



# ARTS1210

7cbWdhg'cZ5g]U

HYfa`Hk c`##`&\$%-

7ci fgY`Cj Yfj JYk

`GHUZZ7cbhUWhi8YHUJ`g`

`7cbj Ybcfg`

B Ua Y	9a Uj`	5j Uj`UVj`]m	@cWWhjcb	D\cbY
A ]bU`F cWg	a "fcWg4 i bgk "YXi "Ui	K YXbYgXUmg`%%d%&ž	A cfj Yb`6fck b	- ' , ) &' ( , ' ) -

`Hi hcfg`

B Ua Y	9a Uj`	5j Uj`UVj`]m	@cWWhjcb	D\cbY
>Ua Yg`DUi`	^dUi ``4 i bgk "YXi "Ui			

GWXcc``7cbhUWhi`bZcfa Uhjcb

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

@cWWhjcb. `GWXcc``C Z]WžA cfj Yb`6fck b`6i ]X]b[ ž`@Yj Y``&ž&),

C dYb]b[ `<ci fg. `A cbXUm! : f]XUmž- Ua `!` ) da

D\cbY. `ž`\*%&`- ' , ) `\* , %

: U! . `ž`\*%&`- ' , ) ; +\$)

9a Uj`. [\U`4 i bgk "YXi "Ui](#)



## 5ggYgga Ybh

D'YUgY'gYY'hY'A ccX'Y'g]hY'Zcf'UhfUWka Ybht'cb. 'fP&A U'cf'9ggUmifh'g]bWl XYg'hY'a Uf\_]b[ 'fi Vf]VZ ]bZcfa Uh]cb'fY'Uh]b[ 'hc'fYZYfYbW]b[ 'YhWk \]WX' ]g'U'gc'Wc] YfYX' ]b'hY'YVWl fY'cb'YggUmk f]h]b[ E

f&E'Hi hc]f]U'fYUX]b[ g'UbX'ei Ygh]cbg'Zcf'hY'fYgdcbgYg'hc'fYUX]b[ g'UbX'hi hc]f]U'X]gW'gg]cb

fI'E'9ggUmei Ygh]cbg'UbX'V]V' ]c[ fUd\]Yg

f(E'@YWl fY'\UbXci h

## 5ggYgga YbhHUg\_g'

5ggYgga YbhHUg_	K Y][ \h	8i Y'8UH'	Ghi XYbh@YUfb]b[ Ci hWca Yg'5ggYggYX
F YgdcbgYg'hc'F YUX]b[ g'	&\$!	8i Y'Uh]i hc]f]U'g']b'k'YY_g'& UbX' (	'
< ]ghc]f]WU'g]hY'YI YfW]gY'	&\$!	8i Y'Uh]i hc]f]U'g']Zca'k'YY_g', !%\$	(
WUgg'hYgh	&\$!	%, #\$, #&,\$%- '%%\$\$'5A	%z&Z
A U'cf'9ggUmi	( \$!	%&# \$+ #&,\$%- '\$) .\$\$'DA	%Z Z(

## 5ggYgga Ybh8YhU]`g

5ggYgga Ybh% 'F YgdcbgYg'hc'F YUX]b[ g

GHUfhXUH'. 'Bch5dd']WV'Y

8YhU]`g. 'Ghi XYbht'gi Va ]hU'fYgdcbgY'fWU'') \$\$!\* \$\$'k cfXgE'hc'gYhei Ygh]cbg'cb'U'k'YY\_'mfYUX]b[ 'VYZcfY'k c'hi hc]f]U'g': YYXVUW\_]g'Vm]bX]j ]Xi U'Wca a Ybht'z'UbX']b!WUgg'X]gW'gg]cb"

5XX]h]cbU'XYhU]`g.

GYY'hY'Z]Y'cb'hi hc]f]U'fYUX]b[ g'UbX'ei Ygh]cbg']bWl X]b[ 'h'cgY'Zcf'h'g'UggYgga Ybh]b'U'Z]Y'i d'cUXYX']b'hY'A ccX'Y'g]hY'"

Hi fb]h]b'gYh]b[ . 'H\]g'Ugg][ ba Ybh]g'gi Va ]hYX'h'fci [ \ 'Hi fb]h]b'UbX'ghi XYbht'WU]b'gY'Hi fb]h]b'g]a ]Uf]hm'fYdcftg"

5ggYgga Ybh&. '< ]ghc]f]WU'g]hY'YI YfW]gY

GHUfhXUH'. 'Bch5dd']WV'Y

8YhU]`g. 'Ghi XYbht'gY'YWhU'\]ghc]f]WU'g]hY']b'Ubm]5g]Ub'Wci b'fmiUbX'gdYU\_'Zcf''a ]bi hYg'UVci h'k \Uh'hY'g]hY'Wca a Ya cfU'h'g'UbX'k \Uh'Y'Ya Ybht'UVci h'h'Y'g]hY'g'\]ghc]f]m]g'Zcf[ c'h]b']b'hY'bUh]cbU'a Ya cfm'Ghi XYbht'gi Va ]hU'cbY!dU[Y'V]V' ]c[ fUd\]mcZgci fW'g'Wc]bgi 'hYX'Zcf'hY]f'dfYgYbh]h]cb": YYXVUW\_]g'Vm]bX]j ]Xi U'Wca a Ybht'z'UbX']b!WUgg'X]gW'gg]cb"

5XX]h]cbU`XYHJ]g.

5b`Ybh]fY`YWH fY]g`XYj`chX`hc`lck`hc`Xc`h]g`YI`YfW]gY"``@]ghY`b`hc`hY`YWH fY`Z]fghVYZc`fY`Xc]b[ `hY`  
UggYgga`Ybh`GYY`hY`YWH fY`\UbXci`hZc`f`hY`fY`Yj`Ubh`YWH fY`Zc`f`YI`Ua`d`Yg`UbX`a`Uf\_]b[ `W]hYf]U" `Gh`XYb]g`  
g\ci`X`B`C`H`Xc`hY`gUa`Y`\]ghc`f]U`g]hYg`d`fYgYbhX`Ug`YI`Ua`d`Yg`]b`h]g`YWH fY"``H\]g`]g`mci`f`c`f]`[ `]bU`  
fYgYUfW`d`fc`YWH`UbX`mci`UfY`hY`k`c`f`X]g`YI`dYf`h`c`b`mci`f`W`c`g`Y`b`]g]hY`UbU`mg]g"

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

5ggYgga`Ybh' .`WUgg`hYgh

GHUfhXUH. `Bch5dd`]WUV`Y

8YHJ]g. `Gh`XYb]g`Wca`d`YH`UhYghfWU" `&`\ci`fgE`Ub]gk`Yf]b[ `ei`Ygh]cbg`VUgYX`cb`hY`YWH fYg"

5XX]h]cbU`XYHJ]g.

H\Y`WUgg`hYghk`]`VY`VUgYX`cb`a`UHf]U`Wcj`YfYX`]b`hY`Wci`fgY!!`hY`YWH fYg`Ug`k`Y`Ug`hY`hi`hc`f]U`g"

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

5ggYgga`Ybh(. `A`U`c`f`9ggUm

GHUfhXUH. `Bch5dd`]WUV`Y

8YHJ]g. `F`YgYUfW`9ggUmVfc`\_Yb`Xck`b`]bhc`V]V]c[ `fUd`\mz`UVghfUWH`UbX`Z]bU`YggUm`Gh`XYb]g`k`f]hY`Ub`  
YggUm]fWU" `&\$\$\$`k`c`f`XgE`]b`fYgdc]bgY`hc`cbY`cZ`hY`ei`Ygh]cbg`i`g]b[ `gW`c`Ufg\]d`]b`5g]Ub`gh`X]Yg`"  
: `YYXVUW\_]g`Vm]bX]j`]Xi`U`Wca`a`Ybh]g`UbX`fi`Vf]WH\]g`]g`hY`Z]bU`UggYgga`YbhZc`f`UhY`bX`UbW`di`fdcgYg"

5XX]h]cbU`XYHJ]g.

GYY`hY`]ghcZYggUmei`Ygh]cbg`UbX`fYWca`a`YbXYX`V]V]c[ `fUd\]Yg`]b`Z]Y`i`d`c`UXYX`]b`hY`A`ccX`Y`g]hY"

Hi`fb]h]b`gYH]b[ .`H\]g`Ugg][`ba`Ybh]g`gi`Va`]hYX`h`fci`[`\`Hi`fb]h]b`UbX`gh`XYb]g`WUb`gY`Hi`fb]h]b`g]a`]Uf]m`  
fYdc]fg"

5 HhYbXUbW'F Yei ]fYa Ybhg

Gh XYbhg'UFY'ghfcb[ 'mYbWci fU[ YX'hc'UhhYbX'U''WUggYg'UbX'fYj ]Yk ''YWhi fY'fYWcfX]b[ g"

7 ci fgY'GWXYXi `Y

[J \]Yk 'WUgg'hja YhUVY](#)

H]a YhUV`Y`

8UhY	HmdY	7cbhYbh
K YY_%'' 'i bY!'+'i bY	@YWhi fY	DUfh%'F Y')[ [cb'UbX'7 ]j ]'nUhcb'cZGci h'5g]U ]bWhi X]b[ 'WUghY' ]b' bX]U  DUfh&.'F Y')[ [cb'UbX'7 ]j ]'nUhcb'cZGci hYUgh5g]U .
	Hi hcf]U'	Hi hcf]U'g'VY[ ]b' ]b'k YY_%''Mci f'hi hcf'k ]''YI d'U]b h'Y'UggYgga Ybhg ]bWhi X]b[ 'h'Y'Z]fghfYgdcbgY'hc fYUX]b[ g'Xi Y' ]b'k YY_&''K Y'g\U''d'UmHf]j ]U' Di fgi ]h'hUh]bj c]j Yg'Z]]b[ 'ci h'hY'Wci bhf]Yg' ]b'U V'Ub_'a Ud'cZ5g]U''
	: ]Y'Xk cf_	: cf'h'Y'H< # 8 `ci f'cZ'YWhi fY'gh XYbhg'UFY'fYei ]fYX hc'Xc'U'cbY'XUmZ]Y'Xk cf_#I W fg]cb'cb'h'Y]f'ck b'cb Ubmik YY_YbX'VYtk YYb'k YY_g%i d'hc'VYZcfY'h'Y hi hcf]U'cb'k YY_+'''Gh XYbhg'UFY'Ug_YX'hc' [ c'hc 7 \ ]bUhc'k b'hc'YUhiUhiU'mi a 'WXU'fYghUi fUbh]b'cfXYf hc'Ub'gk Yf'h'Y'ei Ygh]cbg'Zcf'X]gW'gg]cb'Zcf'k YY_+'fj hi hcf]U'cb'5g]Ub: ccX'UbX'X'Ybh]m]'5b'Ybh]fY 'YWhi fY'k ]''VY'XYj c'h'X'hc'YI d'U]b]b[ 'h'Y'UddfcUWX gh XYbhg'g\ci 'X'hU_Y' ]b'k YY_) 'gc' ]XYU'mgh XYbhg g\ci 'X'[ c'UZYf'' ]ghYb]b[ 'hc'h' ] YbX'VYtk c'fY'h'Y



K YY_%. ) '5i [ i gh! '- 5i [ i gh	5ggYgga Ybh	7 `Ugg'hYghk ]`VY`\\Y`X`Uh`h`Y`i` gi` U`Y`W`h` fY`h`a` Y`]b` h`h`Y`i` gi` U`Y`W`h` fY`h`Y`U`h`f`Y`'cb`H`\\i` fgXUm5i [ i gh, ž &\$%- `Z`ca` `%%`d`a` !`%`d`a` "
	Hi hcf]U`	< ]ghcf]WJ`g]h`Y`YI`YfW]gY`W`b`h]bi`YX`



F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

H\YfY`]g`bc`hI`hcc\_`fYei`]fYX`Zcf`hY`Wci`fgY`"

GYY`hY`A`ccX`Y`G]h`Zcf`hY`Z`Y`cb`"Hi`hcf]U`F`YUX]b[`g`UbX`E`i`Ygh]cbg`Zcf`8]gW`gg]cb`"i`bXYf`hY`\`YUX]b[`  
"7`cbhYb]h]UbX`F`Ygci`fWg`"Zcf`hY`"ghcZfYUX]b[`g`fYei`]fYX`Zcf`YUW`k`YY\_`"F`YUX]b[`g`Zcf`h`hcf]U`g`UfY`  
UWf]gg]V`Y`Y`YVfcb]W]`m`h`fci`[`\`hY`@]VfUfmi@[`Ubhc`gmghYa`Ya`VYXXYX`]b`hY`A`ccX`Y`g]h`Zcf`hY`  
Wci`fgY`"7`]W]cb`hY`[`fYyb`]Wcb`Yb]hYX`"F`Yei`]fYX`F`YUX]b[`g`Zcf`Hi`hcf]U`g`"

F YWca a YbXYX`F Ygci fWg

D`YUg`Y`gYY`hY`\`UbXci`hcb`9ggUmHcd]Wg`UbX`6]V`]c[`fUd\]Yg`Zcf`hY`"ghcZYggUmhcd]Wg`UbX`  
fYWca`a`YbXYX`V]V`]c[`fUd\]Yg`Zcf`YUW`ei`Ygh]cb`"bWi`XYX`hYfY`]g`U`"ghcZ5g]Ub`Gh`X]Yg`ci`fbU`g"

D`YUg`Y`gYY`hY`\`UbXci`h]b`hY`Z`Y`"9ggUmF`Ygci`fWg`"k`\]W`\Ug`hY`"b\_g`cb`dfcdYf`fYZYfYbW]b[`g]mY`  
UbX`hY`a`Uf\_]b[`W]hYf]U`Ug`k`Y`"Ug`hY`a`Uf\_]b[`fi`Vf]WZcf`YggUmg`"

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`gg][`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`gg][`ba`Y`b`h`X`i`Y`h`c`U`Z`U`i`h`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`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[ Ygž`UfhUbX`XYg][ b`dfc`YWgž`Ug`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`U`b[ ]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]hYg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[ ]Uf]ga ž'Wcdmf][ \hž' BGK 'Gh XYbh7cXY'cZ7cbXi W'UbX'5WWhUV'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 YfmbY' ]b'h'Y'I BGK 'Wca a i b]m

## 5 WUXYa ]WbZcfa Uh]cb`

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

- fYei Ygh]Zcf`YI h`bg]cb/
- `Uh]`gi Va ]gg]cbg`[ i ]XY`]bYg/
- fYj ]Yk `cZa Uf\_g/
- I BGK `<YU`h`UbX`GUZY`midc`]WYg/
- YI Ua ]bUh]cb`dfcVWXi fYg/
-