

ARTS2363

7 \]bYgY`D\]`cgcd\m

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

7ci fgY`Cj Yfj]Yk

GHJZZ7cbHJW`8YHJ]`g

7cbj Ybcfg

B Ua Y	9a U]`	5j U]`UV]`]m	@cW]h]cb	D\cbY
? Ufmb`@U]	_`"U]4 i bgk "YXi "Ui	Hi Yg`%a%&ž'cf Ya U]`hc'cf[Ub]gY'Ub Uddc]bha Ybh	A 6' &* ž A cfj Yb'6fck b 6i]X]b[

GVXcc``7cbHJW`bZcfa U]h]cb

GVXcc``cZ<i a Ub]h]Yg'UbX'@Ub[i U[Yg

@cW]h]cb. 'GVXcc``C Z]WžA 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](#)

7ci fgY'8YHJ]g

7fYX]hDc]bqg '*

Gi a a UfmicZ\hY'7ci fgY

h'h]g'Wci fgYz'mci 'k]`gh Xmi7cbZ W]Ub]ga 'UbX'8Uc]ga 'fHuc]ga Lz'd\]cgcd\]Yg'k\]W'cf[]bUH'X'Zca
7\]bU'UbX'k\]W'Wcb]bi Y'hc]bZi YbW' h]b_]b['UbX'dfUW]W'g]b'7\]bU'UbX'VYmc'bX"'Mci 'k]`U'gc`YUfb
UVci h'YggYf!_bck b'7\]bYgY'd\]cgcd\]Yg]bWi X]b['A c\]ga ž@Y[U]ga 'UbX'7\]bYgY'6i XX\]ga "'H\Y
Wci fgY' h]j Ygh[UH'g'U'fUb[Y'cZhc'd]Wg]b'YUfm'7\]bYgY'd\]cgcd\migi W'Ug'Yh]Wg'UbX'dc'h]Wgž
WcbW'dh]cbg'cZ_bck `YX[YžUbX'j]Yk g'cZfYU']miUbX'hY'k c'fX" K Y'X]gW gg`lck 'hY'YUfm'h]b_Yfg']b
7\]bU'hci [\hUVci h'hYgY]ggi Yg'UbX'XfUk g'cb'hY]f']bg[\hg'hc'Yb\UbW'Wcb]hYa dcfUfmXYVUH'g"
5'hci [\hY'Wci fgY'k]`ZcW g'cb'U'gh XmcZhfUX]hcbU'7\]bYgY'd\]cgcd\]Ygž'hk]`U'gc'Wcbg]XYf
Wca dUfU'h]j Y'YUghk YghdYfgdYW]j Yg'UbX'hY]f'Wcb]hYa dcfUfm'fY'Yj UbW"

Bch'. 'Bc'dfYj]ci g'_bck `YX[Y'cZ7\]bYgY'W'hi fY'cf'Ub[i U[Y']g'Uggi a YX"

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

%" Ufh]W 'UH'hY'hYa Yg'UbX']ggi Yg'fU]gYX']b'hY'j Uf]ci g'fUX]h]cbg']b'YUfm'7\]bYgY'd\]cgcd\m
&"]XYbh]Zma YhcXc'c'c']Yg'UbX'd\]cgcd\]W'Uf[i a Ybh]h]cb']b'YUfm'7\]bYgY'd\]cgcd\m
' " Yb[U[Y']b']bXYdYbXYbhUbX'fYZYW]j Y'YUfb]b['h'fci [\UggYgg]b['UbX'fYgdc'bX]b['hc']XYUg']b
7\]bYgY'D\]cgcd\m
(" Yl d'U]b'hY'Wcb]hYa dcfUfm]g[]b]Z]W]bW'cZUgdYW'g'cZ7\]bYgY'd\]cgcd\m
)" Wca a i b]W]h]cb']XYUg'YZZYW]j Y'm]b'Zcfa U'UbX']bZcfa U'k'f]h]b['

HYUW]b['GhfUH[]Yg'

A miHYUW]b[]b'h]g'Wci fgY']g'j Yfma i W']bZcfa YX'Vma m'fYgYUfW']b'hY'UfYUž'k]h'gdYW]U'ZcW g'cb'hY
]bh'fUW]cbg'VY'hk Yyb'7\]bYgY'UbX'K Ygh'fb'd\]cgcd\m' H\Y'Wci fgY'k]`]b]fcXi W' mci 'hc' i d!hc!XUH
fYgYUfW']b'7\]bYgY'UbX'Wca dUfU'h]j Y'D\]cgcd\m' A mUddfcUW'hc' hYUW]b[]g'hc']bj'c'j Y'mci 'Ug'Ub'UW]j Y
'YUfbYf'Ug'a i W'Ug'dcgg]V'Y'" A m'YW'hi fYgž'cb']bY'a UH'f]U'g'UbX'hi hc'f]U'g'UfY'XYg[]bYX'Zc'f'mci 'hc'UW]j Y'm
Yb[U[Y']b'hY'Wci fgY'" Mci 'UfY'gh'fcb['mUXj]gYX'hc' i bXYfU_Y'U'Wcbg]gh'Ybh'fYUX]b['dfc[fUa 'UbX
YbWci fU[YX'hc' dUfU'h]dUH']b'WUgg'UbX'cb']bY'X]gW gg]cbg" H\Y'YW'hi fYgž'cb']bY'a UH'f]U'g'UbX'hi hc'f]U'gž'Ug

5ggYgga Ybh

5ggYgga YbhHUg_g`

5ggYgga YbhHUg_	K Y][\h	8i Y'8UHŸ	Gh XYbh@YUfb]b[Ci hWta Yg'5ggYggYX
F YZYW]cbg`UbX`E i]nnYg`	(\$i	&`C Wtc VYfz`%* `C Wtc VYfz`% Bcj Ya VYf	%ž&ž ž(
HYgh	&\$i	\$&#/#&.\$&.\$	%ž&ž)
F YgYUfW`9ggUmi	(\$i	&+ #/#&.\$&.\$`%\$`DA	%ž&ž ž(ž)

5ggYgga Ybh8YHU]`g

5ggYgga Ybh% F YZYW]cbg`UbX`E i]nnYg`

GhUfhXUHŸ. `&`C Wtc VYfz`%* `C Wtc VYfz`% `Bcj Ya VYf`

@Yb[h. `J Uf]ci g`

8YHU]`g.

: cfa Uhj Y`UggYgga Ybh`H\]g`UggYgga YbhWta dcbYbh]g`Wta df]gYX`VmA ccXY`X]gW gg]cb`dcghž`a i `h!
Wc]W`UbX`g\cfhUbgk Yf`ei Ygh]cbg`]b`h`fY`gY`YW`X`k`YY`g`"H\Y`a`U`l`j`a`i`a`k`cfX`Yb[`h`Z`f`YUW`h`fU]cb
]g`" `\$\$`k`cfXg`"

H\YgY`UggYgga Ybhg`UfY`hja`YX`VY`k`YYb`Y`W`h`fYg`UbX`h`h`f]U`g`]b`fY`Yj`Ubhk`YY`gž`gc`h`Uhgh`XYbhg`UfY`
YbWci`fU[`YX`h`fYUX`h`Y`a`U`h`f]U`ž`UbX`h`h`b`_`h`fci`[`\`h`Y`Y`W`h`fYž`VY`Z`fY`h`Y`mi`U`h`Y`b`X`h`Y`h`h`f]U`" `H\Y`
h`h`f]U`g`k`]`h`Yb`d`]W`_i`d`cb`gca`Y`cZ`h`Y`_Y`mi`UbX`g`][`b]ž`W]bhei`Ygh]cbg`fU]gYX`Vmigh`XYbhg`Z`f`X]gW`gg]cb`"
H\Y`gY`YW`X`k`YY`g`k`]`VY`gY`h`ci`h`]b`h`Y`W`ci`fgY`ci`h`]bY`" Gh`XYbhg`k`]`fY`W`j`Y`]bX]j`]Xi`U`Z`Y`X`V`U`W`_`cb`
h`Y`f`fY`ZY`W]cbg`"5`a`Uf`_b[`i`fi`Vf]W]g`i`gYX`h`c`[`i`]X`Y`gh`XYbhg`cb`h`Y`a`Uf`_b[`W]h`f]U`"9`UW`X]gW`gg]cb`k`]`
VY`[`fU`Y`X`ci`h`cZ`U`a`U`l`j`a`i`a`cZ`\$`a`Uf`_gž`UbX`h`Y`h`f]U`cZ`"]h`fU]cbg`k`Y][\`h`Y`h`c`(` \$i` "

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

`cb`]bY`Ugg][`ba`Ybhg`]b`A`ccXY`Xi`Y`cb`&`C Wtc VYfz`%* `C Wtc VYfz`% `Bcj Ya VYf`

Gi Va]gg]cb`bchYg.C b`]bY`UggYgga Ybh

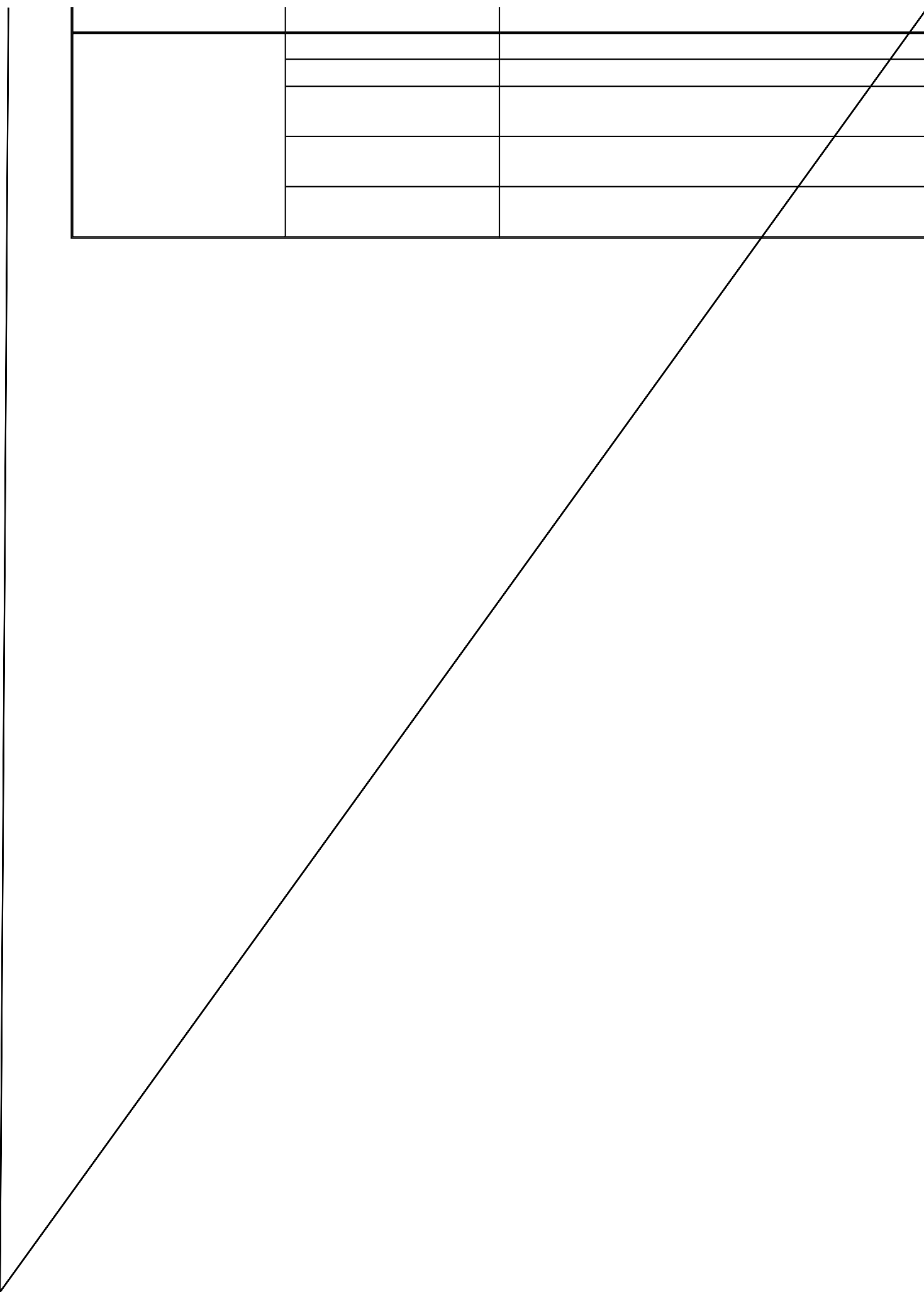
Hi fb]h]b`gYh]b[. `H\]g`]g`bchU`Hi`fb]h]b`Ugg][`ba`Ybh

5ggYgga Ybh&`HYgh

GhUfhXUHŸ. `\$&#/#&.\$&.\$

@Yb[h. `*`\$\$`k`cfXg`

8YHU]`g.



F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

HYI hVcc_žUj U]UV`Y`Zca`I BGK`Vcc_g\cd.

H]hY.``	5b`#hfcXi W]cb`hc`7\]bYgY`D\]cgcd\m&Y
5i`h\cf.``	@U]`? Ufmb
Di`V]g\Yf.``	7Ua`Vf]X[`Y`I`b]`DfYgg
6]bX]b[`,`	DUdYfVUW_
9X]h]cb.``	&Y%+
5DB.``	- +, %%\$+) \$(\$- +`cf`-G6BfP%\$+) \$(\$- \$Ł
F F D.``	~(-)"`-`
	Ci`f`Df]W.`` (&"+`

F YWca a YbXYX`F Ygci fWg

F YWca a YbXYX`gi dd`Ya`Yb]fmiFYUX]b[`g`UfY`Uj U]V`Y`cb`@Y[`Ub]h]z]`]U`A`ccX`Y`"

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

H\Y`W`ei`fgY`h]g`mYUf`k`j``]bW`f`dcfU]h`a`cfY`Z]fgh`U`bX`fYUX]b[`c`Z`h`Y`h`Y`h`g``G`h`X`Y`b`h`g`]b`d`f`Y`j`]`c`i`g`m`Y`U`f`g`k`Y`f`Y`_`Y`Y`b`h`c`c`c`_`U`h`h`Y`f`U`b`[`Y`c`Z`d`f`]a`U`f`m`h`Y`h`g``H\Y`W`U`g`g`f`c`c`a`U`b`X`c`b`]b`Y`h`U`W`X`]b[`W`e`a`d`c`b`Y`b`h`g`k`]`d`f`c`j`]`X`Y`a`c`f`Y`c`d`d`c`f`h`b`]h`Y`g`h`c`X`c`h`g`"

H\]g`m`Y`U`f`z`]b`g`h`U`X`c`Z`U`j`]b[``\`c`i`f`g`Y`W`h`f`Y`Z`%`\`c`i`f`h`h`c`f`]U`z`k`Y`k`]``\`U`j`Y`&`\`c`i`f`g`Y`W`h`f`Y`Z`%`\`c`i`f`h`h`c`f`]U`Z`%`\`c`i`f`c`b`]b`Y`U`W`h`]h`m`G`h`X`Y`b`h`g`U`g`h`m`Y`U`f`Z`Y`h`h`U`h`h`Y``\`c`i`f`Y`W`h`f`Y`g`c`h`Y`Z`h`h`Y`a`a`Y`b`h`U`m`Y`I`\`U`i`g`h`X``=\\U`j`Y`h`U`_`Y`b`h`Y`c`d`d`c`f`h`b`]h`m`h`c`i`g`Y`h`Y`%`c`b`]b`Y`\`c`i`f`Z`i`]h`z`m`h`Y`c`b`]b`Y`U`W`h`]h`m`z`U`j`U]UV`Y`U`h`h`Y`Y`b`X`c`Z`Y`U`W`k`Y`Y`_`z`k`]`g`Y`f`Y`h`c`W`e`b`g`c`]X`U`h`h`Y`k`Y`Y`_`f`j`X]g`W`g`g]c`b`g``k`]`g`Y`h`c`i`h`h`Y`k`Y`Y`_`f`j`[`c`U`g`U`b`X`c`i`h`W`e`a`Y`g`U`g`k`Y`U`g`d`f`c`j`]`X`Y`c`d`d`c`f`h`b`]h`Y`g`Z`c`f`Y`i`h`b`X`]b[`W`U`g`g`X]g`W`g`g]c`b`g`"

Gi Va]gg]cb 'cZ5ggYgga YbhiHUg_g

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

Ʒmci 'YbWci bHYf'U'dfcV'Ya 'k \Yb'UH'Ya dh]b['hc'gi Va]hmc i f'Ugg][ba YbhiH'fci [\ 'Hi fb]h]bž'd'YUgY
HY'Yd\cbY'9I HYfbU'Gi ddcfhcb'-',) " ' ' %cf'Ya U] 'H'Ya 'cb'YI HYfbU'HY'ggi ddcfh4 i bgk "YXi "Ui "'Gi ddcfh
\ci fg'UfY', .\$\$Ua '—%\$.\$\$da 'cb'k YY_XUmg'UbX'-. \$\$Ua '—) .\$\$da 'cb'k YY_YbXg'fl *) 'XUmg'U'm'YUfl" Ʒmci
UfY'i bUV'Y'hc'gi Va]hmc i f'Ugg][ba YbhiXi Y'hc'U'Zi 'hk]H'Hi fb]h]b'mci 'a UmUdd'm'Zcf'Ub'YI HYbg]cbž'Vi hmc i
a i ghfYHU]b'mci f'h]W_Yhbi a VYf'Z'ca '9I HYfbU'Gi ddcfhfU'cb['k]H'UbmcH'Yf'fY'Yj UbhXcW a YbHg'k'hc
]bWi XY'Ug'Yj]XYbVW'hc'gi ddcfhmc i f'YI HYbg]cb'Udd'jW]h]cb" Ʒmci 'Ya U] '9I HYfbU'Gi ddcfhmc i 'k]
Ui 'ca UH]WU'm'fYW]j Y'U'h]W_Yhbi a VYfž'Vi h]Zmci 'HY'Yd\cbY'mci 'k]'b'YX'hc'gdYW]Z]WU'mUg_ 'Zcf'cbY"
Hi fb]h]b'U'gc'dfcj]XYg'i dXUH'g'cb'H'Y]f'gmgh'Ya 'ghU'hi g'cb'Hk]HYf"

; YbYfU'mž'UggYgga YbhiHUg_g'a i ghVY'gi Va]HYX'Y'YW'fcb]WU'mj]U'Y]H'Yf'Hi fb]h]b'cf'U'A ccX'Y
Ugg][ba YbH' 'b]bg]UbVW'g'k \YfY'H'g]g'bc]hdccg]V'Yž]hk]'VY'ghU'HYX'cb'mci f'Wci fgY'g'A ccX'Y'g]H'k]H
U'HYfbUH] Y'gi Va]gg]cb'XYHU]g"

: cf]bZ'fa UH]cb'cb'\ck 'hc'gi Va]hUgg][ba YbHg'cb]bYj]U'A ccX'Y. \h'hdg.#gh XYbH'i bgk "YXi "Ui #ck!
gi Va]hUgg][ba YbH'a ccX'Y

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

D`U[]Uf]ga `]g`i`g]b[`h`Y`k`c`f`X`g`c`f`]X`Y`U`g`c`Z`c`h`Y`f`g`i`U`b`X`d`f`Y`g`Y`b`h]b[`h`Y`a` `U`g`m`c`i`f`c`k`b`" `#`W`U`b`h`U`_`Y`a` `U`b`m`
Z`c`f`a`g`Z`Z`c`a` `X`Y`]V`Y`f`U`h`Y` `W`X`Y`U`h]b[`h`c` `U`W`W`Y`X`Y`b`h`U` `m`i`W`c`d`m]b[`Z`c`a` `U`g`c`i`f`W` `k`]h`c`i`h`U`W`_`b`c`k` `Y`X[`Y`a` `Y`b`h`

I`B`G`K` `[`f`c`i`d`g`d`U[]Uf]ga `]b`h`c` `h`Y` `Z`c` `c`k`]b[`W`U`h`Y`[`c`f`]Y`g.

- 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'Y'fg'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 cgh'cZ'mci f'gh X]Yg'Uhl BGK ""

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

