



7ci fgY`Cj Yfj JYk

`GHUZZ7cbhUWhi8YHJ]`g`

`7cbj Ybcfg`

B Ua Y	9a U]`	5j U]UV]]m	@cWWhjcb	D\cbY
GYcb[!7\i`G\]b	g"g\]b4 i bgk "YXi "Ui	A cbXUmg`&!` / : f]XUmg`&!(`cf`Vm Ya U]`	A 6&*&	-', )!' +&(

`@YWhi fYfg`

B Ua Y	9a U]`	5j U]UV]]m	@cWWhjcb	D\cbY
GYcb[!7\i`G\]b	g"g\]b4 i bgk "YXi "Ui	A cbXUmg`&!` / : f]XUmg`&!(`cf`Vm Ya U]`	A 6&*&	-', )!' +&(

`Hi hcfg`

B Ua Y	9a U]`	5j U]UV]]m	@cWWhjcb	D\cbY
G]b^>i b[	\U`4 i bgk "YXi "Ui	H65	A 6&*,	H65

GWXcc``7cbhUWhi`bZcfa Uh]cb

GWXcc``cZ<i a Ub]hYg`UbX`@Jb[ i U[ Yg

7 ci fgY'8YHJ`g

7 fYX]hDc]bHg`\*`

Gi a a UfmicZ\hY'7 ci fgY

Gi V'YWh5fYU.`=adMS` E fgV[Wé

H\]g'Wci fgY'Wcb]bi Yg'hc'dfcj ]XY'5Xj UbWfX`Yj Y`h ]hcb`]b`? cfYUb`Ub[ i U[ Y'gh XmZca`U`Wca a i b]WU]j Y UbX`hUg`!VUgYX`UddfcUW`"H\Y'df]a Ufma YX]i a`cZ]bgf]i W]cb`]g`? cfYUb`"Mci`k`j`"Wcb]bi Y`hc`XYj Y`cd`UbX YI`hYbX`mci f`i bXYfgf]UbX]b[ `UbX`i gY`cZ? cfYUb`a cfd\c`c[ mž`YI`]g`UbX`gnb]U]`h`fci [ \`fYUX]b[ `UbX X]gW`gg]cb`cZUi`h`Ybh]W? cfYUb`hY`h]g`]b`? cfYUb`žVmi`h`]g]b[ `j`Uf]ci`g`fYUX]b[ `ghfU]h[ ]Yg`"Mci`k`j`" dUf]W]dU]h`]b`U`j`Uf]Ym]cZk`f]h]b[ `hUg`gž`gi`W`Ug`Wca`d`YI`"YhYfgž`]hYfU]h`fY`fYgdc]bgYgž`bc]h`hU`]b[ ž`UbX YggUmik`f]h]b[ ž`UbX`[ U]b`gm]hYa`U]h]WdfU]W]W`cZgYa`]bUf`dfYgYb]h]cbg`]b`U`k`]XY`fUb[ Y`cZWca`a`i`b]WU]j`Y`g]h`U]h]cbg`gi`W`Ug`dfcZ]gg]cbU`UbX`Vi`g]bYgg`Wcb]YfgU]h]cbg"

Hcd]Wg`]bWi`XY`dfcj`YfVgž`hY`]bZcfa`U]h]cb`U[ Yž`YU`h`ž`Z]g\]cbž`UXj`Yf]h]gYa`Ybhgž`YbhYf]U]ba`YbhUbX`? cfYUb`a`cXY`cZ`]j`]b[ "

7 ci fgY`@YUfb]b[ `Ci`hWca`Yg

%`I`gY`? cfYUb`cb`j`Uf]ci`g`hcd]Wg`Wc]j`YfYX`]b`hY`Wci`fgYž`UbX`dfYgYbhU`W]h]WU`UbX`]a`U[ ]bU]h]j`Y`h`]b`]b[ `UVci`h]ggi`Yg`h`U]h]Uf]gY`&`F`YUX`UbX`k`f]h]Zcfa`U`UbX`Wca`d`YI`hY`h]g`hc`XYgW]VY`UW]j`]h]Ygž`Yj`Ybhg`UbX`hc]d]Wg`h`U]h]fY`U]h`hc`hY`"Z`UbX`k`cf`cZ? cfYUbg`'`"5`h]W`U]h`"b[ i`]gh]Wcf`gc]Wc!W`h`fU`UgdYW]g`cZ? cfYU`cf`U? cfYUb`Wca`a`i`b]m]b`5i`ghfU`]U`("9I`d`U]b`UbX`X]gW`gg`hY`h]fUX]h]cbU`UbX`Wcb]hYa`dcfUfmW`h`fY`Zca`]bhYfbU]h]cbU`dYfgdYW]j`Yg"

HYUW]b[ `GhfU]h[ ]Yg`

F`U]h]cbU`Y.

H\]g'Wci fgY'Wcb]bi Yg'hc`XYj Y`cd`mci f`Wca`a`i`b]WU]h]cb`g\_]`g`h`U]h]k`j`"Yb\UbW]mci`f`dfUW]W]Ug`U`Wca`d`Yh`bh`Wca`a`i`b]WU]h]cb`]b`? cfYUb`"h`fYZYW]g`U`dcg]h]cb`h`U]h]mci`f`dfUW]W]k`]h]b`hY`Z]Y`X`k`j`"fYei`]fY`

Ugg][ ba Ybhcib'hc d]Vg'fY'UH'X'hc'U''b[ i ]gh'WUbX'gc'V]c! W'hi'fU''UgdYWh'cZ? cfYU''H\Y'cb'']bY'a UH'f]U'g  
k ]''dfcj ]XY'mci 'k ]h'YI'd']M'hj'cWUVi 'Ufm'z'gYb'hY'bVW'dUH'Y'fbg'UbX'ch'Y'f'k'f]h'Y'b'YI'Y'fW]gYg'Z'f'k'\]W'k'mci 'U'fY  
dfcj ]XYX'ja a YX]UH'Z'YXVUW."

H\Y'W'ei fgY'i gYg'U'fUb[ Y'cZ'h'UW' ]b[ 'gh'fUH' [ ]Yg'z']bW'i X]b[ 'hUg\_'c'f]Yb'h'X'U'W'hj ]h'Yg'']b'dU]fg'UbX' [ fci dg'z  
UbX'WUgg'UbX'ga U'' [ fci d'X]g'W'gg]cbg'' b'h' ]g'dfc'W'gg'z'mci 'k ]''VY'UV'Y'hc'W'ca a i b]W'h'Y'Z'f'']bZ'fa U'h'cb'z  
]XYUg'UbX'U'f[ i a Yb'hg'V'c'h'c'fU''m'UbX'']b'k'f]h'b[ ''M'ci 'k ]'' [ U'h'Y'f'UbX'c'f[ Ub]g'Y'']bZ'fa U'h'cb'Z'ca 'h'Y  
h'I h'V'cc\_'UbX'U'k ]XY'fUb[ Y'cZ'k'f]h'Y'b'a UH'f]U'g'z'U'i X]c!j ]gi U'f'8 J 8'z'J ]XY'c'z'Y'h'W'UbX'Y'Y'W'f'c'b]W'f]b'h'f'b'Y'h'z  
Y'h'W'g'ci f'W'g''H\]g'dfc'W'gg'k ]''U'gc'Y'b'U'V'Y'mci 'hc'i gY'+'H'f'p'cfY'Ub'k'c'f'X'dfc'W'gg'c'f'z? cfY'Ub'k'Y'V''']b\_g'z  
Y'h'W'Y'Z'Y'W'hj ]Y'mi'Ug'U'a Y'Ub'g'c'Z'W'ca a i b]W'h'cb'UbX'Ug'Ub'U]X'hc''Ub[ i U[ Y''Y'U'fb]b[ 'Ug'k'Y''Ug'']bXY'dYbXYbh  
'Y'U'fb]b[ "



Hi fb]hjb'gYHjb[ . H\]g]g'bchU'Hi fb]hjb'Ugg][ ba Ybh

5ggYgga Ybh&. 'Gdc\_Yb'HYgh

GHUfhXUHY. '% #/%#&\$%- '\$' .\$\$'DA

@Yb[ h. )! , 'a ]bi h'g'cZgdc\_Yb'fc'Y!d'Um

8YHU]`g. 'Gh XYbtrg'k ]`dYfZcfa 'U'fc'Y'd'Um]b'dU]fg'f) ! , 'a ]bi h'g'c'k f]h'Y'b'ZYXVUW\_ UbX' ]bX]j ]Xi U' W'a a Ybtrg"

5XX]h]cbU'XYHU]`g.

5'fc'Y!d'UmigYgg]cb' ]b'dU]fg'Zc'f'UVci h) ! , 'a ]bg'cb'dfY!UffUb[ YX'hcd]Wg" Gdc\_Yb'UbX'k f]h'Y'b'ZYXVUW\_ k ]h' a Uf\_g"

Gi Va ]gg]cb'bc'hYg.Mci 'a i ghUHY'bX'h'Y'h' h'c'f]U'`WUgg'h'c'dYfZcfa 'h'Y'fc'Y!d'Um]b'h'Y'WUggfcca "

Hi fb]hjb'gYHjb[ . H\]g]g'bchU'Hi fb]hjb'Ugg][ ba Ybh

5ggYgga Ybh' . 'K f]h'Y'b'HYgh

GHUfhXUHY. '&#/%#&\$%- '\$' .\$\$'5A

@Yb[ h. " '\$ei Ygh]cbg'YUWX

8YHU]`g. 'Hk c'k f]h'Y'b'h'ghg'\Y'X'Xi f]b[ 'gdYW]ZYX'WUggYg"9UWX'W'cbg]grg'cZ[ fUa a Uf'dUHYfb'hUg\_gz fYUX]b[ 'UbX'k f]h]b[ 'hUg\_g'Ug'W'a V]bYX'W'a dcbYbtrg'VUgYX'cb'k'U'hg'W'c]j YfYX' ]b'WUgg" #h'Y[ fUHY'g'U'`h'Y' i b]trg'h'Uj [ \h'UbX'`YUfbYX'i d'h'c'h'Y'd'Ufh]W'Uf'dc]bhcZgh Xn'K f]h'Y'b'ZYXVUW\_ k ]h' W'a a Ybtrg'UbX'a Uf\_g" H\Y'gYW'cbX'h'ghf&\$' E]g'h'Y'Z]bU'`UggYgga YbhZc'f'UHY'bXUbW'`di fdcgYg"

Gi Va ]gg]cb'bc'hYg.Mci 'a i ghgi Va ]h'c'i f'h'gh#Ubgk Yf'dUdYfg'Uh'h'Y'YbX'cZ'h'Y'h' h'c'f]U'`WUgg"

Hi fb]hjb'gYHjb[ . H\]g]g'bchU'Hi fb]hjb'Ugg][ ba Ybh

5ggYgga Ybh(. '7`Ugg'7ca dcg]h]cb

GHUfhXUHY. '& #&- #&\$%- '\$' da

@Yb[ h. '%\$\$'k cfXg'YUWX

8YHU]`g. ': ci f'g\cfh[i ]YX'W'a dcg]h]cbg'cb'[ ]j Yb'hcd]Wg'Uhbc'a cfY'h'Ub'%\$\$'k cfXg'YUWX'fUddfci " '\$!a ]bi h'Y'Zc'f'YUWX'W'a dcg]h]cb'W'a d'YHY'X'Xi f]b[ 'WUgg'UbX'gi Va ]h'Y'X'Uh'h'Y'YbX'cZ'h'Y'WUgg"8YHU]`g cZ'h'Y'W'a dcg]h]cb'hUg\_g'UfY'i d'cUXYX'cbhc'h'Y'i b]j Yfg]h'Y'g'@A G'Uh'h'Y'W'a a YbW'a YbhcZ'h'Y'7ci fgY" K f]h'Y'b'ZYXVUW\_ k ]h' a Uf\_g"

5XX]h]cbU'XYHU]`g.

7`Ugg'7ca dcg]h]cb. '







K YY_%% '&)' Bcj Ya VYf! &- 'Bcj Ya VYf	@YWh fY	b]h-!( 'HUG_g'%&'Di V`W\c`]XUm9""7 ca dclhcb'( fl b]hg' -!%/ '-( 'L'lc'gi Va ]hZcf'a Uf_g"
	Hi hcf]U'	K f]hYb'hYghfl b]hg', !%ž, !' ž-!%ž-!( 'L'

# F Ygci fWg

## DfYgWf]VYX`F Ygci fWg`

Ka`eWl`=adMS` &/&Z\$Fz`VmMcbgY]`I b]j Yfg]mi? cfYUb`@Ub[ i U[ Y`-bgh]h hYz`McbgY]`I b]j Yfg]miDfYggz`&\$\$, cf`hY`"UhYghYX]hcb"

## F YWca a YbXYX`F Ygci fWg

=adMS` 9 dS`\_ SdXd;` fWd Sf[a` S^>Wsd Wde`Vm=Aa z<cb[ `UbX`7\Ub[ z`McbgY]`I b]j Yfg]mz`GYci`" I b]j Yfg]mi6cc\_g\cd"`@UhYghYX]hcb"

G`VWefS` V[ Y >\$`=adMS` >Wsd Wd7dab, 6WeUdf[a` t 7j b`S` Sf[a` S` V;\_ b[USf[a` e`VmG\]bz`GYcb[ ! 7\i`f&\$%+E`"GYci`:`Gchcb[ `Di V`]g\]b[ `fUj U]UV`Y`Uh`hY`I BGK`6cc\_g\cdE`"

=adMS` : WdfSYW>S` YgSYW? S[ fW S` UW >Wsd [ Y S` V 6WhWab\_ W f, 3gefS`[S` BdsUf[UW` S` V BwdebWUf[hWe`VmG\]bz`GYcb[ ! 7\i`f&\$%+E`"GYci`:`Gchcb[ `Di V`]g\]b[ `fUj U]UV`Y`cb`]bY`UhGYci`"GY`YW]cb 6cc\_g\cdE`"

K YVg]hYg.

I BGK`"jVfUfm`[k k k`"\]VfUfm\]i bkg`"YXi`"Ui](#)

B Uh]cbU`-bgh]h hY`cZ`hY`? cfYUb`@Ub[ i U[ Y. [k k k`"?cfYUb`\[c`" f](#)

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

H\Y`7ci fgY`]g`dYf]cX]W`mifYj ]Yk YX`UbX`mci f`ZYXVUW`]g`i gYX`hc`ja`dfcj Y`hY`7ci fgY`": YYXVUW`]g [ UhYfYX`Zfca`mci`i`g]b[ `a`m9I dYf]YbW`" `h]g`YbW`i fU[ YX`mci`Wca`d`Yh`mci`f`gi`fj`YmVmUW`W`gg]b[ `hY`dYfgcbU`]gYX`k`YV`]b`\_j`]U`hY`A`ccX`Y`W`i`fgY`g]hY`" `b`dUghZYXVUW`z`Zcf`YI`Ua`d`Yz`hY`Zfca`UhczWUgg`Wca`d`cg]hcb`UbX`gdc`\_Yb`hYghk`Ug`]XYbh]ZYX`Ug`Ub`]ggi`Y`UbX`h`i`g`k`Ug`W`Ub[ YX`hc`UXXfYgg`hY`]ggi`Y. gi`Va`]gg]cb`UbX`a`Uf`\_]b[ `cZ`Zc`i`f`WUgg`Wca`d`cg]hcbg`]bghY`UX`cZ]j`Y`fUbXca`a`Uf`\_]b[ g`ci`hcZ`hY`b gi`Va`]gg]cbg`UbX`U`fc`Y`d`Um]b`dU]fg`]bghY`UX`cZ]bX]j`]X]Xi`U`hU`\_]b[ `gYgg]cb`k`]h`hY`hY`UW`]b[ `ghUZZ`"

Gi Va ]gg]cb`cZ5ggYgga YbhHUg\_g

Gi Va ]gg]cb`cZ5ggYgga YbhHUg\_g

Hi fb]hb`Gi Va ]gg]cb

zmc i`YbWci bhYf`U`dfcV`Ya`k` \Yb`U`H`Ya` dh]b[ `hc`gi Va ]hmc i`f`Ugg][ ba YbhHfci [ \`Hi fb]hbzd`YUgY  
H`Y`d`l`cb`Y`9I`H`f`b`U`G`i` ddcfhcb`-`'` ,` )` " ` ' ` ' ` %cf`Ya` U]`H`Ya` `cb`YI`H`f`b`U`H`f`gi` ddcfh4` i` bgk` "YXi` "Ui` " `Gi` ddcfh  
`l`ci` fg`UfY` ,` .` \$\$Ua` -`-%\$.` \$\$da` `cb`k` YY`\_`XUmg`U`b`X`-` .` \$\$Ua` -` )` .` \$\$da` `cb`k` YY`\_`YbXg`f`l` \*` )` `XUmg`U`m`Y`U`f`l`" zmc i  
UfY`i` bUV`Y`hc`gi Va ]hmc i`f`Ugg][ ba YbhXi`Y`hc`U`Z`U`i`h`k`]H`Hi`fb]hb`mc i`a` UmUdd`m`Z`f`Ub`YI`H`f`bg]cbz`Vi`hmc i  
a`i` ghf`Y`H]b`mc i`f`h]W`Y`h`bi`a` VYf`Z`ca` `9I`H`f`b`U`G`i` ddcfhf`U`cb[ `k`]H`U`b`m`c`H`Y`f`f`Y`j` UbhXcW`a` YbHg`L`hc  
]bW`i`XY`Ug`Y`j`]XYbW`hc`gi` ddcfhmc i`f`YI`H`f`bg]cb`Udd`]W`h]cb" zmc i`Ya`U]`9I`H`f`b`U`G`i` ddcfhmc i`k`]`  
Ui`hc`a`U`h]W`U`m`f`Y`W`]j`Y`U`h]W`Y`h`bi`a` VYf`z`Vi`h]Z`mc i`H`Y`d`l`cb`Y`mc i`k`]`b`Y`Y`X`hc`gd`Y`W`Z]W`U`m`Ug`\_`Z`f`cb`Y`"  
Hi`fb]hb`U`gc`d`fc`j`]XYg`i`d`X`U`H`g`i`cb`H`Y`j`f`g`m`g`H`Ya` `g`h`U`h`g`i`cb`H`k`]H`Y`f`"

; YbYfU`mz`UggYgga YbhHUg\_g`a`i` ghVY`gi Va ]H`Y`X`Y`Y`W`f`cb]W`U`mj`]U`Y`]H`Y`f`Hi`fb]hb`cf`U`A`cc`X`Y`  
Ugg][ ba Ybh`H`b`]bg`H`U`b`W`g`k` \Y`f`Y`H`L`g`]g`b`c`h`i`d`c`g`g]V`Y`Z`]h`k`]`V`Y`g`H`Y`X`i`cb`mc i`f`W`ci`fg`Y`g`A`cc`X`Y`g`]H`Y`k`]H`  
U`H`f`b`U`H]j`Y`gi Va ]gg]cb`XY`H]`g`"

: cf`]b`Z`c`fa`U`h]cb`cb` \ck`hc`gi Va ]hUgg][ ba Ybh`g`cb`]b`Y`j`]U`A`cc`X`Y` .` \`h`d`g` .`#`g`h`XY`b`H`i`bgk`"YXi`"Ui`#`ck`!  
gi Va ]hUgg][ ba Ybh`a`cc`X`Y`

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

D`U[ ]Uf]ga `]g`i g]b[ `h`Y`k cfXg`cf`]XYUg`cZc`h`Yfg`UbX`dfYgYbh]b[ `h`Ya `Ug`mci f`ck b" `h`WUb`hU`Y`a Ubm  
Zcfa gž`Zca `XY`]VYfU`h`W`Y`U`h]b[ `h`U`W`Y`X`Y`b`U`m`W`c`d`m]b[ `Zca `U`gci f`W`k ]h`ci h`U`W`\_`b`c`k `Y`X[ `Y`a `Y`b`f`

I BGK `[ fci dg`d`U[ ]Uf]ga `]b`h`c`h`Y`Z`c`ck ]b[ `W`U`h`Y`[ `cf]Yg.

7 cdm]b[ .`i`g]b[ `h`Y`g`U`a `Y`cf`j`Y`f`m`g]a ]U`f`k`cf`X`g`h`c`h`Y`c`f][ ]b`U`h`I`h`c`f`]X`Y`U`k ]h`ci h`U`W`\_`b`c`k `Y`X[ ]b[ `h`Y`

- i bXYfghUbx'mci f'f][ \hg'UbX'fYgdcbg]V]h]Yg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[ ]Uf]ga ž'Wcdmf][ \hž' 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`]b'h'Y'I BGK 'Wca a i b]m
- `cWJh'gYfj ]Wg'UbX' ]bZcfa Uhcb'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 ""

[\hhd.##ji 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[ `rc.

- fYei Ygh]Zc`fYI h`bg]cb/
- `Uh]`gi Va ]gg]cbg`[ i ]XY`]bYg/
- fYj ]Yk `cZa Uf\_g/
- I BGK `<YU`h`UbX`GUZY`midc`]WYg/

