



ENGG9744

Bi WYUf'GUZYhmž'GYW f]miUbX'GUZY[i UfXg

HYfa 'Hk c`#`&\$&%

GWcc`cZA YWUbjWU`UbX'A Ubi ZUW f]b['9b[]bYYf]b[`..##'I BGK '9b[]bYYf]b[

7 ci fgY`Cj Yfj]Yk

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7 cbj Ybcfg

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K YV

[GWcc`cZA YWUbj\]WU`UbX`A Ubi ZJW` f\]b\[`9b\[\]bYYf\]b\[](#)

[9b\[\]bYYf\]b\[`Gh`XYbhGi`ddcfhGYfj`\]Wg](#)

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[I BGK `Gh`Xm5VfcUX`UbX`9I`WU\]b\[Y`fZcf`\]bVci bX`gh`XYb\]g](#)

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D\cbY

fZ`*%&Ł`- ' ,) ;) \$\$`-Bi WYi g`Gh`XYbh<i V

fZ`*%&Ł`- ' ,) `+**%`-9b[]bYYf]b[`bXi`grf]U`HfU]b]b[

fZ`*%&Ł`- ' ,) `"-`%+-`-I BGK `Gh`Xm5VfcUX`UbX`I BGK `9I`WU]b[Y`fZcf`]bVci bX`gh`XYb]g

fZ`*%&Ł`- ' ,) `(\$`-`+`-GWcc`C`Z]W]f

fD`YUgY`bchY`hUh`hY`GWcc`C`Z]W`k`j`bch_bck`k`Yb#Zmci`fWci`fgY`Wcbj`Ybcf]g`cb`Wla`di`g`cf`Uj`Uj`UV`Y

9a U]

[9b\[\]bYYf\]b\[\]Gh.XYbhGi ddcfhGYfj.\]Wg](#) – W ffYbhghi XYbhYbei]f]Yg

- Y"["Ybfc`a Ybž`dfc[fYgg]cbžWUg\`fYei YgržWči fgY`]ggi Yg`cf`dfc[fUa !fY`UhYX`ei Yf]Yg

[9b\[\]bYYf\]b\[\]`Xigf\]U`HfU\]b\]b\[\]`Xigf\]U`HfU\]b\]b\[\]`ei Ygh\]cbg](#)

[\]BGK`Gh.Xm5VfcUX](#) –`gh XmiUVfcUX`gh XYbhYbei]f]Yg`fZcf`]bVci bX`gh XYbhgŁ

[\]BGK`9I.WUUb\[\]Y](#) –`gh XYbhYI WUUb[]Y`Ybei]f]Yg`fZcf`]bVci bX`gh XYbhgŁ

[\]BGK`:\]i`h`fY`Gh.XYbhg](#)

H\]g'Wci fgY'Ugc'dfcj]XYg'gYj YfU'Wca dYH'bwWmUFYUg'cZkY'595' bH'fbUhc'bu'Bi WYUf'A UbU[Ya Ybh 5WUXYa mifBA 5E'YUfb]b['ci hWca Yg'Zcf'a Ugh'fg''Yj Y'Wci fgY']b'Bi WYUf'HYWbc'c[mA UbU[Ya Ybh

BA 5'7ca dYH'bwWm5fYUf	BA 5'7ca dYH'bwWm @Yj Y'
%&' bH'fbUhc'bu'bi WYUf'cf[Ub]nUhc'bg	%
%" 'BUhc'bu'bi WYUf'HYWbc'c[midc']Wz'd'Ubb]b['UbX'dc']h]Wg	%
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%) 'Bi WYUf'Uk	%
%, 'Bi WYUf'W]Wbg]b['z'W]Wbg]b['VUg]g'UbX'fY[i 'Ufc'fmidfcW]ggYg	&
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%%\$ 'Bi WYUf'gUZ[i UfXg	&
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&%'Bi WYUf'dck Yf'd'Ubh'UbX'ch'Yf'ZUW]m]mXYg][b'df]bW]d'Yg	%
&%'Bi WYUf'dck Yf'd'Ubh'ZUW]m]mcdYfUhc'bu'gm]hYa g	%
&*" 'Bi WYUf'gUZ]hmidf]bW]d'Yg'UbX'UbU'm]g]	'
&+'F UX]c'c[]W]gUZ]hmiUbX'dfch'W]cb	'
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f; fcgVc]gž>"XYž: "'5XUW]ž'UbX'<"<]fcgY"'&\$%+" " bH'fbUhc'bu'Bi WYUf'A UbU[Ya Ybh5WUXYa mA Ugh'fg Dfc[fUa g']b'Bi WYUf'HYWbc'c[mA UbU[Ya Ybh" "595"

HYUW]b['GhfUH[]Yg'

: i 'micb]bY"H\]g'Wci fgY']g' BGK 'X][]H' i d]ZiW'cbH'bz'k \]W]]g']U[[\hcb]bY'h'fci [\hY'cb]bY'YUfb]b[d'Uh'Zca "

5XX]h]cbU'7ci fgY' bZcf'a Uh]cb

H\]g']g'U'dcgh[fUXi UH' Wci fgY' Wcbj YbYX'Vm'hY'GW]cc'cZA YW]Ub]W]UbX'A Ubi ZUW] f]b['9b[]bYf]b[" 4]g'dUfhcZkY'A 9b[GW]Bi WYUf'9b[]bYf]b['gdYW]U]nUhc'bu'UbX'W]b'VY'hU_Yb'Ug'Ub'Y'YW]j Y'Vm' fX'cf (h'mY'f'gh XYbh]Zca 'ch'Yf'gW]cc'g'UbX'ZUW]h]Yg'cb'hY'Uddfcj U'cZ\ca Y'gW]cc'UbX'hY'9B; ; - +((

Gh XYbng'k cf_]b'[fci dg'hc'dfcXi W'U'XYg][b'VUg]g'hfYUhUggYgga YbhZcf'U'bi WYUf'ZUW']m'i'H\Y
Ugg][ba Ybh]g'[fUXYX'VmU'fi Vf]W': cf'UH'gi Va]gg]cbgž&\$i' cZa Uf_g'UFY'XYXi W'X'dYf'XUmž'fYUWX]b[
nYfc'a Uf_g'cb'%'&h'>i' mž&\$&%"A Uf_g'UFY'fYh'fbYX'Vm%(h'>i' m'

Gi Va]gg]cb'bchYg. 'Gi Va]hYX'h'fci [\ 'Hi fb]h]bž]b'a ccXY"

Hi fb]h]b'gYh]b[. 'H\]g'Ugg][ba Ybh]g'gi Va]hYX'h'fci [\ 'Hi fb]h]b'UbX'gh XYbng'Xc'bchgYY'Hi fb]h]b
g]a]Uf]mifYdcfng"

5ggYgga Ybh' . '9a Yf[YbWmGWbUf]c

GHUfhXUH. '%(# \$ * # & \$ & % \$ - . \$ \$ ' 5A

5 H\Y'W'ei fgY'jg'W'ebXi WY'X'Z' "mcb'jBY" H\Y'W'ebH'bh]g'YI H'bg]j' Y'UbX'gca Y'hja Yg'W'U''Yb[]b['a YUb]b['h'Uh

UH\Y'bxUbW' U'hk YY_'mh' h'cf]U'g'k]h' H\Y'W'ei fgY'W'ebj YbY'f'k '\]Y'cd]h'cbU''jg'gh'f'cb['miYbW'ei fU[YX''G'h XYbhg k]''b'YYX'h'c'a U_Y'U'ffUb[Ya Ybhg'h'c'W'ebXi W'h[f'ci d'k c'f_'h'c[Y'h'Y'f''G'ca Y'U'gg][ba Ybhg'z'gi W'U'g'h'Y'g'UZ'hm W'lgY'd'f'Y'g'Y'bh]h'cb'U'f'Y'g'W'Y'X'i 'Y'X'j'b'U'X'j UbW'U'bx'U'h'Y'bxUbW''jg'a UbX'U'h'c'f'm'h'c'c'V'h]b'h'Y' [f'UX'Y'g''

7 ci fgY'GW'Y'Xi 'Y

[J \]Yk' W'U'gg'h'ja Y'hUV'Y](#)

H]a Y'hUV'Y'

8UH	HmdY	7cbhYbh
C'K YY_'&)'A Um!'&, A Um		
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K YY_'&' + '>i bY!'%%>i bY	Hcd]W	A U'h'f]U''5VW'ei bh]b[
K YY_' ' '% ('>i bY!'%'>i bY	Hcd]W	F UX]U'h]cb'GUZY'hm
K YY_' (' &'>i bY!'&)'>i bY	Hcd]W	h'W]X'Y'bh'A UbU[Ya Ybh
K YY_') ' &' '>i bY!'&'>i 'm	Hcd]W	Bi WYUf'GYW f]hm
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F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

H\Y`a cgh]a dcfUbhfYgci fWg`UfY`dfcj]XYX`Ug`dXZxcW a Ybhtg`Ug`dUfhcZhY`Wci fgY"

F YWca a YbXYX`F Ygci fWg

%`Bi WYUf`GUZY [i UfXgZ`GYW f]mUbX`B cdbfc`]ZfUhc`b. `5W\Yj]b[`GYW f]m k]h`HYWbc`c [mUbX`Dc`]Wn
5i hcf.`>Ua Yg`8cmY
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Di V`]g\Yf`< Y]bYa Ubb!6i hYfk cfh

&`H\fYY`A]Y`g`UbX. `5`Bi WYUf`7 f]g]g`]b`<]ghcf]WU`DYfgdYW]j Y
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(``K YVg]hYg. `DUfh]W`Ufmi`595`XcW a Ybhtg`f]dfcj]XYX`]b`hY`Wci fgY`a UHf]U`gE``5`gc. `K B5ž
5BGžB9žK`BG

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

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A m9i dYf]YbW`dfcW`ggž]bZcfa U`X]gW`gg]cb`]b`hY`Wci fgYžUbX`hY`GVXcc`fj`Gh XYbh`GHUZZa YYh]b[g``Mci f
ZYXVUW`_]g`hU`_Yb`gYf]ci g`nžUbX`Wcb]bi U`]a dfcj Ya Ybhtg`UfY`a UXY`hc`hY`Wci fgY`VUgYXž]b`dUfř`cb`gi`W
ZYXVUW`_"

Gi Va]gg]cb'cZ'5ggYgga YbhiHUg_g

5ggYgga Ybhgi Va]gg]cb'UbX'a Uf_]b['Wf]hYf]U

G\ci 'X'hY'Wci fgY'\Uj Y'Ubmcbcb!Y'YWfcb]WUggYgga Ybhgi Va]gg]cbz'hYgY'g\ci 'X'\Uj Y'U'ghUbxUfX
GWcc'Wcj Yf'g\YYH'

5''gi Va]gg]cbg'UfY'YI dYWfX'hc'VY'bYUhUbX'WYUfmgYhici H'Mci f'fYgi 'hg'UfY'hY'd]bbUWY'cZU''mci f'\UfX
kcf_'UbX'g\ci 'X'VY'hYUhx'k]h'Xi Y'fYgdYWf'DfYgYbh]b['fYgi 'hg'WYUfmi[]j Yg'hY'a Uf_Yf'hY'VYghWUbxW
cZi bXYfgtUbx]b['mci f'a YhcX/Yj Yb']ZhY'bi a Yf]WU'fYgi 'hg'UfY']bVc'ffYWf'

UggYgga YbhdYfZcfa UbWžmci 'UfY'Y'[]V'Y'hc'Udd'mZcf'GdYWU'7 cbg]XYfUhc'b'df]cf'hc'gi Va]h]b['Ub
UggYgga Ybhcf'g]h]b['Ub'YI Ua "

I BGK 'bck '\Ug'U': [\]h\]c'G\]h#Gi Va \]h\]f'Yžk \\]W'a YUbg'hUh\]Zmci 'Uhf'a dhUb'YI Ua 'cf'gi Va \]hU'd\]YW'cZ](#)
UggYgga Ybž'mci 'UfY'XYWUf]b['mci fgY'Z]hYbci ['\ 'hc'Xc'gc'UbX'W]bbch'Uhf'Udd'mZcf'GdYWU'
7 cbg]XYfUhc'b"

: cf'XYHU]g'cZUdd'm]b['Zcf'GdYWU'7 cbg]XYfUhc'b'UbX'W]bX]h]cbg'Zcf'hY'Uk UfX'cZgi dd'Ya YbUfm
UggYgga Ybž'd'YUg'gYY'hY'jbZcfa U]cb'cb'I BGK 'g'[GdYWU'7 cbg\]XYfUhc'b'dU\]Y"](#)

D'YUg'Y'bc'h' ~~h]U]gh'X'Y]bg'k']b'chVY'fYei]fYX'hc'dfcj]XY'Ubm'XcW'a YbUfmYj]XYbW'hc~~
gi ddcfhUVgYbW'g'Zca 'UbmWUggYg'a]ggYX'VYWU'i gY'cZ7CJ -8!%- 'di V']W\YU'h'a YUgi fYg'gi W'Ug

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

I BGK `Ug`Ub`cb[c]b[`Wca a]ha Ybhlc`ZcghYf]b[`U`W`hi fY`cZ`YUfb]b[`]bZcfa YX`VmiUWUXYa]W]bhY[f]m`5`
I BGK `gh XYbthg`Uj Y`U`fYgdcbg]V`]mhc`UX`YfY`hc`h`g`df]bW]d`Y`cZUWUXYa]W]bhY[f]m`D`U[]Uf]ga
i bXYfa]bYg`UWUXYa]W]bhY[f]m]UbX`]g`bchlc`YfUHX`UhI BGK "`B`SY[Sde_ SfG@E|`[e VWX` VW Se ge[Y
fZWi`ad/e ad[VWSe aXafZWde S` V bSee[Y fZW_ aXSe kagdai ` ž

D`U[]Uf]ga `]g`U`mdY`cZ]bhY`YWfi U`h`Y`Zi`#iW]b`hU`_Y`a UbmiZcfa gžZca `XY`]VYfUHX`WX`YU]b[`hc`UWUXYbH`m
Wc`dm]b[`Zca`U`gci fWY`k]h`ci hUW`bck`YX[Ya Ybh`I BGK `Ug`dfcXi WYX`U`k YVg]hY`k]h`U`k YU`h`cZ
fYgci fWYg`hc`gi ddcfhigh XYbthg`hc`i bXYfgHUbX`UbX`Uj c]X`d`U[]Uf]ga žj]g]h`[gh XYbthi bgk "YXi "Ui #d`U\[\]Uf\]ga "](#)
H\Y`@YUfb]b[`7 YbhfY`Ugg]ghg`gh XYbthg`k]h`i bXYfgHUbX]b[`UWUXYa]W]bhY[f]m]UbX`\ck`bchlc`d`U[]Uf]gY"

5 WUXYa]W=Zcfa Uh]cb

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7 ci fgY`WYX]hg`W`W`UH`X`]b`I` b]hg!C Z 7 fYX]hfl C 7 E`H`Y`bcfa U`k cf`_cUX`YI dYWUh]cb`Zc`cbY`I C 7

