



MTRN9400

7 cblfc`cZF cVchjWGmgHYa g

HYfa `H\fYY`##`&\$&\$

GWcc`cZA YWUbjWU`UbX`A Ubi ZUW`fjb[`9b[]bYYfjb[`##`I BGK `9b[]bYYfjb[

fZ *%&Ł- ' ,) ' + * * % - ' 9b []bYYf]b [' ǝXi ghf]U ' HfU]b]b [

fZ *%&Ł- ' ,) ' %+- ' -I BGK ' Gh Xm5VfcUX ' UbX'I BGK ' 9I WUb [Y ' fZcf]bVci bX'gh XYbhgŁ

fZ *%&Ł- ' ,) ' (\$- + ' -GWcc ' C ZWYH

†D`YUgY`bchY`hUhihY`GWcc`C ZW`k J`bch_bck `k \Yb#Znci f`Wci fgY`Wcbj Ybcf`]g`cb`Wla di g`cf Uj U]UV`Y

9a U]

[9b \[\]bYYf\]b \[' Gh XYbhGi ddcfhGYfj \]Wg](#) -`W ffYbhghi XYbhYbei]f]Yg

- Y"["Ybfc`a Ybħždfc [fYgg]cbž`WUg\`fYei Yghgž`Wci fgY`]ggi Yg`cf`dfc [fUa !fY`UHX`ei Yf]Yg

[9b \[\]bYYf\]b \[' ǝXi ghf\]U ' HfU\]b\]b \[' - ǝXi ghf\]U ' HfU\]b\]b \[' ei Ygh\]cbg](#)

[I BGK ' Gh Xm5VfcUX](#) -`gh XmUVfcUX`gh XYbhYbei]f]Yg`fZcf`]bVci bX`gh XYbhgŁ

[I BGK ' 9I WUb \]Y](#) -`gh XYbhYI WUb [Y`Ybei]f]Yg`fZcf`]bVci bX`gh XYbhgŁ

[I BGK : i h fy Gh XYbtg](#) -`dchYbh]U`gh XYbhYbei]f]Yg

- Y"["UXa]gg]cbgž`ZYgž`dfc [fUa gž`WYX]hfhUbgZYf

[GWcc`C ZWY](#) -`GWcc` [YbYfU`cZ]WY`UXa]b]ghfU]cb`Ybei]f]Yg

- B 6. hY`fY`Yj UbhYUa g`]ghYX`UVcj Y`a i ghVY`WcbUWYX`Zcf`U`gh XYbhYbei]f]Yg

5ggYgga Ybh

5ggYgga YbhHUg_g

5ggYgga YbhHUg_	K Y][\h	8i Y'8UHŸ	Gh XYbh@YUfb]b[

5 HbXUbW F Y\ fYa Ybhg

Gh XYbhg UfY gfc b[mYbWci fU[YX hc UHbX U WUggYg UbX fyj Yk YWfi fy fyWcfX b[g"

7 ci fgY GWXYXi Y

[J Yk WUgg hja YhUV Y](#)

Hja YhUV Y

8 UHr	HmdY	7 cbHrYbh
K YY_%%(GYdhYa VYf! %GYdhYa VYf	@YWh fy	dfcXi Wjcb! F Yj Yk cZghUH gdUW a cXY UbX bYUf gmghYa g
K YY_&.&%GYdhYa VYf! &)GYdhYa VYf	@YWh fy	Bcb bYUf Wcbfcb gmghYa g! mUdi bcj ghUV m
K YY_'.&.GYdhYa VYf! &C WcVYf	@YWh fy	@JGU Yg H\YcfYa ! F cVchA Ub]di Urcf XmbUa Jg
K YY_(.)C WcVYf! - C WcVYf	@YWh fy	F Y[i Uhcb dfcVYa . D8 Wcbfcb ZD=8 / D8 Wcbfcb k h [fUj mWca dYbgUhcb
K YY_) . %&C WcVYf! -* C WcVYf	@YWh fy	HfUW_b[Wcbfcb cZfcVcha Ub]di Urcfg! F cVi gh Wcbfcb
	5ggYgga Ybh	HYgh%fl \$i Ecb H\i fgXUm% C WcVYf"
K YY_+. &*C WcVYf! " \$ C WcVYf	@YWh fy	5XUdhj Y Wcbfcb cZfcVcha Ub]di Urcfg
	5ggYgga Ybh	hXj Xi U dfc YW%Xi Y cb: f]XUm' \$C WcUh%+. \$\$"
K YY_ . .&Bcj Ya VYf! * Bcj Ya VYf	@YWh fy	E i UXfchfg a cXY b[UbX gfi Wh fU dfcdYfh Yg
K YY_-. - Bcj Ya VYf! % Bcj Ya VYf	@YWh fy	E i UXfchf Wcbfcb
K YY_%. %* Bcj Ya VYf! &\$ Bcj Ya VYf	@YWh fy	A i h !U[YbhgmghYa Wcbfcb
	5ggYgga Ybh	HYgh&f&) i Ecb H\i fgXUm% Bcj .

Gi Va]gg]cb'cZ5ggYgga YbhiHUg_g

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

G\ci 'X'hLY'Wci fgY'\Uj Y'Ubmbcb!Y'YWfcb]WUggYgga Ybhgi Va]gg]cbž'hLYg'g\ci 'X'\Uj Y'U'ghUbxUfX
GWkcc'Wcj Yf'g\YYH'

5`gi Va]gg]cbg'UfY'YI dYWYX'hc'VY'bYUhiUbX'WYUfmgYhici H'Mci f'fYgi 'hg'UfY'hLY'd]bbUWY'cZU`mci f'\UfX
k cf_'UbX'g\ci 'X'VY'hYUhiX'k]h'Xi Y'fYgdYWf'DfYgYbh]b['fYgi 'hg'WYUfm[]j Yg'hLY'a Uf_Yf'hLY'VYghWUbxWY
cZi bXYfgtUbx]b['mci f'a YhcxX/Yj Yb']ZhLY'bi a Yf]WU'fYgi 'hg'UfY']bVc'ffYWf'

A Uf_]b[[i]XY']bYg'Zcf'Ugg][ba Ybhgi Va]gg]cbg'k]`VY'dfcj]XYX'UhihLY'gUa Y'h]a Y'Ug'Ugg][ba YbhXYH]g
hc'Ugg]ghk]h'a YYh]b['UggYggUV'Y'fYei]fYa Ybhg'Gi Va]gg]cbg'k]`VY'a Uf_YX'UWwcfX]b['hc'hLY'a Uf_]b[
[i]XY']bYg'dfcj]XYX"

@UHY'dc`]Wm

K cf_gi Va]hYX'`UHY'k]h'ci hUb'Uddfcj YX'YI hYbg]cb'VmihLY'Wci fgY'Wc'cfX]bUhc'f'cf'XY'Y[UHYX'Ui h'cf]hm]g
gi VYWWhc'U'`UHY'dYbU'micZ&\$'dYfW'bhf&\$i' E'cZhLY'a U[]a i a 'a Uf_'dcgg]V'Y'Zcf'hUhiUggYgga Ybh]hYa ž
dYf'WU'YbXUf'XUm'

HLY'`UHY'dYbU'mi]g'Udd'YX'dYf'WU'YbXUf'XUm]bWi X]b['k YY_YbXg'UbX'di V']W\c'XUmgE'hUhihLY
UggYgga Ybh]g'c] YfXi Y'"HLYfY']g'bc'dfc!fUfU'cZhLY'`UHY'dYbU'miZcf'gi Va]gg]cbg'a UXY'dUfhk Umih'fci [\ 'U
XUm'

K cf_gi Va]hYX'UZfY'hLY'XYUX']bY'Zcf'UVgc'i hY'ZU]']g'bchUWwY'dhYX'UbX'U'a Uf_'cZnYfc'k]`VY'Uk UfXYX
Zcf'hUhiUggYgga Ybh]hYa "

: cf'gca Y'UggYgga Ybh]hYa gžU'`UHY'dYbU'mia UmbchVY'Uddfcdf]UHY'"HLYgY'UfY'WYUfm]bX]WUhiX'']b'hLY
Wci fgY'ci h]bYž'UbX'gi W'UggYgga Ybhg'fYW'j Y'U'a Uf_'cZnYfc']ZbchWca d'YhYX'VmihLY'gdYW]Z]YX'XUHY'
9I Ua d'Yg']bWi XY.

% K YY_'micb']bY'hYgh'cf'UVcfUhc'fmik cf_'k cffh'U'ga U'`dfc'dc'f]cb'cZhLY'gi VYW'ia Uf_ž'cf
&' C b']bY'ei]nnYg'k \YfY'Ubgk Yfg'UfY'fY'UgYX'hc'gfi XYbhg'cb'Wca d'Yh]cbž'cf
' " DfcZ]gg]cbU'UggYgga YbhiHUg_gžk \YfY'hLY']bhYbh]cb]g'hc'WYUHY'Ub'Ui hLYbh]WUggYgga YbhihU
\Ug'Ub'UVgc'i hY'gi Va]gg]cb'XUHY'ž'cf
(" DUgg# U]'UggYgga YbhiHUg_g"

9I Ua]bU]cbg

Mci 'a i ghVY'Uj U]'UV'Y'Zcf'U'`ei]nnYgž'hYgh'UbX'YI Ua]bU]cbg": cf'Wci fgYg'hUh\Uj Y'Z]bU'YI Ua]bU]cbgž
hLYgY'UfY'\Y'X'Xi f]b['hLY'I b]j Yfg]hmYI Ua]bU]cb'dYf]cXg. : YVfi UfmZcf'Gi a a Yf'HYfa žA UmZcf'Hž
5i [i ghZcf'Hž'UbX'bcj Ya VYf#8YW'fa VYf'Zcf'H' "

D'YUg'Y'j]g]ha m' BGK 'Zcf'Dfcj]g]cbU'9I Ua]bU]cb'h]a YHUV'Y'di V']g\XUHY'g": cf'Z f'hLYf']bZcfa U]cb'cb
YI Ua gž'd'YUg'Y'gY'hLY'9I Ua_g'k YVdU[Y"

GdYW]U'7cbg]XYfU]cb

žmci '\Uj Y'YI dYf]YbW'X'Ub']`bYgg'cf'a]gUXj Ybhi fY'VYmcbX'mci f'Wc'bf'c'hUhih]`]bhYfZ]fY'k]h'mci f'

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 \]hfi_Yžk \\]](#)W'a YUbg'hUh]Zmci 'UthYa dhUb'YI Ua 'cf'gi Va]hU'd]YW'cZ UggYgga Ybhž'mci 'UfY'XYWUf]b['mci fgY'Z]hYbci [\ 'hc'Xc'gc'UbX'WUbbch'Uthf'Udd'mZcf'GdYWU' 7 cbg]XYfUhc'b"

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

D'YUgY'bc'hY'hUhighi XYbhg'k]'bchVY'fYei]fYX'hc'dfcj]XY'UbmXcW a YbhUfmYj]XYbW'hc gi ddcfhUVgYbW'g'Zca 'UbmWUggYg'a]ggYX'VYWU] gY'cZ7CJ -8!%- 'di V']W\YU'h'a YUgi fYg'gi W'Ug]gc'Uh]cb" I BGK 'k]'bchVY']bg]gh]b['cb'a YX]W'Wf]h]Z]W]hYg'Zca 'UbmcbY'XYYa YX'hc'VY'U'dcg]h] Y'WUgYž cf'k \Yb'hYm\Uj Y'fYVčj YfYX" 'Gi W'Wf]h]Z]W]hYg'UfY'X]Z]W'h'hc'cVhU]b'UbX'di hUb'i bbYW'ggUfm]ghfU]b'cb ghi XYbhg'UbX'a YX]W'ghUZZ'

5dd']W]h]cbg'Zcf'gdYWU'Wcbg]XYfUhc'b'k]'VY'fYei]fYX'Zcf'UggYgga YbhUbX'dUfh]W]dUhc'b'UVgYbW'g' - Vi hbc'XcW a YbhUfmYj]XYbW'Zcf'7CJ -8 %-]'bYgg'cf']gc'Uh]cb'k]'VY'fYei]fYX']b'H' "

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

I BGK `Ug`Ub`cb[c]b[`W&a a]ha Ybhlc`ZcghYf]b[`U`W`hi`fY`cZ`YUfb]b[`]bZcfa YX`VmiUWUXYa]W]bhY[f]m`5`

I BGK `gh`XYbhg`Uj`Y`U`fYgdcbg]V`]mhc`UX`YfY`hc`h`g`df]bW]d`Y`cZUWUXYa]W]bhY[f]m`D`U[]Uf]ga

⇒ dcfhUbh@]b_g

- [A ccX`Y](#)
- [@UV`5WV`gg](#)
- [<YU`h`UbX`GUZYhm](#)
- [7ca`di`hb\[`: UW`hYg](#)
- [Gh`XYbhF`Ygci`fW`g](#)
- [7ci`fgY`Ci`h\]bYg](#)
- [9b\[\]bYYf\]b\[`Gh`XYbhGi`ddcfhGYfj`_W`g:7YbhfY](#)
- [A`U`YfgdUW`](#)
- [I`BGK`H\]a`YhUV`Y](#)
- [I`BGK`<`UbXVcc`](#)
- [I`BGK`A`YWX`Ub\]W\]`UbX`A`Ubi`ZUW`h`f\]b\[`9b\[\]bYYf\]b\[](#)
- [9ei`\]hUV`Y`@YUfb\]b\[`GYfj`_W`g](#)

⇒ U[Y`7`fYX]h

GmbYf[]Yg`]b`Gci`bX`&\$%*`

7F ⇒ CG

7F ⇒ CG`Dfcj`]XYf`7`cXY.`\$\$\$-`,`;

5W_bck`YX[Ya`YbhcZ`7`ci`b]fm

K`Y`UW_bck`YX[Y`h`Y`6YXY[U`d`Ycd`Y`k` \c`UFY`h`Y`f`UX]h]cbU`W`g`h`X]Ubg`c`Z`h`Y`UbXg`cb`k` \]W`I`BGK`
?`Ybg]b[h`cb`W]a`di`g`]g`c`W]h`Y`X`"

5ddYbX|l . '9b[]bYYfg'5i ghfU`U'f95Ł'DfcZYgg]cbU`'9b[]bYYf'7ca dYhYbWm
 GHUbXUfX

Dfc[fUa 'hYbXYX'@YUfb]b['Ci hWta Yg	
? bck `YX[Y'UbX'g_]`VUgY	
D9%"%7 ca dfY\Ybg]j YžhYcfmVUgYX'i bXYfghUbX]b['cZhY'i bXYfd]bb]b['bUh fU`UbX d\mg]WU`gWYbWg'UbX'hY'Yb[]bYYf]b['Z bXUa YbH'g'Udd']WUV'Y'hc'hY'Yb[]bYYf]b['X]gWd`]bY	
D9%"&'7 cbWdh U`i bXYfghUbX]b['cZhY'a UhYa Uh]Wgžbi a Yf]WU`UbU'mg]gžghUhgh]WgžUbX Wta di h'f'UbX']bZcfa Uh]cb'gWYbWg'k \]W' i bXYfd]b'hY'Yb[]bYYf]b['X]gWd`]bY	
D9%" " 'h!XYdh'i bXYfghUbX]b['cZgdYWU]ghVcX]Yg'cZ_bck `YX[Y'k]h]b'hY'Yb[]bYYf]b[X]gWd`]bY	
D9%"('8]gWfba YbhcZ_bck `YX[Y'XYj Y`cda YbhUbX'fYgYUfW'X]fYW]cbg'k]h]b'hY Yb[]bYYf]b['X]gWd`]bY	
D9%"') ? bck `YX[Y'cZYb[]bYYf]b['XYg][b'dfUW]W'UbX'WcbhYi h U`ZUWc'fg]a dUW]b['hY Yb[]bYYf]b['X]gWd`]bY	
D9%"* 'i bXYfghUbX]b['cZhY'gWc'dYždf]bWd`Ygžbcfa gžUW]b' bHUV]']h]Yg'UbX'Vci bXg'cZ gi gh]bUV'Y'Yb[]bYYf]b['dfUW]W']b'hY'gdYW]ZWX]gWd`]bY	
9b[]bYYf]b['Udd']WU]cb'UV']]m	
D9%"%5dd']WU]cb'cZYghUV]g\YX'Yb[]bYYf]b['a Yh'cXg'hc'Wta d'Yi 'Yb[]bYYf]b['dfcV'Ya gc']]b[
D9%"&'&: 'i YbhUdd']WU]cb'cZYb[]bYYf]b['h'W]b]ei Ygžhc'g'UbX'fYgci fW'g	
D9%" " '5dd']WU]cb'cZgmg]Ya Uh]WYb[]bYYf]b['gmb'hYg]g'UbX'XYg][b'dfcW'ggYg	
D9%"('5dd']WU]cb'cZgmg]Ya Uh]WUddfcUW]Yg'hc'hY'WcbXi W]UbX'a UbU[Ya YbhcZYb[]bYYf]b[dfc'YW]g	
DfcZYgg]cbU`UbX'dYfgcbU`Uhf]Vi hYg	
D9' "%9h]WU`WcbXi W]UbX'dfcZYgg]cbU`UW]b' bHUV']]m	
D9' "&'9ZYW]j Y'cfU`UbX'k f]hYb'Wta a i b]WU]cb']b'dfcZYgg]cbU`UbX`UmXca U]bg	
D9' "' '7fYUh]j Yž]bbcj Uh]j Y'UbX'dfc!UW]j Y'XYa YUbcj f	
D9' "('DfcZYgg]cbU`i gY'UbX'a UbU[Ya YbhcZ]bZcfa Uh]cb	
D9' ") 'C fXYfma UbU[Ya YbhcZgY'Zi'UbX'dfcZYgg]cbU`WcbXi W]	
D9' "*" '9ZYW]j Y'hYUa 'a Ya VYfg\]d'UbX'hYUa ``YUXYfg\]d	