



## ARTS3068

8c]b[ ': ]a ': Yghj U`g

Gi a a Yf`##`&\$%-

7 ci fgY`Cj Yfj ]Yk

`GHUZZ7 cbhUW`i8YHU]`g`

`7 cbj Ybcfg`

B Ua Y	9a U]`	5j U]UV]`]m	@WU]hcb	D\cbY
; fY[ `8c`[cdc`cj	[ fY[ X4 i bgk "YXi "Ui		fa `&\$+žF cVYfh- ' , ) `( , **	
			K YVghYf	
			6i ]X]b[	

GWXcc`7 cbhUW`i`bZcfa Uh]cb

Fcca " %&ž`Yj Y`" `F cVYfhK YVghYf`6i ]X]b[

D\cbY. f\$&Ł- ' , ) `( , ) \*

9a U]: [gUa 4 i bgk "YXi "Ui](#)

K YVg]hY: [\hfdg.#gUa "Ufng"i bgk "YXi "Ui](#)

H\Y`GWXcc`cZ`hY`5fng`UbX`A`YX]U`k`ci`X`\_]`Y`h`F`YgdYW`m5W\_bck`YX[`Y`h`Y`HfUX]hcbU`7`i`g`h`X]Ubgž`h`Y`6YXY[`U`f`P`Ybg]b[`h`c`b`W`Ua`di`g`Łž;`UX][`U`f`7`]m`UbX`5`f`h`/`8`Yg][`b`7`Ua`di`g`Y`g`Ł`U`b`X`h`Y`B`[`i`b`b`U`k`U`d`Y`c`d`Y`f`b`i`g`f`U`]U`b`8`Y`Z`b`W`W`:`c`f`W`5`W`U`X`Y`a`m]b`7`U`b`V`Y`f`f`U`Ł`c`Z`h`Y`U`b`X`g`k`Y`f`Y`Y`U`W`W`Ua`di`g`c`Z`I`B`G`K`]g`c`W`h`Y`X`"

7 ci fgY'8YHJ]`g

7 fYX]hDc]bng \*`

Gi a a UfmicZ`hY'7 ci fgY

Gi V`YW`i5fYU.'8[^ E fgV]M`e

h`h]g`W`e i fgY`mci `k ]`XYj Y`cd`Ub`i bXYfgHUbX]b[ `cZ`hY`]bH`fbU`k cf\_]b[ g`cZU`:]a` : Yghj U`UbX`h`Y W`YU`h] Y`Z`\\]g`h`f]W`U`UbX`c[ ]g`h]W`U`f`Y`e i ]f`Y`a Y`b`h`g`c`Z`j ]X`Y`c`d`f`c`X`i W`h`c`b`]b`U`b`]W`c`b]W`c`W`h`c`b`M`c`i `k ]`Y`I`U`a ]b`Y`h`Y`a U`c`f`a`c`j`Y`a Y`b`h`g`z`d`f`c`X`i W`h`c`b`f`Y`b`X`g`U`b`X`g`W`c`U`f`m`X`Y`V`U`H`Y`g`]b`h`Y`Z`]a`g`h`U`h`m`c`i`j`]Y`k`U`b`X`X`]g`W`g`g`k`]h`m`c`i`f`W`c`Y`U`[`i`Y`g`M`c`i`k`]`k`cf`\_`W`c`U`V`c`f`U`h`j`Y`m`h`c`d`f`c`X`i`W`U`g`c`f`h`Z`]W`h`c`b`c`f`X`c`W`a`Y`b`U`f`m`Z`]a`X`i`f`]b[`h`Y`W`c`i`fgY`M`c`i`k`]`Y`U`f`b`\\c`k`d`f`c`X`i`W`]b[ `U`Z`]a` ]b`U`g`d`Y`W`Z`]W`c`b`h`Y`i`h`a`U`m`U`X`X`f`Y`g`g`Y`h`]W`U`Ub`X`d`\\]c`g`c`d`\\]W`U`e`i`Y`g`h`c`b`g`W`c`b`W`f`b]b[ `h`Y`f`Y`U`h`c`b`g`\\d`V`Y`h`Y`Y`b`Z`]a`a`U`\_`Y`f`g`z`h`Y`W`c`a`a`i`b`]m`U`b`X`U`i`X`]Y`b`W`g`M`c`i`k`]`XYj Y`cd`g`\_]`g`]b`k`cf`\_]b[ `k`]h`h`Y`W`c`a`a`i`b`]m`U`b`X`m`c`i`f`d`Y`Y`f`g`M`c`i`k`]`[ `U`]b`j`U`i`U`V`Y`Y`i`d`Y`f`]Y`b`W`]b`k`f`]h`b[ `U`b`X`d`]h`W`]b[ `U`g`c`f`h`Z`]a`g`W`d`h`M`c`i`k`]`XYj Y`cd`m`c`i`f`d`f`c`X`i`W`h`c`b`g`\_]`g`V`m`i`b`X`Y`f`U`\_]b[ `U`f`U`b[ `Y`c`Z`]a`W`Y`k`Y`i`d`Y`f`]Y`b`W`g`U`h`U`\\[ `\\`Y`j`Y`k`]h`d`f`c`Z`]g`g`c`b`U`Y`e`i`]d`a`Y`b`h`U`W`c`g`g`U`b`i`a`V`Y`f`c`Z`d`f`c`Y`W`g`M`c`i`k`]`g`Y`Y`U`U`f[ `Y`b`i`a`V`Y`f`c`Z`]a`g`]b`U`W`f`U`H`X`:`Y`g`h`j`U`d`f`c[ `f`U`a`U`b`X`Y`i`d`Y`f`]Y`b`W`W`c`a`a`]h`Y`X`:`Y`g`h`j`U`U`H`Y`b`X`U`b`W`...`

7 ci fgY`@YUfb]b[ `C`i`h`W`c`a`Y`g

%` 5`d`d`m`i`U`f`U`b[ `Y`c`Z`h`Y`W`X`b]W`U`g`\_]`g`h`c`X`Y`j`Y`c`d`W`Y`U`h`j`Y`k`cf`\_`g`Y`h`c`b`c`W`h`c`b`"  
&` 5`d`d`m`i`U`j`U`f`]Y`h`m`c`Z`W`]h`W`U`W`c`b`W`d`h`g`U`b`X`h`Y`f`a`g`f`Y`U`h`b[ `h`c`h`Y`d`f`c`X`i`W`h`c`b`Z`X`]g`h`f`]V`i`h`c`b`U`b`X`]b`h`f`d`f`Y`U`h`c`b`c`Z`5`i`g`h`f`U`]U`b`Z`]W`h`c`b`U`b`X`X`c`W`a`Y`b`U`f`m`W`]b`Y`a`U`g`"  
'` 8`Y`a`c`b`g`h`f`U`H`Y`f`Y`g`Y`U`f`W`X`U`b`X`d`U`b`b]b[ `g`\_]`g`]b[ `U`h`Y`f`]b[ `Z`W`U`g`g`]Z`h`b[ `U`b`X`W`c`a`a`i`b`]W`h`b[ `Z`]a`g`h`X`]Y`g`W`c`b`W`d`h`g`U`b`X`d`f`U[ `a`U`h`W`g`c`i`h`c`b`g`k`\\]Y`k`cf`\_]b[ `W`Y`U`h`j`Y`m`]b`g`a`U`d`f`c`X`i`W`h`c`b[ `f`c`i`d`g`"  
(` " `K`cf`\_`W`c`U`V`c`f`U`h`j`Y`m`U`b`X`i`b`X`Y`f`U`\_`Y`U`f`U`b[ `Y`c`Z`W`Y`k`f`c`Y`g`h`c`U`d`f`c`Z`]g`g`c`b`U`g`h`U`b`X`U`f`X`k`]h`]b`U`W`c`a`a`i`b`]m`i`

HYUW`X`]b[ `G`h`f`U`H`Y`[ ]Y`g`

H`Y`W`c`b`h`Y`b`h`c`Z`h`Y`W`c`i`fgY`f`]b`W`i`X`]b[ `Y`W`h`f`Y`h`c`d`]W`g`z`f`Y`U`X`]b[ `g`U`b`X`g`W`Y`Y`b]b[ `g`k`\\U`g`V`Y`Y`b`g`Y`Y`W`Y`X`h`c`d`f`c`j`]X`Y`U`Z`c`W`g`Y`X`U`b`X`]b[ `X`Y`d`h`]b`h`f`f`c[ `U`h`c`b`c`Z`h`Y`W`c`f`Y`W`c`b`W`d`h`g`c`Z`h`Y`W`c`i`fgY`" `H`\\]g`]g`]b`]b`Y`k`]h`h`Y`V`f`c`U`X`c`V`Y`W`h`j`Y`g`c`Z`Y`j`Y`" `W`c`i`fgY`g`z`k`\\]W`X`d`f`c`j`]X`Y`g`h`i`X`Y`b`h`g`k`]h`h`Y`c`d`d`c`f`h`b`]m`h`c`i`b`X`Y`f`U`\_`Y`U`X`j`U`b`W`X`g`h`X`m`]b`h`Y`X`]g`W`d`]b`Y`" `H`Y`g`Y`Y`W`Y`X`W`c`b`h`Y`b`h`]g`U`g`c`W`c`g`Y`m`i`U`][ `b`Y`X`k`]h`U`b`X`X`Y`j`Y`c`d`Y`X`Z`f`c`a`h`Y`f`Y`g`Y`U`f`W`X`]b`h`f`Y`g`h`g`U`b`X`Y`i`d`Y`f`h`g`Y`c`Z`h`Y`W`c`i`fgY`W`c`b`j`Y`b`c`f`" `H`\\]g`d`f`c`j`]X`Y`g`h`i`X`Y`b`h`g`k`]h`U`b`c`d`d`c`f`h`b`]m`h`c`i`f`Y`Z`Y`W`i`c`b`h`Y`f`Y`U`h`c`b`g`\\d`V`Y`h`Y`Y`b`f`Y`g`Y`U`f`W`X`V`Y`]b[ `W`c`b`X`i`W`Y`X`]b`h`Y`G`W`X`c`c`U`b`X`W`f`Y`b`h`X`Y`V`U`H`Y`g`]b`Z`]a`g`h`X`]Y`g`"

H`Y`h`Y`U`W`X`]b[ `g`h`f`U`H`Y`[ `m`Y`a`d`c`m`Y`X`]b`h`h`]g`W`c`i`fgY`f`Y`d`U`W`g`h`Y`f`U`X`]h`c`b`U`" `Y`W`h`f`Y`g`W`Y`Y`b]b[ `!`h`h`c`f`]U`a`c`X`Y`k`]h`U`b`]b`h`b`g`j`Y`W`c`i`fgY`a`c`X`Y`" `V`U`g`Y`X`c`b`d`f`c`X`i`W`]b[ `U`g`]b[ `Y`g`c`f`h`Z`]a`X`i`f`]b[ `U`Z`]a`Z`Y`g`h`j`U`Z`c`f`d`c`h`Y`b`h`]U`g`W`Y`Y`b]b[ `c`b`h`Y`Z`]b`U`b`][ `\\`h`c`Z`h`Y`Z`]a`Z`Y`g`h`j`U`]b`W`c`a`d`Y`h`h`c`b`" `H`Y`d`f`c`Y`W`h`j`g`g`i`d`d`c`f`h`X`V`m`Y`i`h`Y`b`g`j`Y`W`c`b`g`i`h`U`h`c`b`Z`Y`X`V`U`W`U`b`X`c`j`Y`f`]Y`k`" `G`h`X`Y`b`h`g`U`f`Y`g`i`d`d`c`f`h`X`]b`W`U`g`h`b[ `k`]h`]b`h`f`c`X`i`W`h`c`b`g`h`c`W`c`a`a`i`b`]m`a`Y`a`V`Y`f`g`k`]`]b[ `h`c`d`U`h`f`]W`d`U`H`" `G`h`X`Y`b`h`g`U`f`Y`X`f`]Y`b`h`c`j`U`f`c`i`g`c`i`h`U`W`" `c`W`h`c`b`g`b`Y`U`f`h`Y`h`c`k`b`c`Z`K`]b`h`c`b`Z`c`f`h`Y`j`f`c`W`h`c`b`g`l`c`c`h`b[ " `G`Y`a`]b`U`f`g`U`b`X`k`cf`\_`g`l`c`d`g`U`b`X`a`Y`Y`h`b[ `g`k`]h`Z`]a`g`h`U`f`g`U`f`Y`Y`b`U`V`Y`X`h`f`c`i`[ `\\`h`Y`W`c`i`fgY`h`U`\_]b[ `d`U`W`U`h`i`h`Y`g`U`a`Y`h`j`a`Y`U`g`h`Y`j`]g`c`b`G`d`Y`b`X`]X`C`i`h`U`W`\_`:]a` : Y`g`h`j`U`" `G`h`X`Y`b`h`g`\\U`j`Y`U`W`W`g`g`h`c`Z`]a`]b`X`i`g`h`f`m`d`f`c`Z`]g`g`c`b`U`g`j`]g`]h`b[ `Z`c`f`h`Y`Z`]a`Z`Y`g`h`j`U`U`b`X`d`f`c`j`]X`]b[ `U`b`X`g`U`f`]b[ `h`Y`]f`Y`i`d`Y`f`h`g`Y`" `H`Y`g`h`i`X`Y`b`h`g`\\c`k`Y`j`Y`f`U`f`Y`i`h`j`a`U`h`Y`m`i`f`Y`g`d`c`b`g`]V`Y`Z`c`f`h`Y`j`f`h`j`a`Y`a`U`b`U[ `Y`a`Y`b`h`U`b`X`h`Y`Y`b[ `U[ `Y`a`Y`b`h`k`]h`h`Y`W`c`a`a`i`b`]m`U`b`X`h`Y`Z`]a`Z`Y`g`h`j`U`U`b`X`h`Y`]f`c`k`b`d`f`c`Y`W`h`X`Y`j`Y`f`U`V`Y`g`" `H`\\]g`]g`]b`]b`Y`k`]h`h`Y`[ `Y`b`Y`f`U`U`]a`c`Z`Y`j`Y`" `Z`]a`g`h`X`]Y`g`g`i`V`Y`W`g`h`c`d`f`c`a`c`h`Y`U`\\[ `\\`Y`f`X`Y`[ `f`Y`Y`c`Z`g`h`X`Y`b`h`Y`X`f`Y`g`Y`U`f`W`X`U`b`X`X`Y`V`U`H`Y`c`b`

X]gWd`]bY!gdYWZ]WWt bW dhg"


5ggYgga Ybh' . 'DUfh]V]dUh]cb' / 'FYZYW]cb

GHUfhXUHY. 'Bch5dd']WUV'Y

8YHU]g. 'Gh XYbHg'UfY'fYei ]fYX'hc'UW]j Y'mYb[ U[ Y'k ]h' h'Y': ]a' : Yghj U'UbX'UggcW]UHYX'Yj YbHg'UbX'hc'VY  
UV'Y'hc'XcW'a Ybh'h'Y'dfcW]gg'UbX'fYZYW]cb'h'Y]fYI dYf]YbW]g" b'cfXYf'hc'[ U]b'U'[ fYUHYf'i bXYfg]UbX]b[ 'cZ  
h'Y']bbYf!k cf\_]b[ g'cZU'Z'a' 'ZYghj U'k cf\_]b[ 'UW]cgg'U'fUb[ Y'cZXYdUf'a YbHg'Z'gh' XYbHg'k ]'k cf\_'cb'Ub  
UgdYW]icZ'h'Y': Yghj U'!'Z'ca' 'a Uf\_Y]h]b[ 'UbX'dfca' ch]cb'UbX'W'ca' a i b]m'Yb[ U[ Ya Ybh'hc'J F' 'a Ugh'fWUggYg  
UbX'Z'cbh'cZ\ci gY'UbX'dfc'YW]cb'i bXYf'gi dYfj ]g]cb" 'H\]g'dfcW]gg'k ]'fYei ]fY'XcW'a Ybh]U]cb'UbX  
fYZYW]cb" 'Gh XYbHg'k ]'U'HYbX'\_Ymk cf\_g\cdg'Z'gW]YYb]b[ g'UbX'Yj YbHg'fUg'U[ fYX'k ]h'gi dYfj ]g]b[  
'YW]i fYf' "Gh XYbHg' bYX'hc' h'U\_Y'dUfh]b' h'Y'Z'a' 'dfcXi W]cb'UW]j ]h]Yg'h'Uh]bWi XY'k cf\_]b[ 'Ug'W]Yk' 'cb'h'Y]f  
[ fci d'fj ]Z'a' žVi hid'f'Yb]h]U'm\Y'd]b[ 'ci h'cb'Ub'ch'Yf'dfcXi W]cb"5ggYgga Ybhk ]'VY'VUgYX'cb'dYfZ'ca UbW]Y  
Yj U'i Uh]cb'VUgYX'cb'U'dYYf]fYj ]Yk'gmg'h'a' 'k \YfY'gh' XYbHg'i g]b[ 'U'g]UbXUfX]gYX'h'Ya d'UHY'k ]'dfcj ]XY'U  
gY'Z'fYj ]Yk'gh]U]h'a Ybh'UbX'U'dYYf]fYj ]Yk'gh]U]h'a Ybh'cb'h'Y'W'cb]f]Vi h]cbg'cZ'h'Y'dYYfg' ]b'h'Y'ga U'  
dfcXi W]cb[ fci dg" '5h'h'Y'W'cbWi g]cb'cZ'h'Y'W'ci fgY'UbX'h'Y': Yghj U'Z'gh' XYbHg' bYX'hc' d'fcj ]XY'U'%) \$\$  
k cfX'fYZYW]cb'fYdcf'h'Uh'W'cb]g]XYfg'h'Y'dfcW]ggYg'Z'gh'f' W]i fYg'UbX'Yh' ]W]'W'cb]g]XYfU]h]cbg'h'Uh'h'Ym  
YI Ua ]bYX'k \]Y'k cf\_]b[ ' ]b'Ub'ci h'UW'\_Ybj ]f'c'ba Ybh'Z'k ]h]b'U'fi fU'W'ca' a i b]m'cb'U'Z'a' ]bXi g]f]U'  
dfcW]gg"7 cbgi' h]U]cb'cb'h'Y'dfcW]gg'UbX'k f]h]b'UbX'Z'ca Uh]j Y'Z'YXVUW'\_k ]'VY'dfcj ]XYX'Uh'h'Y  
W'cbWi g]cb'cZ'h'Y'Yj Ybh'

# F Ygci fWg

## DfYgWf]VYX`F Ygci fWg`

8ck b`cUX`UbX`ZJa ]]Uf]gY`mci fgY`Zk ]h`U`ZYj`Yfg]cb`cZh`Y`gW]dtk f]h]b[ `gcZk UfY`7Y`h`fW`h`"Wca`E`cf`U`h`fbU]h] Y`fZY`E`gW]dhk f]h]b[ `hYa`d`U`h`g`

: Ua ]]Uf]gY`mci fgY`Zk ]h`5XcVY`DfYa ]YfY`Dfc`YX]h]b[ `gcZk UfY`"fYZYg`mci f`g\_]`g`Vm] ]Yk ]b[ `h`YgY`h`h`cf]U`g`" `h`d`g`#`A`Y`d`"UXcVY`Wca`#d`fYa ]YfY`d`fc`#i`h`cf]U`g`" `h`a`

## F YWca a YbXYX`F Ygci fWg

### K Uhm`

5g`a`Ubm]gYUgcbg`UbX`Yd]gcXYg`cZ4a`V[ DW`UgWUg`mci`WbU`a`UbU[ Y

Fi`a`: S`Ve`f] fY[ cf`>cfXUbz`%`--`E`

BgTW`dk`4`g`W`e`f`b`fi`W`6`Y`f`g`z`c`f`X`z`%`,`%`

FZW4WSUZ`f&\$\$`\$`E`!`5`XcW`a`Yb]UfmiUVci`h5i`gfU`]Ubg`"cj`Y`UZZ]f`k`]h`h`Y`VYUW`"

4dS`4ake`fA`UW]f]c`8Y`Gci`nUz`&\$\$`+`E`

FZWE`gd`W`d`f]`f`Ub\_]`G`Y`X`g`z`%`,`\*`E`

4d`S`f`Z`f`G]a`cb`6`U`\_`f`z`&\$\$`+`E`

4`g`W]`S`f`W`d`:[Y`f`&\$\$)`!`&\$\$`,`HJ`g`Y`f]Y`g`E`

D[b`F`[VW`f`E`\_]`Ubbcb`6`UbbYbVYf]`&\$\$`+`E`

FZWD`W`W`f`b`b`X`f`Y`k`H`f`U`i`W\_]`z`&\$\$`\$`E`

4S[f`f`P]a`V`Y`F`Y`b`X`U`"z`&\$\$`&`E`

4a`V[ F`eg`S\_]`[f`U`W`X`Y`"@"`W`g`z`&\$\$`(`E`

### F YUX

5i`gfU`]Ub`6`Y`U`W`7`i`h`f`Y`g`" `H`Y`<]`g`h`c`f`m`c`Z`G`i`b`z`G`U`b`X`U`b`X`G`i`f`Z`V`m`[8ci`\[`Ug`6cch`f&\\$\\$`\\$`E`](#)

[8ck`b`I`b`X`Y`f`#`b`5`G`i`b`V`i`f`b`Y`X`7`ci`b`f`m`V`m`i`6`\]`"6`f`m`g`c`b`](#)

[FZWE`W`U`d`W`D`h`W`d`V`m`?`U`h`";`f`Y`b`j`\]"`Y`](#)

7ci fgY'9j U'i Uh]cb'UbX'8Yj Y'cda Ybh

H\]g'j]fU]cb'cZ5F HG'' \$\*, 'jg'U'byk 'Wci fgY'j]b'U'X]ZYfYbhWcb]hI hUbX'k ]h'X]ZYfYbhg]fi Wfi fYg'hc  
dfYj ]ci g'j]fU]cb'cZ5F HG'' \$\*, 'gc'dfYj ]ci g'ZYXVUW\_a UmbchVY'fY'Yj Ubh

Gh XYbtg'k ]''VY'YbWci fU[ YX'hc'i gY'A m9I dYf]YbW'hc'dfcj ]XY'Zcfa Uhj Y'ZYXVUW\_

Gh XYbtg'k ]''VY'YbWci fU[ YX'hc'dfcj ]XY'ZYXVUW\_Xi f]b[ 'hY'Wci fgY'



# Gi Va ]gg]cb'cZ5ggYgga YbhHUg\_g

Hi fb]h]b'Gi Va ]gg]cb

Ʒmci YbWci bhYf'U'dfcV'Ya 'k \Yb'UHYa dh]b[ 'hc'gi Va ]hrci f'Ugg][ ba YbhHfci [ \ 'Hi fb]h]bzd'YUgY  
HY'Yd\cbY'9I HYfbU'Gi ddcfhcb-' , ) ' ' ' %cf'Ya U]'hYa 'cb' [YI HYfbU'HY'fji ddcfh4 i bgk "YXi "Ui "](#)Gi ddcfh  
\ci fg'UFY' , .\$\$Ua '-%\$.\$\$da 'cb'k YY\_XUmg'UbX'-. \$\$Ua '-) .\$\$da 'cb'k YY\_YbXg'f1 \*) 'XUmg'U'mYUfL'Ʒmci  
UFY'i bUVY'hc'gi Va ]hrci f'Ugg][ ba YbhXi Y'hc'U'ZUi 'hk ]h'Hi fb]h]b'mci 'a UmiUdd'miZcf'Ub'YI HYbg]cbZ'Vi hrci  
a i ghfYhU]b'mci f'h]W\_Yhbi a VYf'Z'ca '9I HYfbU'Gi ddcfhfU'cb[ 'k ]h'UbmchYf'fY'Yj UbhXcW a YbhgE'hc  
]bWi XY'Ug'Yj ]XYbW'hc'gi ddcfhrci f'YI HYbg]cb'Udd'jW]h]cb"Ʒmci 'Ya U]'9I HYfbU'Gi ddcfhrci 'k ]`  
Ui hca Uh]W]m'fYW'j] Y'U'h]W\_Yhbi a VYfZ'Vi h]Zmci 'HY'Yd\cbY'mci 'k ]`bYYX'hc'gdYW]W]m'Ug\_'Zcf'cbY"  
Hi fb]h]b'U'gc'dfcj ]XYg'i dXUH'g'cb'hY]f'gmg'hYa 'ghU]h'g'cb'Hk ]hYf"

; YbYfU'm'UggYgga YbhHUg\_g'a i ghVY'gi Va ]hYX'Y'YWfcb]W]m'j ]U'Y]h'Yf'Hi fb]h]b'cf'U'A ccX'Y  
Ugg][ ba Ybh'f'f]bg]h]b]W'g'k \YfY'h.]g'jg'bchidcgg]V'Yz'hk ]`VY'ghUH'X'cb'mci f'Wci fgY'g'A ccX'Y'g]h'k ]h  
U'hYfbU]h] Y'gi Va ]gg]cb'XYhU]g"

: cf]bZ'fa Uh]cb'cb'\ck 'hc'gi Va ]hUgg][ ba Ybhg'cb']bY'j ]U'A ccX'Y.

[\h\]dg.#gh XYbhi bgk "YXi "Ui #ck !gi Va \]hUgg\]\[ ba YbhA ccX'Y](#)

@UH'5ggYgga YbhDYbU'h]Yg'

Gh XYbh]U'fY'fYgdcbg]V'Y'Zcf'hY'gi Va ]gg]cb'cZUggYgga YbhHUg\_g'VmihY'fYei ]fYX'XUH'g'UbX'h]a Yg"  
8YdYbX]b[ 'cZ'hY'YI HYbh'cZXY'Um]b'hY'gi Va ]gg]cb'cZUb'UggYgga YbhHUg\_g'dUgh'hY'Xi Y'XUH'UbX'h]a Yz  
cbY'cZ'hY'Zc'ck ]b[ 'UH'dYbU'h]Yg'k ]`Udd'mi b'Ygg'gdYW]U'W'cbg]XYfU]h]cb'cf'U'V'Ub\_YhYI HYbg]cb'Xi Y'hc'U  
hVXb]W]ci hU] Y'jg[ fUb'hYX": cf'hY'di fdcgY'cZ'UH'dYbU'm'W]W'Uh]cbz'U'XUm'jg'XYYa YX'hc'VY'YUWX

h\k cf\_]g'u'wca di `gcfmwci fgY'wca dcbYbhflni fX'Y'fYei ]fYa YbhZ'u'ghi XYbhk ]`VY'XYYa YX'hc`Uj'Y'a Yh  
hUhfYei ]fYa Ybh'

K cf\_]gi Va ]hYX`&\$'cf'a cfY'XUmg'UZhf'hY'gh]di `UH'X'XYUX`]bY'k ]`bchVY'UWVdh'X'Zcf'UggYgga Ybh  
UbX'k ]`fYW]j Y'bc'ZYXVUW\_z'a Uf\_'cf'[ fUXY"Z'hY'UggYgga YbhUg\_]g'u'wca di `gcfmwca dcbYbhicZ'hY  
Wci fgY'U'ghi XYbhk ]`fYW]j Y'Ub'l bgUhgZUWcfmi: U]`fl : E[ fUXY'Ug'U'fYgi `hcZi bgUhgZUWcfmidYfZ'fa UbW  
]b'Ub'YggYbh]u'wca dcbYbhicZ'hY'Wci fgY"

H\]g']bZ'fa Uh]cb ]g'u'gc'Uj U]UV'Y'Uh [\hfdg.#k k k "Ufng"i bgk "YXi "Ui #W ffYbhghi XYbhg#JWJXYa \]W  
\]bZ'fa Uh\]cb#dfch'W'g!\[ i \]XY\]bYg#](#)

Gi dd`Ya YbhUfmUggYgga Ybhg`

H\Y'Z'fa `cZ'hY'gi dd`Ya YbhUfmUggYgga YbhYXX'bhVY']XYbh]W`hc`hY'cf][ ]bU'UggYgga YbhVi h]ha i gh  
UggYgg'hY'gUa Y`YUfb]b[ `ci h'wca Yg"

5`gi dd`Ya YbhUfmUggYgga Ybhk ]`VY'cZYfYX'hc`U'ghi XYbhk \c'ZU]g'Ub'UggYgga YbhUg\_]b'Y]hYf'cZ'hY  
Z`ck ]b[ `W]W a ghUbwg.

f`DfYj Ybhmc i`Zca`Wca d`Yh]b[`U`Wci fgY`fYe i`JfYa Ybłż

f`?YYd`mci`Zca`UHYbX]b[`Ub`UggYggUV`Y`UW]j`]mż

f`Ghd`mci`gi Va`]h]b[`UggYggUV`Y`k cf\_`Zcf`U`Wci fgYż

f`G][`b]Z]W]b]h]m]U]Z]Y]W]h]m]i`f`d`Y`f`Z`c`f`a`U`b`W`]`b`U`g`g`Y`g`g`U`V`Y`k`c`f`\_`ż`V`Y`]`h`U`Z`c`f`a`U`Y`b`X`!`c`Z`h`f`a`Y`I`U`a`]`b`U`h`c`b`ż`U`W`U`g`g`h`Y`g`h`ż`U`U`V`c`f`U`h`c`f`m`h`Y`g`h`ż`U`g`Y`a`]`b`U`f`d`f`Y`g`Y`b`h`U`h`c`b`c`f`U`b`m`i`c`h`Y`f`Z`c`f`a`c`Z`U`g`g`Y`g`g`a`Y`b`h`

:`c`f`Z`f`h`Y`f`X`Y`h`U`]`g`]`b`f`Y`U`h`c`b`h`c`G`d`Y`W`U`7`c`b`g`]`X`Y`f`U`h`c`b`]`b`W`i`X`]`b`[`K`Y`b`h`c`5`d`d`m`ż`<`c`k`h`c`5`d`d`m`U`b`X`G`i`d`d`c`f`h`]`b`[`8`c`W`a`Y`b`h`U`h`c`b`d`Y`U`g`Y`f`Y`Z`f`h`c`h`Y`G`d`Y`W`U`7`c`b`g`]`X`Y`f`U`h`c`b`k`Y`V`g`]`h`.

[\h\]d\]g.#\]g\]h`XYb\]h\]i`bgk`"YXi`"Ui`#gdYWU`!Wcbg\]XYfU\]h\]cb](#)

# 5 WUXYa ]W<c bYghmUbX`D`U[ ]Uf]ga

D`U[ ]Uf]ga `]g`i g]b[ `hY`k cfXg`cf]XYUg`cZchYfg`UbX`dfYgYbh]b[ `hYa `Ug`mci f`ck b" `hWUb`hU`Y`a Ubm  
Zcfa gZ`Zca `XY`]VYfUHY`WXYU]b[ `hc`UWV]XYbhU`mW`dm]b[ `Zca `U`gci fW`k ]h`ci hUW\_bck`YX[ Ya Ybh`

I BGK `[ fci dg`d`U[ ]Uf]ga `]bhc`hY`Zc`ck ]b[ `WUHY`[ cf]Yg.

7 cdm]b[ .`i g]b[ `hY`gUa Y`cf`j Yfmg]a ]Uf`k cfXg`hc`hY`cf][ ]bU`hYI hcf]XYU`k ]h`ci hUW\_bck`YX[ ]b[ `hY`  
gci fW`cf`i g]b[ `ei chU]cb`a Uf\_g" `H\]g`U`gc`Udd`]Yg`hc`]a U[ YgZ`UfhUbX`XYg][ b`dfc`YWgZ`Ug`k Y`Ug`  
dfYgYbhU]cbg`k \YfY`gca YcbY`dfYgYbh]g`UbchYf`g`]XYUg`cf`k cfXg`k ]h`ci hW`YX]h`

hUddfcdf]UHY`dUfUd`fUg]b[ .`7`U`b[ ]b[ `U`ZYk`k cfXg`UbX`d`fUgYg`k`Y`a cghmifYU]b]b[ `hY`cf][ ]bU`  
ghfi W`fY`UbX`#`f`dfc[ fYgg]cb`cZ]XYUg`cZ`hY`cf][ ]bU`Z`UbX`]bZcfa U]cb`k ]h`ci hUW\_bck`YX[ Ya Ybh`H\]g`U`gc`  
Udd`]Yg`]b`dfYgYbhU]cbg`k \YfY`gca YcbY`dUfUd`fUgYg`UbchYf`g`]XYUg`cf`k cfXg`k ]h`ci hW`YX]h`UbX`hc`  
d]YW]b[ `hc[ Y`hYf`ei chYg`UbX`dUfUd`fUgYg`]bhc`U`bYk`k \c`Y`Z`k ]h`ci hUddfcdf]UHY`fYZYfYbW]b[ "

7 c`i g]cb.`k cf\_]b[ `k ]h`chYfg`Vi hdUgg]b[ `cZ`hY`k cf\_]Ug`U`dYfgcb`g`]bX]j ]Xi U`k cf\_]7 c`i g]cb`U`gc`  
]bWi XYg`dfcj ]X]b[ `mci f`k cf\_]hc`UbchYf`gh`XYbhVYZc`fY`hY`Xi Y`XUHY`Zc`f`Zc`hY`di fdcgY`cZ`hY`a

- i bXYfghUbx'mci f'f][ \hg'UbX'fYgdcbg]V]h]Yg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[ ]Uf]ga ž'Wc'dmf][ \hžI BGK 'Gh XYbh7cXY'cZ7cbXi W'Ubx'5Ww'dhUV'Y'I gY'cZ I BGK '⇒H'F Ygci fW'g'Dc`]Wm
- VY'Uk UfY'cZh'Y'ghUbxUfXg'cZVY\Uj ]ci f'YI dYW'X'cZYj Yfmcby'jb'h'Y'I BGK 'Wca a i b]m
- `cWJh'gYfj ]Wg'UbX'jbZcfa Uh'cb'UVci hl BGK 'UbX'I BGK '@]VfUfm

Gca Y'cZh'YgY'UfYUg'k ]`VY'ZJa ]]Uf'hc'mci ž'ch'Yfg'k ]`VY'byk "; U]b]b[ 'U'gc`X'i bXYfghUbx]b[ 'cZU`h'Y fY'UH'X'UgdYW'g'cZ9@G9'k ]`Y'd'mci 'a U\_Y'h'Y'a cghcZmci f'gh X]Yg'Uhl BGK ""

[\hd. #gj V'YWf i \]XYg" \]VfUfm'i bgk "YXi "Ui #'\]gY#JVci h' \]gY](#)

5 WUXYa ]WbZcfa Uh]cb`

: cf`YggYbh]U`ghi XYbh]bZcfa Uh]cb`fY`Uh]b[ `hc.

- fYei Ygh]Zcf`YI h`bg]cb/
- `Uh]`gi Va ]gg]cbg`[ i ]XY`]bYg/