



ARTS3292

A][fUbhg'UbX'F YZ [YYg']b'5 i ghfU`]Ub'<]ghc fm

HYfa `C.bY`'#`&\$%-

7 ci fgY`Cj Yfj]Yk

`GHUZZ7cbhUWhi8YHU]`g`

`7cbj Ybcfg`

B Ua Y	9a U]`	5j U]UV]]m	@cWUhcjb	D\cbY
NcfU`G]a]W	n"gl]a]W i bgk "YXi "Ui	H\i fgXUm%%d%cf`Vm Uddc]bha Ybh	A 6' (+	- ' ,) '%+ ' *

GW\cc``7cbhUWhi`bZcfa Uh]cb

GW\cc``cZ<i a Ub]h]Yg`UbX:@Ub[i U[Yg

@cWUhcjb. `GW\cc``C Z]WZA cfj Yb`6fck b`6i]X]b[ž@Yj Y``&ž&),

CdYb]b[`<ci fg.`A cbXUm! : f]XUmž - Ua `!) da

D\cbY. `ž*%&`- ' ,) `%*, %

: Ul. `ž*%&`- ' ,) ; , +\$)

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

7 ci fgY'8YHJ]`g

7 fYX]hDc]bhtg '*`

Gi a a UfmicZ\hY'7 ci fgY

Gi VYWh5fYU.: [efack

5hU'hja Y'k\Yb'a i W\cZ\hY'k cF\Xfj'dcddi`U\hcb]g'cb'hY'a cj Yz]a a][fU\hcb'UbX'Ugmi a` \Uj Y'VYWta Y
rk c'cZ\hY'a cghWcb'hYb]h]ci g']ggj Yg'hcXUm'5bX'k \]Y'5i g'fU]Ufj'dcddi`U\hcb]g'cbY'cZ\hY'a cghX]j YfgYz'ci f
gcWYhm]g'\]g'cf]W\`micbY'cZ\hY'a cgh]bgi`Uf`b'h]g'Wci fgY'mci`k]`YI d'cfY'\ck`a][fU\hcb'\Ug'g\UdYX
UbX'fUbgZ'fa YX'5i g'fU]Ub'dc`]h]Wg'UbX'gcWYmz'UbX'\ck`5i g'fU]U'\Ug'fYgdcbXYX'hc`a][fUbhg'UbX
fYz [YYg`K Y'YI Ua]bY'hY'f]gY'UbX'Z\`cZ\hY'K \]hY'5i g'fU]U'dc`]Wz'hY'a U'cf'g\]Zg'cZ\hY'dcghk Uf
dYf]cX'UbX'bYk`]b'hY'fbU\hcbU'cV`][U\hcbgZ'5i g'fU]Ufj`W\Ub[]b[`U\h]h XYg'hc`bYk Wta Yfgz'hY'UddYUfUbW'cZ
`VcUhdYcd'Y`UbX'bYk`fY[]a Yg'cZYI W\ g]cbz'UbX'hY'k Umg]b'k \]W\ gi W\Wggj Y'a][fUbh[fci dg'\Uj Y
Wta Y'hc`W\`5i g'fU]U'\ca Y`

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

- %` 5bU'mgY`_YmYj Ybhgz]XYUgz'dYcd'Y`UbX'XYj Y'cda Ybhg]b'fY`U\hcb'hc`5i g'fU]Ufj`\]g'cfmicZa][fUbhg
UbX'fYz [YYg
- &` 9j U'i U\h'fY'Yj UbhgW\c`Uf'm`]hYfU\h`fY
- '` 5bgk Yf'\]g'cf]W\`ei Ygh]cbg'i g]b[`Yj]XYbW`VUgYX'Uf[i a Ybhg`VUgYX'cb]bXYdYbXYbhim`cW\hYX
gci fWg
- (" 7cbf]Vi hY'YZYW]j Y'mUg'U'a Ya VYf'cZU`[fci d'cf'hYUa
-)` 7ca a i b]W\h']XYUg'UbX'Yb[U[Y]b`X]gW`gg]cb

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

5g'gW\c`Ufg'UbX'k f]hYfg]bhja U\h'm]bj c]j YX']b'a][fU\hcb'\]g'cfmz'k Y'XYg][bYX'h]g'Wci fgY'k]h'hY'U]a`cZ
g\ck W]g]b[`hY'VYbYz]hg'cZfYgYUfV\!`YX'hYUW\]b[`"K Y'VY'Yj Y'hUhfYgYUfV\!`YX'hYUW\]b[`Wcbj Ymg
Yb'h]i g]Uga`UbX'XYX]W\hcb'hc`U'gdYW]Z]W\hYUW\]b[`UfYUz'UbX'hc`\]g'cf]W\`gW\c`Ufg\]d`Mci`k]`VY
YbWci fU[YX'hc'h]b`_UVci h\ck`a][fU\hcb'\]g'cfm\Ug]bZ'fa YX'W ffYbhYj Ybhgz'dc`]WYg'UbX'U\h]h XYg
hc k UfXg'a][fUbhg'UbX'fYz [YYg]b`5i g'fU]U`Mci`k]`VY]b'f'cXi W\X'hc`f]W\`UbX'X]j YfgY'a U\h'f]U'z'Z'ca
Z'a g'UbX']hYfU\h`fY`hc`a c'fY'fU\h]hcbU'UfV\]j U'gci fW'gZ'UbX'k]`VY`dUf'hcZk \U\h]g'U'k Umg'U`]j Y'm'YUfb]b[
Ybj]f'cba Yb'h'5g'k Y`Ug'XYj Y'cd]b[`mci`f'k f]hY'b'UbX'UbU'm]W\`g_]`gZ'mci`k]`U'gc`VY`[]j Yb'hY'gdUW\
UbX'[i]XUbW\`hc`XYj Y'cd`U'dfc`YW\hcj Yf'hY'Wci fgY'cZ\hY'gYa YghYf]b`U'ga U`[fci d'UVci hU'a][fUbh
[fci d'cZmci`f'ck b`W\ccg]b[`

5ggYgga Ybh

Gi Va]gg]cb

Hi hc]U`dUdYfg`UbX`fYgYUfW`YggUmg`g\ci`X`VY`gi Va]hYX`Y`YWfcb]WU`mhc`Hi fb`#i`b`cb`A ccX`Y`"H\Y`"j]b_ k]`VY`WYUf`mia`Uf`_YX"

F YZYfYbW]b[

5`k f]hY`b`k`cf`_`a`i`ghVY`cf][`]bU`f]Y`"bchd`U[`]Uf]gYX`U`bX`dfcdYf`m`fYZYfYbW`X`i`g]b[`]C`B`9`fYW`[`b]gYX`fYZYfYbW]b[`]gmg]hYa`fY["`"C`I`Z`c`f`X`c`f`<`Uf]`UfX`U`Vi`hbchU`W`ca`V]bU]h]cb`c`Z`gmg]hYa`g`"H\Y`d`fYZYfYbW`"j]Z`c`f`Z`c`b`c`h`gmg]hYa`-`C`I`Z`c`f`X`c`f`7`]\WU[`c"

\hhdg.#gh`XYbh`i`bgk`"YXi`"Ui`#Z`c`b`c`h`Y`!`V]V`]c[`fUd`m`c`f`c`l`Z`c`f`X`!`fYZYfYbW]b[`!`gmg]hYa

#!`hY`!`h`fY[`"G`h`Y`U`f`b`g`&`\$`%`ž`d`"``%`(`Ł`]g`c`_`U`m`d`f`c`j`]X`Y`X`]`h`]b`W`i`X`Y`g`U`d`U[`Y`b`i`a`V`Y`f`5`B`8`U`f`Y`Z`Y`f`Y`b`W`"``]g`h`

GYY.`\`hhdg.#gh`XYbh`i`bgk`"YXi`"Ui`#Uf]`UfX`!`fYZYfYbW]b[

H]d.`K` \`Y`b`]b`X`ci`V`h`ž`fYZYfYbW`":`c`c`b`c`h`Y`g`ž`Z`c`f`Y`I`U`a`d`Y`ž`U`f`Y`b`c`h`c`b`m`Z`c`f`X`]fYW`h`e`i`c`h`U`h]`c`b`g`V`i`h`U`g`c`Z`c`f`

]b`g`h`U`b`W`g`]b`k` \`W`X`m`c`i`d`U`f`U`d`f`U`g`Y`h`Y`k`c`f`_`c`Z`c`h`Y`f`g`W`c`U`f`g"

H]d.`:`c`c`b`c`h`Y`g`[`c`]b`g`Y`e`i`Y`b`W`ž`V`i`h`g`h`c`i`X`b`Y`j`Y`f`V`Y`d`U`W`X`b`Y`I`h`i`c`Y`U`W`X`c`h`Y`f`"O`Q`Q`O`Z`m`c`i`k`U`b`h`i`c`f`Y`Z`f`

h`c`h`c`g`c`i`f`W`g`U`h`c`b`Y`d`c]b`ž`]b`g`Y`h`c`b`Y`Z`c`b`c`h`Y`U`b`X`h`Y`b`X`Y`g`W`]V`Y`V`c`h`g`c`i`f`W`g`"O`Q`

H]d.`K`]h`U`Z`c`b`c`h`Y`ž`Z]f`g`h`h`Y`b`g`i`f`b`U`a`Y`"``#`U`V]V`]c[`fUd`m`#fYZYfYbW`"``]g`ž`U`f`f`U`b[`Y`]b`U`d`U`V`Y`h]WU`c`f`X`Y`f`V`m`g`i`f`b`U`a`Y`"

:`c`f`a`U`h]b[

5`k`f]hY`b`k`cf`_`a`i`ghVY`dfcdYf`m`Z`c`f`a`U`hY`X.

%)`c`f`X`c`i`V`Y`g`d`U`W`X`"

%&`d`c]b`h`Z`c`b`h`f`d`fYZYfU`V`m`U`b`Y`U`g`m`h`c`f`Y`U`X`Z`c`b`h`g`i`W`U`g`H]a`Y`g`B`Y`k`f`c`a`U`b`Ł`

F`Y`U`g`c`b`U`V`Y`a`U`f[`]b`g`"

.

O`Q`D`Y`h`f`B`"G`h`Y`U`f`b`g`ž`9`W`V`W`d[`I`adV`:[`e`f`a`c`k`ž`f`X`Y`X`b`"B`Y`k`m`c`f`_`f`c`i`h`Y`X`[`Y`ž`&`\$`%`ž`d`"``%`

O`Q`O`#`W`Ł`f`Y`W`i`G`Y`Y`Z`c`b`c`h`Y`"``"

O`Q`D`Y`h`f`B`"G`h`Y`U`f`b`g`ž`9`W`V`W`d[`I`adV`:[`e`f`a`c`k`ž`f`X`Y`X`b`"B`Y`k`m`c`f`_`f`c`i`h`Y`X`[`Y`ž`&`\$`%`ž`d`"``%`/`>`c`U`b`k`"G`W`Ł`h`ž`';`Y`b`X`Y`f.`5`!`g`Y`Z`7`U`h`Y`[`c`f`m`i`c`Z`<`]g`h`c`f]WU`5`b`U`m`g]g`ž`3`_`W`d[US`:`[`e`f`a`d[US`^`D`W`h[W`ž`-`%`ž`%-`*`ž`d`d`"

%`\$`)'`!`%`\$`+`ž`d`"``%`\$`)(`

5ggYgga YbhHUg_g`

5ggYgga YbhHUg_	K Y][\h	8i Y`8UH`	Gh XYbh@YUfb]b[Ci hWta Yg`5ggYggYX
Hi hcf]U`DUdYf`	' \$i	%+#\$' #&\$%- '\$(. \$\$`DA	%ž&ž
A U`cf`fYgYUfW`YggUm) \$i	&* #\$(#&\$%- '\$(. \$\$`DA	%ž&ž
; fci d`DFYgYbhU]cb`	&\$i	K YY_`-	%ž&ž(ž)

5ggYgga Ybh8YHU]`g

5ggYgga Ybh%`Hi hcf]U`DUdYf`

GHUfhXUH`. Bch5dd`]WV`Y

@Yb[h. %\$\$\$`k cfXg`fbYk `k cfX`Wci bH

8YHU]`g. `Hi hcf]U`dUdYf`"%) \$\$`k cfXg`"5`k f]hYb`fYgdcBgY`h`U`gYhi hcf]U`ei Ygh]cb`W`cgYb`Z`ca`h`Y`Z`fghi`
k YY_g`cZ`h`Y`Wci`fgYz`UbU`mg]b[`gYh`fYUX]b[`g`H\`g`fYW`]j`Yg`k`f]hYb`Z`YXVUW`cb`h`Y`h`fb]h]b`dU[`Y`cZ`h`Y`f`
gi`Va`]gg]cbž`i`bXY`f`h`Y`Wta`a`Ybhg`Z`Y`Xž`cZ`cbY`h`h`fY`dUfU[`fUd`gž`VUgYX`cb`h`Y`f`]bW`f`dc`fU]cb`cZ`
gci`fW`gž`h`Y`f`UV`]m]h`c`U`W`W`fU`h`m`UbU`mgY`h`Y`gci`fW`a`U`h`f]U`UbX`fYgdcB`X`h`h`Y`ei`Ygh]cbž`h`Y`f`k`f]hYb`
ghmY`UbX`d`fYgYbhU]cb`"

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

H\`g`h`h`cf]U`dUdYf`]g`U`a`]b`YggUm]bgcZUf`Ug`mci`VUgY`mci`f`Ub`gk`Yf`cb`gi`Z]W]Ybh`fYgYUfW`f`gY`W`b`X`U`f`m`#`
df]a`U`f`n`e`UbX`d`fYgYbh]h]b`YggUm]Z`ca`U`h`f]b`h`c`X`i`W]cbž`_Y`m`d`c]b`g`Y`i`U`a`]b`Y`X`]b`g`m`g`h`a`U`h]WZ]g`\]cbž`
W`c`b`W`i`g]cbž`" `h]g`VUgYX`cb`ei`Ygh]cbg`gYh`Z`c`f`K`YY_g`%d`(" `M`ci`d`]W`cbY`cZ`h`Y`g`Y`ei`Ygh]cbg`UbX`Ub`gk`Yf`]h`
i`g]b[`Wci`fgY`a`U`h`f]U`g`" `h]g`X`i`Y`U`h`h`Y`Y`b`X`c`Z`K`YY`_`(`ž`b`c`h`k`YY`_)`ž]b`_Y`Y`d]b[`k`]h`h`Y`b`Y`k`h`Y`fa`Z`ca`U`h`

Gi Va]gg]cb`b`chYg.F Yj]g]cb`cZk`cfX`Wci`bhUbX`Xi`Y`XUH`Z`ca``&\$%

Hi fb]h]b`g`Y`h]b[. H\`g`Ugg][`ba`Ybh]g`gi`Va`]hYX`h`fci`[\`Hi`fb]h]b`UbX`gh`XYbhg`W`Wb`g`Y`Y`Hi`fb]h]b`g]a`]Uf]m`
fYdcf`g`"

5ggYgga Ybh&`A U`cf`fYgYUfW`YggUm

GHUfhXUH`. Bch5dd`]WV`Y

@Yb[h. `&) \$\$!` \$\$\$`k cfXg

8YHU]`g. `F`Y`DA

5XX]h]cbU`XYHJ]g.

H\]g]g`h\Y`Z]bU`UggYgga YbhZcf`UHYbXUbW`di fdcgYg`H\YfY`k`j`VY`h]a`Y`XYX]WJHX`]b`WUgg`hc`YggUm`k`f]h]b[`UbX`fYgci`fW`g`U`c`WJHX`cb`A`ccX`Y`

5ggYgga YbhfYj`]g]cb`hc`VY`]bfcXi`W`X`]b`HYfa` `&\$%`!`%\$` `cZ`h\Y`cj`YfU`a`Uf`_`Zcf`h]g`UggYgga Ybhk`j`W`bg]ghcZU`df]a`Ufmigci`fW`fUg`_`hc`VY`dfYgYbhX`]b`h\Y`gYa`]bUf`A`cfY`XYHJ]g`k`j`VY`Uj`U]UV`Y`cb`A`ccX`Y`!`h\Y`VUg]W]XYU`]g`hc`Z]bX`U`df]a`Ufmigci`fW`fY`Yj`Ubh`hc`mci`f`YggUm`UbX`hc`g`UfY`XYHJ]g`cZ]hk`]h`mci`f`WUgga`UH`g`Ncf`U`k`j`dfcj`XY`k`f]h]b`ZYXVUW`_`j`U`Ya`U]`UbX`h\Y`a`Uf`_`k`j`[`c`hc`k`UfXg`mci`f`cj`YfU`YggUm`a`Uf`_`

Hi`fb]h]b`gYH]b[`. `H\]g`Ugg][`ba`Ybh]g`gi`Va`]h]X`h`fci`[`\`Hi`fb]h]b`UbX`ghi`XYbhg`WJb`gY`Y`Hi`fb]h]b`g]a`]Uf]hm`fYdcf]g`

5ggYgga Ybh`. `;` fci`d`DfYgYbH]h]cb`

GHUfhXUH`. `Bch5dd`]WJY`

@Yb[`h`. `.`\$`a`]bi`hYg`d`i`g`)`\$\$`k`cfXg`

8YHJ]g.`;` fci`d`dfYgYbH]h]cb`cZ`\$`a`]bi`hYg`d`i`g`U`)`\$\$`k`cfX`fYgdcbgY`"9Ufm]b`h\Y`W`ci`fgY`Z`mci`k`j`VY`di`h]b`hc`U`ga`U`[`fci`d`M`ci`f`[`fci`d`k`j`W`ccgY`U`a`][`fUbhW`ca`a`i`b]m]hc`h]g`hc`f]W]gY`H\`fci`[`\`ci`h`h\Y`gYa`Ygh`f`z`h\Y`[`fci`d`k`j`XYj`Y`cd`h\Y`f`dfc`Y`W`h]b`WUgg`UbX`ci`hg]XY`cZ]h]f]Y`"C`j`Yf`Ya`U]`UbX`#`cf`h`fci`[`\`YI`h`fb`U`a`YY]h]b[`g]c`"H\Y`U]a`]g`hc`dfYgYbhU`&`)`!`\$`a`]bi`h`dfYgYbH]h]cb`]b`K`YY`_`%`&`cf`%` `cb`h\Y`dUgh`UbX`dfYgYbh`cZ`h\Y`XYg][`bUH`X`a`][`fUbhW`ca`a`i`b]m]`5g`d`UfhcZ`h\Y`UggYgga`Ybh`z`gh`XYbhg`k`j`VY`f`Yei`]fYX`hc`\`UbX`]b`U`)`\$\$`k`cfX`XYgW]d]h]cb`cZ`h\Y`f`]bX]j`]Xi`U`fYgYUfW`UbX`[`fci`d`YI`dYf]YbW`"H\Y`ZYXVUW`_`dfc`W`gg]g`U`cbY`dU`[`Y`fYgdcbgY`Z`fca`a`Y`UggYgg]b[`h\Y]f`[`fci`d`dfYgYbH]h]cb`]b`W`cb`↑`bW]cb`k`]h`h\Y`)`\$\$`k`cfX`fYZYW]h]cb`"=UggYgg`cb`h\Y`VUg]g`cZei`U`]m]cZ`h\Y`dfYgYbH]h]cb`z`h\Y`i`gY`cZ`h]g`hc`f]WJ`XUH`UbX`]a`U`[`Yfn`z`h\Y`Uf`[`i`a`Ybh`UbX`UbU`mg]g`z`ck`k`Y`h\Y`[`fci`d`dYf`z`fa`YX`Ug`U`h`Ua`z`UbX`fYgdcbg]j`YbYgg`hc`ei`Ygh]cbg`Z`fca`h\Y`WUgg`"

5XX]h]cbU`XYHJ]g.

K`Y`k`j`U`c`WJHY`d`YbmicZ]h]a`Y`]b`WUgg`Zcf`[`fci`d`k`cf`_]b`Ubh]W]dU]h]cb`cZ`h\Y`Z]bU`dfYgYbH]h]cbg`"H\YfY`k`j`VY`U`gi`Va`]gg]cb`Vcl`cb`A`ccX`Y`Zcf`h\Y`k`f]h]b`dUfhcZ`h\Y`UggYgga`Ybh`z`hc`VY`gi`Va`]h]X`h\Y`XUmicZ`h\Y`dfYgYbH]h]cb`"

Gi`Va`]gg]cb`bchYg.H\Y`dfYgYbH]h]cbg`UfY`]b`K`YY`_`-`fbch`%`&`cf`%`Ł`

Hi`fb]h]b`gYH]b[`. `H\]g`]g`bchU`Hi`fb]h]b`Ugg][`ba`Ybh`

5 hYbXUbW F Yei]fYa Ybhg

5 hYbXUbW cZ YW h fYg UbX h hcf]Ug UfY a UbXU hcfm]b h]g W e i fgY " i bYI W gYX UVgYbW Zfca a cfY hUb &\$i cZ YW h fYg UbX h hcf]Ug k] fYgi h]b h Y Uk UfX cZU ZU] [fUXY"

h YW h fYg UbX h hcf]Ug mci k] UW h j Y mYb [U [Y k] h W e fY W e i fgY W e b h Y b h z Y b U V] b [mci hcf]U h U] b 7 @C %"

7 ci fgY GWX YXi Y

[J Jk WUgg ha YhUVY](#)

Hja YhUV Y

8UhY	HmdY	7cbhYbh
K YY_% % : YVfi Ufm! &(: YVfi Ufm	@YWh fY	% i hcfXi W]cb &"8 YW e cb]g]b [a] [fU h cb \] g hcfm a] [fU h cb z gY h Y f W e cb]U] ga UbX h X] [Y bci g gcj YfY] [bfm
	GYa]bUf	% A Y Y h UbX ; fY Y h &"8 YW e cb]g]b [a] [fU h cb \] g hcfm
K YY_& (&) : YVfi Ufm! " A UfW	@YWh fY	A] [fU b h g z fY Z [Y Y g UbX K \] h Y 5i ghfU] U V Y Zc fY K c f X K Uf =
	GYa]bUf	A] [fU b h g z fY Z [Y Y g UbX K \] h Y 5i ghfU] U V Y Zc fY K c f X K Uf = ; fci d k cf_ VY [] bg
K YY_ " (A UfW ! "% \$ A UfW	@YWh fY	% Dcghk Uf a] [fU h cb &"8]gd U W X D Y fgcbg
	GYa]bUf	fB Yk 5i ghfU] Ub g fi 5ggYgga Ybh [i] XUbW . h hcf]U d U d Y f
K YY_ (. % % A UfW ! "% + A UfW	@YWh fY	% 6 f] h g a] [fU b h g &"7 \] X a] [fU h cb
	GYa]bUf	fK \] b [] b [Dca g f B ; fci d k cf_
	5ggYgga Ybh	Hi hcf]U d U d Y f Xi Y f % \$ \$ \$ k c f X g L V m (da : f] X U m A UfW % * ! d Y U g Y gi Va] h hcf]U d U d Y f Hi f b h i h # A cc X Y
K YY_) . % A UfW ! "& (A UfW	@YWh fY	A Y b z K ca Y b UbX 7 \] X f Y b . h hcf]U d U d Y f <] g hcf] Y g c Z Dcghk Uf a] [fU h cb
	GYa]bUf	A] [fU b h Z Ja]] Y g ; fci d k cf_ "
K YY_* (&) A UfW ! " % A UfW	@YWh fY	fB c U h D Y c d Y f i U b X h Y Y b X c Z K \] h Y 5i ghfU] U
	GYa]bUf	fB c U h D Y c d Y f i U b X h Y Y b X c Z K \] h Y 5i ghfU] U

		Dfja Ufmgci fW`dfYgYbHjcbg
K YY_+. '%5df]'!'+5df]'	@YWh fY	: fca`5gg]a]Uhjcb`hc`A i`hW`hi`fU`]ga`""Ubx`VUW`U[U]b3`A][fUjcb`Ubx`gYhYa`Ybhd`]M]Yg`Ubx`XYVUhYg`Zca`%+,`hc`hY`dfYgYbh
	GYa]bUf	B Y][\ci`fVccXg`cf;` \Yhcg3.`a a][fUjcb`]b`hY`YfU`cZa i`hW`hi`fU`]ga Dfja Ufmgci fW`dfYgYbHjcbg
K YY_.,.;`5df]'!`%(`5df]'	@YWh fY	6Yz`fY`Ubx`UZYf`HUa`dU.`Zca`a`UbxUhc`fmhc`cZ`g\cfY`XYh`bhjcb
	GYa]bUf	F YZ [Y Y`]]`Yg ;`fci`d`k`cf_
K YY_-.;%`5df]'!`&%`5df]'	@YWh fY	K`fUd`i`d`YWh`fY
	GYa]bUf	:`fci`d`DfYgYbHjcbg
	5ggYgga`Ybh)`\$\$`k`cfX`k`f]hYb`gi`Va`]gg]cb`k`]h`[`fci`d`dfYgYbHjcb`hc`VY`gi`Va`]hYX`hc`Hi`fb`h`Ubm]ja`Y`cb`hY`XUmcZ`hY`[`fci`d`dfYgYbHjcbg"
K YY_%.&&'5df]'!`&`,`5df]'	F YUX]b[H\YfY`]g`bc`ZJW`hc`ZJW`WUgg`]b`K`YY_`%\$`Xi`Y`hc`9UghYf`A`cbXUmUbX`5bnUW8`Um`i`
	5ggYgga`Ybh	Mci`f`fYgYUfW`YggUm!`hY`Z]bU`UggYgga`Ybh!`]g`Xi`Y`Vm(`da`:`f]XUm`&`h`5df]'!`d`YUgY`gi`Va`]h`hc`Hi`fb`h`h`h`

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

@Y[Ubhc`i]g`mci f`cbY`ghcd`g\cd`Zcf`Wci fgY`fYgci Wg`fa`cghmL`

F YWca a YbXYX`F Ygci fWg

H\YfY`jg`bc`gYhHl hZcf`h]g`Wci fgY`"A ccXY`#@Y[Ubhc`WcbH]bg`U`"hY`YggYbh]U`"UbX`Yl hfU`fYUX]b[g`Zcf`YUWX`k`YY`_"6Y`ck`UFY`gca`Y`fYWca`a`YbXYX`[YbYfU`"hY`hgZ`ci`fbU`g`UbX`k`YVg]hYg`"

Hyl hg`-B6.`H\YgY`UFY` ; 9B9F5@]bhcXi`WcfmHl hg`-H\YfY`UFY`a`Ubmia`cfY`fYgci`fWg`]b`hY`@]VfUfm`H\Y`fYUX]b[`]g]hg`Zcf`YUWX`k`YY`_g`hi`hcf]U`c`ZYf`Z`fH`Yf`[i`]XUbW`"

>cW`7c`"bgZ?` [Yd`f` S` Ve` [6`[efS`f`>S` Ve,` 3gefD`[S`e`baefZ` Sd;`_`_` [YdSf]a` t` fGmXbYm`D`i`h`DfYggZ`%`,` ,` ,` ,`

5bb!A`Uf]>cfXYbgZ`3`[W` fa` 5`[f]` W` ,` eWf`[Y` _` [Yd` fe` [3gefD`[S]`#`+`&` Z`)'` ž`fGH`@YcbUfXg.`5`"Yb`UbX`l`bk`]bZ`%`-`+L`

>Ua`Yg`>i`dd`fYX`"LZ`FZW3gefD`[S` B`Wab`W`S` W` UkU`abW`[S`aXfZW` Sf]a` t` [fe`bWab`WS` V`fZW`dad]Y` eZ`f7`Ua`Vf]X`[Y`l`7`Ua`Vf]X`[Y`l`b]`Yfg]mDfYggZ`&\$\$&L`-`C`b`]bY`UW`W`gg`j`]U`@]VfUfm`W`H`c`[i`Y`"

>Ua`Yg`>i`dd`ž`8d`_`l`Z`[fW3gefD`[S`fa`l`aa`_`WdS`,`FZWE`fack`aX3gefD`[S` ;`_`_` [YdSf]a` t` fA`Y`Vci`fbY.`7`Ua`Vf]X`[Y`l`b]`Yfg]mDfYggZ`&\$\$&L`-`C`b`]bY`UW`W`gg`j`]U`@]VfUfm`W`H`c`[i`Y`"

>c`b`@UW`UbX`>UW`e`i`Y`]bY`HYa`d`Y`hcb`fYXg`"LZ`4a`V`7j`bWd`_`W`f`,`3`6a`Ug`_`W`fSk` :` [efack`aX3gefD`[S` ;`_`_` [YdSf]a` e` [UW`#`+`&` ž`fA`Y`Vci`fbY.`C`l`ZcfXZ`%`-`)`L`-`A`m7`ci`fgY`"

?`"U`g`BYi`a`UbbZ`3`Udaee`fZWE`WSe`,`3gefD`[S`e`D`Weba`eWfa`D`WgY`W`eZ`3` :` [efackZ`6`UW`_`bWZA`Y`Vci`fbYZ`&\$\$)`"

9f]WF`]WX`UfXgZ`6`Wef` Sf]a` 3gefD`[S`,`?` [YdSf]a` fa` 3gefD`[S`e` [UW`#`+`" `#`t`fGmXbYm`l`BGK`DfYggZ`&\$\$`,`L`-`A`m7`ci`fgY`"

;`Yc`ZYmG`Yf]b[`hcbZ`3gefD`[S`e`[_`_` [Yd` fe`#)`**`ž`#`+`**`t`fGmXbYm`5`"Yb`UbX`l`bk`]bZ`&`"YX]hcbZ`%`-`\$L`

>ci`fbU`g`

3gefD`[S` :` [efad]US`^E`fgV]W`e`

<agd`S`^a`X3gefD`[S` E`fgV]W`e`

<agd`S`^a`XD`WgY`W`W`E`fgV]W`e`

;`fWd`Sf]a`S`^?` [YdSf]a` D`Wh]W`

B`Wab`WS` V`B`SUW`

>STagd` :` [efack`

3gefδ'S` <agd S^aX: [efack S` V Ba f[Ue

7fZ` [U E fgV[Wē

<agd S^aX7fZ` [U S` V ? [Yδf[a` E fgV[Wē

<agd S^aX;_ _ [Yδ` fS` V DVWgYWWVE fgV[Wē

K YVg]hYg/ '8UHUVUgYg

[\hdg.##fcj Y"b`U"\[cj "Ui](#) !'cbY'cZhY`VYghXUHUVUgYg'cb'h\Y']bhYfbYhZ`YI W`YbhiZcf'5i ghfU`]Ub`WēbhYbh-
YUgmhc`bUj][UH`"

[\hd.##k k k"ja a \]"\[cj "Ui #!](#) '8YdUfha YbhcZ-a a][fUhc`b`UbX`7]hYbg\]d`5i ghfU`]Už`]bWi XYg`WēbhYa dcfUfm
UbX`\]ghcf]WJ`gci fW`g"

BGK`A][fUhc`b`<Yf]hU[Y`A i gYi a`fC`b`]bYē [\hd.##k k k"a \]\[fUhc`b`Yf\]hU\[Y"bgk "\[cj "Ui #/Y`cb\[\]b\[g!](#)
[\ca Y#JVci hVY`cb\[\]b\[g#U ghfU`\]Ug!a \]\[fUhc`b`\]\\]ghcfm#](#)

G6G`-a a][fUhc`b`BUhc`b`H/ [cj "Ui #/Y`cb[]b[g!

Gi Va]gg]cb`cZ5ggYgga YbhHUg_g

Gi Va]gg]cb`cZ5ggYgga YbhHUg_g

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

Ẓmci `YbWci bhYf`U`dfcV`Ya `k \Yb`U`H`Ya dh]b[`hc`gi Va]hmc i f`Ugg][ba YbhHfci [\`Hi fb]h]bžd`YUgY
H`Yd\cbY`9I H`fbU`Gi ddcfhcb`-` ,) `` `` ` %cf`Ya U]`H`Ya `cb`YI H`fbU`H`hgi ddcfh4 i bgk "YXi "Ui ``Gi ddcfh
\ci fg`UfY` , .\$\$Ua `--`%\$. \$\$da `cb`k YY_XUmg`UbX`- . \$\$Ua `--`) . \$\$da `cb`k YY_YbXg`fI *) `XUmg`U`m`Y`UfL` Ẓmci
UfY`i bUV`Y`hc`gi Va]hmc i f`Ugg][ba YbhXi Y`hc`U`ZU`ihk]H`Hi fb]h]b`mci `a UmiUdd`miZc`f`Ub`YI H`bg]cbžVi hmc i
a i ghfY`H]b`mci f`h]W`Yhbi a VYf`Zca `9I H`fbU`Gi ddcfhfU`cb[`k]H`Ubmch`Yf`fY`Yj UbhXcW a Yb`hgL`hc
]bWi XY`Ug`Yj]XYbW`hc`gi ddcfhmci f`YI H`bg]cb`Udd`]W]h]cb" Ẓmci `Ya U]`9I H`fbU`Gi ddcfhmci `k]`

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 gž`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[Ygž`UfhUbX`XYg][b`dfc`YWgž`Ug`k Y`Ug
dfYgYbhU]cbg`k \YfY`gca YcbY`dfYgYbh]g`UbchYf`g`]XYUg`cf`k cfXg`k]h`ci hWYX]h`

hUddfcdf]UHY`dUfUd`fUg]b[.`7`Ub[]b[`U`ZYk `k cfXg`UbX`d`fUgYg`k \]Y`a cghmifYU]b]b[`hY`cf][]bU`
ghfi W`i fY`UbX`#`f`dfc[fYgg]cb`cZ]XYUg`cZ`hY`cf][]bU`ž`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 hWYX]hUbX`hc
d]YW]b[`hc[YhYf`ei chYg`UbX`dUfUd`fUgYg`]bhc`U`bYk `k \c`Yž`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`XUHYž`cf`Zc`f`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][\hž' BGK 'Gh XYbh7cXY'cZ7cbXi W'Ubx'5W'W'dhUV'Y'I gY'cZ I BGK '⇒H'F'Ygci f'W'g'Dc`]W'h
- VY'Uk UfY'cZ'Y'ghUbxUfXg'cZVY\Uj]ci f'YI dY'W'X'cZYj Yfmcby']b'h'Y'I BGK 'W'a a i b]m
- 'cW'W'h'gYfj]W'g'UbX']bZ'fa U]cb'UVci hl BGK 'UbX'I BGK '@]VfUfm

Gca Y'cZ'Y'gY'UfY'Ug'k]''VY'ZJa]]Uf'hc'mci ž'c'h'Yfg'k]''VY'bYk "; U]b]b['U'gc`]X'i bXYfghUbx]b['cZU''h'Y fY'U'Y'X'UgdY'W'g'cZ9@-G9'k]''\Y'd'mci 'a U_Y'h'Y'a cghcZmci f'gh X]Yg'Uhl BGK ""

[\h'hd.##gi V'Y'W'f'i \]X'Y'g" \]V'f'U'f'm'i b'gk "Y'X'i "U'i #' \]g'Y'#J'V'ci h' \]g'Y](#)

