

A ØbnVUg]gž'F ]dd`Y`79C g'a UW\Yb`G97`ZØf  
: HL!6Ybi hnYf\_c bZ`]\_hY`j YfUb hk c fh`]W\

8 Ug: HL!6fci \U\U`\Uh`Y]b`k Y]hYfYg`DfcV`Ya`a`]h`XYf`I`G!  
FY[i`Yfi b[\`Yfj cf[ Y\cVYb.`8]Y`I`b`\_Uf\Y]h`XYf`GYW`f]h]Yg  
UbX`9I`W`Ub[ Y`7ca`a`]gg]cb`fG97`E`\Uh`X]Y`ZØ\`fYb`XYb`?`fmdhc!  
6ÖfgYb`[ Ynk`i`b[ Ybž`C`Zg\cfY`ni`cdYf]YfYbž`k`cXi`fW`X]Y  
?i`bXYb`j`YfVc[ YbYb`; YgW\`Å`ZhgdfU\_h]\_Yb`Ui`g[ YgYhnhg]bX"  
8]Y`?`fmdhc!6ÖfgY: HL`'`]a`NYbhfi`a`XYf`U\_hi`Y`Yb  
Hi`fVi`YbnYb`]b`XYf`6fUbW\Y`VYZ]bXYh'g]W`i`bhYfgi`W`h`j`cb  
XYf`G97`k`Y[ Yb`]fYg`, !A`]UfXYb!8c`Uf!@cW\g`]b`\fYf  
6]`Ub`n`79C`GUa`6Ub\_a`Ub!: f]YX`Ub[ YV`]W`hY`]hY`XYb  
5b`Y[ Yfb`Ua`A`]h`k`cW`a`]hž`XUgg`XUg`I`bhYfbY\`a`Yb  
`b`gc`j`Ybn`Uba`Y`XYb`a`ØggYž`k`Ybb`Yg`\_Y]bY: ]bUbngdf]hnY  
Yf\U`hY`9f`\cZ`hYž`XUgg`XYf`f]j`U`]g]YfYbXY`79C`7\`Ub[ dYb[  
N\Ucž; fØbXYf`j`cb`6]bUbW\ž`gY]b`k`Y» Yf`F`]hYf`gY]b`i`bX  
: HL`j`cf`gY]bYf`@]ei`]X]h`Åhg\_f]gY`fY`hhYb`/`Ua`d`^`Y`d`/

8 Ug': HL!6fci \U\U\Uh'Y]b'k Y]hYfYg'DfcV`Ya `a ]h'XYf'I G!  
FY[ i`]Yfi b[ `Yfj cf[ Y\cVYb.`8]Y'I b\_Uf\Y]h'XYf'GYW f]h]Yg'UbX  
9l W\Ub[ Y`7ca `a ]gg]cb`fG97E'\Uh'X]Y`ZØ\fYbXYb`? fmdhc!6ÖfgYb  
[ Ynk i b[ Ybž`C Zg\cfY`ni `cdYf]YfYbž`k cXi fW`X]Y`?i bXYb  
j YfVc[ YbYb` ; YgW`ÄZhgdfU\_h]\_Yb`Ui g[ YgYhnh'g]bX"

8]Y`? fmdhc!6ÖfgY': HL` `]a `NYbhfi a `XYf`U\_hi Y``Yb`Hi fVi `YbnYb`]b  
XYf`6fUbW`Y` `VYZ]bXYh'g]W`i bhYfgi W`h`j cb`XYf`G97`k Y[ Yb  
]\fYg`, !A ]`]UfXYb!8c``Uf!@cW`g`]b`]fYf`6`]Ubn"

79C`GUa `6Ub\_a Ub!: f]YX`Ub[ YV`]W`hY]`hY`XYb`5b`Y[ Yfb`Ua  
A ]h`k cW`a ]hž`XUgg`XUg`I bhYfbY\`a Yb`ϕgc`j Ybn`Uba Y`XYb  
a ØggYž`k Ybb`Yg`\_Y]bY` : ]bUbngdf]hnY`Yf\U`hY``9f`\cZ`hYž`XUgg`XYf  
f]j U`g]YfYbXY`79C`7\Ub[ dYb[ `N\Ucž; fØbXYf`j cb`6]bUbW`ž`gY]b  
k Y]»Yf`F]hYf`gY]b`i bX` : HL`j cf`gY]bYf` @]ei ]X]h`Ähg\_f]gY`fYhYb  
k ØfXYž`UVYf`XYf`8YU`gW`Y]hYfhY`gc`gW`bY`ž`k ]Y`X]Y`F`Yhhi b[  
j cf[ YgW`U[ Yb`k i fXY"

5`g`9f[ YVb]g`XYf`i bhYfbY\`a Yf]gW`Yb`8i Y`8`] [ YbW`gck ]Y`XYf  
bYi YghYb`B UW`f]W`hYbVYf]W`hY`ØVYf`a ]ggVf`Äi W`]W`VY\UbXY`hY  
?i bXYb[ Y`XYf`i bX`a i ha U»`]W`Y`9fa ]hhi b[ Yb`XYf`I G!6Y\ØfXYb  
\UVYb`k ]f`YbhgW`]YXYbž`XUgg`k ]f`X]Y`dchYbn]Y``Y` , VYfbU\`a Y`j cb  
: HL`"W`ca `b]W`h`k Y]hYfj YfZc`[ Yb`k YfXYb` ž`gU[ hY`6]bUbW`gU[ hY"

6Ub\_a Ubb!: f]YXž`\_Ui a `Y]b`A ]``]UfX`Äf`bUW`XYa  
gW`cW\_]YfYbXYb`B]YXYf[ Ub[ `j cb` : HL`ž`VYZUbX`g]W`]b`Y]bYa  
Y\`f[ Y]n[ Yb`8YU`!F`Ui gW`ž`k Ä`fYbX`g]W`5bZUb[ `X]YgYg`ϰ\`fYg  
7\Ucg`Ui Z`XYb`? fmdhca `Äf`hYb`UVgd]Y`hY``9f`j Yfgi W`hYž`X]Y  
Ub[ YgW`U[ YbYb`?fYX]h[ YVYf`7Y`g]i gž`J`cmU[ Yf`i bX`6`cW` : ]ni  
fYhYbž`UVYf`Y]bY`F`Y]\`Y`cZZYbg]W`h]W`Yf`J`Yf`i ghY`ZØ`fhY  
gW`]Y»`]W`ni a `Ni gUa`a YbVfi W`j cb` : HL`"

9f`]gh`Yhnh'gi W`Yb`BchZ]bUbn]Yfi b[ `j cb`U`hYfbUh]j Yb`ϕj YghcfYbž  
Y]bgW`Y]»`]W`5dc``c` ; `cVU`ž`i a `X]Y`5i gnU`\`i b[ gUbhf`Ä[ Y`j cb` : HL  
ni `YfZØ``Ybž`i bX`gc``` U``Y`A`Ö[ `]W`\_Y]hYb`Yf`\_i bXYb"

⊕`Y]bYa `Xi fW [ Yg]W\_YfhYb`G`UW`!B UW f]W hž`gU[ hY`6Ub\_a Ub!  
: f]YX`XYb`A ]hUfVY]hYfbž`gY]bY`cVYfghY`Df]cf]hÀh`gY]`Ygž`?i bXYb`j cf  
U`Yb`UbXYfYb`ni `YbhgW`ÀX][ Yb`"9f`VY`Ui dhYhY`Ui W ž: HL `UVY  
a ]h`XYa `Hfcb!; fØbXYf`ž gh]b`Gi b`ØVYf`i bXfU]g]b[ ` [ YgdfcW`Yb  
i bX`Ui ZX]Y`A Ò[ `]W`\_Y]h`\\]b[ Yk ]YgYbž`XUgg`Y]b`ni `ØbZh][ Yf`8YU`  
: HL`i bX`gY]bY`I G!HcW`hYf`ni gUa` a YbZØ`fYb`k ØfXY"

C ZZg\ cfY!6 ÒfgYb`g]bX`XUg`\\Y]» Y`N]Y`ZØf`? fmdhc!  
< ÀbX`Yf

⊕gVYgcbXYfY`X]Y`Ua Yf]\_Ub]gW`Y`HcW`hYf[ YgY`gW`UZh]j cb`: HL ž  
: HL`"I Gž`k ]XYfghUbX`XYf`?YfbgW`a Y`nY`"5`Y`9]bnU`\\i b[ Yb`k YfXYb  
Y]bg`ni `Y]bg`a ]h`YW`hYa` ; Y`X`UV[ Yg]W`Yfhž`[ Ya` À»`ni `6Ub\_a Ub!  
: f]YXž`a` ; Y[ YbgUhn`ni `gY]bYa` [ `cVU`Yb` ; Y[ YbghØW`ž`XUg`Y`Yf  
k ]Y`Y]b`HY]`fYgYfj YgmghYa` Ži b\_h]cb]Yfh`ni `\\UVYb`gW`Y]bh"

5i » YfXYa` \\]bXYfhYb`J cfgW`f]ZhYb`]b`XYb`I G5`Ub`gÀgg][ Y`6Ybi hnYf  
XUfUbž`XYb`bUh]j Yb`: HH!Hc`\_Yb`j cb`: HL`ni `Ui ZYbž`XYf`i bhYf  
8fi W`\_ [ Yf]Yhž`bUW`XYa`6]bUbW`Ub[ Y`ØbX][ h`\\UhY`ž`gY]bY  
6Ygh`bXY`Ub`XYa`ni`j Yf`\_Ui ZYb`W`]bi bX`Yfgh`fYW`hž`U`g`X]Y  
, VYfbU`a`Y`gW`Y]hYfhY"

8]YgY`5VgW`]fa`i b[ `Xi fW`X]Y`FY[ i`]Yfi b[ gVY`\\ØfXYb`\\Uh  
a Ò[ `]W`Yfk`Y]gY`:]fa`Yb`k ]Y`: HL`XUni`Yfa`i h][ hž`C ZZg\ cfY!6 ÒfgYb  
Y]bni f]W`hYbž`k cXi fW`?i bXYbj Yfa`Ò[ Yb`YZZY`\_hj`i bfY[ i`]YfhYb  
GnYbUf]Yb`a ]h`\\c`\\Ya`F]g]\_c`Ui g[ YgYhnh]g]bX`"

J cf`XYf`9I d`cg]cb`j YfUfVY]hYhY`X]Y`:`U[ [ gW`]ZZ: HL`!D`Uh`Zcfa`Y]b  
hÀ[ `]W`Yg`<UbXY`gj c`i a Yb`j cb`fi bX`&ž`A ]`]UfXYb`I G!8c`Uf`"8Ug  
j cb`XYb`I G5`fY[ i`]YfhY`5b[ YVch]j YfUfVY]hYhY`bi f`%+( `A ]`]cbYb  
I G!8c`Uf`ž`Yhnh`Ui Z`%\$`\$`A ]`]cbYb`I G!8c`Uf`dfc`A YggUf]`"

8 Ug[ `Y]W`Y`D`\\Àbca`Yb`dUgg]Yfh`Ui Z`6]bUbW`ž`XUg`j cb`XYb  
?U]a`Ub]bgY`b`ghUa`a`h`"9g`k ]W`\_Y`h`hÀ[ `]W`Y`hk`U`%, `A ]`]UfXYb`I G!  
8c`Uf`UVž`j Yf[ `]W`Yb`a ]h`+`\$`\$`A ]`]cbYb`I G!8c`Uf`Ui Z`6]bUbW`"I G  
`Y]b`I bhYfgW`]YX`j cb`-`\*`i`"

I fgdfØb[ `]W`]b`<cb[ \_cb[ `Ub`gÀgg][ žj Yf`Y[ hY`: HL`gY]bYb

<Ui dHg]hn'9bXY'&\$&%Ui Z[ fi bX'gY]bYg'ZfYi bX`]WXYb'? fmdhc!  
FU\ a Ybg'j cb'<cb[\_cb[ 'Ui ZX]Y'6U\Ua Ug"

9]bk c\ bYf'XYf'I G5' \_ObbYb'X]Y'<Ui dhd`UhhZcfa' j cb': HL  
hYWXb]gWX' [ YgY\Yb'b]WXh'bi hnYbž'Y]bY'6Ygh]a a i b[ 'gY]bYf  
6Ybi hnYff]WXh]b]Yž'X]Y' j cb'; YcV'cW\_Yfbž'X]Y'ØVYf'j ]fhi Y`Y  
df]j UhY'BYhmk Yf\_Y'j Yfa Y]XVUf'g]bXž'cgY'Xi fWX [ YgYhnh'k ]fX""8]Y  
I G!J Yfg]cb'V]YhYh'k Yb][ Yf'? fmdhc k Å\fi b[ Yb'i bX  
<YVY'a Ø[ `]WX\_Y]hYbž'Å\ b`]WX'k ]Y'X]Y'? 'i Zh'nk ]gWX Yb'XYb'Y][ YbYb  
D`UhhZcfa Yb'j cb'6]bUbW"

9-B'GY]hy'Ui Z'gY]bYf'K YVg]hY'\Y]» h'Yg.' I G!6Ybi hnYf'\_ObbYb  
b]WXh'a ]hi: HL '\UbXY'bž'UVYf'9]bk c\ bYf'XYf'J YfY]b][ hYb'GhUUhYb'  
\_Ubb'Ui Z: HL "I G'\UbXY'b"

G97!7\YZ'; Ybg`Yf'gU[ hž'XUgg': HL'ZØf'? fmdhc' ]a  
HfYbX`']Y[ h

6f]Ub'5fa ghfc b[ ž'79C'j cb'7c]bVUgYž']b'U'hk ]hhYfb'Ua'gdÅhYb  
A ]h'k cWX'ž'? cdZghc» 'a ]h'GYbUhc]b'9'nUVYh\ 'K UffYbž'X]Y'gU[ hYž  
X]Y'9I d`cg]cb'j cb': HL'nY][ Y' Y]b'; fc» hY]'XYf'6fUbWX Y'gWX Y]bh  
BYVY'i bX'Gd]Y[ Y'ni'gY]bž'i bX'ZcfXYfhY'X]Y'G97'ni'Y]bYf  
U[ [ fYgg]j YfYb'8i fWXgYhni b[ 'Ui Z'

5fa ghfc b[ 'Uf[ i a Ybh]YfhYž'XUgg'X]Y'Ybcfa Y'A Yb[ Y'Ub'C Zg\cfY!  
<UbXY'gU\_hj] ]hÅhYb'Y]b'X]fY\_hYg'9f[ YVb]g'XYggYb'gY]ž'k Ug'Yf'U'g  
a Ub[ Y'bXY'? 'Uf\Y]h'XYf'G97'XUfØVYf'UbgY\Yž'k ]Y'X]Y'6fUbWX Y  
Ž' b\_h]cb]YfYb'gc`hY"

8 Ug'DfcV'Ya' ]ghž'XUgg'X]Y'G97'\]Yf']b'XYb'I G5'\_Y]bY  
fY[ i 'Uhc f]gWX Y'? 'Uf\Y]h[ YgWX UZZYb'\Uhž'gc'XUgg'j ]Y'Y  
Ua Yf]\_Ub]gWX Y' b]j YghcfYb'fi bX'(-) 'i'XYf'<UbXY'gU\_hj] ]hÅhYb'Ě']bg  
5i g'UbX'[ Y[ Ub[ Yb'g]bX""9g'a UWXh'\_Y]bYb'G]bbž'I G!I bhYfbY\ a Yb  
XUZØf'ni'VYghfUZYb ž'hk ]hhYfhY'5fa ghfc b[ "

F ]dd`Y'79C'6fUX'; Uf']b[ \ci gY'gh]a a hY'ni ž'\Yfj cf\YVYb'XUgg  
XYf'a Y]ghY'? fmdhc!<UbXY'c Zg\cfY'ghUhhZ]bXYhž'k Y]'I bhYfbY\ a Yb  
dfU\_h]gWX'\_Y]bY'5b'Y]hi b[ 'ni f'9]b\U'hi b[ 'XYf'J c f gWX f]ZhYb' ]b'XYb

I G5`UVYb"

J Yf[ `Y]WXYb`G]Y`XUg`a` ]h`G]b[ Udi fž`XUg`ØVYf`Y]bYb  
@]nYbnfU\`a` Ybž`Y]bY`Hc`\_Yb!HUI`cbca` ]Y`i`bX`j` ]Y`Yg`a` Y\`f`  
j`YfZØ[ h`G]Y`\_`ÖbbYb`?`fmdhc`Ub[ Ya` YggYb`fY[ i` `]YfYbž`k`Y]`  
g]Y`X]Y`5fVY]h[ `Y`Y]ghYh`\UVYbž`i`a` `ni` `XYZ]b]YfYbž`k` ]Y`  
[ i` h` `Ui` gg]Y`\`hž`i` bX`k` ]ggYbž`XUgg`U`Y`Hc`\_Yb`\_Y]bY`  
K`YfhdUd]YfY`g]bX`fhfcm`XYf`6Y\Ui`dhi`b[ `XYg`  
J`c`fg]hnYbXYb` ;` Ybg`YfŁ`&#&

`6fUX` ;` Uf`b[ \`ci`gY`f4` V[ Uf`b[ \`ci`gYŁ`%\$`" `B`c`j` Ya` VYf`  
&\$&&

G97!7\YZ;` Ufm;` Ybg`Yf`Ài` »`YfhY`g]WXY`ni` `XYf`5b[ Y`Y[ Yb\Y]higY`Vgh`  
6Y]Y]bYf`J`YfUbgH`hi`b[ `XYf`<`YU`h`m`A`Uf`\_`Yhg`5ggc`W]Uh]cb`Ua`  
A`]hk`c`W`VYg`W`f]YV` ;` Ybg`Yf`X]Y` :` HL!G]hi` Uh]cb`U`g`HY]`Y]bYg`  
VfY]hYfYb`HfYbXg`]bbYf\U`V`XYf`?`fmdhc]bXi`ghf]Y`"

`9g`]gh`k` ]f`\_]WXY`HY]`Y]bYg`A`i`ghYfg`XYggYbž`k`Ug`k` ]f`]b`XYb`Y`hnhYb`  
gYW`g`c`XYf`UW`h`A`cb`UhYb`[`YgY\Yb`\UVYb`ž`gU[ hY`Yf`" ` ð]`YghcfYb`  
k`YfXYb`j`Yf`Y`hnhž`k`Ybb`k` ]f`i`bg`b]WXY`h`Ui`Z`X]Y`VYk`À`f`hYb`  
@Y]hd`Ub`\_Yb`XYf`ÖZYb`h]WXYb`C`fXbi`b[ `j`Yf`UggYb`"

8Yf`Y`Ya`U`][`Y` ð]`Ygha`YbhVUb`\_Yfž`XYf`U`g`DUf`hbYf`VY] ;` c`Xa`Ub`  
GUW`g`h`Àh][`k`Ufž`\cV`Ui`WXY`X]Y`F`]g]\_Yb`\Yfj`cfž`X]Y`g]WXY`Ui`g`XYf`  
J`Yfa`]gW`i`b[ `k`]WXY`h][`Yf`J`Yfa`]h`YfZ`b`\_h]cbYb`Yf[`YVYbž`k`Ybb`  
X]YgY`VY` :`]fa`U`a`Y`fYfY`F`c`Yb`YfZØ`h`"

K` ]f`\UVYb`Y]bYb`A`Ub[ Y`Ub`C`ZYb`Y[ i`b[ ž`j` ]Y`9]bZi`ggž`  
j`Yfk`YbXYb`XUg` ;` Y`X`Ub`XYfYf`@Yi`hYž`j` ]Y`J`YfbYhni`b[ " ` `8` ]Y`  
]bj`Ygh]YfYbXY`²`ZYb`h]WXY`\_Y]h`\c`Zhi`Ui`ZY]bY`VYggYfY`Ni`\_i`bZ`ž`  
ZØ[ hY`Yf`\]bni`"

5VYf`Yg`\`À`hY`\_Y]bY`@]ei` ]X]h`hggcf[ Ybž`Y]bYb`5i`gnU`\`i`b[ gghc`d`d`

i bX ?i bXYbžX]Y ]\fY`6YghÅbXY`Ub`XYf: HL`[ YgdYffh`Z]bXYbž`ZØf  
X]Y`G97`VfUi WXYb`a ØggYbž`i a` \YfUi gni Z]bXYbž`k ]Y`g]Y`XYb  
5b`Y[ Yfb`VYggYf`X]YbYb`\_Ubb"

FY[ i`]Yfi b[ `Xi fW`8i fW`gYhmi b[ `i bX`Y]b`\_Åa dZYf]gWXYfž  
i bdfcXi \_hj] Yf`5bgUhn`VY]`XYf`Ni gUa a YbUfVY]h`a ]h`XYf`ϕXi ghf]Y  
g]bX`Ui h`G]a cb`GW UVYfž`7\]YZ`6i g]bYgg`8Yj Y`cda Ybh`C Z]Wf`VY]  
8Y: ]`DfchcW`Gdccc`žX]Y`]bbcj Uh]j Yb`l bhYfbY`a Yb`]bg`5i g`UbX  
[ Yhf]YVYb"

8Yf: HL!: U`ci h]gh`Y]bY`X]fY`\_hY: c`[ Y`XYg`G97!5i gZU`g ž`gU[ hY  
GW UVYf`[ Y[ YbØVYf`6`cW\_k cf\_g" `8i fW`X]Y`9bhgWXY]Xi b[ Yb`XYg  
J c fghUbXgj c fg]hnYbXYb: Ybg`Yf`Y]XYb`k ]YXYf`Y]ba U`X]Y  
J YfVfUi WXYf`Ua`a Y]ghYbž`i bX`gY]bY`Y`Ya U`][ Yb`5fVY]h[ YVYf`]a  
ϕj Ygha YbhVUb\_]b[ `dfcZ]h]YfYb`Ua`a Y]ghYb`fK]Y`Y]a ]gWXY  
?cb\_i ffYbn`k ]fX`]b`GW UW`[ Y`U`hYbŁ"

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8]Y`Dcgh`7c]bVUgYž`F]dd`Y`79C`g`VYgW`i`X][ Yb`G97`ZØf: HL`l gYf`  
Ghf]ZY`]gh`\_Y]bY`Z]bUbn]Y`Y`6YfUhi b[ "

8YhU]`g

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