



# ARTS3022

B UffUHj] Y. 'H\Y '5 fhUbX'GWjYbWV 'cZGhc fntY``]b[

HYfa `Cby``##`&\$&\$



GWXcc``cZHAY'5ftg'UbX'A YX]U``# 'I BGK ``5ftg'UbX'GcWJU``GWjYbWVg

7ci fgY`Cj Yfj JYk

`GHUZZ7cbhUW`i8YHU]`g`

`7cbj Ybcfg`

B Ua Y	9a U]`	5j U]UV]`]m	@cWU]hcb	D\cbY
5ggcWU]h`DfcZ'ggcf DUi ``8Uk gcb	dUi ``XUk gcb4 i bgk "YXi "Ui	6mUddc]bha Ybh	fa `&% ž`Yj Y` &žK YVghYf 6i ]X]b[	- ' , ) &&&\$

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

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

K YVg]hY: [\h\]g.#gUa "Uf\]g"i bgk "YXi "Ui](#)

H\Y%oo %oo `cZrH\Y UfmbY`A "YW]gcUi Xž]\_\Y c' `ZdZUWU]i `6m5U\_Ybk ``X[\Y H\Y UUYWU]h]cUc``i VgcYW]`

7ci fgY'8YHJ>`g

7fYX]hDc]bhtg`\*`

Gi a a UfmicZ`h`Y'7ci fgY

H\]g`Wci fgY`XYj Y`cdg`mci f`g\_]`g`]b`f][`cfci`g`WcgY`fYUX]b[`c`Z`h`Y`Z`c`fa`U`Y`Ya`Y`b`h`g`c`Z`b`U`f`f`U`h`j`Y`Z`W`h`c`b`z`  
Y`b`U`V`]b[`mci`h`c`V`Y`h`f`i`b`X`Y`f`g`h`U`b`X`U`b`X`U`d`d`f`Y`W`U`h`Y`\`c`k`Z`W`h`c`b`k`c`f`\_`g`"K` \`U`h`i`g`U`b`U`f`f`U`h`j`Y`3`8`c`U`  
b`U`f`f`U`h`j`Y`g`g`U`f`Y`Z`c`fa`U`Z`Y`U`h`f`Y`g`3`<`c`k`X`c`U`i`h`c`f`g`W`c`b`g`f`i`W`h`h`Y`f`g`h`c`f`Y`g`3`<`c`k`X`c`f`Y`U`X`Y`f`g`f`Y`W`c`[`b`h`Y`U`b`X`  
a`U`\_`Y`g`Y`b`g`Y`c`Z`h`Y`g`Y`g`h`c`f`Y`g`3`M`c`i`k`]"`Y`U`f`b`h`Y`d`f`]b`W`d`Y`g`c`Z`b`U`f`f`U`h`c`[`m`z`U`b`X`\`c`k`]"`h`d`f`c`j`]`X`Y`g`U`d`c`Y`h`W`g`c`Z`  
Z`W`h`c`b`Z`c`f`W`h`h`W`g`U`b`X`k`f`h`Y`f`g`"M`c`i`k`]"`[`U`]b`]b`!`X`Y`d`h`\_`b`c`k`Y`X`[`Y`c`Z`W`c`b`W`d`h`g`g`i`W`X`U`g`Z`F`Y`Y`]b`X`]f`Y`W`h`  
X`]g`W`c`i`f`g`Y`z`d`Y`f`g`d`Y`W`h`j`Y`z`i`b`f`Y`]U`V`Y`b`U`f`f`U`h`c`b`z`U`b`X`h`Y`d`U`f`U`h`i`h`5`b`i`a`V`Y`f`c`Z`f`Y`W`b`h`h`Y`c`f`Y`h`W`U`U`d`d`f`c`U`W`X`Y`g`  
h`c`b`U`f`f`U`h`j`Y`f`Z`Y`a`]b`]g`h`z`W`c`[`b`]h`j`Y`z`f`Y`h`c`f`]W`U`E`k`]"`V`Y`d`i`h`]b`h`c`X`]U`c`[`i`Y`k`]h`Y`U`W`X`c`h`Y`f`U`b`X`Y`a`d`c`m`Y`X`h`c`  
U`b`U`h`c`a`]n`Y`b`c`j`Y`g`h`U`h`\`U`j`Y`d`f`c`j`c`\_`Y`X`W`c`b`f`c`j`Y`f`g`m`c`f`Y`h`]W`U`X`Y`V`U`h`Y`g`U`a`c`b`[`g`h`f`Y`U`X`Y`f`g`"

7ci fgY`@YUfb]b[`C`i`h`W`c`a`Y`g

%` Æ`Y`b`h`j`Z`m`U`b`X`Y`i`d`U`]b`h`Y`Z`c`fa`U`Z`Y`U`h`f`Y`g`c`Z`b`U`f`f`U`h`j`Y`Z`W`h`c`b`  
&` 5`b`U`m`Y`h`Y`f`Y`U`h`c`b`g`\]d`V`Y`h`Y`Y`b`Z`c`fa`U`b`X`W`c`b`h`Y`b`h`]b`]b`X`j`]X`i`U`k`c`f`\_`g`c`Z`b`U`f`f`U`h`j`Y`Z`W`h`c`b`  
'` " `b`h`Y`f`f`c`[`U`h`Y`h`Y`f`Y`U`h`c`b`g`\]d`V`Y`h`Y`Y`b`h`Y`c`f`Y`h`W`U`W`c`b`W`d`h`g`U`b`X`W`h`h`W`U`#`W`Y`U`h`j`Y`d`f`U`W`h`W`  
(` 5`g`g`Y`g`g`h`Y`a`U`c`f`a`c`j`Y`a`Y`b`h`g`U`b`X`a`Y`h`c`X`c`c`[`]W`U`X`Y`V`U`h`Y`g`k`]h`]b`b`U`f`f`U`h`j`Y`h`Y`c`f`m`

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

HYUWX]b[`g`h`f`U`h`Y`[`]Y`g`

Æ`"``Y`W`h`f`Y`g`h`c`Z`J`a`]U`f`]g`Y`g`h`i`X`Y`b`h`g`k`]h`\_`Y`m`]g`g`i`Y`g`U`b`X`W`c`b`W`d`h`g`]b`h`Y`W`c`i`f`g`Y`

Æ`"``[`f`c`i`d`X`]g`W`g`g`]c`b`c`Z`]g`g`i`Y`g`f`U`]g`Y`X`V`m`Y`W`h`f`Y`g`U`b`X`a`U`h`f`]U`"]b`W`c`i`f`g`Y`f`Y`U`X`Y`f`

Æ`"``W`c`g`Y`f`Y`U`X`]b[`U`b`X`h`i`h`U`U`b`U`m`g`]g`c`Z`g`Y`h`h`i`h`g`h`c`X`Y`j`Y`c`d`W`h`h`W`U`g`\_]`g`

Æ`"``c`W`W`U`g`]c`b`U`"]b`!`W`U`g`g`[`f`c`i`d`Y`i`Y`f`W`]g`Y`g`



5ggYgga YbhHJg_	K Y][ \h	8i Y'8UH	Gh XYbh@YUfb]b[ Ci hWta Yg'5ggYggYX
ϕ!WUgg'hYgh	' \$i	\$&#\$( #&\$&\$'%%\$. \$\$'5A	%ž(
H\YcfYh]WU'W]h]ei Y'CF WYUhj Y'YI dYf]a Ybh	&\$i	% #'\$ #&\$&\$'%%\$\$'DA	' ž(
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5ggYgga Ybh8YHJ]`g

5ggYgga Ybh% ϕ!WUgg'hYgh

GHUfhXUH.

8YHJ]`g. '( \$'a ]bi h' WcgYX'Vcc\_'hYghA Uf\_YX'hYgh'fYh fbYX'k ]h'bi a Yf]WU'a Uf\_ž'UggYgga Ybhfi Vf]WUbx  
Wta a Ybthg" @YWh fYf'k ]''U'gc'dfcj ]XY [ YbYfU'ZYXVUW\_UVci hH\Y'hYghUbgk Yfg']b'hY'WUgg'k \Yb'a Uf\_YX  
hYgh'UFY'fYh fbYX"H\]g'k ]''YbUV'Y'gh XYbth'hc'Wc'ffYWhUFYUg'cZk YU\_bYgg'VYž'fY'hY'a U'cf'Ugg][ ba Ybh

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

5ggYgga Ybh&. H\YcfYh]WU'W]h]ei Y'CF 'WYUhj Y'YI dYf]a Ybh

GHUfhXUH.

8YHJ]`g. '\$\$\$'k cfX'W]h]WU'X]U[ bcg]g'cZhY'fYgYUfW'ei Ygh]cbg'UbX'a YhcXg'cZbUffUhc'c[ mCF %\$\$\$'k cfX  
a ]WcZ]W]cb'hUhYI dYf]a Ybthg'k ]h'cbY'cf'a cfY'Y'Ya Ybthg'cZbUffUhj Y'ž'fa 'Wc] YfYX']b'hY  
Wci fgY"5gg][ ba Ybthg'fYh fbYX'k ]h'bi a Yf]WU'a Uf\_ž'UggYgga Ybhfi Vf]WUbx'Wta a Ybthg"H\YfY'k ]''U'gc'VY  
U [ YbYfU'X]gW'gg]cb]b'WUgg'UVci hH\Y'gh'fYb[ h\g'UbX'k YU\_bYggYg'fYj YU'YX'Vmih\]g'UggYgga Ybh  
YI YfW]gY"

5ggYgga Ybh' . GWc'UfmYggUm

GHUfhXUH.

8YHJ]`g. " \$\$\$'k cfXg"H\]g]g'hY'ž]bU'UggYgga YbhHJg\_"Bi a Yf]WU'a Uf\_'UbX'UggYgga Ybhfi Vf]Wdfcj ]XYX"  
K f]hYb'Wta a YbhUfmdfcj ]XYX'k ]h'a Uf\_YX'YggUm]ž'fYei YghYX"

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

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-`Ub`A WØk Ubž3fa`W\_W f

F YWca a YbXYX`F Ygci fWg

F YWca a YbXYX`fYUX]b[ .

; YfUfX`; YbYHtY" @SdSf[hW6 [eUJagdeW 3` 7eeSk [ ` ? WZaV""%+&""HfUbg">UbY`9"@Yk ]bž`#UWJ. `7cfbY`  
I Dž%, \$"

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-FZW>[h[ Y : S`VTaa] aX@SdSfa`aYk. `hhd.##k k k "\b"i b]!\Ua Vi f[ "XY

-`A UbZfYX`>U\bž`@SdSfa`aYk, 3 9g[VWfa fZWFZWak aX@SdSf[hW`hhd.##k k "i b]!  
\_cY`b"XY# Ua Y\$&#dadb"\ha

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



## 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.

7cdm]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`i 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[ "

7c`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\_]7c`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'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`]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]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