



ARTS3097

7 i ffYbh8 YVUHg]b 'A YX]U'UbX'7 i 'h fy

HYfa 'C bY' '# '&\$&\$

7ci fgY'Cj Yfj JYk

'GHUZZ'7cbhUW'i8YHUJ`g`

'7cbj Ybcfg`

B Ua Y	9a Uj`	5j Uj'UVj]m	@cWUjcb	D\cbY
F cXbYmK U`jg	f`k U`jg4 i bgk "YXi "Ui	Hi YgXUmg`%\$! %\$.) \$'U"a fVm Uddc]bha YbH		

GWXcc`7cbhUW'i8Zcfa Uhjcb

Fcca " %&Z`Yj Y`" 'F cVYfhK YVghYf'6i]X]b[

D\cbY. f\$&L'-',) '(,) *

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

K YVg]hY: [\hfdg.#gUa "Ufmg"i bgk "YXi "Ui](#)

H\Y'GWXcc`cZH\Y'5fmg'UbX'A YX]U'k ci 'X`_Y'hc 'F YgdYWZ'`m5W_bck 'YX[Y'h\Y'HfUX]hcbU`7i ghcX]UbgZ
h\Y'6YXY[U'fP Ybg]b[hcb'WJa di gLZ; UX][U'f7]mUbX'5fhi'8Yg][b'7 Ua di gYgE'UbX'h\Y'B [i bbUk U`
dYcd'Y'f5i gfhU]Ub'8YZ'bwW': cfW'5WUXYa m]b'7 UbVYffUcZH\Y'UbXg'k \YfY YUW'WJa di g'cZI B GK `jg
'cWUHYX"

7 ci fgY'8YHJ]`g

7 fYX]hDc]bHg '*`

Gi a a UfmicZ\hY'7 ci fgY

A YX]U'UFY'W'bfU`m]a d`j]WUHYX']b'ci f`j] Yg - Vch`di V`j]WUbx'df]j UHY": fca`Y'YW]cb`WJa dU] [bg`hc
fUX]WU]gU]cb/Zfca`hfUbgbU]cbU`dYfgcbU`fY`U]cbg\]dg`hc [Ua`]b [/Zfca`h\Y`W`bgh]h`h]cb`cZ\hY` [`cVU`
Y`W`bca`m]c`cb`]bY`XU]b [/a`YX]U`h\W`bc`c []Yg`d`UmU`W`i`W]U`fc`Y`"H\Ym\Uj`Y`h\Y`dc`h`b]U`hc`W`Y`U`h`gc`W]U`
UbX`dc`]h]WU`W`U]b [Y`Ug`k`Y`"Ug`hc`X]gfi`d]dYfgcbU`"j] Yg`]b`k`Um]g`i`b]a`U []bUV`Y`U`XYWUXY`cf`gc`U [c`"

h`h]g`W`ci fgY`m]ci`k`j`"YI`Ua`]bY`W`ffYb]h`"j] Y`hc]d]W]g`]b`a`YX]U]i`g]b [`fY`Yj`Ubh`W`b`W`d]hg`UbX`Z]Ua`Yk`cf`g`hc
]bj`Ygh [U]h`UbX`i`bXYfg]UbX`d]fYgYb]hXU]mia`YX]U]fY`U]h`X`]gg] Yg`"8`i`f]b [`h\Y`W`ci`fgY`z`m]ci`k`j`"VY`Yb`W`ci`fU [YX
hc`W]d]h`fY`UbX`gh`Xmia`YX]U]fY`U]h`X`Yj`Yb]hg`UbX`XYj`Y`cda`Yb]hg`Ug`h\Ymi`bZ`c`X`"5`h`h\Y`VY []bb]b [`cZ`h\Y
h]fa`h`fY`Y`hc`Z`ci`f`g] [b]Z]W]b]h`YI`Ya`d`U]f]m]z`cb! [c]b [`hc]d]W]g]z`bYk`g`g]h`cf]Yg]z`cf`XYj`Y`cda`Yb]hg`]bj`c`j`]b [`h\Y
a`YX]U`k`j`"VY`W`cgYb`"H\Y`fYg]h`cZ`h\Y`h]fa`z`]b]W`i`X]b [`Y`W`i`fYg`UbX`h`hc`f]U`fY`UX]b [g`UbX`X]g]W`gg]cbg]z`k`j`
VY`cf [Ub]gYX`U]fci`bX`h`c`hc`h`fY`Y`V`fc`UX`h\Y`Ya`Yg`h\U`h`UfY`V`UgYX`cb`h\Y`W`cgYb`hc]d]W]g`"

H\Y`_Ym]Z`W`g`k`j`"VY`cb`h\Y`Udd`]W]h]cb`cZ`fY`Yj`Ubh`h`Y`cf]Yg]z`Z]Ua`Yk`cf`g`UbX`W`b`W`d]hg`cb`h\Y`gY`hc]d]W]g]z`
UbX`Ub`YI`d`cf`U]h]cb`cZ`Udd]fcd]f]U]h`a`Y`h`c`X`c`c []Yg`Z`cf`h\Y`]f`Ub`U`m]g]g`"H\Y`hc]d]W]g`W`ej`YfYX`W`ci`X`]b]W`i`XY`z`Z`cf
]bg]h]Ub`W`z`X] []h]U`a`YX]U`U`Z`c`fX`Ub`W`g]z`dc`]h]W]U`W`ca`a`i`b]W]h]cb`Ug`di`V`]W]gh]U]h [n]z`cb`]bY`fUX]W]g]U]h]cb]z`
gc`W]U`a`YX]U`i`gY`UbX`W`ci`b]h]f]di`V`]W]g]z`h\Y`dc`]h]W]U`Y`W`bca`m]cZ`+`i`]b]Xi`g]h]f]Yg]z`cf`gi`fj`Y`]Ub`W`UbX`gY`W`f]m]z`
W`ej`Yf]b [`h\Y`h\Y`Ya`Yg`cZa`YX]U`]b`h\Y`bg]T`U`Xca`U]b`UbX`a`YX]U`]b`h\Y`b`"

ck b'a YXJU'i gY'UbX'ĤY'a YXJU'g]a d'jWĥcb'jb'VfcUXYfž'di V]W]ggi Yg"

GhUfhXUHY.

8YhU]g. 'Gh XYbfg'k]''gi Va]hU'&\$\$\$'k cfX'YggUmcb'U'hd]WdYfU]b]b['hc'hY'a YX]U'hVWbc`c[]Yg]b'hY
di V]WXca U]b''H\]g]g'hY'Z]bU'UggYgga YbhUg_"'9UW'Ugg][ba Ybhk]''VY'[]j Yb'U'bi a Yf]W]'a Uf_'UbX'U
[fUXY"

Hi fb]h]b'gYh]b[. 'H\]g'Ugg][ba Ybh]g'gi Va]hX'hfci [\ 'Hi fb]h]b'UbX'gh XYbfg'W]b'gYY'Hi fb]h]b'g]a]'Uf]m
fYdcfg"

5 HbXUbW F Yei]fYa Ybhg

Gh XYbhg UfY gfc b[mYbWci fu[YX hc UHbX U WUggYg UbX fyj]Yk YWfi fy fYWcfX]b[g"

7 ci fgY GWXYXi Y

[J Yk WUgg ha YhUVY](#)

Hja YhUVY

8 UH	HmdY	7 cbhYbh
K YY_% %+ : YVfi Ufm! &% : YVfi Ufm	@YWfi fy	7i ffYbhXYVUHg. hfi h UbX XYa cWUWz'a YX]U di V]WgzhfUbgbUhcU'a cV]hYgzhX][]H U W Wj]ga
K YY_&.&(: YVfi Ufm! &, : YVfi Ufm	@YWfi fy	H\Y U'h hfi h g\U gYhi g ZYY3 Dcgh hfi h ždi V]W _bck YX[YzW]hYbg\]d
K YY_' .&'A UfW '! '* A UfW	@YWfi fy	8][]H]bhja UWYg!]g hY dfj] UH' bck 'di V]Wb'
K YY_(.-'A UfW '! '% A UfW	@YWfi fy	GcWU'a YX]U UbX'j]c YbW'
K YY_) .'%* A UfW '!&\$ A UfW	@YWfi fy	< i a Ub]Hf]Ub'7 ca a i b]W]hcb/ 'hY; 'cVU'Gci h '! X]ghUbhUbX' d fcl]a UH' gi ZYf]b[
K YY_* .&' A UfW '!&+ A UfW	F YUX]b[: @9L 'K 99?
K YY_+.' \$'A UfW '!" 5df]	@YWfi fy	8][]H 'A YX]Už5W]j]ga 'UbX' Di V]WdfchYgh
K YY_ . '* '5df]'! '%\$ '5df]'	@YWfi fy	K \c'a UXY'a m]D\cbY3'HfUbgbUhcU'X][]H 'UVci f'
K YY_- . '% '5df]'! '%+ 5df]'	@YWfi fy	HfUbgbUhcU'5fhW 'Uhcbg. 'A cV]mž5ZYWž UbX 8]UgdcfU
K YY_%.&\$ '5df]'!&('5df]'	@YWfi fy	H\Y'a YX]U'fi g' -fyj]g]hb['hY'XYVUHg'

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

K YY_mfYUX]b[g`zcf`h`hf]U`g`k`]`VY`Uj`U]UV`Y`j`]U`@Y[Ubhc"

F YWca a YbXYX`F Ygci fWg

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

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`dh]b[`h`c`gi`Va`]h`m`c`i`f`U`g`g`[`ba`Y`b`h`h`f`c`i`[`\`H`i`f`b`]h]b`z`d`Y`U`g`Y`
H`Y`d`\`c`b`Y`9`I`H`f`b`U`G`i`d`d`c`f`h`c`b`-`,`),`"`,`"`,`"`,`%`c`f`Y`a`U`]`h`Y`a`i`c`b`Y`I`H`f`b`U`H`h`g`i`d`d`c`f`h`4`i`b`g`k`"Y`X`i`"U`i`"Gi`d`d`c`f`h`
\`c`i`f`g`U`f`Y`,`.\$`\$`U`a`i`-`%`\$`.\$`\$`d`a`i`c`b`k`Y`Y`_`X`U`m`g`U`b`X`i`-`.\$`\$`U`a`i`-`i`).`\$`\$`d`a`i`c`b`k`Y`Y`_`Y`b`X`g`i`f`l`*)`X`U`m`g`U`i`m`Y`U`f`l`"≠mci`
U`f`Y`i`b`U`V`Y`h`c`gi`Va`]h`m`c`i`f`U`g`g`[`ba`Y`b`h`X`i`Y`h`c`U`Z`U`i`h`i`k`]h`H`i`f`b`]h]b`m`c`i`a`U`m`i`U`d`d`m`i`Z`c`f`U`b`Y`I`H`f`b`g`]c`b`z`V`i`h`m`c`i`
a`i`g`h`f`Y`h`U`]b`m`c`i`f`h]W`Y`h`b`i`a`V`Y`f`Z`f`c`a`i`9`I`H`f`b`U`G`i`d`d`c`f`h`f`U`c`b`[`k`]h`U`b`m`c`h`Y`f`f`Y`j`U`b`h`X`c`W`a`Y`b`h`g`k`h`c`
]b`W`i`X`Y`U`g`Y`j`]X`Y`b`W`h`c`gi`d`d`c`f`h`m`c`i`f`Y`I`H`f`b`g`]c`b`U`d`d`]W`h]c`b`"≠mci`Y`a`U`]`9`I`H`f`b`U`G`i`d`d`c`f`h`m`c`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[YgžUfhUbX`XYg][b`dfc`YWgžUg`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'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'i \]X'Y'g"\]VfUfm'i bgk "Y'X'i "U'i #' \]g'Y#\]V'ci h' \]g'Y](#)

5 WUXYa]W]bZcfa Uh]cb`

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

- fYei Yghg`Zcf`YI 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/
- gdYW]U`Vc]bg]XYfUh]cb`]b`hY`Yj Ybhcz]`bYgg`cf`a]gUXj Ybh fY/
- ghi XYbhYei]m]UbX`X]gUV`]m/
- UbX`chYf`YggYbh]U`UWUXYa]W]bZcfa Uh]cbz`gYY