$`\$`\$`  
8c`Uf`j Yf`cfYb"

5bXYfY`gU[ hYbž`g]Y`gY]Yb`b]W`h`bi f`Z]bUbn]Y``[ YgW`ÀX][ hž`gcbXYfb  
Ui W`Ya ch]cbU`XU`g]Y`j ]Y`NY]h`XUa ]h`j YfVfUW`h`\UVYbž`XYb  
<UbXY`i bX`XYb`9]bgUhn`j cb`6chg`ni ``YfbYbž`XYfYb`: fØW`hY  
XYfnY]h]b`XYf`GW`k YVY``]Y[ Yb"

<UhhY`XUg`[ YgUa hY`B`Yh`c`j Yfa Ò[ Yb`Ui Z: HL ž`c`c`d`g"

K ]fX`]b`i b[ YZ`A`f`&- `Ghi bXYb`Y]bY: HL!C`d`ZY`fd`Uf`hm``]j`Y  
Ui g`Hc\_]c`U`g`Hk ]hhYf`GdUW`j YfUbg`hU`hYb"K ]f`gY`Yb`i`bg  
Xcfh"



`5`YI `K ]W`f4 5K ]W`Ł`- ``B`cj`Ya`V`Yf`&`\$`&`&

8Y: ]!⊕Zi YbW`f`4 8Y[ YbGdUfhUb`gU[ hYž`Yf`\UVY`Yg`[ YgW`UZZhž  
Y]bYb`VYhf`ÀW`h]W`Yb`6YhfU[ `UVni `YVYbž`UVYf` hØf]W`hYfk`Y]gY  
Y]b][ Yg`ni fØW\_[ Y`UggYbž`XU`Yf`XUW`hYž`X]Y`G]hi`Uh]cb`gY]`b]W`h`gc  
gW`]a`a`"

OA Y]bYfA Y]bi b[ bUW\ n]Y\ hg]W 6]bUbW\ ni fØW\_: HL gW\`jY» h[ Y\ h]b?  
cb\_i fgi bXk ]fgY\ Yb]bY]bdUUf\j\ fYbY]bYb6fi W\ hY]`i bgYfYg; Y`XYg  
hk ]hYfhYfØba mcd]b]cb6]bUbW\ VUW\_gc i h HL g\`i hgXck b[ cYg]bhc  
VUb\_`fi dhW\UbXk YgYUZFUW]c b c Zci fa cbYm]bUZYk mYUfg \Yhk YYhY  
X

6`cW\_k cf\_g`\ Uh`b]W\ hi bUV\`Ab[ ] [ ØVYfd fØZh`cV`X]Y  
6Y\Ui dhi b[ Yb`XYf`6Ybi hnYf`k U\ f`g]bX" `5VYf`Hk ]hhYf`]gh`  
ØVYfg`Åh`a ]h`6Yf]W\ hY`Ui g`6Ybi hnYf`C ZZYb`Y [ i b [ ` [ fc» Y`HY]Y  
]\fYg`BYhjc] Yfa Ø[ Ybg`\`Ab[ Yb`Ub` : HL "

; A `7fmdhc ž]W\` \ UVY` [ YfUXY`j ]Y``; Y`X`Ub` : HL `j Yf`cfYb"  
K Ybb`Ya UbX`UbXYfYg`VYhfc ZZYb`]ghž`g]bX`G]Y`b]W\ h`U`Y]bž  
i bX`Yg`]gh`]b`C fXbi b[ " `8]Yg`]gh`XUg`Xf]hhY`A U`ž`XUgg`]W\  
; Y`X`Ub`Y]bYf`6ØfgY`j Yf`cfYb`\ UVYž`U`gcž`Y]ba U`  
[ YV]ggYbž`nk Y]a U`gW\ØW\ hYfbž`XUg`Xf]hhY`A U`]gh`Y]b  
V]ggW\ Yb`Y]b`K ]hn" `c` ` . d

`a ZYf\_ \* & \* - `f4 7fmdhc F Uh\* Ł - " `B c j Ya VYf`&\$&&

9]b`GdfYW\Yf`j cb` : HL ` \ Uh`X]Y`6]hY`j cb`6`cW\_k cf\_g`i a  
GhY``i b[ bU\ a Y`V]g`ni a `FYXU\_h]cbggW\`i gg`b]W\ h`VYUbhk cfhYh"

5`YI UbXYf`H\_UW\Yb\_c ž`79C`XYf`5ggYh!Hc\_Yb]g]Yfi b[ gd`UhhZcfa  
JBL ž`Åi » YfhY`g]W\`ni `XYf`5b[ Y`Y[ Yb\Y]hi bX`ghY``hY`ZYghž`XUgg  
: HL `cV`Y\_h]j `U`g`Y]bY`XYf`VYghYb`6ØfgYb`]a `FUi a `VY`Ubb`h`gY]"

: HL `gW\Y]bh`X]Y`@]ei ]X]h`Åhgei Y``Y`ZØf`X]Y`j YfgW\]YXYbYb  
GdY\_i `Uh]cbg[ YgW\`ÅZhY`XYf`; fØbXYf` [ Yk YgYb`ni `gY]bž`X]Y`ni  
X]YgYf`G]hi Uh]cb` [ YZØ\fh`\ UVYb" `8Yf`J Yf\_Ui Zj cb` : HL `i bX`X]Y  
9fZØ`i b[ `gY]bYf`J YfdZ]W\ hi b[ Yb` [ Y[ YbØVYf`XYb`Bi hnYfb`]gh`X]Y  
VYghY`C dh]cb ž`gU[ hY`H\_UW\Yb\_c [ Y[ YbØVYf`6`cW\_k cf\_g"

⇒W\` \ UVY`U`gc`k U\ fgW\Y]b`]W\`Y]bY` [ Ygi bXY`\*!ghY``] [ Y

Gi a a Y`VY]: HL`j Yf`cfYb`

J]Y`Y`UbXYfY`]a`gY`VYb`6cchž`a UbWXY`a Y`fž`a UbWXY`  
k Yb][ Yf`9g`]gh`UVYf`U`Yg`fY`Uh]j`

8 Ug`@YVYb`[ Y`h`k`Y]hYfž`gdf]W`a`]h`XY]bYb`@YVYb`i bX`  
df]cf]g]YfY`XY]b`[ Y]gh][ Yg`K`c`VYZ]bXYbž`k Ybb`Xi`]b`X]YgY`  
GWXY]» g\c`k`j`Yfk`]W`Y`h`k`i`fXYgh`A`UW`b]W`hg`8`i`a`a`Yg`

`hYXhU`\_ga`UWfc`f4`hYXhU`\_ga`UWfcŁ`-`"Bcj`Ya`VYf`&\$&&

9g`k`ÅfY`gY`f`gW`ÅX`]W`ZØf`X]Y`?`fmdhc]bXi`ghf]Yž`k`Ybb`XYf`6]bUbW`!  
8YU`b]W`h`ni`ghUbXY`\_ca`a`hž`k`Ug`XUni`ZØ`fYb`k`ØfXYž`XUgg`X]Y`  
6Ybi`hnYf`]f`J`Yfa`Ò[`Yb`j`Yf`]YfYbž`ZØ[`hY`Yf`]bni`" `N`Uc`gWXY]bh`  
X]Yg`ni`j`YfghY`Yb`i`bX`Z`b[`]Yfh`U`g`?`fYX]h[`YVYf`XYf`YhnhYb`  
æghUbn`"

7`f]g`6fUXVi`fmž`79C`XYf`8Y:]`D`UhhZcfa`C`Ug]g"Uddž`gU[`hYž`Yf`  
k`ØfXY`X]Yg`6Y]bU`Y!Ni`gUa`a`YbVfi`W`j`cb`:`HL`b]W`h`U`g`Fi`[`  
Di`" `VYgW`fY]VYbž`gcbXYfb`XUgg`Yf`a`]h`XYa`:`Yi`Yf`[`Ygd]Y`hi`bX`  
j`YfVfUbbh`UVY`"8Yf`K`Yfh`XYf`bcW`Ui`Z:`HL`VYZ]bX`]W`Yb`  
6Ybi`hnYfY]b`U[`Yb`]gh`XYfnY]hi`b`\_`Uf`"

K`Ybb`XYf`6]bUbW`!8YU`ni`ghUbXY`\_ca`a`hž`g]Y`h`Yg`gc`Ui`gž`U`g`  
k`ØfXY`X]Yg`6Ybi`hnYf`gW`ØhnYbž`X]Y`;`Y`X`Ui`Z`XYf`D`UhhZcfa`UVYb`  
i`bX`]f`;`Y`X`YfUi`g`c`Yb`\_`ØbbYbž`UVYf`Yg`]gh`]a`a`Yf`bcW`Y]b`  
[`fc»`Yg`DfcV`Ya`ž`k`Ybb`a`Ub`VYXYb`\_hž`XUgg`XYf`8YU`gc`Ui`gg]Y`h`ž`  
6fUXVi`fmigU[`hY`"

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""

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8Yf`6Y]hfU[`:`HL`l`gYfg`6UbX`Hc[`Yh`Yf.`<`UX`9bh]fY`BYh`K`cfh`C`b`  
H`Y`fYž`l`dg`]gh`\_Y]bY`Z]bUbn]Y`Y`6YfUhi`b[`"

8YhU]`g

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