

ARTS3096

A YX]Už'7 ca a i b]WUh]cb'UbX'h\Y'7`]a UhY'7f]g]g

HYfa 'Hk c''#'&\$&%

7ci fgY[.]Cj Yfj]Yk

7cifgY[·]8YHJ]`g

7 fYX]hDc]bhg ***

Gi a a UfmcZh\Y'7ci fgY

GiVYWhi5fYU.??WW[Sł5g/fgdWS`VFWUZ`a/aYk

A YX]UžWća a i b]WUh]cbiUbXih,YiW]a UhYiWf]g]gi\UjYi\UXiU``cb[žYbhUb[`YXifY`Uh]cbg\]d"A YX]U`UbX Wća a i b]WUh]cbgid`Um_Ymfc`Yg`]bih,YigW]YbWYgicZW]a UhYiW,Ub[Yih,Ya gY`jYg":: cfYl Ua d`YžW]a UhY WLUb[YigW]YbWYg`i gYiWća di hYf`a cXY``]b['Yl hYbg]jY`mžUbXiU`gcifY`mcbi[`cVU``a YX]U`bYhk cf_gih,UhVch, W]fW `UhYiYbj]fcba YbhU``XUhU`UbXiU``ckiZcf`Wć``UVcfUh]cbiUbXiX]gWigg]cbiUa cb['igW]Ybh]ghg"'A YX]U`UbX Wća a i b]WUh]cbiU`gcid`UmU`fc`Yi]b`Vf]b[]b['W]a UhYiW,Ub[YigW]YbWYihcih,YidiV`]W'=bih,YidfcW/ggžh,Ym \Y`d`ZfUa Yih,Yik UmW]a UhYiW,Ub[Yi]gX]gWiggYX"'H\Ymh\i gid`UmU`ZJgW]bUh]b[']ZcZhYbiWćbZ]WhYXigYf]YgicZ fc`Yg`]bigYh]b['_YmgcW]U``UbXidc`]h]WU``U[YbXUgik]h\fY[UfXihciW]a UhYiW,Ub[Y"'C bih,Yich,Yf\UbXž

5ggYgga Ybh

$\label{eq:constraint} D`YUgY`gYY`HXY`7\,ci~fgY`A~ccX`Y`G]HY`Zcf`a~cfY`]bZcfa~UH]cb"$

5ggYgga YbhHUg_g

5ggYgga Ybh'HJg_	K Y][\h	8iY`8UhY	GhiXYbhï@YUfb]b[CihWcaYgʻ5ggYggYX
:]bU``9ggUm)\$I	% #\$, #&\$&\$`%%)-`DA	%ž`&ž`'
DYfgcbU``7cifgY`5fWX]jY`UbX FYZYWf]cbg`)\$1	Bch5dd`]WJV`Y	%ž`&ž`' Ž`(

5ggYgga Ybh8YHJ]`g

Gi Va]gg]cbˈbchYg. Mci ˈbYYX hcˈgi Va]h&! 'V`c[ˈdcɡhgːXi f]b[ˈk YY_gʻ‰z&UbX'' ``fU``V`c[ˈdcɡhgʻa i gh VY`gi Va]hYX VmGi bXUmUh‰) - da `Uhih Y YbX cZYUWX k YY_`]bj c`j YX ``gYY Wci fgY`A ccX`Y`g]hY Zcf`XYHJ]`gŁ''Gc mci `bYYX hc 'Wx ccgY'k \Yh Yf`mci `k]``Xc &cf'' `dcɡhg`Xi f]b[``h Y Z]fghih fYY k YY_g cZ'h Y Wci fgY'' Nci `k]``fYWY]j Y ZYYXVUW_`cb`h YgY`dcghgž'k]h `U`a Uf_`]bX]WUh]b[``\ck `mci `UfY`[c]b[ž']b k YY_g]I ''H\Y`a Uf_`mci `UfY`[]j Yb`Uhih]gʻdc]bh]gʻ↑ ghhc ``Yhmci `_bck `\ck `h\]b[gʻUfY`[c]b[''_fik]``žcZ Wci fgYž`\Uj Y`gca Y`VYUf]b[`cb`mci f`Z]bU``a Uf_`Zcf`h\]gʻUgg][ba Ybh'Vi h]h]gbfhiZ]bU``UbX`XcYgbfhi[c`]bhc`h.Y Zcfa U``I BGK `gmghYa "

8YdYbX]b[`cb`k \Yh\Yf`mci `\Uj Y`XcbY`&`cf`' `dcghg`Xi f]b[`h\Y`Z]fgh'' `k YY_gžmci `h\Yb`bYYX`hc W\ccgY`' !(`k YY_g`hc`gi Va]h'a cfY`V`c[`dcghgž'Zfca `k YY_g`(!) /`+!%\$`fh\YfY`UfY`bc`WUggYg`]b`k YY_ g]I Ł''

+b`U``žmci `bYYX`hc`gi Va]h'* `V`c[`dcghg`cj Yf`h\Y`Ybh]fY`Wci fgY`Vmh\Y`YbX`cZ'k YY_`%\$"

Mci a i ghi gY h\Y'V`c[gcZrk UfY'dfcj]XYX`cb`A ccX`Y`hc`dcgh"K f]hhYb`dcghg`g\ci`X`bchVY`UhUW\YX Ug`k cfX`XcWg`cf`dXZg"`Mci `UfY`a cfY`h\Ub`k Y`Wca Y`hc`UXX`]a U[Ygž`Ui X]cž`j]XYc`cf`ch\Yf`a YX]Už`]bhc`h\Y V`c[`]hgY`Zž`Ug`bYYXYX"

D'YUgY bch/ th Uhth YfY UfY Z fh Yf]a dcffUbhXYfU] g UVci hth]g Ugg][ba Ybhcb h Y Wci fgY A ccX`Y g]h/"

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

FYgci fWg

DfYgWf]VYX F Ygci fWyg

GYY '7 ci fgY 'A ccX`Y`g]hY 'Zcf`fYgci fWYg" 'H\YfY`]g bc '7 ci fgY 'F YUXYf 'Zcf`h\]g Wci fgY" '5 ``fYUX]b[g UbX`ch\Yf a UhYf]U`gz`cf``]b_g 'bc 'h\YgYž WUb`VY 'Zci bX`cb`h\Y '7 ci fgY 'A ccX`Y`g]hY"

FYWca a YbXYX⁻FYgci fWYg

D`YUgY`gYY`Wci fgY`A ccX`Y`g]hY`Zcf`XYHU]`g"

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

7 ci fgY ZYYXVUW_`k]```VY`[UH\YfYX`H\]g`Hf]a YgHYf`j]U`X]gW gg]cb`UbX`cVgYfjUH]cb`Xi f]b[`WUggYgžj]U Ugg][ba Ybhik cf_ž`UbX`j]U`H\Y`A m91 dYf]YbWY`gi fjYmg"

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]hjbžd'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'ZJi `hk]h\'Hi fb]hjb'mci 'a UmUdd`mZcf'Ub'YI hYbg]cbžVi hmci a i ghfYhU]b'mci f'hjW_Yhbi a VYf'Zfca '9I hYfbU'`Gi ddcfhfU'cb['k]h\ 'Ubmch\Yf'fY'Yj UbhXcW a YbhgŁhc]bWi XY'Ug'Yj]XYbWY hc'gi ddcfhmci f'YI hYbg]cb'Udd`]WUh]cb'' Zmci 'Ya U]`'9I hYfbU'`Gi ddcfhimci 'k]`` Ui hca UhjWU'`mfYWY]j Y'U'hjW_Yhbi a VYfžVi h]Zmci 'hY`Yd\cbY'mci 'k]``bYYX'hc'gdYWJZWU``mUg_'Zcf'cbY" Hi fb]hjb'U`gc'dfcj]XYg'i dXUhYg'cb'h\Y]f'gmghYa 'gfUh'g'cb'Hk]hYf"

; YbYfU``mž'UggYgga YbhHUg_g`a i ghVY`gi Va]HYX`Y`YWfcb]WU``mj]U`Y]H\Yf`Hi fb]h]b`cf`U`A ccX`Y Ugg][ba YbH'`=b`]bgHUbWfg`k \YfY`H\]g`]g`bchdcgg]V`Yž`]hk]```VY`gHUHYX`cb`mci f`Wci fgY**'**g`A ccX`Y`g]HY`k]H\ U`HYfbUh]j Y`gi Va]gg]cb`XYHU]`g"

: cf`]bZcfa Uh]cb`cb`\ck `hc`gi Va]hUgg][ba Ybhg`cb`]bY`j]U`A ccX`Y.`\hhdg.##gh XYbh'i bgk "YXi "Ui #\ck! gi Va]hUgg][ba Ybha ccX`Y

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

D`U[]Uf]ga `]g`i g]b['H\Y`k cfXg`cf`]XYUg`cZcH\Yfg`UbX`dfYgYbH]b['H\Ya `Ug`mci f`ck b"`=h\Wb`HU_Y`a Ubm Zcfa gžZīca `XY`]VYfUHY`W\YUH]b['hc`UWV]XYbHU``mWcdm]b['Zīca `U`gci fW'`k]H\ci hUW_bck `YX[Ya YbH'

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

i bXYfgHUbX*mci f*f][\hg*UbX*fYgdcbg]V]`]h]Yg*Ug*U*gh XYbhUhI BGK

5₩UXYa]W≢bZcfaUh]cb