



ARTS2150

H\Y'A U_]b['cZHfi a dfg'5a Yf]WU

HYfa 'H\fYY'##'&\$&\$

7ci fgY`Cj Yfj]Yk

GHJZ7cbHJW`8YHJ]`g

7cbj Ybcfg

B Ua Y	9a U`	5j U]UV]`]m	@cWJhcb	D\cbY
8Ub]Y`:`Ya]b[X"ZYa]b[4 i bgk "YXi "Ui	9a U]`rc`UffUb[Y`Ub Uddc]bha Ybh		

GWXcc``7cbHJW`bZcfa Uh]cb

GWXcc``cZ<i a Ub]h]Yg`UbX`@Jb[i U[Yg

7ci fgY'8YHJ]`g

7fYX]hDc]bng`*`

Gi a a UfmicZ\hY'7ci fgY

H\Y'Y'W]cb'cZ8cbU'X'Hfi a d'hc'hY'I b]hY'G'UH'g'dfYg]XYbWn\][\][\hg[Ud]b['f]Zrg]b'hY'gcWY'fmiUbX
dc`]h]Vg'cZ'hY'V'cbhYa dcfUfmi b]hY'G'UH'g'"8Y'W'X'Y'g'cZ]b'W'Y'Ug]b['b]Ye'i U']mž['cVU']gU]cb'UbX'W' 'h' fU'
V'cbZ]W'h'V'Y'h' Y'Y'b'fY'] [ci g'V'cbgY'fj U]h] Ygž'j]V'f'f'U'f]Ubg'UbX'k \Uh'5a Y'f]W'Ubg'W'U'f]V'Y'fU'gf'U'j Y'Y'Z'h
5a Y'f]W'U'b'dc`]h]Vg'UbX'gcWY'fmi a c'fY'X]j]X'Y'X'h'U'b]h'U'g'V'Y'Y'b'Z'c'f'\U'Z'U'W'bh'fmi'5'h'h'Y'g'U'a Y'h'a Y'ž'h'Y'
I b]hY'G'UH'g'f'Ya U]bg'h'Y'k c'f'X'f]g['f'Y'U'h'g'h'd'c'k Y'f'ž'Y'I Y'f'V]g]b['Ub'Y'bc'fa ci g'g'Um]b['c'VU'f' [c] Y'fb'Ub'W'ž'
Z'ca 'Y'V'cbca]Vg'hc'h'Y'Y'bj]f'c'ba Y'bh'H\]g'V'ci fgY'Y'I d'c'f'Y'g'_Y'm'Y'Ya Y'bh'g]b'h'Y'a U_]b['c'Z'H'fi a d'f]g
5a Y'f]W'U'": c'W'g]b['d'U'f]h]W' 'U'f'm'ic'b'h'Y'd'Y'W']U'f'&\$h'!W'bh'fmi' G'\]g'hc'f]Y'g'c'Z'W'U'g'g'ž'f'U'W'ž'f'Y'] []cb'UbX
['c'VU'Y'b[U[Ya Y'bh'ž'm'ci 'k]'Y'U'f'b'\c'k 'h'Y'k c'f'X'f]g'c'X'Y'g'h']V'Y'fU'X'Ya c'W'U'W'h'\U'g'V'Y'V'cb'a Y'gi W'X'U'j]fU'UbX
Z'f'U' [\h'Z'c'f'W']b'h'Y'V'cbhYa dcfUfmi c'f'X"

7ci fgY'@YUfb]b['Ci hV'ca Yg

%" 5bU'mgY'_Ym]XYUgž'Yj Y'bh'gž'd'Y'cd'Y'ž'UbX'XYj Y'c'da Y'bh'g]b'f'Y'U'h]cb'h'c'a c'XY'fb'5a Y'f]W'U'b'\]g'hc'fmi'
&" 9j U'i U'h'f'Y'Y'j U'bh'\]g'hc'f]c[f'U'd'\m'UbX'f'Y'U'h'X'g'W'X'c'U'f'm']h'f'U'h'f'Y"
' " 9I d'U]b'\]g'hc'f]W'U'ei Y'g'h]c'bg'i g]b['Yj]X'Y'b'W'V'U'g'Y'X'U'f[i a Y'bh'g'V'U'g'Y'X'c'b]b'X'Y'd'Y'b'X'Y'bh'im'c'W'U'h'Y'X'
d'f]a U'fmi'UbX'g'Y'V'cb'X'U'f'm'g'ci f'W'g"
(" 7ca a i b]W'U'h'Y']X'Y'U'g'h'f'ci [\k'f]h]b['UbX'c'fU'd'f'Y'g'Y'bh'U'h]cb"

HYUWX]b['G'h'f'U'h'Y[]Y'g'

H\Y'h'Y'U'W'X]b['Z'c'fa U'hc'Z'h]g'V'ci fgY'j'b'W' X'Y'g'Y'W'h'f'Y'g'UbX'h'hc'f]U'g'"H\]g'V'ci fgY'Ya d'c'm'g'U'h'Y'U'W'X]b[
g'h'f'U'h'Y[m'h'U'h' g'Y'g'W'f'f'Y'bh'U'Z'U]f'g'U'g'U'V'cb'g'h]U'bh'hc'i W'g'hc'b'Y'hc'\Y'd'g'h' X'Y'bh'g'hc'i g'Y'\]g'hc'f'm'hc'i b'X'Y'f'g'h]U'b'X'
h'Y'd'f'Y'g'Y'bh'H\]g'U'd'd'f'c'U'W'X'U'g'c'h'Y'U'W'X'Y'g'nc'i 'hc'i g'Y'\]g'hc'f]W'U'j]b'Z'c'fa U'h]cb'hc'Y'b[U[Y'W'f]h]W'U'm'k]h'
[c] Y'f'ba Y'bh'gd]bž'a Y'X]U'V]U'g'ž'UbX'd'c'di 'U'f'g'h'Y'f'Y'c'h'm'd]b["'H\Y'U'W'X]j]h]Y'g'j]b'h'Y'V'ci fgY'U'f'Y'Vi]h'U'f'ci b'X'
U'W'X]Y'd'U'f]h]W'd'U'h]cb'UbX'Y'b[U[Ya Y'bh'h'f'ci [\U'f'U'b[Y'c'Z]b'X]j]Xi U'UbX[f'ci d'V'U'g'Y'X'U'W'X]j]h]Y'g"

ghUbxUfXg'cZUggYgga YbhVUgYX'cb. i bXYfghUbx]b['cZhY'hd]W'i gY'cZ\]gfcf]c[fUd\m'ghfYb[h'cZ
fYgYUfW\ghfYb[h'cZUf[i a Ybh'k f]hYb'YI dfYgg]cb/fYZfYbW]b[/UbX'dfYgYbhU]cb"

Hi fb]hb'gYhb[. H\]g'Ugg][ba Ybh]g'gi Va]hY'hcfc [\ 'Hi fb]hb'UbX'ghi XYbhg'Wb'gYY'Hi fb]hb'ga]Uf]m
fYdcfng"

5ggYgga Ybh' . 5H\ca Y'Z]bU'YI Ua]bU]cb

GHUfXUH. : cfa U'9I Ua 'DYf]cX

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

8YH]g.

%'\$\$\$'k cfXg"GH XYbhg'k]'Ubgh Yf'cbY'h'ghei Ygh]cb'hUhk]'VY'VUgYX'cb'hY'cbY'cZhY'a U]b'hYa Yg'cZ
hY'W'i fgY'hUh\Ug'VYYb'UbU'ngYX']b'fYUX]b[gzh'hc]U'g'UbX'YWh'fYg"

Gh XYbhg'k]'fYW]j Y'U'a Uf_'UbX'ZYXVUW_'VUgYX'cb'hY'fi Vf]WZca 'Hi fb]hb'"H\Y'fi Vf]Wk]'ci h]bY'hY
ghUbxUfXg'cZUggYgga YbhVUgYX'cb. i bXYfghUbx]b['cZhY'hd]W'i gY'cZ\]gfcf]c[fUd\m'i gY'cZY]XYbW\ /
ghfYb[h'cZUf[i a Ybh'k f]hYb'YI dfYgg]cb/fYZfYbW]b[/UbX'dfYgYbhU]cb"

Hi fb]hb'gYhb[. H\]g'Ugg][ba Ybh]g'gi Va]hY'hcfc [\ 'Hi fb]hb'UbX'ghi XYbhg'Wb'gYY'Hi fb]hb'ga]Uf]m
fYdcfng"

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

H\]g:k]`VY`a UXY`Uj U]`UV`Y`cb`A ccX`Y`UbX`@Y[Ubtc"

F YWca a YbXYX`F Ygci fWg

H\]g:k]`VY`a UXY`Uj U]`UV`Y`cb`A ccX`Y`UbX`@Y[Ubtc"

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

=k Y`Wca Y`mci f`ZYXVUW`_j]U`A m9I dYf]YbW"

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`Ybhi`h`fci`[`\`Hi`fb]h]b`z`d`Y`UgY`
HY`Yd`l`cb`Y`9I`HY`fb`U`Gi`ddc`fh`cb`-`,`)`"``"``%`cf`Ya`U]`h`Ya`i`cb`YI`HY`fb`U`HY`hgi`ddc`fh`4`i`bgk`"YXi`"Ui`"Gi`ddc`fh`
l`ci`fg`UfY`,`.\$`\$Ua`-`-%`\$.`\$\$`da`i`cb`k`YY`_X`Umg`U`bX`-`.`.\$`\$Ua`-`-)`.\$`\$`da`i`cb`k`YY`_Y`bX`g`f`l`*)`X`Umg`U`m`Y`U`f`l`"Ʒmci`
UfY`i`b`UV`Y`hc`gi`Va`]hmc`i`f`Ugg][`ba`Ybhi`Xi`Y`hc`U`Z`Ji`h`k`]h`Hi`fb]h]b`mci`a`Um`Udd`m`Z`f`U`b`YI`HY`bg]cb`z`Vi`hmc`i`
a`i`gh`f`Y`h]b`mci`f`h]W`Y`hbi`a`VY`f`Z`ca`9I`HY`fb`U`Gi`ddc`fh`f`U`cb[`k`]h`U`b`m`c`h`Y`f`f`Y`Y`U`b`h`X`c`W`a`Y`b`h`g`k`hc`
]b`Wi`XY`U`g`Y`j`]X`Y`b`W`hc`gi`ddc`fh`mci`f`YI`HY`bg]cb`Udd`]W`h]cb"Ʒmci`Ya`U]`9I`HY`fb`U`Gi`ddc`fh`mci`k`]`
Ui`hc`a`U`h]W`U`m`f`Y`W`]j`Y`U`h]W`Y`hbi`a`VY`f`z`Vi`h]Z`mci`HY`Yd`l`cb`Y`mci`k`]`b`Y`Y`X`hc`gd`Y`W`Z]W`U`m`Ug`_`Z`f`c`b`Y`"
Hi`fb]h]b`U`gc`d`fc`j`]X`Y`g`i`d`X`U`h`Y`g`c`b`h`Y`]f`g`m`g`h`Y`a`i`g`h`U`h`g`c`b`H`k`]h`Y`f`"

;`Yb`Y`f`U`m`z`Ugg`Y`gga`Yb`hi`U`g`_`g`a`i`gh`V`Y`gi`Va`]h`Y`X`Y`Y`W`f`c`b]W`U`m`j`]U`Y`]h`Y`f`Hi`fb]h]b`c`f`U`A`cc`X`Y`
Ugg][`ba`Yb`h`i`h`]b`g`h`U`b`W`g`k` \Y`f`Y`h`l`g`]g`b`c`h`d`c`g`g]V`Y`z`]h`k`]`V`Y`g`h`U`h`X`c`b`mci`f`W`ci`fg`Y`g`A`cc`X`Y`g`]h`k`]h`
U`h`Y`fb`U`h]`Y`gi`Va`]gg]cb`X`Y`h]g`"

:`cf`]b`Z`fa`U`h]cb`c`b`l`ck`hc`gi`Va`]h`Ugg][`ba`Yb`h]g`c`b]b`Y`j`]U`A`cc`X`Y`.\`h`d`g`#`g`h`X`Y`b`h`i`bgk`"YXi`"Ui`#`ck`!
gi`Va`]h`Ugg][`ba`Yb`h`a`cc`X`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'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](#)

