



LING5005

H\Y'; fUa a Uf'cZ9b[`]g\

HYfa `C bY`#`&\$&%

GWXcc`cZ<i a Ub]hYg`UbX`@Ub[i U[Yg`#`! BGK `5ftg`UbX`GcWU`GwYbWg



7ci fgY`Cj Yfj]Yk

GhJZ`7cbhJW`8YhJ]`g

7cbj Ybcfg

B Ua Y	9a Uj`	5j U]UV]]m	@cWjhcb	D\cbY
8YVfU`5Ufcbg	X"Uufcbg4 i bgk "YXi "Ui	H\i fgXUm%da `! &.` \$da `cf`Vm Uddc]bha Ybh`	D`YUgY`W`bHJW` j]U`Ya U]`"	D`YUgY W`bHJW`j]U Ya U]`"

GWXcc``7cbhJW`bZcfa Uhjcb

7ci fgY'8YHJ]`g

7fYX]hDc]bHg`*`

Gi a a UfmicZ`h`Y'7ci fgY

H\]g`Wci fgY`dfcj]XYg`U`ghYd!VmgH`d`UWwci bhicZ9b[`]g\` [fUa a Uf`Wcj Yf]b[`h`Y`a`cgh]a dcfhUbhUbx
W`bhfU`Wcbgrfi W]cbg`UbX`W]HY [cf]Yg" Mci `k]`YUfb`UVci h`h`Y`U`H`gh`h`Y`cf`Y`h]W]`UXj UbW`g`]b`]b[i]gh]Vg
UbXz`VmiUbU`mg]b[`]b`H`f`Y`g]b[`YI Ua d`Y`g`Z`ca `d`f`Y`g`Y`bh`X`Um`9`b[`]g\`z`mci `k]`YI d`c`f`Y`k`Um`g`]b`k` \]W`h`Y
h`f`U`X`]h`cbU` [fUa a Uf`c`Z`9`b[`]g\`]g`W`U`b[]b["

7ci fgY`@YUfb]b[`Ci h`Wca Yg

%`GmgH`a`U`h]W]`m`YI`Ua`]b`Y`h`Y`j`Uf]ci`g`W]H`Y`[`cf]Y`g`c`Z`U`b[`i`U`[`Y`f`a`c`f`d`Y`a`Y`g`z`k`c`f`X`g`z`d`f`U`g`Y`g`U`b`X
W]U`i`g`Y`g`f`U`b`X`h`Y`f`Y`U`h]c`b`g`]d`g`h`Y`g`Y`U`f`Y`U`V`Y`h`c`Y`b`H`f`]b`h`c`]b`9`b[`]g\`
&"`I`g`Y`d`f`Y`W]g`Y`]b[i]gh]W]H`fa`]bc`c[m]Z`f`h`Y`X]g`W`g`g]c`b`c`Z`h`Y`U`V`c`j`Y`
'`" `8`Y`g`W]V`Y`U`b`X`U`b`U`mg`Y`X]Z`Y`f`Y`b`h`W]U`i`g`Y`U`b`X`g`Y`b`H`b`W]`h`m`d`Y`g`]b`9`b[`]g\`
(`" `5`b`U`mg`Y`]b[i]gh]W`X`U`h]U`b`X`U`f[i Y`h`Y`a`Y`f]h`g`c`Z`h`Y`U`b`U`mg]g

HYUW]b[`G`h`f`U`H`Y` []Yg`

H\]g`]g`U` *` \`ci`f`Wci`fgYz`XY`]`Y`f`Y`X`h`f`ci`[\`Y`W]i`f`Y`g`U`b`X`h`h`c`f]U`g"@Y`W]i`f`Y`g`]b`h`c`X`i`W`a`U`H`f]U`U`V`ci`h
]b[i]gh]W]U`d`d`f`c`U`W`X`Y`g`h`c`9`b[`]g\` [fUa a Uf" `h`h`c`f]U`d`f`Y`d`U`f`U`h]c`b`k`c`f`_`z`U`g`g`Y`g`g`a`Y`b`h`g`U`b`X`h`h`c`f]U`g`z`mci
k]`d`f`U`W]g`Y`U`b`X`U`d`d`m`h`Y`g`Y`h`Y`W`X`b]ei`Y`g`U`b`X`]b`h`Y`d`f`c`W`g`g`mci`k]`V`Y`Wca`Y`Wca`d`Y`H`b`h]b`h`Y`X`Y`g`W]d`h]c`b
U`b`X`U`b`U`mg]g`i`g`Y`X`]b`h`Y`]b[i]gh]W]U`d`d`f`c`U`W`X`h`c`9`b[`]g\` ; fUa a U`h]W]`g`h`f`i`W]i`f`Y`" <U`j`]b[`U`d`d`]Y`X`U`b`X
d`f`U`W]g`Y`X`h`Y`g`Y`h`Y`W`X`b]ei`Y`g`mci`k]`Vi`]X`U`g`h`f`c`b[`h`Y`c`f`Y`h]W]`Z`ci`b`X`U`h]c`b`Z`c`f`Z`h`f`Y`U`d`d`]W]h]c`b"

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

5 hYbXUbW F Yei]fYa Ybhg

A UfW		F Yj]g]cb'cZWbHbhWb] YfYX']b'K YY_g'%'!') "
K YY_+. '&- 'A UfW '! '& 5df]	@YWh fY	A cFY'cb'J YfVg.'5i I]]UfmJ Dg" DUfh=
	Hi hcf]U'	7 cbgfi W]cbg'hUhXYdYbX'cb'5i I]]Uf]Yg F YUX]b['7\UdhYf'* 'DUfh= Hi hcf]U'5W]j]hYg d""% - 'bi a VYf% d""% - 'bi a VYf'&
K YY_ ; . :) '5df]'!' - '5df]	@YWh fY	H\Y 'Bci b'D\ fUgY
	Hi hcf]U'	Hi hcf]U' F YUX]b[7\UdhYf'* 'DUfh= Hi hcf]U'5W]j]hYg d""%(\$ 'bi a VYf'(d""%(\$ 'bi a VYf')
	5ggYgga Ybh	HYgh=Xi f]b['h\Y'YWh fY'dYf]cX
K YY_- . '%&'5df]'!' %* 5df]	@YWh fY	H\Y 'Bci b'D\ fUgY
	Hi hcf]U'	F YUX]b['7\UdhYf'+ Hi hcf]U'5W]j]hYg d""%* 'GYh'ž'ž'==
K YY_%. '%- '5df]'!' '& 5df]	@YWh fY	GYbhYbW'g'k]h]b'GYbhYbW'g
	Hi hcf]U'	F YUX]b['7\UdhYf', Hi hcf]U'5W]j]hYg' d""%- ('bi a VYf% d""%-) 'bi a VYf'&

Gi Va]gg]cb 'cZ5ggYgga YbhiHUg_g

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

5 WUXYa]W< cbYgmiUbX`D`U[]Uf]ga

D`U[]Uf]ga `]g`i`g]b[`h`Y`k`cfXg`cf]XYUg`cZc`h`Yfg`UbX`d`fYgYb]b[`h`Ya`Ug`mci`f`ck`b`" `#WUb`hU`_Y`a`Ubm`Zc`fa`g`Z`ca`XY`]VYfUHY`VX`YU]b[`hc`UW]XYb]U`m`Wc`dm]b[`Z`ca`U`gci`f`W`k`]h`ci`hUW`bck`YX[`Ya`Yb]f`

I`B`G`K` `]`fci`dg`d`U[]Uf]ga `]bhc`h`Y`Zc`ck`]b[`W]hY[`cf]Yg.

7`cdm]b[`.`i`g]b[`h`Y`gUa`Y`cf`j`Yfmg]a`]Uf`k`cfXg`hc`h`Y`cf][`]bU`hY`hcf`]XYU`k`]h`ci`hUW`bck`YX[`]b[`h`Y`gci`f`W`cf`i`g]b[`ei`c`hU]cb`a`Uf`_g`"H`]g`U`gc`Udd`]Yg`hc`]a`U[`Yg`Z`Uf`h`UbX`XYg][`b`dfc`Y`Wg`Z`Ug`k`Y`Ug`dfYgYb]h]cbg`k`Y`fY`gca`YcbY`d`fYgYb]g`Ubch`Yf`g`]XYUg`cf`k`cfXg`k`]h`ci`h`WYX]f`

#Uddfcdf]UHY`d`UfUd`fUg]b[`.`7`U`b[]b[`U`Z`k`k`cfXg`UbX`d`fUgYg`k`Y`a`cghm`fY]U]b]b[`h`Y`cf][`]bU`ghf`W`fY`UbX`#`cf`dfc[`fYgg]cb`c`Z]XYUg`cZ`h`Y`cf][`]bU`Z`UbX`]bZc`fa`U]cb`k`]h`ci`hUW`bck`YX[`Ya`Yb]f`H`]g`U`gc`Udd`]Yg`]b`d`fYgYb]h]cbg`k`Y`fY`gca`YcbY`d`UfUd`fUgYg`Ubch`Yf`g`]XYUg`cf`k`cfXg`k`]h`ci`h`WYX]h`UbX`hc`d]Y`W]b[`hc[`Y`h`Y`f`ei`c`hY`g`UbX`d`UfUd`fUgYg`]bhc`U`bYk`k`c`Y`Z`k`]h`ci`hUddfcdf]UHY`fY`Z`fY`b`W]b["

7`c`i`g]cb.`k`cf_]b[`k`]h`c`h`Y`fg`Vi`hdUgg]b[`c`Z`h`Y`k`cf`_`Ug`U`d`Yfgcb`g`]bX]j`]Xi`U`k`cf`_`7`c`i`g]cb`U`gc`]bWi`XYg`d`fcj`]X]b[`mci`f`k`cf`_`hc`Ubch`Yf`g]h`XYbh`VY`Zc`fY`h`Y`Xi`Y`XUHY`Zc`f`Zc`f`h`Y`di`fdcgY`c`Z`h`Ya`d`U[]Uf]g]b[`Uh`Ubmi]ja`Y`Z`dUm]b[`Ubch`Yf`d`Yfgcb`hc`d`Yf`Zc`fa`Ub`UWUXYa`]W]Ug`_`Z`gh`U`]b[`cf`UW`i`]f]b[`Ubch`Yf`d`Yfgcb`g`UWUXYa`]Wk`cf`_`UbX`Wc`dm]b[`]Z`c`Z`Yf]b[`hc`Wc`a`d`Y`h`Ubch`Yf`d`Yfgcb`g`k`cf`_`cf`gYY_]b[

- i bXYfgHUbX'mci f'f][\hg'UbX'fYgdcbg]V]]hYg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[]Uf]ga ž'Wcdmf][\hž' BGK 'Gh XYbh7cXY'cZ7cbXi WñUbX'5WwdfUV'Y'I gY'cZ
I BGK '⇒H'F Ygci fW'g'Dc`]Wñ

5 WUXYa]W]bZcfa Uh]cb

: cf`YggYbh]U`gh XYbh]bZcfa Uh]cb`fY`Uh]b[`tc.

- fYei Ygh]Zcf`YI H`bg]cb/
- `Uh`gi Va]gg]cbg`[i]XY`]bYg/
- fYj]Yk `cZa Uf_g/
- I B GK `<YU`h`UbX`GUZY`midc`]W]Yg/
- YI Ua]bUh]cb`dfcW`Xi fYg/
- gdYW]U`W`bg]XYfUh]cb`]b`hY`Yj Ybhcz]`bYgg`cf`a]gUXj Ybh fY/
- gh XYbhYei]m]UbX`X]gUV`]m/
- UbX`c`hYf`YggYbh]U`UWUXYa]W]bZcfa Uh]cbz`gYY

[\ftdg.#k k k "Uftg"i bgk "YXi "Ui #W ffYbhgh XYbh\]UWUXYa \]W\]bZcfa Uh\]cb#dfchW`g`\[i \]XY`\]bYg#](#)