



ARTS3025

5 Xj UbWX 7 fYUhjj Y K f]hjb[

GYa YghYf'C bY''#'&\$%

7 ci fgY⁻Cj Yfj]Yk

`GHJZZ`7cbHJWh`8YHJ]`g`

7cbj Ybcfg

BUa Y	9a U]`	5j U]`UV]`]m	@cWUh]cb	D∖cbY
5ggcWJUHY DfcZYggcf DUi ``8Uk gcb	dUi `"XUk gcb4 i bgk "YXi "Ui	-	fcca `&% ž `Yj Y``&žFcVYfh K YVghYf 6i]`X]b[- ' ,) &&&\$

GWXcc`7cbHJWhr=bZcfaUh]cb

Fcca '' &&ž`Yj Y`'' FcVYfhK YVghYf6i]`X]b[

D\cbY.`f\$&Ł`-' ,) `(,) *

9a U]`. <u>'gUa 4 i bgk "YXi "Ui</u>

K YVg]hY. <u>http://t</u>

H\Y'GW\cc``cZh\Y'5fhg`UbX'AYX]U'k ci`X``]_Y'hc'FYgdYW2I``m'5W_bck`YX[Y'h\Y'HfUX]h]cbU``7ighcX]Ubgž h\Y'6YXY[U``f?Ybg]b[hcb`WUadigŁž;UX][U``f7]hm'UbX'5fh/`8Yg][b'7UadigYgŁUbX'h\Y'B[ibbUkU` dYcd'Y'fБighfU`]Ub'8YZYbW': cfW'5WUXYami]b'7UbVYffUŁcZh\Y``UbXg'k\YfY'YUW\'WUadig'cZIBGK`]g `cWUhYX"

5 HYbXUbW/FYei]fYaYbhg

5 'ghi XYbh']g'YI dYWYX'nc'UhYbX'U```WUgg'WcbhUWh\ci fg'Zcf'U'ZJWY!hc!ZJWY'fI & Łcf'V'YbXYX'Wci fgY'UbX Wca d'YhY'U``'UWf]j]h]Yg'Zcf'U'V'YbXYX'cf'Z ``mcb`]bY'Wci fgY"

5 'ghi XYbhik \c'Uff]j Ygʻa cfYʻh\Ubʻ%) 'a]bi hYgʻ`UhYʻa UmVYʻdYbU`]gYXʻZcfibcb!UhhYbXUbWY'''-Zgi W\'UʻdYbU`hm]gʻ]a dcgYXž'h\Yʻghi XYbha i ghVYʻ]bZcfa YXʻj YfVU``mUhih\YʻYbXʻcZWUggʻUbXʻUXj]gYXʻ]bʻk f]h]b[ʻk]h\]bʻ&(\ci fg"

ZUʻghi XYbhYI dYf]YbWYgʻ]`bYggža]gUXj Ybhi fYʻcfʻch\YfʻcVWY ffYbWYʻh\Uha U_YgʻUVgYbWYʻZfca ʻU WUgg#UWfjj]hmi bUj c]XUV`Yžcf`YI dYWygʻhcʻVYʻUVgYbhZfca ʻUʻZcfh\Wca]b[ʻWUgg#UWfjj]hmž'h\Ymg\ci `XʻgYY_ dYfa]gg]cbʻZfca ʻh\Yʻ7 ci fgYʻ5i h\cf]hmžUbX`k \YfYʻUdd`]WUV`Yž'h\Y]f`fYei Yghg\ci `XʻVYʻUVWca dUb]YXʻVmUb cf][]bU`cf`WYfh]ZJYX`WcdmcZUʻa YX]WU``WYfh]ZJWUHYʻcf`ch\Yf`Zcfa ʻcZUddfcdf]UHYʻYj]XYbWY"

5 '7 ci fgY '5 i f\cf]ma UmYI W gY 'U'gh XYbhZrca 'WUggYg'cf'UWjj]hjYg'Zcf'i d'hc'cbY 'a cbh\"'< ck Yj Yfz'h\Ym a UmUgg][b'UXX]hjcbU``UbX#cf'U'hYfbUhj Y'HUg_g'hc'Ybgi fY Wca d`]UbW"' 5 '7 ci fgY '5 i f\cf]miWcbg]XYf]b['h\Y [fUbh]b['cZUVgYbW' a i ghVY 'gUhjgZjYX'U'gh XYbhk]``gh]``VY 'UV'Y hc'a YYhh\Y'Wci fgY'g'`YUfb]b['ci H\can Yg UbX#cf'j c`i a Y'cZ`YUfb]b["'5 'gh XYbhgYY_]b['Uddfcj U``hc'VY'UVgYbhZcf'a cfY'h\Ub'cbY'a cbh\'a i ghUdd`m]b'k f]h]b['hc'h\Y'8 YUb'UbX'dfcj]XY'U``cf][]bU``cf'Wfh]Z]YX'gi ddcfh]b['XcW a YbhUh]cb"

: cf`a cfY`]bZcfa Uh]cb`UVci hh\Y`UhhYbXUbWY`dfchcWc`g`]b`h\Y`: UWY`hmicZ5fhg`UbX`GcW]U` GW]YbWYg.`<u>\hhdg.#k k k "Ufhg"i bgk "YXi "Ui #W ffYbh!ghi XYbhg#UWUXYa]W]bZcfa Uh]cb#dfchcWc`g![i]XY`]bYg#</u>

7ci fgY[·]8YHJ]`g

7 fYX]hDc]bhg***

Gi a a UfmcZhXY7ci fgY

Gi VYWh5fYU. '5dWSf[hWI_d[f[`Y H\]g'Wci fgY'WUb'U`gc'VY'ghi X]YX']b'h\Y'Zc``ck]b['gdYW]U`]gUh]cb. '7`Y{eZ

5 'dfUWljWl!VUgYX'Wci fgY']b'Wfcgg![YbYf]Wk f]h]b[žh]g'Wci fgY'Vi]'Xg'cb'Zci bXUh]cbg']b'hY'UbU'mg]g'UbX k f]h]b['cZWfYUh]jY'hYI hg'''Nci 'k]``\UjY'YI dYf]a YbhYX'k]h 'U'fUb[Y'cZk f]h]b[''[YbfYg']b'@YjY``%UbX'& K f]h]b['Wci fgYg'''Nci 'k]``XYjY'cd'fYgYUfW\'a Yh\cXc'c[]Yg'UggcW]UhYX'k]h 'XcWi a YbhUh]cbžgci fW]b['mci f ck b'a UhYf]U'''5g'U'@YjY`'' Wci fgY'h]g'Wci fgY'k]``dfcj]XY'U'gi ghU]bYX'cddcfh b]miZcf'mci 'hc']a dfcjY'UbX YI hYbX'mci f'k f]h]b['g_]``g'UbX'hc'k cf_'cb'U'`Uf[Yf'k f]h]b['dfcYWhVUgYX'cb'mci f'ck b'cf][]bU``fYgYUfW\'' Nci 'k]``VY']bhfcXi WYX'hc'h\Y'h\YcfYh]WU'`]ggi Yg'UggcW]UhYX'k]h\'ZWfcWf]h]W]ga 'UbX'Wfcgg![YbYf]Wk f]h]b[' UbX'UbU'mgY'_YmgUa d`Y'hYI hg'Zfca''h\]g'Z[Y'X''H\Y'Wci fgY'k]``dfcj]XY'Zcf'a cfY']b!XYdh\'k cf_g\cdd]b[h\Ub'U'@YjY`'&'Wci fgY''H\]g'Wci fgY'U]a g'hc'ZcghYf'U'dYYf!WfbhfYX'Wc!cdYfUh]jY``YUfb]b['dfcWfgg'k]W YbWci fU[Yg'mci 'hc'hU_Y'fYgdcbg]V]`]miZcf'mci f'ck b'XYjY`cda YbhUbX``YUfb]b['"

5 hh Y Wc b Wig]cb c Z h]g Wc i fgY h Y gh XY bh k]``VY UV Y hc

%" DfUWjWY h\Y`WfUZricZk f]h]b['hc`YI dUbX'mci f`fYdYfhc]fY

&" 7 f]h]WU``m'UddfU]gY 'mci f`ck b`k cf_`UbX`h\Y`k cf_`cZch\Yfg

'" I bXYfgHJbX`UbX`UddfYWJUHY`H\Y`dfUWJWU``XYWJg]cbg`kf]HYfg`aU_Y`]b`fY`UHJcb`hc`H\Y`WfUZhicZkf]HJb[

("8Ya cbghfUhY`]a dfcj YX`g_]``g`]b`h\Y`XfUZr]b[ž`fYj]g]b[`UbX`YX]h]b[`cZa Ubi gWf]dhg

HYUW]b[GhfUhy[]Yg

H\Y`YWi fYg`dfcj]XY`VUW_[fcibX`]bZcfaUh]cb`UVcih\]ghcf]WU`žh\YcfYh]WU``UbX`X]gWifg]jY`]ggiYg`[YfaUbY hc`h\]g`WcifgY"

H\YmU`gc`dfcj]XY`ghiXYbhg`k]h\`Yl Ua d`Yg`cZ\ck`hc`fYUX`hYl hg`UbX`UbU`mY`h\Ya`]b`fY`Uh]cb`hc`j Uf]ci g W`hi fU``UbX`\]ghcf]WJ``WcbhYl hg''GYa]bUfg`dfcj]XY`Ub`cddcfhi b]miZcf`[fci d`X]gW gg]cb`UbX`U`gc`Zcf]bXYdYbXYbhih\]b_]b[`UbX`d`Ubb]b["`Ghi XYbhg'`k cf_`k]``VY`k cf_g\cddYX`]b`@A G`UbX`k cf_g\cd X]gW gg]cb`k]``VY`gi a a Uf]nYX`]b`h\Y`gYa]bUfg''

5ggYgga Ybh

5ggYgga YbhHUg_g

5ggYgga Ybh'HJg_	K Y][\h	8iY'8UHY	GhiXYbhï@YUfb]b[CihWcaYgʻ5ggYggYX
AU∕cf [™] DfcYWh) \$I	\$, #\$*#&\$% `%%\$\$`DA	%ž ž(
K_cf_g\cd^dfYdUfUhjcbž ZYYXVUW_`UbX`YX]hjb["`	&\$1	Bch5dd`]WUV`Y	%ž&ž ž(
F YUX]b[`@c[`UbX`HYI h U` 7 c``U[Y`	' \$I	&-#\$'#&\$%`%%\$\$`DA	%∄

5ggYgga Ybh8YHJ]`g

5ggYgga Ybh% A U⁄cf Dfc YWh

GHUfh'XUHY.

@Yb[h\."\$\$\$!")\$\$

8YHJ]`g. `Gh XYbhg`XYj Y`cd`U`hcd]WZcf`h\]g`dfc'YWi]b`h\Y`Z]fgh(`k YY_g`cZh\Y`Wci fgY"`H\]g`dfc'YWi]g]bhYfX]gWJd`]bUfmUbX`fYei]fYg`gh XYbhg`hc`Ya d`cmU`fUb[Y`cZ[YbfYg`UbX`k f]h]b[`ghm`Yg`fUddfcl]a UhY`m' Ł]b`h\Y`YI d`cfUh]cb`cZh\Y`hcd]W`H\Y`dfc'YWi]g`' \$\$\$`k cfXg"`H\]g`]g`h\Y`ZJbU``UggYgga YbhHUg_"Gh XYbhg`k]`` fYWY]j Y`ZYYXVUW_`Zfca `WUgga UhYg`cb`XfUZhj Yfg]cb`cZh\Y]f`a U'cf`Ugg][ba YbhH\fci [\`k cf_g\cdd]b[`fcb A ccX`Y`UbX`]b`WUggŁ":]bU``ZYYXVUW_`Zfca `HYUW\Yf`k]``VY`]b`Zcfa `cZU`[f]X``]gh]b[``UggYgga YbhWf]hYf]U fk]h\fcca `Zcf`Wca a Ybhg`Ug`kY``Ł"

5ggYgga Ybh& K cf_g\cd'dfYdUfUh]cbžZYYXVUW_'UbX'YX]h]b["

GHUfh'XUHY.

8YhU]`g. 'Ghi XYbhg`k]```VY`UggYggYX`cb`kf]hYb`Wca a Ybhg`dcghYX`cb`A ccX`Y`]b`fYgdcbgY`hc`gi Va]hYX a Ubi gWf]dhgž`UbX`cb`Wcbhf]Vi h]cbg`hc`]b!WUgg`k cf_g\cdd]b[`cZh\YgY`a Ubi gWf]dhg"H\]g`ZYYXVUW_`k]```VY []j Yb`Vmh\Y`hYUW\Yf`j YfVU``m`]b`WUgg`YUW\`kYY_`]b`fYgdcbgY`hc`ghi XYbhgfMca a Ybhg`dcghYX`cb`A ccX`Y"

5ggYgga Ybh'. FYUX]b[@c[UbX HYI h U`7c``U[Y

GHUfh'XUHY.

8YHJ]`g. FYUX]b['@c['UbX'HYI hi U`'7 c``U[Y.'%\$\$\$!&\$\$\$'k cfXg'GhYd'C bY. FYUX]b['@c[=Zdf]bhW' hi fY'cZ hY'; i hYbYYf[YfU`\Ug'[]j Yb'k Umhc'X][]HU`W' hi fY'cZhY'; cc[`Y'YfUž'h\]g`\Ug'cb'm]bWfYUgYX'h Y'Ua ci bh cZhYI hih\Uhk Y'UfY']a a YfgYX']b"'Ghi XYbhg'k]``VY'Ug_YX'hc'WkccgY'U'dYf]cX'cZhK c'XUmg']b'k YY_'hc 'cZ gYa YghYf'Xi f]b['k \]W.'h\Ym`c['Ug'Wca dfY\Ybg]j Y`mUg'dcgg]V'Y'Yj Yfmd]YW'cZhYI hih\YmfYUX']b'df]bhcf cb`]bYž'Zfca 'Vcc_gž'Uff]WYg'UbX'YggUmgž'hc'bYk gdUdYf'ghcf]Ygž'gcWJU`a YX]U'dcghgž']bghfi Wf]cb'a Ubi U`gž Ya U]`gž`YfhYfgž'Zcfa gž'YhWH\Y'U]a '`]g'hc'YbWci fU[Y'ghi XYbhg'hc'fYZYWicb'h\Y'a Ugg'cZhYI hi U``a UHYf]U' k]h\]b'k \]W.'WfYUhj Y'k f]h]b['`WfW `UhYg'UbX'ci hcZk \]W.']hYa Yf[Yg''GhYd'Hk c.'HYI hi U``7 c``U[YH\Y UggYggUV`Y'dUfhcZh\]g'YI YfWjgY']g'U'g\cfh]bh/f[YbYf]Wd]YW' f\UhWc``UhYg'U'fYdfYgYbhUhj Y'gUa d'Y'cZ h\YgY'Zci bX'Y'Ya Ybhg'UWWcfX]b['hc'U'WkcgYb'df]bW]d`Y'cZcf[Ub]nUhcb'''H\]g'df]bW]d`Y'cZcf[Ub]nUhcb'a Um VY'bUffUhj] YždUfUHUI]gžgY[a Ybhj]]mžcf`]gh]b['f]Y''ž]b'U'd\UVYf]WD'cf'ch\Yfk]gY'UWfcfXYf'cZ ei cłUł]cbźcf'UWWcfX]b['hc'gca Y'dUłłYfb'XYłYfa]bYX'Vm[YbYf]WłmdY'cf'gWU'Y'cZXY[fYYg'cZZ]Wf]cbU']mź YłWŁ"K f]łłYb'ZYYXVUW_'k]``VY'dfcj]XYX'cb'U``'Ugg][ba Ybłgž'UbX'[YbYfU``df]bW]d`Yg'k]``VY'X]gW ggYX']b WUgg'Ug'dUfhicZicj YfU```U]a 'cZł\Y'Wci fgY'UbX']b'dfYdUfUh]cb'Zcf'a U/cf'k cf_"

Gi Va]gg]cb cZ5ggYgga YbhHUg_g

Ghi XYbhgʻUfYʻYI dYWhYXʻhcʻdi hih\Y]fʻbUa YgʻUbXʻghi XYbhibi a VYfgʻcbʻYj YfmdU[YʻcZh\Y]fʻUgg][ba Ybhgʻ

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

Zmci YbWci bhYf'U'dfcV'Ya 'k \Yb'UthYa dhjb['hc'gi Va]hmci f'Ugg][ba Ybht\fci [\'Hi fb]hjbž'd'YUgY hY'Yd\cbY'9I hYfbU''Gi ddcfhicb'-',) '' ' %cf'Ya U]`'h\Ya 'cb'<u>YI hYfbU'hY'hgi ddcfh4 i bgk "YXi "Ui</u>"'Gi ddcfh \ci fg'UfY', .\$\$Ua '-'%\$.\$\$da 'cb'k YY_XUmg'UbX'-.\$\$Ua '-') .\$\$da 'cb'k YY_YbXg'fl *) 'XUmg'U'mYUfŁ'' Zmci UfY'i bUV'Y'hc'gi Va]hmci f'Ugg][ba YbhXi Y'hc'U'ZJi `hk]h\'Hi fb]hjb'mci 'a UmUdd`m'Zcf'Ub'YI hYbg]cbžVi hmci a i ghfYhU]b'mci f'hjW_Yhbi a VYf'Zfca '9I hYfbU''Gi ddcfhfU'cb['k]h\ 'Ubmch\Yf'fY'Yj UbhXcW a YbhgŁ'hc]bWi XY'Ug'Yj]XYbWY hc'gi ddcfhimci f'YI hYbg]cb'Udd`]WUhjcb'' Zmci 'Ya U]`'9I hYfbU''Gi ddcfhimci 'k]`` Ui hca UhjWU'`mfYWY]j Y'U'hjW_Yhbi a VYfž'Vi h]Zmci 'hY'Yd\cbY'mci 'k]``bYYX'hc'gdYWJZWU``mUg_'Zcf'cbY" Hi fb]hjb'U`gc'dfcj]XYg'i dXUhYg'cb'h\Y]f'gmghYa 'gfUh g'cb'Hk]hYf"

; YbYfU``mž'UggYgga YbhiHUg_g'a i ghVY'gi Va]HHXXYYWYfcb]WU``mj]U'Y]H\Yf'Hi fb]h]b'cf'U'A ccX`Y Ugg][ba Ybh''=b`]bgHUbWYg'k \YfY'H\]g']g'bchdcgg]V`Yž']hk]``VY'gHUHX'cb'mci f'Wci fgY'g'A ccX`Y'g]HY'k]H\ U`HYfbUh]j Y'gi Va]gg]cb'XYHU]`g''

@UhY 5ggYgga Ybh DYbU`h]Yg

5b'UggYggYX'HUg_']g'XYYa YX'`UHY']Z]h']g'gi Va]HYX'UZHYF'H\Y'gdYW]ZJYX'Ha Y'UbX'XUHY'Ug'gYhici h']b'H\Y Wci fgY'@YUfb]b['A UbU[Ya YbhGmghYa 'f@A GŁ''

H\Y``UHY`dYbU`hm`]g`H\Y`cgg`cZ)ı `cZH\Y`hcHJ``dcgg]V`Y`a Uf_g`Zcf`H\Y`HUg_`Zcf`YUWX`XUmcf`dUfhiH\YfYcZH\Y k cf_`]g``UHY"`@UHYbYgg`k]```]bWi XY`k YY_YbXg`UbX`di V`]W\c`]XUmg"`H\]g`XcYg`bchUdd`mhc`U`HUg_`H\Uh`]g UggYggYX`Vi hibc`a Uf_`]g`Uk UfXYX"

K cf_'gi Va]httX:Zci fhtYb`f%(EXUmg`UZhYf`h\Y`Xi Y`XUhY`k]``VY`a Uf_YX`UbX`ZYYXVUW_`dfcj]XYX`Vi hbc`a Uf_ k]``VY`fYWcfXYX''`=Zh\Y`k cf_`k ci `X`\Uj Y`fYWY]j YX`U`dUgg`a Uf_`Vi hZcf`h\Y``UhYbYgg`UbX`h\Y`k cf_`]g`U Wca di `gcfmWci fgY`Wca dcbYbhzU`gh XYbhk]``VY`XYYa YX`hc`\Uj Y`a Yhh\UhfYei]fYa Ybh'`H\]g`XcYg`bch Udd`mhc`U`hUg_`h\Uhi]g`UggYggYX`Vi hbc`a Uf_`]g`Uk UfXYX''

K cf_`gi Va]hhYX'hk YbhnicbY'f&&:XUmg'UZhYf'h\Y'Xi Y'XUhY'k]``bch'VY'UWW/dhYX'Zcf'a Uf_]b['cf'ZYYXVUW_ UbX'k]``fYWY]j Y'bc'a Uf_`cf'[fUXY"'=Zh\Y'UggYgga Ybh'hUg_`]g'U'Wca di `gcfm'Wca dcbYbhicZh\Y'Wci fgY'U ghi XYbh'k]``Ui hca Uh]WU``m'ZU]``h\Y'Wci fgY"

GdYWJU``7cbg]XYfUh]cb`5dd`]WUh]cbg

 $\label{eq:milling} \end{tabular} Mci `WUb`Udd`millingYgdYWJU`Wcbg]XYfUh]cb`k \Yb`]``bYgg`cf`ch\Yf`WJfW a ghUbWfg`]bhYfZYfY`k]h\`mci f UggYgga YbhidYfZcfa UbWf"$

G]W_bYggža]gUXjYbhifY`cf`ch\Yf`W]fW a gHubWfg`VYmcbX`mcif`Wcbhfc``aUm

ł DfYj Ybhmci Zfca Wcad Yhjb[UWci fgY fYei]fYa Ybhž

ł?YYdimci Zfca UHYbX]b[UbiUggYggUVYUW]j]mž

ł Ghod moi i gi Va]hh]b[iUggYggUV Y k cf_ Zcf U Wci fgYž

ł `G][b]Z]WUbhmUZYWimci f`dYfZcfa UbWi`]b`UggYggUV`Y`k cf_ž`VY`]hU`Zcfa U``YbX!cZigYa YghYf`YI Ua]bUh]cbž`U WUgg`hYghž`U``UVcfUhcfmhYghž`U`gYa]bUf`dfYgYbhUh]cb`cf`Ubmich\Yf`Zcfa `cZUggYgga Ybh'

: cf'Z fh\Yf'XYHJ]`g`]b`fY`UH]cb`rc`GdYW]U``7 cbg]XYfUH]cb`]bWi X]b[`''K \Yb`rc`5dd`mf'Z''<ck`rc`5dd`mf'UbX "Gi ddcfh]b[`8cW a YbHJh]cb"'d`YUgY`fYZYf'rc'h\Y`GdYW]U``7 cbg]XYfUH]cb`rk YVgh]Y.` \hrdg.##gh XYbH'i bgk "YXi "Ui #gdYW]U`!Wcbg]XYfUH]cb

5WUXYa]W<cbYghmUbX^D`U[]Uf]ga

D`U[]Uf]ga `]g`i g]b[`h\Y`k cfXg`cf`]XYUg`cZch\Yfg`UbX`dfYgYbh]b[`h\Ya `Ug`mci f`ck b"`=hWUb`hU_Y`a Ubm Zcfa gžZca `XY`]VYfUhY`W\YUh]b[`hc`UWW]XYbhU``mWcdm]b[`Zca `U`gci fWY`k]h\ci hUW_bck `YX[Ya Ybh'

IBGK '[fcidg'd`U[]Uf]ga ']bhc'h\Y'Zc``ck]b['WUhY[cf]Yg.

7 cdm]b[..i g]b[.ih,Y`gUa Y`cf`j Yfmig]a]`Uf`k cfXg`hc`h,Y`cf][.]bU``hYI h`cf`]XYU`k]h\ci hUW_bck `YX[.]b[.ih,Y gci fWY`cf`i g]b[`ei chUh]cb`a Uf_g"`H\]g`U`gc`Udd`]Yg`hc`]a U[.Ygž`Ufh`UbX`XYg][b`dfc`YWfgž`Ug`k Y```Ug dfYgYbhUh]cbg`k \YfY`gca YcbY`dfYgYbhg`Ubch\Yf`g`]XYUg`cf`k cfXg`k]h\ci hWfYX]h"

=bUddfcdf]UhY'dUfUd\fUg]b[.'W\Ub[]b['U'ZYk 'k cfXg'UbX'd\fUgYg'k \]Y'a cghmfYhU]b]b['h\Y'cf][]bU' ghfi Whi fY'UbX']bZcfa Uh]cb'k]h\ci hUW_bck `YX[Ya Ybh''H\]g'U`gc'Udd`]Yg']b'dfYgYbHUh]cbg'k \YfY'gca YcbY dUfUd\fUgYg'Ubch\Yf'g']XYUg'cf'k cfXg'k]h\ci hWfYX]h''=hU`gc'Udd`]Yg'hc'd]YW]b['hc[Yh\Yf'ei chYg'UbX dUfUd\fUgYg']bhc'U'bYk 'k \c`Yž'k]h\ci hfYZYfYbW]b['UbX'U'gh XYbhg'ck b'UbU`mg]g'hc'Vf]b['h\Y'a UhYf]U` hc[Yh\Yf''

7 c``i g]cb. 'k cf_]b['k]h 'ch Yfg'Vi hdUgg]b['cZh Y'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'Ubch Yf'gh XYbhVYZcfY'h Y'Xi Y'XUhYzcf'Zcf'h Y'di fdcgY'cZh Ya d`U[]Uf]g]b['UhUbmh]a Yž'dUm]b['Ubch Yf'dYfgcb'hc'dYfZcfa 'Ub'UWUXYa]WhUg_ž'ghYU`]b['cf'UWei]f]b[Ubch Yf'dYfgcb'g'UWUXYa]Wk cf_'UbX'Wcdm]b[']hz'cZYf]b['hc'Wca d`YhY'Ubch Yf'dYfgcb'g'k cf_'cf'gYY_]b[dUma YbhZcf'Wca d`Yh]b['UWUXYa]Wk cf_''

=ÐUddfcdf]UhY`W]hUh]cb. 7]h]b[`gci fWYg`k∖]WX`\Uj Y`bchVYYb`fYUXžk]h\ci hUW_bck`YX[]b[`h\Y`″gYWcbXUfm´ gci fWY`Zfca`k∖]W\`_bck`YX[Y`cZh\Ya`\Ug`VYYb`cVhU]bYX"

8id`]\WUh]cb`fl`gY`ZId`U[]Uf]ga "Ł`gi Va]hhjb[`mcif`ckb`kcf_ž`]b`k\c`Y`cf`]b`dUfhž`k\YfY`]h\Ug`dfYj]cig`m VYYb`dfYdUfYX`cf`gi Va]hhYX`Zcf`Ubch\Yf`UggYggaYbhcf`\\circf`Ucil BGK `cf`Ubch\Yf`ib]jYfg]hm"

7 cffYWhfYZYfYbW]b[dfUWf]WYg.

• VYHYfa UbU[Y'mcifh]a Y

7 ci fgY GWX YXi `Y

<u>J]Yk 'WUgg'h]a YHJV`Y</u>

H]a YHJV`Y'

8 UHY	Hmd Y	7 cbhYbh
K_YY_`%`&*`: YVfi_Ufm!`(A_UfVX	@YWifY	=bhfcXiWnjcb.; YbfY`UbX`7fYUhjj]hm
K_YY_`&.`) `A_UfVX.`!`%% A_UfVX	@YWhifY	7 fYUhjjYK f]hjb[ž: U_YBYk gžUbXDcghiHfih∖
		=blfcXiW1jcbihciHUfUiAcggžFZW8[Uf[a`S^ Ia_S`f&\$%(Ł
		5bXfYk `7U`WiHhž`~H\Y`Gifdf]g]b[`Cf][]bg`cZfDcgH Hfih\f`–`UbX`\ck`]hkUg`GdUkbYX`VmH\Y`@]VYfU` @YZh~f&\$%*Ł
		5XUa '?]fgW\ž'″@]Y'hc'AY.':]Wf]cb']b'h\Y'DcghHfi h\ 9fU″'f&\$%+Ł
		5`]gcbʻ;]VVcbgži″DcghacXYfb]gai]gʻ8YUX"`K\Uh 7 caYgʻBYI h3″`f&\$%+Ł
		AUf]Y!@UifY`FmUbži″DcghacXYfb]ga`UbX`h∖Y 8cWff]bY`cZDUbZ]Wf]cbU`]hm″`f1%+Ł
	GYa]bUf	5 Zf]YbX`mWXUhUVci hk f]h]b[
k yy_''.`%&`A ufwx`!`% A ufwx	@Y₩ i fY	FYU`]hmi <ib[yfiubxi5ihcz]wk]jcb< td=""></ib[yfiubxi5ihcz]wk]jcb<>
		FYUX]b[g
		YIhfUWkgʻZfca `8Uj]X`G\]Y`XgžDWS^{fk:g`YWdf&\$%\$Ł
		cdYb]b[ˈhcːG∖Y]`U` <yh]ž:ai ezag∿vsbwdea`<br="">4W1f&\$%\$Ł</yh]ž:ai>
		AUf∕cf]Y`Kcfh\]b[hcb`″:]Wn]cb`]b`h\Y`Dcgh'Hfih\`9fU. H\Y`≢cb]W9ZZYWng`cZ5ihcZ]Wn]cb‴f&\$%+Ł
	GYa]bUf	FYUX]b[`\UV]hg
k yy_`(.`%-`A ufwx`!`&) A ufwx	@YWhifY	:fca DcghacXYfb`≢cbmhc'h∖YBYk'G]bWff]hm
		DWSV[Ye

1		>c\b`6Ufh\zॅ´H\Y`@]hYfUhifY`cZ9I\Uigh]cb´´`f%-*+Ł
		>c\b`6Uft\ž̃″@cgh]b`t\Y`:ib\cigY″`f%-*,Ł
		8Uj]X': cghYf'K U``UWYž'″9'I b]Vi g'D`i fUa .
		HY`Yj]g]cb`UbX`I "G"`:]Wjcb~`f%' Ł
		8Uj]X`: cgHYf`K U``UVW`ž´´CWHYh´`f1%Ł
	GYa]bUf	k cf_g\cdd]b[
K_YY_`).`&*`A_UfWX`!`%	@YWhifY	:]WJcb`UbX#Jg`GcWJU``AYX]U
5df]`		
		FYUX]b[g
		BUakU`]'GYfdY``ž'″H\Y'6cc_'cZ:UWYg″'f&\$%(Ł
		>Ybb]ZYf`9[Ubž´´6`UW_6cl´´`f&\$%&Ł
	GYa]bUf @YWhifY	K_cf_g\cdd]b[H\Y`Hk_]WF`Hc`X`HU`Y`H]a_Yg`=bZ]b]hm`F_YhY``]b[_`UbX
		F Ya YX]Uh]b[`Ghcf]Yg
		FYUX]b[g

		FYUX]b[g
		?]a `5XXcb]n]cž´´: i W_´´f&\$\$)Ł
		<yfu`@bxgym6]fxž`~?yuhg`]g`8yux`gc`:iw_`ay`zfca 6Y\]bX~`f&\$%*Ł</yfu`@bxgym6]fxž`~?yuhg`]g`8yux`gc`:iw_`ay`zfca
		< YfU`@]bXgYm6]fXž´´A cb]WJ´`f&\$%*Ł
		DUi``8Ukgcbž″8YWUfUh]cbicZh\YiF][\hgicZF][\hg f&\$%*Ł
	GYa]bUf	K cf_g\cdd]b[
K_YY_*%\$.*+*A_Um'!*%	@YWhifY	DYfZcfa]b[`; YbXYf~fUgʻUʻk f]hYfŁ
A Um	GYa]bUf	K cf_g\cdd]b[
K_YY_*%%*%(*A_Um!*&\$	@YWhifY	: Ya]b]ga 'HcXUm'Cfžh\Y' <mghyf]u'cz, bchu``a="" td="" yb<=""></mghyf]u'cz,>
A Um	GYa]bUf	K cf_g\cdd]b[
K_YY_`%&.`&%`A_Um'!`&+	@YWhifY	Ghi XYbhF YUX]b[g
A Um	GYa]bUf	K cf_g\cdd]b[
K YY_`% .`&, `A Um!'' >i bY	GYa]bUf	K cf_g\cdd]b[

FYgci fWg

DfYgWf]VYX F Ygci fWfg

FYWca a YbXYX FYgci fWYg

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

9UWX mYUfžfYUX]b['a UhYf]U`g`UbX`dYXU[c[] **†** g`UfY`fYj]gYX`Ug`U`fYgi 'cZ **†** XY Ug``cb['Ug`h\YmUfY`Wcbg]XYfYX`UbX`dfcX Wf]jY"`G XYbhg`UfY`YbWci fU[YX`hc`Wca a Ybh]bZcfa U``mcb`h\Y Wci fgY`h\fci [\ci hih\Y`gYa YghYf" H\Y`Zcfa U`ž'UbX`Ubcbma ci gž75H9=Yj U`i Uh]cb`dfcWYgg`Uhih\Y`YbX`cZ gYa YghYf`]g`cZ]h a dcffUbWY`Zcf`h\Y`cb[c]b[`XYj Y`cda YbhcZ \]g`Wci fgY"

Bck \Uh75H9=YjU`iUh]cbg`UfY`WcbX WYX`cb`]bYž` XYbhdUfh dUhcb \Ug XfcddYX XfUa Uh ΜŽ fY`]UV`Y"': cf`]bghUbWYžk \Yb`cb`mU`ga U```dfcdcfh]cb`cZ fYgi b[]b ZYYXVUW_ k \]W]g ghuhgh] mi Х XYbhg`fYqdcbXžcbY`X]qqUhqZ XYbhWUbWcbghhhhY&\$i cZ \Y`cj YfU```fYqdcbqY"' =hhYbXq`hc`VY`cb ď XYbhgʻk \c``cj YX`U`Wci fgY`cf`h\cgY`k \c`k YfY`X]g]``i g]cbYX`Vmi]hk \c`HU_Y`h\Y`h]a Y`hc`Z[```ci hih\Y h\Y'q' gi fj Ymg" H\]gidfYgYbhgiUig_Yk YXicj YfU```]a dfYgg]cbicZk \Uhig' XYbhgih\ci [\hli Mci i UfYih\i gii f[YXihcihU_Y h\Y'ha Y'hc'Z```ci hih\Y'75H9=qi fj YmUhih\Y'YbX'cZqYa YqhYf"'F Ya Ya VYf'hccz'h\Uhi]b'h\Y'qUa Y'k Um Wca a YbhgʻcbʻUbʻUgg][ba YbhUfY a cfY`\Y`dZ``h\UbʻU a Uf_žmci f`k f]hhYbʻZYYXVUW_cbʻh\Y`Wci fgY`]gʻa cfY]adcfhUbhih\Ubih\Y'Vcl gimci'h] žicfih\Y'WfW gimci'W[W_icbik]h\imcifiacigY"

⊨a U[Y[·]7 fYX]h

6cX g'/ "=bhYfZJWg'&\$%*

7F=7CG

7F =7CG Dfcj]XYf 7cXY. \$\$\$-,;