



ARTS2900

; `cVU`': Ya]b]ga g. '7 ca dYh]b['J]g]cbgžJ Ufm]b[' <]ghcf]Yg

HYfa `Cby`'##`&\$%-

7 ci fgY'8YHJ]`g

7 fYX]hDc]bhtg`*`

Gi a a UfmicZ\hY'7 ci fgY

Gi VYWh5fYU. I a_ W ie S` V 9 W VWdE fgV[Wé

H\]g`Wéi fgY`WUb`U`gc`VY`gh`X]YX`]b`hY`Zé`ck`]b[`gdYWU`]gU]cbg.`: [efack

H\]g`Wéi fgY`Wébg]XYfg`Vch`ZYa`]b]gh]UH]Ya`dhtg`hc`cf[Ub]gY`[`cVU`miUWfcgg`fUW]U`ž`Yh`b]WUbX`bU]cbU`
Vci`bXUf]Ygž`UbX`X]ZYfYbW`g`]b`ZYa`]b]gh]gh]UH]Y`[]Yg`UbX`j`]g]cbg`Zc`f`h`Y`Z`h`fY`"Mci`k`]"`fUW`h`Y`
Ya`Yf[YbW`UbX`Wé]b]bi`U]cb`c`Z`h`c`Wé`a`dY]b[`fU]X]h]cbg`-`fY`Zc`fa`UbX`fY`j`c`i`h]cb`-`Zc`a`UbUfW`]gh`
k`ca`Yb`g`UW]j`]g]h]h]fci`[\`hc`Wé]b]h`Ya`dcfUfm]h]Ubg]bU]cbU`UbX`dcg]h`Wé`cb]U`ZYa`]b]ga`g`"Mci`k`]"`U`gc`
YI`Ua`]bY`fYW`bhZYa`]b]gh]UW]j`]m]h]U]h`Ug`[UfbYfYX`[`cVU`U]h]b]h]cb`UbX`Wé]b]f]c]j`Yfgnž`gi`W`Ug`-`g`Ua`]W`
ZYa`]b]ga`UbX`Di`ggm]F`]ch`H`fci`[\`ci`h`k`Y`\`][\`][\`h]cb[c]b[`W]h]ei`Yg`c`Z`h`Y`i`b]j`YfgU`]gh]WU]a`g`c`Z`gca`Y`
Zc`fa`g`c`Z`ZYa`]b]ga`ž`]b]W`X]b[`b]X][Ybci`g`UbX`]b]h]fgYW]cbU`W]h]ei`Yg`"

7 ci fgY`@YUfb]b[`Ci`hWé`a`Yg

%`8Ya`cbg]h]UH]U`VfcUXž`Wfcgg!W`h`fU`i`bXYfgh]UbX]b[`cZ[`cVU`ZYa`]b]ga`g`
&"`XYb]h]žm`_Ym]h]Ya`Ygž`XYVUH]g`UbX`Wé]b]W`dhtg`]b`ZYa`]b]gh`]\`g]h]c]fm]UbX`g]W]c`Ufg`]\`d`"
'`" `7`cbg]fi`W]h]Uf[i`a`Yb]h]i`g]b[[YbXYf`UbX`#`f`ZYa`]b]gh]UbU`mg]g`UbX`fY`gYUfW`]b`k`f]h]Y`b`UbX`#`f`j`YfVU`
Zc`fa`"
(`" `5`f]h]W`UH]U`b`i`bXYfgh]UbX]b[`cZ`\`ck`WUggž`fUW`UbX`#`f`gYI`i`U`]m]b]Zc`fa`ZYa`]b]ga`#`g`\`g]h]c]f]WU`m]UbX`
]b`h`Y`d`fY`gY`b]h`"

HYUWX`]b[`G]h]UH]Y`[]Yg`

H\]g`Wéi fgY`k`]"`Y`d`mci`XYj`Y`cd`U`VfcUX`\`]g]h]c]f]WU`UbX`Wfcgg!W`h`fU`i`bXYfgh]UbX]b[`cZ[`cVU`ZYa`]b]ga`g`
UbX`]g`XYg][bYX`hc`XYdYb`mci`f`g_]`g`]b`W]h]ei`]b[`g]W]c`Uf]m`]h]YfU]h`fY`ž`Wé]b]g]h]i`W]b[`mci`f`ck`b`Uf[i`a`Yb]h]g`
UbX`Wé]b]Xi`W]b[`fY`gYUfW`" `@YWh`fY`g`k`]"`d]f]c]j`]XY`W]h]V]U`VUW`[fci`bX`]b]Zc`fa`U]h]cb`UbX`]b]h]c]Xi`W`mci`hc`_Ym`
XYVUH]gž`h]b`_Yfg`UbX`h`Ya`Yg`]b`ZYa`]b]gh`\`]g]h]c]fm]UbX`[YbXYf`gh]X]Yg`" `b`h`hc]f]U`gž`mci`k`]"`d`Uf]h]W]d`UH]Y`]b`
X]g]W`gg]cb`c`Z`h`Y`g]W]c`Ufg`\`d`UbX`Y`W]h`fY`a`UH]f]U`ž`[i`]XYX`V]m]h`hc]f]U`ei`Yg]h]cbg`"Mci`k`]"`U`gc`ZUW]h]UH]Y`
cbY`h`hc]f]U`X]g]W`gg]cb`V]m]b]h]c]Xi`W]b[`bYk`a`UH]f]U`UbX`#`f`ei`Yg]h]cbg`hc`mci`f`WUgga`UH]gž`h`YfYV]m`
YI`h]b]X]b[`mci`f`fY`gYUfW`UbX`UbU`h]WU`g_]`g`"A`m]h]UWX]b[`g]h]UH]Y`[m]g]hc`Yb`Wéi`fU[Y`mci`f`W]h]WU`
Yb[U[Ya`Yb]h]k`]h`Wéi`fgY`a`UH]f]U`UbX`hc`\`Y`d`XYj`Y`cd`mci`f`k`f]h]Y`b`UbX`j`YfVU`Wé`a`a`i`b]W]h]cb`h]fci`[\`
WUgg`X]g]W`gg]cb`UbX`k`f]h]Y`b`fY`g]d]cbg]Yg`hc`gY`Y`W]h]X`h`hc]f]U`ei`Yg]h]cbg`"Hei`Y`\$`

5ggYgga Ybh

F Yei]fYa Ybtg Zcf K f]hYb K cf_

Gi Va]gg]cb

Hi hcf]U`dUdYfg`UbX`fYgYUfW`YggUm`g\ci`X`VY`gi Va]hX`Y`YWfcb]W`mh`Hi fb`h`b`cb`A ccX`Y`D`YUgY`
gi Va]h`h`Y`Hi fb`h`b`dcfU`k]h`m`i`f`h`h`f`g`b`Ua`Y`cb`]h`

F YZYfYbW]b[

5ggYgga YbhHUg_g`

5ggYgga YbhHUg_	K Y][\h	8i Y`8UH`	Gh XYbh@YUfb]b[Ci hWta Yg`5ggYggYX
F YgYUfW`YggUm	(\$i	%) #\$(#&\$%- `\$(. \$\$`DA	&Z ž(
Hi hcf]U`F YgdcbgYg`	() i	DUfh=YbX`cZK ? `(žDUfh= YbX`cZK YY_`%\$	%ž&ž
Hi hcf]U`ZUW]hU]cb`UbX fYZYVW]cb`	%) i	K YY_g`U`cWUHX`]b`K YY_`%	&ž

5ggYgga Ybh8YHU]`g

5ggYgga Ybh%`F YgYUfW`YggUm

GHUfhXUH`.

@Yb[h. `&\$k

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'WUb'gYY'Hi fb]h]b'g)a]'Uf]m fYdcfng"

5ggYgga Ybh&. 'Hi hc]f]U'F YgdcbgYg

Gh]fhXUH'.

@Yb[h. '* 'l '&\$ \$'k cfXg

8YH]g. '5Wfcgg'h'Y'gYa Ygh'fz'gh XYbhg'k]''Ubgk Yf'g]l 'ei Ygh]cbg']b'k f]H]b'Zcfa 'VUgYX'cb'h'Y]f Yb[U[Ya Ybhk]h' h' hc]f]U'fYUX]b[g'UbX'Wci fgY'Wcbh'Ybh''9UWX'fYgdcbgY]g'Uddfcl]a UH'mi&\$ \$'k cfXg''Hk c UfY'Xi Y'Uh'h'Y'YbX'cZK YY_) 'f%) i 'cf'+") i 'YUWX'UbX'Zci f'UfY'Xi Y'Uh'h'Y'YbX'cZK YY_% 'fl \$i 'cf'+") i YUWX'': YXXVUW']j]U']bX]j]Xi U'Wca a Ybhg'Zfi Vf]WUbX']b!WUgg'X]gW gg]cb"

5XX]h]cbU'XYH]g.

HI HCF =5@'F 9GDCBG9G'DUfhg' =UbX' =Z'hc'VY'gi Va]H]X'h'hc'Hi fb' h' h'cb'A ccX'Y Vm(da 'cb'h'Y : f]XUmcZK YY_ ('fDUfh'UbX': f]XUmcZK YY_%\$ fDUfh&B 6 'h'YgY UfY'h'Y'Wc'ffYWh'gi Va]gg]cb XUH'g'VUgYX'cb'bYk 'h'fa "

K Y][\h'+") i 'dYf'fYgdcbgY'l '* 'l '() i

: YXXVUW'. 'H\Y'h' hc]f]U'fYgdcbgYg'k]''VY'a Uf_YX']b'Hi fb' h' h'UbX'mci f[fUXY'UbX'ZYYXVUW'k]''VY Uj U]UV'Y]j]U'A ccX'Y'k]h']b'h'Y'b'XUmg''Mci 'k]''VY'UggYggYX'cb'\ck 'gi W'W'ggZ ''mici 'Ubgk Yf'h'Y'ei Ygh]cb fUf[i a YbhUbX'UbU'mg]g'Z'gm'Y'UbX'g]fi W'h' fY'UbX'fYgYUfW'UbX'fYZ'fYbW]b['f]Y''Yb[U[Ya Ybhk]h' fY'Yj Ubha UH'f]U'UbX'Uddfcd]U'H'fYZYfYbW'g'Z'

8YgW]dh]cb.

9UWX'k YY'Zci f'h' hc]f]U'g'UfY'cf[Ub]gYX'Ufci bX'h'fY'hc'Zci f'ei Ygh]cbg'VUgYX'cb'YggYbh]U'fYUX]b[g'UbX h'Y''YWh' fY''H\YgY'ei Ygh]cbg'UfY'XYg][bYX'hc'Yb[U[Y'mci 'k]h' h'Y' _Ym'h'Ya Yg'cZ'h'Y'Wci fgY'UbX'Z'a]b]gh

fY`Yj Ubhlc`hY`ei Yghcb`mci`WUb`j`bW`XY`j`h`Vi`hbchUhi`hY`YI`dYbgY`cZ`hY`YggYbhU`fYUX]b[`"f5bX`U`k`Um`g`fY`ZfYbW`j`Zmci`XcE"

Gi`Va`jgg]cb`bchYg.H\YfY`UFY`fk`c`Xi`Y`XUHYg.`DUfh=]g`Xi`Y`cb`f]XUm`cZK`YY_(`Vm(`da`ZDUfh=Vm: f]XUm`cZK`YY_`%\$`Vm(`da`"Mc`i`WUb`gi`Va`]hVY`Zc`fY`h`YgY`XUHYg`j`Zmci`k`jg\`"

Hi`fb]h]b`gYH]b[.`H\]g`Ugg][`ba`Ybh]g`gi`Va`]hYX`h`fci`[\`Hi`fb]h]b`UbX`gh`XYbhg`Xc`bchgYY`Hi`fb]h]b`g]a`]Uf]m`fYdc`fYg`"

5ggYgga`Ybh`.`Hi`hcf]U`ZUW]j]h]h]cb`UbX`fYZYW]cb`

GHUfhXUHY.`

@Yb[`h.`)`a`]bi`hYg`

8YH]j`g.`H\]g`UggYgga`Ybh`Ug`fk`c`dUfYg":`]fgh`Z`gh`XYbhg`k`j`"Ui`bW`X]gW`gg]cb`k`]h`U`Vf]YZHU`_`fbc`a`cfY`h`Ub`Zj`Y`a`]bi`hYgE`UVci`h`hY]f`ck`b`Yb[`U[`Ya`Ybhk`]h`XYg][`bUHYX`fYUX]b[`g`#`cd]W]g`f%\$i`E`"GYW`bX`m`Z`h`Ym`k`j`k`f]h`U`Vf]YZfYZYW]cb`f%`\$!&\$`k`cfXgE`UVci`h`hY`d`fcW`gg`c`Zd`fYdUf]b[`Z`W`bX`i`W]b[`Z`UbX`fYW]j`]b[`ZYXVUW`_`cb`hY`ZUW]j]h]h]cb`f)`.E":`YYXVUW`_`j`U`]bX]j`]Xi`U`W`a`a`Ybhg`cb`V`ch`W`a`dcbYbhg`"

5XX]h]cbU`XYH]j`g.`

HI`HCF`-5@: `57`@+H5H`-€B`Z`k`YY_`Ugg][`bYX`]b`Z]fgh`h`hcf]U`Z]b`WUgg`UggYgga`Ybh`

K`Y][`h`h`%\$i`Zc`f`ZUW]j]h]h]cb`UbX)`i`Zc`f`fYZYW]j`Y`fYgdc`bgY`h`Ya`U]`ZYXVUW`_`h`hY`ZUW]j]h]h]cb`-`h`hU`%)`i`

8YgW]dh]cb.`: `fca`K`YY_`&Z`YUW`h`hcf]U`k`j`"Uj`Y`cbY`h`h`fY`XYg][`bUHYX`ZUW]j]h]h]cb`fUgg][`bYX`]b`Z]fgh`h`hcf]U`E`"H\Y`ZUW]j]h]h]cb`k`j`"Ui`bW`X]gW`gg]cb`k`]h`U`6`F`-9: `fbc`a`cfY`h`Ub`Zj`Y`a`]bi`hYgE`hU`_`UVci`h`hY]f`ck`b`Yb[`U[`Ya`Ybhk`]h`hY`fYUX]b[`#`cd]W`H\Y`]XYU`]g`i`gY`mci`f`ck`b`i`b]ei`Y`dU`h`k`Um`h`fci`[\`hY`a`UHYf]U`h`cdYb`i`d`X]gW`gg]cb`bchcb`mcZ`hY`W`b`h`b`h`Z`Vi`h`U`gc`cZ]rg`k`]XYf`i`h]m`i`

'K`]XYf`i`h]m`i`W`ci`X`a`YUb`a`U`]b[`W`b`b`Y`W]cbg`VY`h`YYb`hY`fYUX]b[`#`cd]W`UbX`W`b`h`Ya`dcfUfmZYa`]b]ga`g/i`g]b[`hY`a`UHYf]U`Ug`U`^`a`d]b[`c`Z`dc]bhlc`YI`d`cfY`dUfh]W`Uf`h`Ya`Yg`#`ei`Ygh]cbg`#`YI`Ua`d`Yg`#`h]b`_`Yfg`#`ZYa`]b]ga`g`]b`U`]hY`a`cfY`XYH]j`/`cf`Ug`U`a`YUbg`h`fYZYW]cb`ck`gV`c`Ufg`XYj`Y`cd`Uf[`i`a`Ybhg`fY[`"mci`W`ci`X`X]gW`gg`hY`fYUX]b[`Ug`Ub`YI`Ua`d`Y`cZU`dUfh]W`Uf`UddfcUW`#`ghmY`h`U`h`mci`Z`ci`bX`i`gY`Z`_`cf`i`bdfcXi`W]j`Y`E`"

Hfmbchlc`h]b`_`UVci`h`h]g`Ug`U`bUffck`mXY`Z]bYX`YI`YfW]gY`]b`k`h]W`h`YfY`UFY`f][`h`h`UbX`k`fcb[`f`fYgdc`bgYg`h`hY`a`UHYf]U`"F`U`h`Y`f`]h]g`_`cdYX`h`U`h`h]g`YI`YfW]gY`YbW`ci`fU[`Yg`i`g`h`h]b`_`UbX`hU`_`UVci`h`hYU]g`.

U'Mci 'Hi VY'W]d'cf'U'k YVg]h'cf'hc'i gY'U'dck Yfdc]bh' #h]g'U'gc '\cdYX'hUh'h.]g'YI YfW]gY'YbWci fU[Yg'mci 'hc
gdYU_a cfY'[YbYfU'm]b'h.]g'hi hc f]U'UbX']b'mci f'ch\Yf'WUggYg":]bU`mž Ug'hY'U]a 'cZUW']h]cb']g'hc'cdYb

+), ('fK]gh]bW]cbŁ-U'j Yfm[ccX'ZUW]fU]cb]b'k \]W 'hY'gh XYbhWJa Y'k Y''dfYdUfYX'UbX'cZYfYX]bg][\hZ 'Wca a YbhUfm]b'UXX]h]cb'hc'gybX]b['X]gW gg]cb]b]bhYfYgh]b['X]fYW]cbg"

,)!%\$\$'fK][\ 'X]gh]bW]cbŁ'Ub'YI Wdh]cbU'ZUW]fU]cb]b'k \]W 'hY'gh XYbhdYfYgYbhYX'k]h'ZU]f'UbX]bg][\hZ'WU'Yb[]b['Vch'h'Y'h'UW'Yf'UbX'gh XYbh]hc'UddfcUW' 'hY'hd]W]b'bYk 'UbX'a YUb]b[Z 'k Umg"

F 9: @97 H€B. 'f) i ŁfUddfc] ja UH'm%) \$'k cfXgŁ

8i Y. 'i d'hc'U'k YY_ 'UZf'f'nci f'h'hc'f'gYbXg'ZYXVUW_ 'hc' 'hY'ZUW]fU]cb"

Gi Va]gg]cb. 'GYbX'hc'h'hc'f'X]fYWhmVmYa U]'cf'j]U'A ccX'Y'"Mci 'WUb'U'fUW' 'Ug'U'k cfX'Z'Y'cf'k f]h'X]fYWhm]b'hc' 'hY'Ya U]"

5]a . 'K f]h'f'YZYW]j Y'mUVci h'hY'dfcW'gg'cZfYgYUfW]b[ždfYgYbh]b['UbX'fYW]j]b['ZYXVUW_'cb'nci f ZUW]fU]cb'"Mci 'WUb'W'ccgY'hc'Ya d'Ug]gY'cbY'dUfhcZ'hY'dfcW'gg'c] Yf'hY'chYfgž'Zcf'YI Ua d'Y.

!'Uj]b['fYW]j YX'k f]h'Y'Z'ZYXVUW_ž'nci 'a UmW'ccgY'hc'f'YZYW]cb'k \U'nci 'Wci 'X'Uj Y'XcbY'X]ZYfYbh]hc]a d'fc] Y'nci f'fYgi 'hC F

!'nci 'a Umi gY'hY'cddeh] b]m]cZfYZYW]cb'hc'fi a]bU'Y'cb'h'Y'fYgYUfW' 'dfcW'gg. 'Y["VmZ f'hYf Y'UVcfU]b['cb'\ck 'nci 'k \m]nci 'W'cgY'hc'Xc'gca Y'a cfY'fYgYUfW' 'cb'U'dUfh]W 'Uf'UgdYWhcZ'hY'hd]WC F

!'nci 'a UmifZYW]cb'hY'UggYgga Ybh'UbX']h]i h]m]Ug'U'k \c'YžY["d'fc]]XY'ZYXVUW_'cb'k \h'Y'f'cf'bc] h]g'UggYgga Ybh\Ug'VYb'U'i gYž 'k Um]hc'YI d'cfY['cVU'Z'a]b]ga g'c F

!'U[YbYfU'f'YZYW]cb'cb'hY'hd]W#Wci fgY]h]Y'Zi g]b['nci f'ZUW]fU]cb'Ug'U'gd'f]b['VcUfX"

<ck 'hc'UddfcUW' 'h]g'UggYgga Ybh'h]g]g'bc]hU'Zcfa U'fYgYUfW' 'UbX'k f]h]b['YI YfW]gY'f]Y'"bc]hUb YggUmŁ'F U'hYf']h]g'XYg][bYX'hc' [Yh]nci 'hc'f'YZYW]cb'\ck 'nci f'fYgYUfW'ždfYgYbh]cb'UbX#cf]bh'fd'fYU]h] Y'g_]`g'UfY'XYj Y'cd]b['Ug'hY'Wci fgY'dfc[fYggYg'"Dfcj]XYX'nci 'Wca a i b]WU'h'nci f']XYUg WYUf'mUbX'XYa cbg]fU'h' [Ybi]bY'f'YZYW]cbž'nci 'k]'f'YW]j Y'Z 'a Uf_g'Zcf'h]g'UggYgga Ybh'

: YZXVUW_ 'Mci f'fYZYW]cb'k]'VY'fYgdc]bXYX'hc'j]U'Ya U]'k]h]b'U'k YY_'cZfYW]j]b['h'

Gi Va]gg]cb'bc]h]g.J YfVU'UggYgga Ybhž'k f]h]Y'Z'ZYXVUW_#f'YZYW]cb"

Hi fb]h]b'gYh]b[. 'H\]g]g'bc]hU'Hi fb]h]b'Ugg][ba Ybh

5 hYbXUbW F Yei]fYa YbHg

Gh XYbHg UfY gHfcb[mYbWci fU[YX'hc UHhYbX'U''WUggYg UbX'fYj]Yk ''YWhi fY'fYWc fX]b[g"

7 ci fgY'GWXYXi `Y

[J \]Yk WUgg'ha YhUVY](#)

H]a YhUV`Y`

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	Hi hcf]U`	GYW `Uf`UbX`#j g`fY`][[ci g`ZYa]b]ga g`]b`hY`A]XX`Y 9UghUbX`B cfh`5Z]WJ
K YY_+. %5df]`!+`5df]`	@YWh fy	K \Uh]g; `cVU` : Ya]b]ga 3`H\Y`I B`K ca Yb]g 8YWXy
	Hi hcf]U`	K \Uh]g; `cVU` : Ya]b]ga 3`H\Y`I B`K ca Yb]g 8YWXy K cf_g\cd. `9ggUmk f]h]b[
K YY_., ; `5df]`!%(`5df]`	@YWh fy	�X][Ybci g#B Uh] Y`ZYa]b]ga g
	Hi hcf]U`	8YW�`cb]g]b[`ZYa]b]ga g
K YY_-. %) `5df]`!`&% 5df]`	@YWh fy	DcghGcj jYhZYa]b]ga g. `Di ggmF]chUbX` : Ya Yb K fUd`i d. `7 cbhYa dcfUfmiZYa]b]ga g`]b`hY`YfU`cZ a Y`hc
	Hi hcf]U`	Di ggmF]chZ` : Ya Yb`UbX`W�`bhYa dcfUfmiZYa]b]ga g
	5ggYgga Ybh	F YgYUfWk `YggUmXi Y`cb`A cbXUm%) h`5df]`fHi fb`� �#A ccX`Y�`Vm(da
K YY_%. `&&`5df]`!`&, 5df]`	F YUX]b[K Y`Uj Y`bc`ZJW`hc`ZJW`WUggYg`]b`K YY_`%\$`Xi Y`hc 5bnUW8Umid V`]W\c`]XUm
	5ggYgga Ybh	Hi hcf]U`fYgdcbgYg`DUfh`=f(`!`&\$`k cfXg�`]g`Xi Y`Vm (da : f]XUm`*`h`5df]`

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

H\YfY`jg`bc`gYhHl Hcc_`Zcf`h]g`Wci`fgY"GYhfYUX]b[g`Zcf`YUW`k`YY`_`k`j`VY`Uj`U]UV`Y`j]b`XYg][bUHfX
Z`XYfg`cb`A`ccX`Y"

5b`YggUm[i`j]XY`k`j`VY`dfcj`j]XYX`cb`A`ccX`Yz`k`j]h`gi`[[YghfX`fYUX]b[g`Zcf`gdYW]Z]WYggUmei`Ygh`cbg"

9I`h`bg]j`Y`i`gY`k`j`VY`a`UXY`cZ`@Y[Ubtc`!`j]bW`X]b[`fYUX]b[g`UbX`gci`fWg`Zcf`h`Y`YggUm`

F YWca a YbXYX`F Ygci fWg

>ci`fbU`g.`3gefD`fS`_`8W`_`[`[ef`E`fgV[W`e`-`8W`_`[`[ef`E`fgV[W`e`-`8W`_`[`[ef`D`Wh[W`-`9`W`VWd`S`_`V`:`[efack`-`9`W`VWd`
S`_`V`E`aU[Wfk`-fi<agd`S`^aXI`_`a`_`W`_`e`:`[efack`-`<agd`S`^aXfZW`:`[efack`aXE`Wj`gS`f`k`-`:`[efack`I`_`ad]eZab`->[fZ`
/3gefZ`XW`_`[`[ef`Z`[efackf`E`Wj`gS`f`[W`e`-`E`[Y`_`e`-`I`_`a`_`W`_`e`:`[efad[US`^D`Wh[W`_`I`_`a`_`W`_`e`E`fgV[W`e`;`fWd`Sf[a`S`^`
8adg`_`fi`I`_`a`_`W`_`e`E`fgV[W`e`C`gSd`Wd`k`-`U`_`Uj`U]UV`Y`j`j]U`@]VfUfm7`UH`U`c`[`i`Y`"K`_`Yb`i`g]b[`];`cc[`Y`GW`c`Uf`
a`U`_`Y`gi`fY`mci`_`UfY`_`c`[[YX`]b]tc`h`Y`@]VfUfmz`h`Uhk`Umimci`_`W]b`Xck`b`c`UX`Ufh]WYg"

h`h`fa`g`c`Z`fYgci`fWg`z`=\][`_`m`fYWca`a`YbX`h`Y`Ua`Un]b[`bYk`_`F`ci`hYX[`Y`<]g]rc`fmcZ`:`Ya`]b]ga`_`XUH`V`UgY`
Uj`U]UV`Y`j`j]U`h`Y`@]VfUfmW]UH`U`c`[`i`Y`f]b`_`cZ`@Y[Ubtc`!`-`]h`W`cb]U]bg`df]a`_`Ufm`UbX`gY`W`b`X`Ufm]gci`fWg`
gdUbb]b[`h`Y`[`c`VYz`ci`f`k`_`c`Y`h`a`Y`dYf]cX"

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

H\]g`]g`h`Y`h`j]fX`h`a`Y`h`U`h`=\Uj`Y`h`U`i`[\h`h`Y`Wci`fgYz`Vi`h`h`Y`Z]fghi]h`a`Y`=\Uj`Y`h`U`_`Yb`h`Y`h`h`c`f]U`g`!`=\Ua`_`j`Yfm`
YI`W]h`X`UVci`h`h`g`*`=\Uj`Y`h`U`_`Yb`W]fY`h`c`fYgdc`bX`h`c`gi`[[Ygh]cbg`a`UXY`Z`ca`_`ZYXVUW`_`fYW]j`YX`]b`&\$%`+`#`
&\$%`_`j`j]U`A`m`9I`dYf]YbW`#Ya`U]#WUgg`X]gW`gg]cb`!`h`Y`g`Y`]bW`i`XY`g`Y`h]b[`YggUmei`Ygh]cbg`cb`XYW`c`b]g]b[`
Z`Ya`]b]ga`_`UbX`h`Y`i`B`K`_`ca`Yb]g]8YWUXYz`gWfYb]b[`a`cfY`XcW`a`Yb]Ufm]ZcchU[Y`UbX`a`cfY`h`a`Y`XYj`ch`X`h`c`
UggYgga`YbhdfYdUfU]cb"

Gi Va]gg]cb`cZ5ggYgga YbhHUg_g

Gi Va]gg]cb`cZ5ggYgga YbhHUg_g

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

≠mci`YbWci bHYf`U`dfcV`Ya`k`Yb`U`H`Ya`d]b[`hc`gi`Va`]hmc`i`f`Ugg][`ba`Ybh`h`fci`[`\`Hi`fb]h]b`z`d`YUgY`
HY`Yd`cbY`9I`HYfbU`Gi`ddcfhcb`-`,`),`'`,`'`,`%cf`Ya`U]`h`Ya`cb`YI`HYfbU`HY`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`mY`UfL`≠mci`
UfY`i`bUV`Y`hc`gi`Va`]hmc`i`f`Ugg][`ba`YbhXi`Y`hc`U`ZU`hik`]h`Hi`fb]h]b`mci`a`Um`Udd`mi`Zc`f`Ub`YI`HYbg]cb`z`Vi`hmc`i`
a`i`ghfY`hU]b`mci`f`h]W`Yhbi`a`VYf`Zca`9I`HYfbU`Gi`ddcfhfU`cb[`k`]h`Ubmc`h`Yf`fY`Yj`UbhXcW`a`Yb`hg`L`hc`
]bWi`XY`Ug`Yj`]XYbW`hc`gi`ddcfhmc`i`f`YI`HYbg]cb`Udd`]W]h]cb"≠mci`Ya`U]`9I`HYfbU`Gi`ddcfhmc`i`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`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]hU`bX`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'Wcdmf][\hž' BGK 'Gh XYbh7cXY'cZ7cbXi W'Ubx'5Ww'dhUV'Y'I gY'cZ I BGK '⇒H'F Ygci fW'g'Dc`]Wm
- VY'Uk UfY'cZh'Y'ghUbxUfXg'cZVY\Uj]ci f'YI dYW'X'cZYj Yfmcby'j]b'h'Y'I BGK 'Wca a i b]m
- `cWJh'gYfj]Wg'UbX'j]bZcfa Uh]cb'UVci hl BGK 'UbX'I BGK '@]VfUfm

Gca Y'cZh'YgY'UfYUg'k]`VY'ZJa]]Uf'hc'mci ž'ch'Yfg'k]`VY'byk " "; U]b]b['U'gc`X'i bXYfghUbx]b['cZU`h'Y fY'UH'X'UgdYW'g'cZ9@G9'k]`Y'd'mci 'a U_Y'h'Y'a cghcZmci f'gh X]Yg'Uhl BGK ""

[\hhd.##ji V'YWf'i \]XYg" \]VfUfm'i bgk "YXi "Ui #' \]gY#JVci h' \]gY](#)

5 WUXYa]WbZcfa Uhcb`

: cfYggYbhU`ghi XYbh]bZcfa Uhcb`fY`Uh]b[`hc.

- fYei Yghg`ZcfYI hYbg]cb/
- `UhY`gi Va]gg]cbg`[i]XY`]bYg/
- fYj]Yk `cZa Uf_g/
- I B GK `<YU`h`UbX`GUZY`midc`]WYg/
- YI Ua]bUh]cb`dfcVWXi fYg/
- gdYWU`Vc]bg]XYfUh]cb`]b`hY`Yj Ybhcz]`bYgg`cf`a]gUXj Ybh fY/
- ghi XYbhYei]hmUbX`X]gUV`]`hm/
- UbX`chYfYggYbh]U`UWUXYa]W]bZcfa Uh]cbz`gYY

[\hfg.#k k k "Ufng"i bgk "YXi "Ui #W ffYbhghi XYbh\]bZcfa Uhcb`dfcVc`g!\[i \]XY`\]bYg#](#)

⇒ U[Y`7 fYX]h

DfchYghz% +` `D\chc.`7 ci fhYgmcZGYY`F YX`K ca Yb`g`K cf_g\cd`@i V`]WXca U]bO

7F ⇒ CG

7F ⇒ CG`Dfcj]XYf`7cXY.`\$\$\$- , ;