



ARTS1121

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

7ci fgY`Cj Yfj]Yk

GHJZZ'7cbHJW`8YHJ]`g

7cbj Ybcfg

B Ua Y	9a Uj`	5j Uj`UVj]m	@cWjhcb	D\cbY
6fmb]`HfYn]gY	V`hfYn]gY4 i bgk "YXi "Ui	D`YUgY`Ya Uj`Zcf Uddc]bha Ybh	F cVYfh K YVghYfz F cca`%%+ @Yj Y`%	-',) `() %

@YWhi fYfg

B Ua Y	9a Uj`	5j Uj`UVj]m	@cWjhcb	D\cbY
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F cca`" `%%ž`@Yj Y`" žF cVYfhK YVghYf`6i]X]b[`f] %Ł

D\cbY.`f\$&Ł`-',) `(`,) *

9a Uj]: [gUa 4 i bgk "YXi "Ui](#)

K YVg]hY: [k k k "Ufng"i bgk "YXi "Ui #gUa](#)

H\Y`GWcc`cZH`Y`5fng`UbX`A`YX]U`k ci `X`_]Y`rc`F`YgdYW`z`m5W`bck`YX[`Y`h`Y`HfUX]`hcbU`7i`g`rcX]Ubgž`h`Y`6YXY[`U`f`P`Ybg]b[`hcb`W`a`di`gŁž;`UX][`U`f`7`]m`UbX`5`f`h`/`8`Yg][`b`7`Ua`di`g`YgŁ`UbX`h`Y`B[`i`bb`Uk`U`d`Y`cd`Y`f`5i`g`f`U`]Ub`8`Y`Z`Y`b`W`:`c`f`W`5`W`U`X`Y`a`m]b`7`Ub`V`Y`f`U`Ł`c`Z`H`Y`Ub`X`g`k`Y`f`Y`Y`U`W`W`a`di`g`c`Z`I`B`G`K`]`g`c`W`h`Y`X`"

7 ci fgY'8YHJ]`g

7 fYX]hDc]bhr *`

Gi a a UfmicZhY'7 ci fgY

Gi VYWh5fYU. FZWSfdWS` V BWAad_ S` UWE fgV[W

H\]g`Wci fgY`WU`U'gc`VY`ghi X]YX`]b`hY`Zc`ck]b[`gdYWU`]gU]cbg. `5 dWSf]hWl` dff` Yf 6 S` UWE fgV[Wet ? WWS]f 5 g`fgdWS` V F WUZ` a`hYk

DYfZcfa UbW`]g`hY`dfUW]W`h`UhVf]b[g`WYU]j]mhc`"]Z`" `h]g`Z` bXUa` YbH`"hc`h`YUfY!a` U_]b[`Z`XUbW`UbX`]j`Y`Uf]h`g`h`c`f`m`h`"]b[`]b`Z`a` Z`Ub]a` Uh]cb`UbX`[Ua`Yg/UbX`hc`W`e`a`a`i`b]WU]b[`]XYUg`]b`di`V`]WfY`Uh]cbg`UbX` Vi`g]bYgg`"K` \YhYf`mci`f`Z`W`g`]g`Uf]gh]WYbXYUj`ci`f`]b`dfcZ]gg]cbU`dfcXi`W]cbz`W`h`fU`dUf]W]dU]cb`]b` W`e`a`a`i`b]m]gY]h]b[g`Z`cf`W`cbgi`a`Yf`dfUW]W`]b`Yj`YfmXUm`]Z`Z`mci`k`]"`YUfb`"ck`hc`UbU`mgY`h`Y`g][`b]Z]WbW` cZUW]cb`UbX`"ck`hc`XYg][`b`Yi`dYf]YbW]g`h`UhYb[U[`Y`Ui`X]YbW]g`hc`XUm`"H`Y`@]Z`cZDYfZcfa`UbW`[`]`Yg` mci`h`Y`g_]`g`hc`i`bXYfg]UbX`dYfZcfa`UbW`]b`h`Y`W`b`h`Y`a`dcfUf]m`cf`X`" `h]UddfcUW]Yg`h`Y`gh`XmicZ` dYfZcfa`UbW`UW]cgg`U`VfcUX`gdYW]f`a`Z`ca`gc`WU`f]h`U`g`]b`c`WU`g`Y]h]b[g`hc`a`i`h]a`YX]U`Yj`Yb]g`cb`h`Y` k`cf`X`ghU[`Y`"H`fci`[`\`U`W`e`a`V]bU]cb`cZUW]g`Y`gh`X]Yg`UbX`dfUW]W`]Z`Y`Xk`cf`Z`mci`k`]"`Yi`d`cfY`"ck` dUf]W]dU]cb[`]b`dYfZcfa`UbW`WYU]h]g`j`U`i`Yg`Z]XYb]h]h]Yg`UbX`VY`]Y`Z]h`UhW`bbYW]h`dYcd`Y`hc`[`Y`h`Yf`UW]cgg` [`c`VU`"b`Y`k`cf`g`"H`]g`]g`U`W`e`fY`@]j`Y`" `W`e`i`fgY`]b`h`Y`H`Y`UfY`UbX`DYfZcfa`UbW`Gh`X]Yg`gdYW]U`]gU]cb`" `h` WU]b`U`gc`VY`gh`X]YX`Ug`dUf]cZ`7`fYU]h]`Y`k`f]h]b[`Z`8`UbW`Gh`X]Yg`Z`UbX`A`YX]U]Z`7`i`h`fY`UbX`H`Y`W`bc`c[`m`

7 ci fgY`@YUfb]b[`Ci hW`e`a`Yg

- %`XYa`cbgfU]h`Ub`i`bXYfg]UbX]b[`cZ`h`Y`k`UmidYfZcfa`UbW`gh`X]Yg`fY`U]h]g`hc`c`h`Yf`X]gW]d`]bYg`-` YgdYW]U`m`h`Y`UfY`gh`X]Yg`Z`Ub`h`f`c`d`c`c`[`m`UbX`W`h`fU`gh`X]Yg`Z`UbX`X]g]h]b[`i`]g`h`Y`]XYU`cZ` 'dYfZcfa`UbW`'Z`ca`h`Y`]XYU`cZ`h`Y`UfY`
- &`UbU`mgY`U`fU]b[`Y`cZ]Y`YfmXUm`]Z`VY`U]j`]ci`fg`UbX`Yj`Yb]g`Ug`dYfZcfa`UbW`'
- '`" `Udd`m]gca`Y`cZ`h`Y`_Y`m]h]fa`]bc`c[`micZ`dYfZcfa`UbW`gh`X]Yg`-`gi`VX`Ug`" `a`]bU`]m]z`"m]f]X]m]z` 'ei`ch]X]Ub`"UbX`gma`Vc`]WUbX`fYg]h`fYX`VY`U]j`]ci`f`-`hc`U`k`]XY`fU]b[`Y`cZ]Y`YfmXUm]UbX` W`e`b`h`Y`a`dcfUf]m]dYfZcfa`UbW`dfUW]W]g`Z`UbX`VY`UV`Y`hc`Yj`U`i`U]h`h`Y`Yj`c`j`]b[`W`e`bbYW]cbg`VY`k`Y`Yb` h`cgY`dfUW]W]g`
- (" `Udd`fYW]U]h`h`Y`fc`Y`UbX`Z`bW]cb`cZ`UbX`XYa`cbgfU]h`gca`Y`g_]`g`]b`gY`Z`X]fYW]X`Y`h`bc[`fUd`]W` UbU`mg]g`cZ`dYfZcfa`UbW`
-)`]"`XYb]h]Z`m`"ck`W`h`fU`dYfZcfa`UbW`UbX`W`e`b`h`Y`a`dcfUf]m]Uf]g`dfUW]W]`]g`]bZcfa`YX`Vm]UbX`fYg]dcbXg`hc` bU]cbU`"UbX`]b]h]fbU]cbU`dc`]h]WU`"UbX`UYg]h`Y]W]W`e`bW]fbg`
- *`" `XYa`cbgfU]h`Z]a`]`]Uf]m]k`]h`g`W`c`Uf]m]fYgYUfVX`dfUW]W]`k`]h]b`h`Y`X]gW]d`]bY`cZ`dYfZcfa`UbW` gh`X]Yg.`U`E`" `fYUX`UW]XYa`]WUbX`dYfZcfa`UbW`h`l`hg`k`]h`W]h]WU`i`bXYfg]UbX]b[`V`E`" `UW]W]gg`]bZcfa`Uh]cb`UbX`fYgci`fW]g`fY`Yj`Ub]h`c`dYfZcfa`UbW`gh`X]Yg`UbX`W`e`b`h`Y`a`dcfUf]m]dYfZcfa`UbW`W`E`" `Z`c`ck`h`Y`W`e`b]`Yb]h]cbg`cZUW]XYa`]Wk`f]h]b[`]Y`fY`Z]fYbW]b[`UbX`ei`c`U]h]cb`gmg]h`a`gX`E`" `k`cf_]`b`Ub` YZ]W]h]Y`Z`gY`Z`a`ch]j`U]h`X`k`Um]b`U`i`b]j`Yfg]m]W`e`b`h`Y`l`h`

HYUW]b[`Gh`fU]h`[]Yg`

H`Y`@]Z`cZDYfZcfa`UbW`k`]"`Yb[U[`Y`mci`]b`XmbUa`]WYUfb]b[`Yi`dYf]YbW]g.`WUggfcca`g`]bW]i`XY` k`cf`g`"cdg`]b`WYU]h]Y`dfcV`Ya`!gc`j`]b[`UbX`W]h]WU`"UbU`mg]g`Y`W]h`fYg`UfY`]b]h]fUW]h]Y`UbX`k`Y`k`cf`"h`fci`[`\` WU]g`Y`gh`X]Yg`hc`[`Y`h`Y`f`"K`Y`j`Yk`"dYfZcfa`UbW`"Ug`V`ch`U`U`[`i`]XY`hc`k`"U`h`k`Y`"YUfb`UVci`hUg`k`Y`"Ug`"ck`k`Y` Xc`ci`f`YUfb]b[`"H`]g`]g`]a`dcfU]b]h]VYW]i`gY`k`Y`gh`Xm]h`Y`]"`b`g`VY`k`Y`Yb`Yj`YfmXUm]W`h`fU`UbX`Uf]gh]W` dYfZcfa`UbW`dfUW]W]g`"H`]g`a`YUbg`h`Uhk`Y`i`bXYfg]UbX`dYfZcfa`UbW`"Ug`ci`f`cV`Y`W]cZ]bei`]fm]Ug`k`Y`"Ug`

ci f'a YhcX"Mcik]`VY`YbWci fU[YX`hc`hYghci hmcif`h]b_]b[`VmWc`UVcfUhb[`]b`WYUhj`Y`UbX`W]hW`
YI dfYgg]cb"Mcik]`WYUHY`dYfZcfa UbW`WcbWdhg`hUhFYZYWii dcb`UbX`W`YVfUHY`h`Y`k`Umj]b`k`\\WX
dYfZcfa UbW`ZYUhi`fYg]b`ci`f`XU]m`]j`Yg"

5ggYgga Ybh

D`YUgY`gYY`hY`Wci`fgY`A`ccX`Y`Zc`f`XYHJ`YX`]bZc`fa`Uh]cb`cb`Wci`fgY`UggYgga`Ybhg`"

5ggYgga YbhHUg_g`

5ggYgga YbhHUg_	K`Y][`h	8i`Y`8UH`	Gh`XYbh`@YUfb]b[Ci`hWca`Yg`5ggYggYX
:`Y`Xk`cf_`5gg][`ba`Ybh`	`)`	\$`*`#`\$`+`#`&`\$`&`\$`%`\$`.\$`\$`DA	%`z`&`Z`z`(`z`*`
hX]j`]Xi`U`fYdcfhi`	&`	B`ch5`dd`]WUV`Y`	%`z`&`Z`*`
;`fci`d`cf`]bX]j`]Xi`U` dfYgYbhU]cb`	%`	B`ch5`dd`]WUV`Y`	%`z`z`)
h!WUgg`hYgh!`gYhcb`A`ccX`Y`	&`	B`ch5`dd`]WUV`Y`	%`z`&`Z`

5ggYgga Ybh8YHJ]`g`

5ggYgga Ybh%`:`Y`Xk`cf_`5gg][`ba`Ybh`

GHUfhXUH`.

8YHJ]`g`.

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

D`YUgY`gYY`]bZc`fa`Uh]cb`cb`A`ccX`Y`]b`cfXYf`h`d`fYdUfY`Zc`f`h`]g`hUg_`"

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

5ggYgga Ybh&.`hX]j`]Xi`U`fYdcfh`

GHUfhXUH`.B`ch5`dd`]WUV`Y`

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

8YHJ]`g`.

hX]j`]Xi`U`fYdcfhcb`dfYgYbhU]cb`"

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Fi`Vf]Wz`Wca`a`YbhUbX`[`fUXY`"

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

D`YUgY`gYY`UXX]hcbU`]bZcfa Uhcb`cb`hY`Wci fgY`A ccX`Y"

Gi Va]gg]cb`bchYg.8i Y`cb`hY`Yj Yb]b[`cZmci f`D]hW`dfYgYbU]hcb`XUmVm%%da `!`k YY_g`+!%\$"

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

5ggYgga Ybh`. ; fci d`cf`]bX]j]Xi U`dfYgYbU]hcb

GhUfhXUHy. Bch5dd`]WUV`Y

@Yb[h. `h`h`hcf]U`dfYgYbU]hcbg.)!%\$`a]bi hYg[fci d`cf`]bX]j]Xi U`

8YH]`g.

; fci d`dfYgYbU]hcb"

F i Vf]W`Wca a YbhUbX`[fUXY"

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

D`YUgY`gYY`A ccX`Y`Zcf`XYH]`YX`]bZcfa Uhcb"

Gi Va]gg]cb`bchYg.HU_Yg`d`UW`Xi f]b[``YWh`fY`UbX`#cf`h`hcf]U`WUgg`h]a Yg`Xi f]b[`k YY_g`+!%\$

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

5ggYgga Ybh(. `h!WUgg`hYgh!`gYhcb`A ccX`Y

GhUfhXUHy. `

@Yb[h. `(\$`a]bi hY`]b`WUgg`hYgh!`gYhcb`A ccX`Y

8YH]`g.

(\$`a]b"; fUXY`cb`m!`gWXYXi`YX`Zcf`k YY`_%\$`"H]a Y`H67`cb`a ccX`Y"

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

Mci `UfY`fYei]fYX`h`Wca d`YH`h\]g`hYgh]b`hY`YWh`fY`h]a Yg`chXi f]b[`K YY`_%\$`"9I UWh]a Y`H65`"H\Y`hYgh`k]`VY`fi b`cb`A ccX`Y`"Zmci `UfY`i bUV`Y`h`UthYbX`Zcf`fYUgcb`cZa YX]W]`Ya Yf[YbW]mci `k]`VY`fYei]fYX`h`Wca d`YH`U`GdYW]U`7 cbg]XYfU]hcb`Udd`]W]h]cb`h`Udd`miZcf`U`a U_Y]!i d`hYgh`

Gi Va]gg]cb`bchYg.H\]g`]g`U`hYghWca d`YH`X`cb`A ccX`Y"

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

D`YUgY'gYY'I BGK `7cXY'cZ7cbXi WñZcf'a cfY`j]bZcfa Uhcb"

F YWca a YbXYX`F Ygci fWg

Mci `Wb`Z]bX`hY`"j]b`hc`hY`Wca d`Yh`Vcc_";`faVgUf[a``fa BwAd_ S` UWE fgV[We`VmF`jWUfX`GWYWbYf`j]b
K YY_`C bY`cZhY`Wci fgY`gWYXi `Y`"H\]g`]g`U`Y`dZ` ``hI hVcc_`hc`[fci bX`mci `]b`hY`X]gWd`]bY"

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

Gh XYbfg`]b`dfYj`]ci g`mYUfg`Yb`cmYX`"YUfb]b[`UVci hdYfZcfa UbW`Zca `X]ZYfYbhdYfgdYWj` Yg"

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'hgi 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'mYUfl" Ʒmci
UfY'i bUV'Y'hc'gi Va]hmc i f'Ugg][ba YbhiXi Y'hc'U'ZU'i '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'Y'YX'hc'gd'Y'W]WU'mUg_'Zcf'cbY"
Hi fb]h]b'U'gc'dfcj]XYg'i dXUH'g'cb'H'Y]f'gmgh'Ya 'ghU'i g'cb'Hk]H'Yf"

; YbYfU'mž'UggYgga YbhiHUg_g'a i ghVY'gi Va]H'YX'Y'Y'W'fcb]WU'mj]U'Y]H'Yf'Hi fb]h]b'cf'U'A ccX'Y
Ugg][ba YbH' 'b]bg]H'UbVW'g'k \YfY'H'g]g'bc]hd'cgg]V'Yž]hk]'VY'gh'UH'X'cb'mci f'Wci fgY'g'A ccX'Y'g]H'k]H'
U'HY'fbUH] Y'gi Va]gg]cb'XYHU]g"

: cf]bZ'fa UH]cb'cb'\ck'hc'gi Va]h]Ugg][ba YbHg'cb]bY'j]U'A ccX'Y. \H'hdg.#gh XYbH'i bgk "YXi "Ui #ck!
gi Va]h]Ugg][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'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']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'YW'i \]XYg"'\]VfUfm'i bgk "YXi "Ui #' \]gY#JVci h' \]gY](#)

5 WUXYa]W=Zcfa Uh]cb

: cf`YggYbh]U`ghi XYbh]bZcfa Uh]cb`fY`Uh]b[`tc.

- fYei Yg]Zcf`YI H`bg]cb/
-