

ARTS3212

7 cbhYa dcfUfmi±bX]U'H\fci [\'6c``mk ccX.'Dc`]h]Wgž'GcW]Yhm UbX'7i`hi fY

HYfa 'H\fYY''##'&\$&\$

7ci fgY[.]Cj Yfj]Yk

7ci fgY 8YW] g

7 fYX]hDc]bhg * *

Gi a a UfmcZh\Y 7ci fgY

#Dith Y Webhya defulfmik cf X cf XYfz #DX]U df YgYbhg U dufuxel . 'U'f]g]b['['cVU'YWebca] Wdck Yf\ci gY'ZJW]b[gi VgHJbh]U'XYj Y'cda YbhU'UbX'Ybj]fcba YbhU'WkU'Yb[Yg"'5a`fW_bacSck; V[S'dfcj]XYg'ghi XYbhg'k]h\duhk Umg'hc'i bXYfgHJbX]b['#DX]U'hcXUmz'k]h\fYzYfYbWY'hc']hg'dcghlWe'cb]U''\]ghcfmz'gcW]YmiUbX'W ffYbh dc']h]Wg"'H\Y'Wei fgY'i gYg'dcdi 'Uf'<]bX]'W]bYa U'cf'6c''mk ccX'Ug'Ub'Ybhfmdc]bhhc'hfUWY'h\Y''Y[UW]Yg'cZ We'cb]U']ga z'XYa cWfUWmUbX'gYW' 'Uf]ga ']b'#DX]Uz'U'cb[g]XY'UbU'mgYg'cZWJghYz'[YbXYf'UbX'fY[]cb"'H\Y Wei fgY'Webg]XYfg'h\Y'XYj Y'cda YbhU''Ywebca mz'Ug'k Y`''Ug']ggi Yg'cZWeffi dh]cbz'bYc']VYfU']ga 'UbX'h\Y'fc'Y cZh\Y'#DX]Ub'X]UgdcfU"'6mh\Y'YbX'cZh\Y'Wei fgYz'mci 'k]'''VY'UV'Y'hc'cZZYf'gci bX'UXj]WY'hc'UbmcbY'k \c Ug_g'mci .'K\YfY']g'#DX]U'[c]b[3'K\UhUfY'h\Y'cddcfhi b]h]Yg'UbX'f]g_g'cZZYfYX'VmYb[U[]b['k]h\

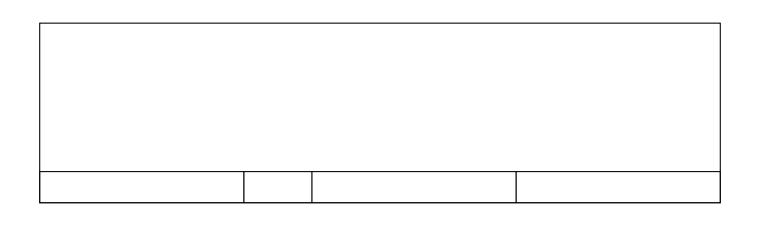
7 ci fgY @YUfb]b[Ci hWca Yg

%" 5bU'mgY'UbX'Yj U'i UhY'fY'Yj Ubh'gWkc'Uf'm']hYfUh fY

- &" 91 d`U]b _YmUgdYWfg cZ \DX]Ub 'gcWJYhmž'W \hi fY 'UbX'dc\]fJWg 'g]bWY '% (+
- ' " 7 cbglfi WiYj]XYbWY!VUgYX'Uf[i a Ybhg'i g]b[']bXYdYbXYbhm`cWUhYX'gci fWYg
- ("DYfZcfa 'Ugg][bYX'HJg_g'k]h\]b'U'[fcid'gYH]b['UbX'HJ_Y'dUfh']b'[fcid'X]gW gg]cb
-)" ⇒XYbhjZmh\Y`k Umg`]b`k \]W\`dcdi`Uf`W\`h fYžgi W\`Ug`Z]`a ž`fYZYW\g`h\Y`dc`]hjWJ`ž`gcWjU``UbX`W`h fU`]bZi YbW'g`]b`k \]W\`]h]g'dfcXi WYX`UbX`Wcbgi a YX"

HYUWX]b[GhfUhY[]Yg

H\Y`Wei fgY`]g`XYg][bYX`lec`]blfcXi WY`ghi XYblg`lec`WebhYa defUfm'±bX]Ub`de`]h]WgžgeW]Ymž'UbX`W``hi fY`]b`UbUWjj Y``YUfb]b[`Ybj]fcba Ybh'`H\Y`Wei fgY`h_Yg`gi VghUbh]i Y`]ggi Yg`UXXfYggYX`]b`WebhYa defUfm6e``mk ceXZ]`a `Ug`U`dfca dhilec`]bhYffc[UhY`lh\Y`Wei fgY`h_Ya Yg''`G\cfhW]dg`k]```VY`g\ck b`UbX`X]gW`ggYX`]b`WUgg`Ug`U k UmcZdfca dh]b[`lh\]b_]b[`UVci hled]Wg''`K YY_`m`YWi fYg`dfcj]XY`lh\Y`VUW_[fci bX`]bZcfa Uh]cb`lec`]blfcXi WYghi XYbhg`lec Wf]h]WU``lh\Ya Yg`h\Uhghfi Wi fY`We``UVcfUh]j Y``YUfb]b['''6fYU_!ci h[fci dg`ZcW g`cb`gdYW]Z]W fYUX]b[gž`WebbYW]b[`Yj Ybhg`UZYW]b[`WebhYa defUfm*bX]U`VmYb[U[]b[`k]h\`bYk g`Yj YbhgžW`hi fU`YI dfYgg]cbg`UbX`UbU`mg]g`]b`lh\Y`V`c[cgd\YfY''`K Y`k]```a U_Y`i gY`cZ'][gUk`[fci dg`lec`X]j]XY`fYUX]b[g`UbXX]gWi gg`lh\Ya`]b`ga U```[fci dg''Ghi XYbhg`UfY`YbWei fU[YX`hc`lU]`cf`lh\Y]f`k f]h]b[`UggYgga Ybhg`hc`U`][b`k]h\h\Y]f`dUfhW``Uf`]bhYfYqhqžUbX`hc`k f]hY`Ub`YI hYbXYX`YqqUmcb`U`led]WcZh\Y]f`ck b`XYq][b''



 $\label{thm:continuous} \begin{tabular}{ll} Hi & fb & fb & gYY'Hi & fb$

5ggYgga Ybh& 9ggUmUVghfUWhUbX UbbchUhYX V]V]c[fUd\m

GhUfhXUhY. Bch5dd`]WUV`Y

@Yb[h\.**\\$\$!\%) \$\$*k cfXg

8 YW] g.

Gh XYbhg]XYbh]Zmh\Y]fa Uʻcf ZcW gʻZcf h\YʻYggUmVmk YY_ʻZci fž Vmk f]h]b['Ub 'UVghfUWhci h]b]b['h\Y]f]bhYbXYX`Uf[i a Ybhž VUgYX`cb h\Y`]hYfUh fY Wcbgi `hYX"'H\Y`UbbchUhYX`V]V`]c[fUd\mk]```XYhJ]``h\]g `]hYfUh fYž UggYgg]b['Z]j YʻgWkc`Uf`mgci fWYgʻh\Ym\Uj Y`]XYbh]Z]YX"'\&\\$!\%) \$\$`k cfXg"': YYXVUW_`k]``VY cZYfYX`j]U`]bX]j]Xi U``Wca a Ybhzž Uʻfi Vf]WžUbX`]b!\WUgg`X]gW gg]cb"'

Gi Va]gg]cb bchYg GYY]bglfi Wjcbg cb A ccXY"

5ggYgga Ybh' . F YgYUfW 9ggUm

GhUfhXUhY. Bch5dd`]WUV`Y

@Yb[h\.")\$\$

8YW]`q.

H\Y`fYgYUfW\`YggUmk]``YI hYbX`cb`h\Y`Z[fghUgg][ba YbhžVUgYX`cb`ZYYXVUW_`UbX`h\Y]f`]bXYdYbXYbh fYgYUfW\`cZh\Y`gYWcbXUfm`]hYfUh fY"`K]h\`U``]a]hcZ' ž) \$\$`k cfXgžh\Y`YggUmcZYfg`h\Y`cddcfh b]hmhc YI d`cfY`U'hcd]WcZh\Y`gh XYbhg`W\ccg]b[`]b`gca Y`XYhU]`": YYXVUW_`k]```VY`cZZYfYX`j]U`]bX]j]Xi U` Wca a Ybhg`UbX`U`fi Vf]W`H\]g`]g`h\Y`Z[bU``UggYgga YbhZcf`UhYbXUbW'`di fdcgYg"`

Fygci fWyg

DfYgWf]VYX F Ygci fWYg

 $\label{eq:final_problem} F\ YUX]b[\ g`UfY`gYhYUVX`k\ YY_`cb``A\ ccX`Y\#@Y[\ Ubhcž`Ug`k\ Y```cb`]bY`a\ UhYf]U`g''$

FYWca a YbXYX FYgci fWYg

 $\label{eq:hammer_hammer} H\YfY^k]``VY^UXX]h]cbU``fYgci fWYg^cb^A ccX`Y\#@Y[Ubhc"$

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

Gi Va]gg]cb cZ5ggYgga YbhHUg_g Hi fb]h]b Gi Va]gg]cb

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 bXYfgfUbX mci f'f][\hg'UbX'fYgdcbg]V]`]hJYg'Ug'U'gh XYbhUhl BGK
- VY`Uk UfY`cZd`U[]Uf]ga ž`Wcdmf][\hz'l BGK `Gh XYbh7cXY`cZ7cbXi WhUbX`5VWWdhUV`Y`l gY`cZ I BGK `=\forall H`F Ygci f\W\g`Dc`]\m\m
- VY 'Uk UfY 'cZh\Y 'ghUbXUfXg 'cZVY\Uj]ci f'Yl dYWYX 'cZYj YfmcbY ']b 'h\Y 'l BGK 'Wca a i b]hm
- `cWUHY 'gYfj]WYg'UbX ']bZcfa UH]cb'UVci hI 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 bXYfgHJbX]b['cZU``h\YfY`UhYX'UgdYWng'cZ9@+69'k]``\Y`d'mci 'a U_Y'h\Y'a cghicZmci f'ghi X]Yg'UhI BGK "'\\hd.##qi VYWfi |XYg"`]VfUfm'i bqk "YXi "Ui #\`]qY#JVci hY`]qY

5WUXYa]W±bZcfaUhjcb

: cf'YggYbhJU`ghi XYbh]bZcfa UhJcb'fY`UhJb['lc.