

# ARTS3330

@Ub[iU[Yg'7UdghcbY.'HfUbg`Uh]cb'UbX'=bhYfdfYh]b[

# 7 ci fgY<sup>-</sup>Cj Yfj ]Yk

# `GHJZZ`7cbHJWh`8YHJ]`g`

#### '7cbj Ybcfg'

BUa Y	9a U]`	5j U]`UV]`]m	@cWUh]cb	D∖cbY
:Y`]WJhmiAiY``Yf	Za i Y``Yf4 i bgk "YXi "Ui	-	A cfj Yb 6fck b &* (	

#### °@Y₩ni fYfg'

BUa Y	9a U]`	5j U]`UV]`]m	@cWUh]cb	D∖cbY
:Y`]WjhmiAiY``Yf	Za i Y``Yf4 i bgk "YXi "Ui	-	A cfj Yb 6fck b &* (	

#### "Hihcfg"

BUa Y	9a U]`	5j U]`UV]`]m	@cWUhjcb	D∖cbY
6cg\Yb[`>]b[	Vcg\Yb["]b[4 i bgk "YXi "Ui	VmUddc]bha Ybh	A cfj Yb 6fck b &* (	

## GWX.cc``7cbHJWhi=bZcfaUhjcb

GW&cc``cZ<iaUb]hJYg'UbX'@Ub[iU[Yg

@cWUhjcb. `GW&cc``CZjWYžA cfjYb`6fckb`6i]`X]b[ž@YjY``&ž&),

CdYb]b[ '< ci fg. 'A cbXUm!': f]XUmž - Ua '!') da

D\cbY. Ž\*%&'-',) %\*, %

: UI . Ž\*%&'-' , ) ', +\$)

9a U]`. <u>\U`4 i bgk "YXi "Ui</u>

# 7ci fgY<sup>·</sup>8YHJ]`g

## 7 fYX]h Dc]bhg \*\*\*

## Gi a a UfmcZhXY7ci fgY

Gi VYW65fYU. 5Z[`WeWEfgV[Weł 8dW UZ EfgV[Weł 9Wd\_S` EfgV[Weł <SbS` WeWEfgV[Weł = adWS` EfgV[Weł EbS` [eZ'UbX'>Sf[` 3\_ Wd[US` EfgV[We

⊕ 'ħ ]g'WJdghcbY'Wci fgYžmci 'k ]``'VY'gi ddcfhYX']b'ħY'dfcZYgg]cbU`]gUh]cb'cZmci f``Ub[i U[Y'g\_]``g'ħ fci [ \
 Ui ħYbh]WhfUbg`Uh]cb'UbX']bhYfdfYh]b[ 'HUg\_g'H\_Yb'Zfca 'U'fUb[Y'cZWcbhYa dcfUfmžfYU`!k cfX'WcbhYI hg'' 'H\Y
 Wci fgY'k ]```Umħ\Y'Zci bXUh]cb'Zcf'mci 'hc'Yb[U[Y'k]h\'f\Y'dfcZYgg]cb'k \YfY'mci 'k]```VY'[i]XYX']b
 YgHUV`]g\]b[ 'U'gci bX'i bXYfgHUbX]b[ 'cZh\Y'ħ\YcfmUbX'dfUWŋ]W' cZhfUbg`Uh]cb'UbX']bhYfdfYh]b[ ']b'`cWU`ž
 bUh]cbU`ž'UbX']bhYfbUh]cbU``WcbhYI hg''

Mci 'k]``dUfhjWjdUhY`]b'V`YbXYX``YUfb]b['Wcbg]ghjb['cZVch\cb`]bY`UbX`ZUWY!hc!ZUWY`YWifYg`UbX`hihcf]U`g" @YWifYg`k]``VY`g\UfYX`UWfcgg`U````Ub[iU[Yg`UbX`k]``X]fYWhm``]b\_'hc`U`\cghcZcb`]bY`aUhYf]U`g`UbX`hUg\_g k\]W\`k]```gi ddcfhinci ']b'nci f`ck b`]bXYdYbXYbhXYjY`cda YbhcZmci f`HfUbg`Uhjcb`UbX`]bhYfdfYhjb['g\_]``g fY`UhjjY`hc`nci f`ib]eiY``Ub[iU[Y`dfcZ]WjYbWh"`H\]g`]g`fY]bZcfWYX`Vm'hihcf]U`g`]b`k\]W\`nci 'k]```dfUWijWY`nci f V]`]b[iU`g\_]``g`]b`Vch\``Ub[iU[YX]fYWijcbg`UbX`HU\_Y`dUfhi]b'dYYf!`UbX`gY`ZUggYggaYbh'

#### 7cifgY`@YUfb]b[`CihWcaYg

- % UbU`mgY`H\Y``]b[i]gH]WZYUHifYg`cZHfUbg`UHYX`UbX`]bHYfdfYHYX`HYI hg`]b`UWUXYa]WUbX`dfcZYgg]cbU` Z[Y`Xg
- &" Ya d`cmih,Ycf]Yg`cZlfUbg`Uh]cb`UbX`]bhYfdfYh]b[ 'hc`]bZcfa žXYj Y`cdž'UbX`↑ gh]ZmiffUbg`Uh]cb`UbX ]bhYfdfYh]b[ 'Wkc]Wfg`UbX'dYfZcfa UbWf`]b``]bY`k]h,`dfcZygg]cbU``Yh,]Wg
- ' "XYj Y`cd<sup>-</sup>UbX'Udd`mV]`]b[i U```Ub[i U[Y'g\_]``g'hc'fY`Yj UbhUbX'dfcZ]W]YbWhIUddfcdf]UhY'HUbg`Uh]cbž ]bhYfdfYh]b[ž'UbX']bhYfW `h fU``Wca a i b]WUh]cb'HUg\_g
- ("Wf]h]eiY'WcbhYadcfUfmihfUbg`Uh]cb'UbX']bhYfdfYh]b['h\Ycf]YgžfYgYUfW\'UbX'dfcZYgg]cbU`'Yh\]Wg
- ) "g\ckWJgY'U'dfcZYgg]cbU`'dcfhZc`]c'cZV]`]b[iU`'HJg\_g']b'HUbg`Uh]cb'UbX']bhYfdfYh]b[

#### HYUW ]b[ GhfUhy[ ]Yg

H\]gʻVʻYbXYX! YUfb]b[ 'Wći fgY Wća V]bYgʻZJWY!tc!ZJWY UbX'cb`]bYʻj ]XYc "YWfi fYg"'H\Y'YWfi fYgʻU`ck ghi XYbhgʻcZU````Ub[ i U[ YgʻUbX'X]fYWf]cbgʻtc "YUfbʻZca "YUWX'ch\Yfži bXYfgHJbX'g]a ]`UfʻUbX'i b]ei Y W\U``Yb[ Ygʻ]b`X]ZYfYbh`Ub[ i U[ YgʻUbX'W `hi fYgž'UbX`YUfbʻtc cj YfWća Yʻh\YgY'i g]b[ 'IffUbgʻUh]cb`UbX ]bhYfdfYh]b[ 'h\Ycf]YgʻUgʻk Y```UgʻdfcZygg]cbU``Yh\]Wg"'H\YfY`UfY`Zci f`cb`]bYʻj ]XYc!fYWcfXYX``YWfi fYgž'Ugʻk Y`` Ugʻtk cʻZJWY!tc!ZJWY`cbYgʻZcfʻh\Y`]bhfcXi Wf]cb`UbX`WcbWi g]cb"'K ]h\]bʻZcftb][ \hmZJWY!tc!ZJWY`th tc]JUgʻ ghi XYbhgʻk ]``\Uj Yʻh\Y`cddcfhi b]tmitc`ZcW gʻcbʻh\Y]f`ck b``Ub[ i U[ Y`UbX`gcW]cW`th fU``dfcZ]WJYbW]YgʻUbX XYj Y`cd`h\fci [ \`U`fUb[ Y`cZgY`ZX]fYWfYXždYYfž'UbX'th tcf`ZYYXVUW\_`i g]b[ `cb`]bY`a UhYf]U`gʻUbX`ZJWY!tc! ZJWY`tfUbq`Uhcb`UbX`]bhYfdfYhb[ `dfUWf]Wf"'

# 5ggYgga Ybh

H\Y`UggYgga Ybhk]``VY`X]gWiggYX`]b`h\Y`ZJWY!hc!ZJWY`]bHfcXi Whcfm`YWhifY`]b`K YY\_`%UbX`]b`h\Y`Zcfhb][\hm hihcf]U`g"`=ghfi Wh]cbg`k]``VY`dcghYX`]b`A ccX`Y"

# 5ggYgga YbhHUg\_g

5ggYgga Ybh'HJg_	K Y][∖h	

k cfXgž']bWi X]b[ 'gci fWf 'hYl hg"

Hi fb]h]b`gYh]b[.`H\]g`Ugg][ ba Ybh]g`gi Va ]hhYX`h\fci [\`Hi fb]h]b`UbX`gh XYbhg`WUb`gYY`Hi fb]h]b`g]a ]`Uf]hm fYdcfhg"

# 5 HHYbXUbWY FYei ]fYa Ybhg

Ghi XYbhgʻUfYʻghfcb[`mʻYbWci fU[YX'hcʻUhhYbX'U```WUggYgʻUbX'fYj]Yk ``YWhi fYʻfYWcfX]b[g"

# 7 ci fgY GWX YXi `Y

#### J]Yk WUgg ha YHJV Y

## H]a YHJV`Y'

8 UHY	Hmd Y	7 cbhYbh
K_YY_`%`'_`>i_bY`!`+`>i_bY	@YV₩ifY	=blfcXiWi]cbihcih∖Yi@Ub[iU[YiWUdghcbYiWcifgY" HfUbg`Uh]cbiUbXi]bhYfdfYh]b[i]biUWUXYa]WUbX dfcZYgg]cbU`igYhi]b[g"
		6]`]b[iU``dfYdUfUh]cb`UbX`fYgYUfWX"`5\WVfUWmUbX Yei]jU`YbWf.`]bhfU`]b[iU``hfUbg`Uh]cb`fbUaYgž ]X]cagŁ"`GYUfWX]b[`Zcf`Yei]jU`YbWf`UWfcgg`W``hifYg"
		8]gWigg]cbicZhYbigYbhYbWYg
K YY_`&.`%\$`>i bY`!`%( >i bY	Cb`]bY`5WMjj]hm	5iX]c!j]giU```YWnifY.`HfUbg`Uh]cb`fGhYd\Yb 8c\YfhmŁ"
	Cb`]bY`5W(jj]]hm	Cb`]bY'ei]n'VUgYX'cb'H\Y'j]XYc``YWhifY'cb HfUbg`Uh]cb'f)ı Ľ
		H\Y`ei]n`WUb`VY`Wcad`YhYX`Ubmih]aY`Zfca`AcbXUm hc`:f]XUmi(`da"
	Hihcf]U`	Hi hcf]U``]b`lfUbg`Uh]cb"
K_YY_`(.`&(`>i_bY`!`&,	Cb`]bY`5₩1jj]hm	5iX]c!j]giU```YWnifY.`=bHYfdfYh]b[`fGUbXfU` <u`ył"< td=""></u`ył"<>
>i bY	Cb`]bY`5₩ <b>1</b> j]hm	Ei]n'cb']bhYfdfYh]b['f]  Ł"
		H\Y'ei]n'WUb'VY'Wcad`YHYX'Ubmih]aY'Zfca`AcbXUm hc':f]XUmi('da"
	Hi hcf]U`	Hihcf]U``]bhYfdfYh]b[]bhYfdfYh]b[.]b'X]ZYfYbh alcXYg`UbX`X]ZYfYbhgYh]b[gžfc`Y`d`Um"
K YY_`*.`, `>i `m'!`‰`>i `m	Cb`]bY`5W(jj]hm	5iX]c!j]giU``YWnifY. ⊕hYfWi`hifU``]bhYfUWn]cb`fBYVfU 5UfcbgŁ
	Cb`]bY'5Wh]j]hm	Ei]n'cb']bhYfWi`hifU``]bhYfUWf]cb'f)+ L"
		H\Y'ei ]n'WUb'VY'Wcad`YhYX'Ubmh]aY'Zfca`AcbXUm hc': f]XUmi('da"
	Hihcf]U`	Hihcf]U``cb`]bhYfW``hifU``]bhYfUWjcb"
K_YY_`, .`&&`>i `m!`&*`>i `m	Cb`]bY`5W(jj]hm	5iX]c!j]giU``YWhifY.`DfcZYgg]cbU``9h\]Wg`]b HfUbg`Uh]cbブ '=bhYfdfYh]b[ 'f@iXa]`U`GhYfbŁ
	Cb`]bY'5WMjj]mm	Ei]n`cb`DfcZYgg]cbU``Yh\]Wg`f <b>)</b> ı Ł"
		H\Y`ei]n`WUb`VY`Wcad`YHYX`Ubmih]aY`Zica`AcbXUm

FYgci fWfg

' ) ) \* ) \$- "&\$\$%"%\$+- - \$`- \*

• < c``mA ]\_\_\_Y`gcbž`=bHYfdfYHYf`YH\]Wg. 5 fYj ]Yk `cZH\Y`HUX]h]cbU``UbX`Y`YW#fcb]W`]HYfUH fYž =bHYfdfYHjb[ žJ c`i a Y`) žBi a VYf`%ž&\$\$\$Zdd"(-!) \*fJ Ł"

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

Gh XYbhfYgdcbgYg hc h\]g Wci fgY \Uj Y YYYb j Yfmdcg]hj Y"': c``ck ]b[ `gh XYbhfYei Yghg Zcf``cb[ Yf h hcf]U`g UbX ``Ub[ i U[ Y!gdYW]Z]WUgg][ ba Ybhg a Uf\_]b[ žUg cZ&\$% žh\Y ``Yb[ h\g cZh\Y h hcf]U`g \Ug VYYb YI hYbXYX hc '%') `\ci fgž UbX ZYXVUW\_'hc Zcfhb][ \hmUgg][ ba Ybhg k ]``VY k ]h\ fYZYfYbWY hc 'UWW fUWh'

## Gi Va ]gg]cb cZ5ggYgga YbhHUg\_g

# Gi Va ]gg]cb cZ5ggYgga YbhHUg\_g

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

=Zmci YbWci bhYf'U'dfcV'Ya 'k \Yb'UhYa dhjb[ 'hc'gi Va ]hmci f'Ugg][ ba YbhN fci [ \ 'Hi fb]hjbž'd'YUgY hY'Yd\cbY'9I hYfbU'`Gi ddcfhcb'-', ) '' ' %cf'Ya U]`'h\Ya 'cb'YI hYfbU'hY'hgi ddcfh4 i bgk "YXi "Ui '" Gi ddcfh \ci fg'UfY', .\$\$Ua '--'%\$.\$\$da 'cb'k YY\_XUmg'UbX'-.\$\$Ua '--) .\$\$da 'cb'k YY\_YbXg'fl \*) 'XUmg'U'mYUfŁ'" =Zmci UfY'i bUV'Y'hc'gi Va ]hmci f'Ugg][ ba YbhXi Y'hc'U'ZUi `hk ]h\ 'Hi fb]hjb'mci 'a Um'Udd`mZcf'Ub'YI hYbg]cbž'Vi hmci a i ghfYhU]b'mci f'hjW\_Yhbi a VYf'Zfca '9I hYfbU``Gi ddcfhfU`cb[ 'k ]h`Ubm'ch\Yf'fY`Yj UbhXcW a YbhgŁ'hc ]bWi XY'Ug'Yj ]XYbWi'hc'gi ddcfhimci f'YI hYbg]cb'Udd`]WUh]cb''`=Zmci 'Ya U]``9I hYfbU``Gi ddcfhimci 'k ]``

## 5WUXYa ]W<cbYghmUbX^D`U[]Uf]ga

D`U[]Uf]ga `]g`i g]b[`f\Y`k cfXg`cf`]XYUg`cZcf\Yfg`UbX`dfYgYbh]b[`f\Ya `Ug`mci f`ck b"`=fiWUb`hU\_Y`a Ubm Zcfa gžZfca `XY`]VYfUHY`W\YUh]b[`fc`UWV]XYbhU``mWcdm]b[`Zfca `U`gci fWFk]h\ci hUW\_bck `YX[Ya Ybh'

I BGK '[fci dg'd`U[]Uf]ga ']bhc'h\Y'Zc``ck ]b[ 'WUhY[cf]Yg.

7 cdm]b[. `i g]b[ `h\Y`gUa Y`cf`j Yfmig]a ]`Uf`k cfXg`hc`h\Y`cf][ ]bU``hYI h`cf`]XYU`k ]h\ci h`UW\_bck`YX[ ]b[ `h\Y

- i bXYfgHJbX'mci f`f][\hg`UbX'fYgdcbg]V]`]h]Yg`Ug'U'ghi XYbh'Uhil BGK
- VY 'Uk UfY 'cZd'U[]Uf]ga ž Wcdmf][ \lž I BGK 'Gh XYbh7cXY 'cZ7cbXi WiUbX '5 WW dhUV'Y 'I gY 'cZ I BGK '=7 H F Ygci fW g'Dc']Wh
- VY Uk UfY cZh Y gHUbXUfXg cZVY Uj ]ci f YI dYWYX cZYj YfmcbY ]b h Y I BGK Wca a i b]m
- `cWUHY'gYfj ]WYg'UbX']bZcfa UHjcb'UVci hI BGK 'UbX'I BGK '@VfUfm

Gca Y'cZh\YgY'UfYUg'k]``VY'ZJa]`]Uf'hc'mci žch\Yfg'k]``VY'bYk"'; U]b]b['U'gc`]X'i bXYfgHJbX]b['cZU``'h\Y fY`UhYX'UgdYWfg'cZ9@=G9'k]``\Y`d'mci 'a U\_Y'h\Y'a cghcZmci f`gh X]Yg'UhI BGK "' <u>\hhd.#gi VYWf[i]XYg'`]VfUfm'i bgk "YXi "Ui #Y`]qY#UVci hY`]qY</u>

# 5WUXYa]W=bZcfaUh]cb<sup>.</sup>

: cf<sup>\*</sup>YggYbhJU<sup>\*\*</sup>gh XYbh<sup>\*</sup>]bZcfa UhJcb<sup>\*</sup>fY<sup>\*</sup>UhJb[<sup>\*\*</sup>hc.

- fYei Yghg Zcf Yl hYbg]cb/
  `UhY gi Va ]gg]cbg [ i ]XY`]bYg/
  fYj ]Yk cZa Uf\_g/
- .