



ARTS2480

☯hYfa YX]UHŸ : fYbWx '5

HYfa 'H\ŸŸ'##'&\$&\$

7ci fgY`Cj Yfj JYk

GHJZZ7cbhJWw8YHJ`g

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7ci fgY'8YHJ`g

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Gi a a UfmicZ\hY'7ci fgY

H\]g`Wci fgY`]g`XYg][bYX`Zcf`ghi XYbqg`k]h`VUg]W_bck`YX[Y`cZ: fYbW`YeI]j U`Ybhic`hk`c`hYfa`g#gYa`YghYfg`cZgh`Xm]b[`hY`Ub[i U[Y`Uhi`b]j`Yfg]hm`Yj`Y`"K`]h`U`Wca`a`i`b]W]h] Y`UbX`hUg_!VUgYX`UddfcUW`hc`ZcfY][b`Ub[i U[Y`YUfb]b[žmci`k`]"YUfb`hc`Wca`a`i`b]W]h]`]b`g]a`d`Y`UbX`fci`h]bY`hUg_g`fYeI`]f]b[`U`g]a`d`Y`UbX`X]fYWhYI`W`Ub[Y`cZ]bZcfa`U]cb`cb`ZJa`]"Uf`UbX`fci`h]bY`a`U]hYfg`"Mci`k`]"XYj`Y`cd`mci`f`]ghYb]b[`UbX`gdYU_]b[`g_]`g`Ug`k`Y`"Ug`mci`f`fYUX]b[`UbX`k`f]h]b[`g_]`g`h`fci`[`]j`Uf]YX`UW]j`]hYg`UbX`hUg_g`XcbY`]b`WUgg`UbX`#f`dfYdUfYX`Uh`lca`Y`"J`cW]Vi`UfmiUbX`[fUa`a`U]h]W]`g]h]i`W]i`fYg`UfY`dfYgYbhYX`]b`hY`WcbhYI`hcZ`W`h`fU`mfY`Yj`Ubh]g]i`Yg`Zca`":`fUbW`cf`hY":`fUbW`d`lcbY`k`cfX`"H\Y`a`YX]i`a`cZ]bqg]i`W]cb`]g":`fYbW`"

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

- %`I`bXYfghUbX`UbX`i`gY`k`]h`WcbZXYbW`Z`YeI`Ybhmi`gYX`YI`dfYgg]cbg]b":`fYbW`k`]\W`UfY`fY`UhYX`hc`UfYUg`cZa`cgh]a`a`YX]UhY`fY`Yj`UbW`
- &`7`ca`a`i`b]W]h]`Y`ZY`W]j`Y`m]b":`fYbW`]b`Yj`YfmXUm]hUg_g`fYeI`]f]b[`U`g]a`d`Y`UbX`X]fYWhYI`W`Ub[Y`cZ`]bZcfa`U]cb`
- '`"8`YgW]VY`]b":`fYbW`UgdYW]g`cZdYfgcbU`VUW_[fci`bXž]a`a`YX]UhY`Ybj`]fcb`a`YbhUbX`a`U]hYfg]`]b`UfYUg`cZ]a`a`YX]UhY`bYYX`
- ("8`Ya`cbqhfUhY`U`VUg]Wi`bXYfghUbX]b[`cZgca`Y`]"b[i`]gh]WUbX`W`h`fU`X]j`Yfg]hm]bWi`X]b[`hY`j`Uf]YX`bUhi`fY`cZ`hY":`fUbW`d`lcbY`k`cfX`

HYUW]b[`GhfUH[]Yg`

H\Y`UddfcUW`hc`hY":`fYbW`"Ub[i U[Y`]g`Wca`a`i`b]W]h] Y`UbX`hUg_!VUgYXžk`]\W`a`YUbg`hY`Wci`fgY`ZcW`gYg`cb`hY`Ub[i U[YžWca`a`i`b]W]h] Y`ghfUH[]Ygž`UbX`W`h`fU`Z]W`c`fg]b`XU]midYfgcb!hc!dYfgcb`]bhYfUW]cbž]b`cfXYf`hc`UW`ca`d`]g`a`YUbb[ž`"hUg_g`"H\]g]g]UW]Yj`YX`h`fci`[`]Wc`"UVcfU]h] Y`d`YYf`]bhYfUW]cb`UbX`]bWi`g]j`Y`hYUW]b[`ghfUH[]Yg`U]a`]b[`Uh`hY`]a`dfcj`Ya`YbhicZcfU`UbX`k`f]hYb`Zi`YbWhUbX`UW]W`fUW]ž`U`"gi`ddcfYX`VmU]j`Uf]YfmicZUi`hY`bh]W]XcW`a`Ybqg`UbX`j`Uf]ci`g`a`YX]U`hc`]bW]YUgY`gh`XYbh`]ghYb]b[`UbX`fYUX]b[`Wca`dfY`Ybg]cb`g_]`g`"H\Y`"Ub[i U[Y`cZ]bqg]i`W]cbž`UggYgga`YbhUbX`[YbYfU`Wca`a`i`b]W]h]cb`]g":`fYbW`":`UW]!hc!Z]W`hY`UW]b[`]g`gi`ddcfYX`UbX`Yb`UbW]X`Vmcb!]bY`a`UhYf]U`g`UbX`UW]j`]hYg`j`]U`hY`cb`]bY`d`UhZcfa`fA`ccX`Y`h`fci`[`]H9@H`I`B`G`K`";`UhYk`Uht`"

- `#`"YWi`fYgž`gh`XYbqg`a`U]b`mi`YUfb`UVci`hW`h`fY`hcd]Vg`Zca`hY":`fYbW`gdYU_]b[`k`cfX`f]gi`W`Ug`]Z]gmiY`/`gdcf]gž`cf`gcV]U`UW]j`]ga`k`UbX`hY`j`cW]Vi`UfmiY`UhYX`hc`hY`Z]Y`Xž`Ug`k`Y`"Ug`UVci`h`[fUa`a`Uf`hcd]Vg`f]gi`W`Ug`hYbgYg`cf`dfcbci`bgk]b`cfXYf`hc`XYj`Y`cd`UW]W`fUW]i]b`hY`"Ub[i U[Y`"Hc`ž`f`hYf`hY`gh`XYbqg`"YUfb]b[`YI`dYf]YbW]ž`U`"[fUa`a`Uf`YWi`fYg`k`]"VY`dfY`%

⊖·UXX]hcb'hc'hY'WUgg'UWj]hYgžgh'XYbhg'UFY'YI dYWYX'hc'Xc'k YY_m[fUa a Uf'YI YfW]gYg'UbX'']ghb]b['cf
k f]h]b['YI YfW]gYgž'Ug'k Y''Ug'fY[i 'Uf'df]j UH'gh'Xm'UbX'fYj]g]cb'Uh\ca Y'cf]b'hY'a i 'h]a YX]U'UFYU"
fK YY_'mdfUW]W'UbX'fYj]g]cb'k]h'hY'Ui X]c'UbX'j]XYc'a UH'f]U'UW'ca dUbm]b['hY'Wci fgY'hY h'cc_Ž'hY
cb]bY'Wcbh'bhcz'hY'Wci fgY'5'a]b]a i a 'cZ) \ci fg'dYf'k YY_'cZ]bXYdYbXYbhk cf_]g'YI dYWYX'"F Y[i 'Uf
UWj Y'dfUW]W'UbX'fYj]g]cb'UFY'YggYbh]U'Zcf'YZYWj Y'dfc[fYgg]cb"

5ggYgga Ybh

HfUj Y`UffUb[Ya YbHg`a UXy`df]cf#UZyf`h`Y`di V`]WU]cb`c`Z`h`]g`W`ci fgY`cj Yfj]Yk`UfY`bchU`j`U`]X
fYUgcb`Z`c`f`U`h`f`b`U`h`Y`UggYgga Ybh`

5ggYgga YbhHUg_g`

5ggYgga YbhHUg_	K Y][\h	8i Y`8UH`	Gh XYbh@YUfb]b[Ci hW`a Yg`5ggYggYX
HYgh%	(\$i	K YY_g`) /`%\$`Xi f]b[`bcfa U` h`h`cf]U``\`ci fg	%z&Z`ž(
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K YY`_micb`]bY`YI YfW]gYg`	&\$i	K YY_g`&Z` ž(ž+	%ž(

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GHUfhXUH`. Bch5dd`]WUV`Y

8YHU]`g.

H\]g`UggYgga Ybhk]``HU`_`d`UW`Xi f]b[`h`Y`h`h`cf]U`g`]b`h`k`c`d`Uf]g`" `b`c`b`Y`gd`YU`]`YX`k`YY`_`ž`gh` XYbHg`Ubgk`Yf`
W`a`dfY`Ybg]cb`ei`Ygh]cbg`cb`U`b`U`i`X]cf#`]XYcŁ`XcW`a`YbhFY`UH`X`h`c`h`Y`W`b`h`Y`b`h`c`Z`h`Y`W`ci`fgY`ž`h`Y`h`Y`gh`
`Ugh]b[`WU``()`a`]b`/`]b`U`b`c`h`Y`f`k`YY`_`ž`gh` XYbHg`dfY`d`UfY`U`h`c`d]WcZX]gW`gg]cb`fY`UH`X`h`c`h`Y`W`b`h`Y`b`h`c`Z`h`Y`
W`ci`fgY`ž`U`b`X`X]gW`gg`]h`c`f`U`m`k`]h`c`h`Y`f`gh`XYbHg`ž`h`Y`h`Y`gh`Ugh]b[`WU``()`a`]b``]b`W`i`X]b[`dfY`d`U`f`U`h]cb`h`a`Y`
H`Y`X]gW`gg]cb`]g`fY`W`Ł`f`Y`X`Z`c`f`U`W`W`f`U`W`i`c`Z`UggYgga Ybh`

: YYXVUW`_`cb`]]gh]b]b[`W`a`dfY`Ybg]cb`j`]U`W`Ł`f`Y`W]cb`c`Z`h`Y`h`Y`gh]b`W`Uggž`U`b`X`bi`a`Yf]WU``[`f`U`X`Y``: YYXVUW`
cb`cf`U`YI`dfYgg]cb`j`]U`bi`a`Yf]WU``[`f`U`X`Y`ž`fi`Vf]W]g`U`b`X`k`f]h`Y`b`W`a`a`Y`b`Hg`"

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

@]gh]b]b[`h`Y`gh]cb`%` `c`f`%`#`%`\$`&`\$`\$`f`k`YY`_)`Ł`U`b`X`gd`YU`_]b[`h`Y`gh]cb`%` `c`f`&`\$`#`%`#`&`\$`\$`f`k`YY`_`%`\$`Ł`W`b`Xi`W`h`Y`X`
Xi`f]b[`m`ci`f`bcfa`U`h`h`cf]U``\`ci`fg`"H`Y`h`Y`g`h`k`]``V`Y`X`cbY`cb`]bY`"

Hi`fb]h]b`g`Y`h]b[.`H`Y`g`]g`b`chU`Hi`fb]h]b`Ugg][`ba`Y`bh`

5ggYgga Ybh&`HYgh&

GHUfhXUH`. Bch5dd`]WUV`Y

@Yb[h.`7`U``-`\$`a`]b`"

8YHU]`g.

8i`f]b[`h`Y`Y`W`i`f`Y`g`ž`gh`XYbHg`Ubgk`Yf`W`a`dfY`Ybg]cb`ei`Ygh]cbg`cb`U`k`f]h`Y`b`h`Y`h`U`b`X`k`f]h`Y`U`W`a`d`cg]h]cb`

f&\$!&) \$'k cfXgŁ'cb'U'rcd]WfY'UH'X'rc'h\Y'VebH'bhicZĤY'Vei fgYžĤY'k \c'Y'h'gh'Ugh]b['W'-'\$'a]b"

⊕X]j]Xi U'ZYXVUW'j]U'bi a Yf]W' [fUXYžfi Vf]WUbx'k f]H'Yb'Vea a Ybhg'cb'Vea dcg]hcb": YYXVUW'cb
fYUX]b['Ve a dfY\Ybg]cb'j]U'Ve ffYW]cb']b'WUgg'UbX'bi a Yf]W' [fUXY"

5XX]h]cbU'XYHJ]g.

F YUX]b[žk f]h]b[/ [fUa a Uf# cWUVi 'UfmiYghVebXi WYX'Xi f]b['bcfa U'YWi fY'\ci fg'cb'&#%#&\$&\$'fk YY_
, Ł" H\Y'h'ghk]"VY'XcbY'cb']bY"

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

5ggYgga Ybh' . 'K YY_'micb']bY'YI YfW]gYg

GHUfhXUH'. Bch5dd']WV'Y

@Yb[h. '7U"%\ci f'dYf'k YY_

8YHJ]g.

Gh XYbhg'k]"Ve a d'YH'k YY_'mdfYdUfU]cbg'cb'Ui X]clj]XYc'XcW a Ybhgžk f]H'Yb'hYI hgž'UbX'cf'j cWUVi 'Ufm#
[fUa a Uf'ei]nnYg'cb'A ccX'Y'f%\ci f'dYf'k YY_Ł"

: YYXVUW'k]"VY'dfcj]XYX'j]U'gY'ZVe ffYWYX'YI YfW]gYg'cb'A ccX'Y"; YbYfU'ZYXVUW'dfcj]XYX']b'WUgg"

5XX]h]cbU'XYHJ]g.

H\Y [fUXYX'cb']bY'ei]nnYg'UfY'Uj U]UV'Y'cb'A ccX'Y" 9UWX'ei]n'k]"VY'Uj U]UV'Y'Zcf'ĤY'k \c'Y'cZĤY
Ve ffYgdcx]b['k YY_'UbX']hWU]b'VY'UH'Ya dhYX'cb'micbW'UbX'k]"VY'h]a YX"

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

5 hYbXUbW F Yei]fYa YbHg

Gh XYbHg UfY gHfcb[mYbWci fU[YX'hc Uhh'bx'U''WUggYg UbX'fyj]Yk ''YWhi fY'fYWtfx]b[g"

7 ci fgY GWXYXi `Y

[J \]Yk WUgg'ha YhUV`Y](#)

H]a YhUV`Y

8UhY	HmdY	7cbhYbh
C`K YY_'; 'GYdhYa VYf!`-		

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

A ">"@cdYgž>"H"@Y`6ci [bYW`f&\$(L`HcH`a `&!`a`Åh`cXY`XY`ZUb`ÄU]g`5&"<UWXYHhY`:`@9"

A ""5bhYfz7""6f]`UbržG""9f]WžA ">"@cdYgž>"H"@Y`6ci [bYW`f&\$(L`HcH`a `&!`WU\Yf`XfUW]j]h`Äg"

Gi Va]gg]cb`cZ5ggYgga YbhiHUg_g

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

≠mci`YbWci bHYf`U`dfcV`Ya`k` \Yb`UHYa` dh]b[`hc`gi`Va`]hmc`i`f`Ugg][`ba`YbhiHfci`[`\`Hi`fb]h]b`z`d`YUgY`
HY`Yd\cbY`9I`HYfbU`Gi`ddcfhcb`-`,`)`"``"``%cf`Ya`U]`hYa`icb`YI`HYfbU`HY`hgi`ddcfh4`i`bgk`"YXi`"Ui`""Gi`ddcfh`
\ci`fg`UfY`,`.\$\$Ua`-`-%\$.\$\$da`icb`k`YY`XUmg`UbX`-`.\$\$Ua`-`).\$\$da`icb`k`YY`YbXg`fI`*)`XUmg`U`mY`UfI`"≠mci`
UfY`i`bUV`Y`hc`gi`Va`]hmc`i`f`Ugg][`ba`YbhiXi`Y`hc`U`ZU`ihk`]h`Hi`fb]h]b`mci`ia`UmUdd`mZc`f`Ub`YI`HYbg]cb`z`Vi`hmc`i`
a`i`ghfYhU]b`mci`f`h]W`Yhbi`a`VYf`Zca`9I`HYfbU`Gi`ddcfhU`cb[`k`]h`Ubmic`hYf`fY`Yj`UbhXcW`a`Ybhtg`L`hc`
]bWi`XY`Ug`Yj`]XYbVW`hc`gi`ddcfhmc`i`f`YI`HYbg]cb`Udd`]W]h]cb`"≠mci`Ya`U]`9I`HYfbU`Gi`ddcfhmc`i`k`]`
Ui`hca`U]W]m`fYW]j`Y`U`h]W`Yhbi`a`VYf`z`Vi`h]Zmci`HY`Yd\cbY`mci`k`]`bYYX`hc`gdYW]Z]W]m`Ug`Zc`f`cbY`"
Hi`fb]h]b`U`gc`dfcj`]XYg`i`dXUH`g`cb`hY]f`gmghYa`ig`hU`h`g`cb`Hk`]hYf`"

;`YbYfU`mz`UggYgga`YbhiUg_g`a`i`ghVY`gi`Va`]hYX`Y`YWfcb]W]m]j`]U`Y]h`Yf`Hi`fb]h]b`cf`U`A`ccX`Y`
Ugg][`ba`Ybhi`h`]bghU`bVW`g`k`\YfY`h`lg`]g`bchidcgg]V`Yz`]hk`]`VY`ghU`hYX`cb`mci`f`Wci`fgY`g`A`ccX`Y`g]h`k`]h`
U`HYfbU]h]`Y`gi`Va`]gg]cb`XYhU]g`"

:`cf]bZcfa`Uh]cb`cb`\ck`hc`gi`Va`]hUgg][`ba`Ybhtg`cb]bY`j`]U`A`ccX`Y`.\`hhdg`#gh`XYbhi`bgk`"YXi`"Ui`#ck`!
gi`Va`]hUgg][`ba`Ybhta`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'Yfg'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 cghcZmci f'gh X]Yg'Uhl BGK ""

[\h'hd.##gi V'Y'W'i \]X'Yg" \]VfUfm'i bgk "YXi "Ui #' \]gY#UVci h' \]gY](#)

