

ARTS5505

DYfgcbU`]gYX'9b[`]g\'@Ub[i U[Y'9b\UbWa Ybh

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

7ci fgY[·]Cj Yfj]Yk

GhJZZ 7 cbhJWh 8 YhJ] `g

7cbj Ybcfg

B Ua Y	9a U]`	5j U]`UV]`] m	@cWUh]cb	D\cbY
@cb[`cb["`]4 i bgk "YXi "Ui	K YXbYgXUmg'!!(d	la Cb ⁻ Ncca	

7ci fgY 8YHJ] g

7 fYX]hDc]bhg**

Gi a a UfmcZh\Y 7 ci fgY

 $H\[g'WcifgY'k]\[mathemath{\]} WcifgY'k]\[mathemath{\]} WcifgY'dfcj]\[mathemath{\]} WcifgY'dfcj]\[mathemath{\]} WcifgY'dfcj]\[mathemath{\]} WcifgY'dfcj]\[mathemath{\]} WcifgY'dfcj]\[mathemath{\]} WcifgY'dfcj]\[mathemath{\]} WcifgY'gc'fk'Uh'mcif'gc'fk'Uh'mcif'Wb'WcbfjbiY'fc'Yb\UbW'mcif'9b[`]g\'mb[iU[Y'g_]``g']bhc'fk'Y'ZihifY'hc'UW\]YjY'mcif UWWXYa]\[mathemath{\]} WbX'dfcZYgg]\[mathemath{\]} Wcifg'fy'cZmcif'9b[`]g\'mcif'kci'X'`]_Y'hc'fc'YUbX'fk'Yb'XYg]\[mathemath{\]} WcifgCY'UbX'fk'Yb'XYg]\[mathemath{\]} b'UbX']\[mathemath{\]} WcifgCYUbX'fk'Yb'XYg]\[mathemath{\]} b'UbX']\[mathemath{\]} WcifgCYUbX'fk'Yb'XYg]\[mathemath{\]} b'UbX']\[mathemath{\]} WcifgCYUbX'fk'Yb'XYg]\[mathemath{\]} b'UbX'fk'Yb'XYg]\[mathemath{\]} b'UbX']\[mathemath{\]} b'UbX'fk'Yb'XYg]\[mathemath{\]} b'UbX'fk'Yb'XYg]\[mat$

7 ci fgY @YUfb]b[Ci hWca Yg

5ggYgga Ybh

 $5\,bmfYZ'fYbW]b[\ 'gmghYa\ 'gi\ WX\ 'Ug'5D5\ ']g'UWWYdhUV`Y\ ']b'hN]g'Wci\ fgY'Ug'`cb[\ 'Ug']h']g'Wcbg]ghYbhmUdd`]YX.\\WXYW_I BGK 'Gi ddcfh'Zcf'F YZYfYbW]b[\ '5gg][\ ba\ Ybhg.\ '\\ '\\ 'hdg. #\ghi\ XYbh'i\ bgk\ "YXi\ "Ui\ #YZYfYbW]b[\ '\)$

Ghi XYbhg`WJb`UWWygg`dfYj]ci g`ghi XYbhgUa d`Yg`cb`CdYb@YUfb]b["`

5ggYgga YbhHUg_g

5ggYgga Ybh'hUg_	K Y][\h	8i Y'8UHY	Gh XYbh@YUfb]b[Ci hWca Yg 5ggYggYX
DYfgcbU`'dfcYWiXYg][bfDD8Ł'			

Gh XYbhg fYVV) j Y k f]hh/b ZYYXVUW_VUgYX cb fi Vf]Wg"

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

 $\label{thm:condition} $$HYY``c[Vcc_'UbX'`cifbU``XcYg'bchbYYX'giVa]gg]cb/fUh\Yfz']hk]```VY'UggYggYX'X]fYWhmcb'h\Y'Y!dcfhzc']ch\Uh\Y'ghXYbhWfYUhYg'UbX'g\UfYg'k]h\Th\Y'hYUW\Yfg''`$

Hi fb]hb gYhb[. H\]g]g bchU Hi fb]hb Ugg][ba Ybh

5ggYgga Ybh' . CfU DfYgYbhUh]cb! % a]bi hYg

GhUfhXUhY. Bch5dd`]WUV`Y

8 YW] g.

Ghi XYbhgʻdfYgYbhh\Yjf``YUfb]b[`\][\\jazaca h\Y]fʻdYfgcbU``dfcYWhzcf`UVci h%\$`a]bi hYgʻhc`]bgd]fY dYYfgʻhc`Wcbh]bi Y`hc`Yb\UbWY`h\Y]f``Ub[i U[Y`g_]``gʻYj Yb`UZYf`Wca d`Yh]b[h\Y`Wci fgY"`H\YmUfY`fYei]fYX`hc gi Va]hUb`UVghfUWhfUVci h'%) \$`k cfXgŁ`UVci hk\Uhh\YmUfY`[c]b[`hc`dfYgYbhU'Wci d`Y`cZk YY_g`VYZcfY`h\Y dfYgYbhUh]cb`XUm'`Ghi XYbhgʻfYWY]j Y`k f]hhYbʻZYYXVUW_Zfca hi hcf`cb`UVghfUWgʻf%\$i Ł`UbX`Zfca dYYfgʻcb dfYgYbhUh]cb`f%\$i Ł`VUgYX`cb`fi Vf]Wg''

5XX]h]cbU`XYhJ]`g.

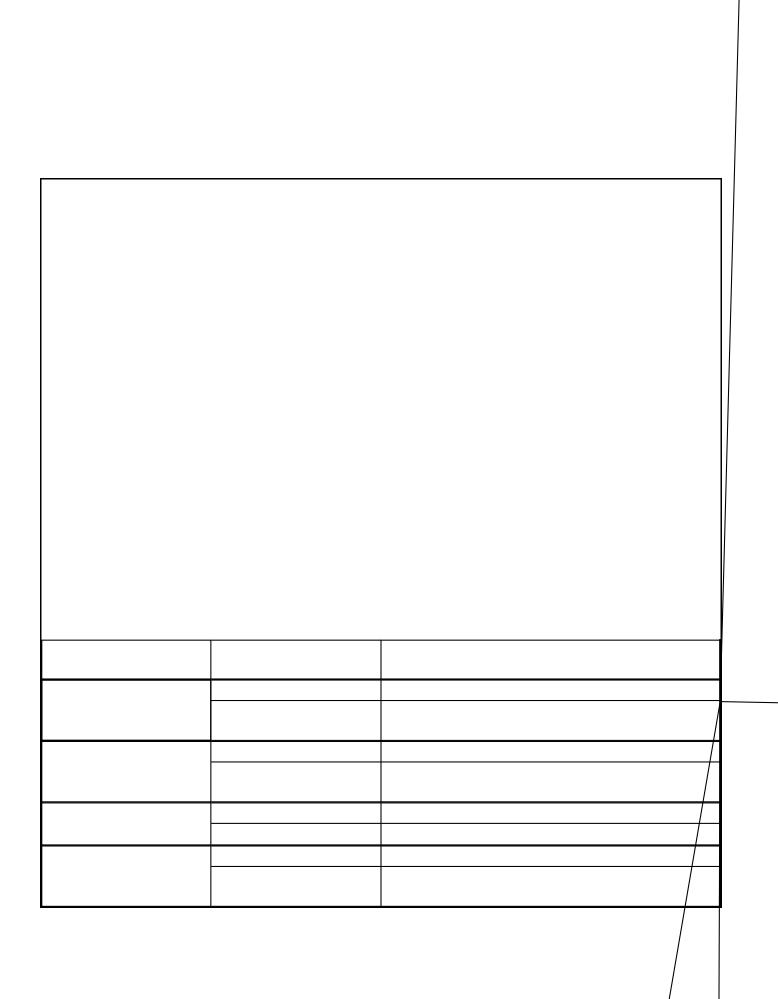
H\Y`UVghfUWhi]g`Xi Y`cb`Hi fb]h]b`Vm- Ua ž'A cbXUm'&:5df]``fK YY_`- Ł"`H\Y`dfYgYbhUh]cb`]g`dYYf`UggYggYX UbX`Xi Y`]b`h\Y`WUgg`cZh\Y``Ughk YY_/ghi XYbhg`k \c`a]gg`h\Y`Z|bU``WUgg`k]```a]gg`h\]g`%\$i `UggYgga Ybh'`

 $\label{thm:continuous} \begin{tabular}{ll} Hi fb]h]b"gYH]b[."H\]g"Ugg][ba Ybh]g"gi Va]hYX"h\fci [\Thi fb]h]b"UbX"ghi XYbhg"WUb"gYY"Hi fb]h]b"g]a]"Uf]hm fYdcfhg" \\ \begin{tabular}{ll} Hi fb]h]b"UbX"ghi XYbhg"WUb"gYY"Hi fb]h]b"g]a]"Uf]hm fYdcfhg" \\ \end{tabular}$

5qqYqqa Ybh(. FYZYWhji Y YqqUm

GhUfhXUhY. Bch5dd`]WUV`Y

5a



FYgci fW/g

Gi Va]gg]cb cZ5ggYgga YbhHUg_g

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

Image: Ybwei bhyfu'dfcv'ya k \yb'uhhya dhjb['hc'gi va]hmci f'Ugg][ba Ybhh\fci [\ 'Hi fb]h]bž'd'YUgY

Hy'Yd\cby'9| hy'fbu''Gi ddcfhcb'-',) '' ' ' %cf'Ya U]''h\Ya 'cb'Y! hy'fbu'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'mYUft'''=Z'mci
UfY'i bUV'Y'hc'gi va]hmci f'Ugg][ba YbhXi Y'hc'U'ZJi 'hk]h\ 'Hi fb]h]b'mci 'a Um'Udd'mZcf'Ub'Y! hy'bg]cbž'Vi hmci
a i ghfYhJ]b'mci f'h]W_Yhbi a VYf'Zfca '9! hy'fbU''Gi ddcfhfU'cb['k]h\ 'Ubmch\Yf'fy'Yj UbhXcW a Ybhgt'hc
]bWi XY'Ug'Yj]XYbW' hc'gi ddcfhmci f'Y! hy'bg]cb'Udd']WUh]cb"'=Zmci 'Ya U]''9! hy'fbU''Gi ddcfhmci 'k]'`
Ui hca Uh]WJ'`mfYW']j Y'U'h]W_Yhbi a VYfZ'Vi h]Zmci 'hY'Yd\cbY'mci 'k]``bYYX'hc'gdYW]Z]WJ'`mUg_'Zcf'cbY''
Hi fb]h]b'U'gc'dfcj]XYg'i dXUhy'g'cb'h\Y]f'gmghYa 'ghUh' g'cb'Hk]hyf''

; YbYfU`mž'UggYgga YbhiHug_g'a i ghVY'gi Va]hhYX'Y`YVWfcb]\WJ``mij]U'Y]h\Yf'Hi fb]h]b'cf'U'A ccX`Y Ugg][ba Ybh''=b']bgHJb\W'g'k \YfY'h\]g']g'bchdcgg]V`Yž']hk]```VY'gHJhYX'cb'mci f'\\circ i fgY'g'A ccX`Y'g]hY'k]h\U`hYfbUh]j Y'gi Va]gg]cb'XYHJ]`g"

cfi]bZcfa Uhjcbicbi\ckihcigi Va]hUgg][ba Ybhgicbi]bYij]UiA ccXiY.i\hdg.#gh XYbhi bgk "YXi "Ui #\ck! gi Va]hUgg][ba Ybha ccXiY

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

D`U[]Uf]ga i]gii g]b[ih\Yik cfXgicfi]XYUgicZch\YfgiUbXidfYgYbh]b[ih\Ya iUgimci fick b"i=hWJbihU_Yia Ubm Zcfa gžZfca iXYi]VYfUhYiWXYUh]b[ihciUWW]XYbhU`mWcdm]b[iZfca iUigci fWYik]h\ci hiUW_bck iYX[Ya Ybh'

IBGK [fcidg'd'U[]Uf]ga]bhc'h\Y'Zc``ck]b['WUhY[cf]Yg.

• i bXYfgHJbX'mci f'f][\hg'UbX'fYgdcbg]V]`]h]Yg'Ug'U'gh XYbh'Uhil BGK

5 WUXYa] W = b Zcfa Uh]cb

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

- fYei Yghg Zcf Yl hYbg]cb/`UhY gi Va]gg]cbg [i]XY`]bYg/