

ARTS1630

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H\Y'Wci fgY']bfcXi WYg'h\Y'>UdUbYgY'gci bX'gmghYa žVUg]W[fYYh]b[g'Ug'k Y```Ug'U'bi a VYf'cZVUg]W >UdUbYgY'gfi Wi fYg'UbX'j cWJVi `UfmYI dfYggYX']b'<]fU[UbU'UbX'? UhJ_UbU'gm``UVUf]Yg'h\UhUfY'YggYbh]U` hc `VUg]W>UdUbYgY'Wca a i b]WJh]cb"'H\]g'Wci fgY']g'Zcf'h\cgY'k\c'\Uj Y'bc'cf'U'a cghbc'_bck 'YX[Y'cZ >UdUbYgY"'H\Y'Zc'`ck]b['Z]j Y'gcW]U'#W 'hi fU'hcd]Wg'k]``VY'Wcj YfYX.'%"; fYYh]b[g'UbX'a YYh]b['bYk'Zf]YbXg/&"'5g_]b['UVci hh\]b[g'Ufci bX'mci /' "'8U]`mfci h]bYg/("'@cWJh]cbg/)"'@]_Yg'UbX'X]g`]_Yg"'C b'YUW\'hcd]Wzk\\]'Y'ghi Xm]b['h\Y'`Ub[i U[Yžmci 'UfY'W\U`Yb[YX'hc'X]gWcj Yf'X]ZZYfYbhUddfcUW\Yg'hc'j]Yk]b['h\Y'k cf'X Ufci bX'mci '`]b[i]gh]WJ'`mUbX'W 'hi fU``mž'UbX'UfY'[]j Yb'h\Y'cddcfhi b]hmhc'i bXYfghUbX'W ffYbhgcW]cW''hi fU`]ggi Yg']b'>UdUb"'Nci 'UfY'U`gc']bhfcXi WYX'hc'`YUfb]b['fci h]bYg'bYW/ggUfmhc'gi WWYX']b'h\Y'ZJghdUW''YUfb]b['cZU'ZcfY][b'`UfY'"

H\]g`Wci fgY`]g`U`VY[]bbYfg!`Yj Y```Ub[i U[Y`Wci fgY"'5```ghi XYbhg`k \c`\Uj Y`\UX`gca Y`Yl dYf]YbW'`k]h\`h\Y`Ub[i U[Y`ZY]h\Yf`Ug`U`\Yf]hU[Y``Ub[i U[Y`cf`h\fci [\`dfYj]ci g`]bghfi Wh]cbža i ghZ]```]b`h\Y`d`UW'a Ybhei Ygh]cbbU]fY`Uj U]`UV`Y`Uh\hdg.#\U`"Uffg"i bgk "YXi "Ui #ghi XYbhg#\Ci fgYg#Ub[i U[Y!d`UW'a Ybhg"`\Ci k]``bchVY`dYfa]hhYX`hc`Ybfc``]b`U``Ub[i U[Y`Wci fgY`h\Uh]g`hcc`YUgmZcf`mci "`=Zh\]g`c\Wi fgž`mci k]``VYfei YghYX`hc`W\Ub[Y`mci f`Ybfc`a Ybh'

7 ci fgY @YUfb]b[Ci hWca Yg

%" +bffcXi WY cbYgY`ZVmi g]b['g]a d`Y`>UdUbYgY"
&" Gi ghU]b g]a d`Y`Wcbj YfgUh]cbg']b >UdUbYgY`k \Yb'hU`_]b['UVci hcbYgY`ZUbX'cbY'g`XU]`mfci h]bYg"
' "FYUX`UbX`k f]hY`<]fU[UbUž? UhU_UbU`Zi Ybhmž'UbX'fYWc[b]gY'), '? Ub']"
("FY[c[b]gY`dfcV`Ya g`cZ]bhYfW`hi fU``]bhYfUWf]cb`k]h\`ch\Yf`>UdUbYgY`gdYU_Yfg"
) "K cf_'Wc``UVcfUh]j Y`mk]h\`ch\Yfg"

HYUW]b['GhfUhY[]Yg'

 $\label{thm:continuous} H\Y'Wc fgY']g'Hui [\hh\fci [\k YY_m'YWh fYgž'hi hcf]U'g'UbX'gYa]bUfg'''+b ``YWh fYgž'ghi XYbhg``YUb[i U[Y'UbX``Ub[i U[Y'YUfb]b[ž'ghUfh]b[Zfca 'VUg]]WWc bWYdhg'''+b hYfg'UbX'gYa]bUfgž'ghi XYbhg'dfUWf]WY'h\]Yf'>UdUbYgY``Ub[i U[Y'g_]``g'Wc``YWh]i Y`mž'ghUfh]b['k]h\ 'VUg]WZ bWh]cbg'UbX'k cf_]b['cb'Wca dfY\Ybg]j Y'HUg_g'''+bhYffY`Uh]b['k]h\ ch\Yf'Wci fgY'a Ya VYfg']b``YWh fYgž hi hcf]U'g'UbX'gYa]bUfg']g'U'gc'YggYbh]U''''Ghi XYbhg'k]```VY'YI dYWhYX'hc'dUfh]\W]dUhY']b'X]gW gg]cbgž'dU]fg'cf [fci d'HUg_g'h\fci [\ci hih\Y'Wci fgY'''5bmZcfa 'cZX]gWf]a]bUh]cb'VUgYX'cb'Ub']bX]j]Xi U'fg'U[YžYh\b]W]hmž gYI i U`cf]YbHJh]cb'UbX'h\Y'`]_Y'k]```bchVY'hc'YfUhYX''$

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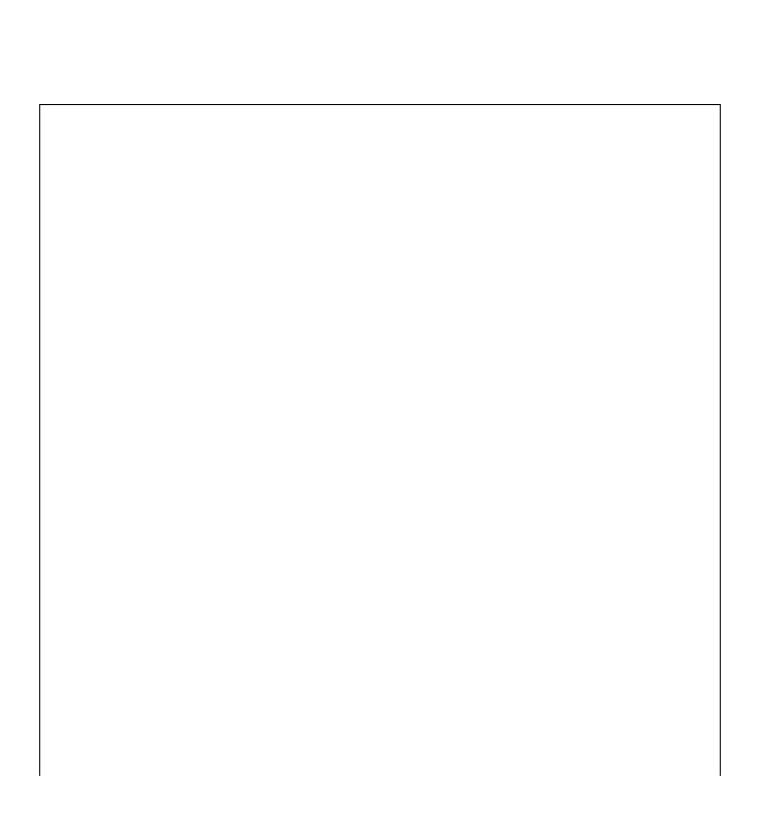
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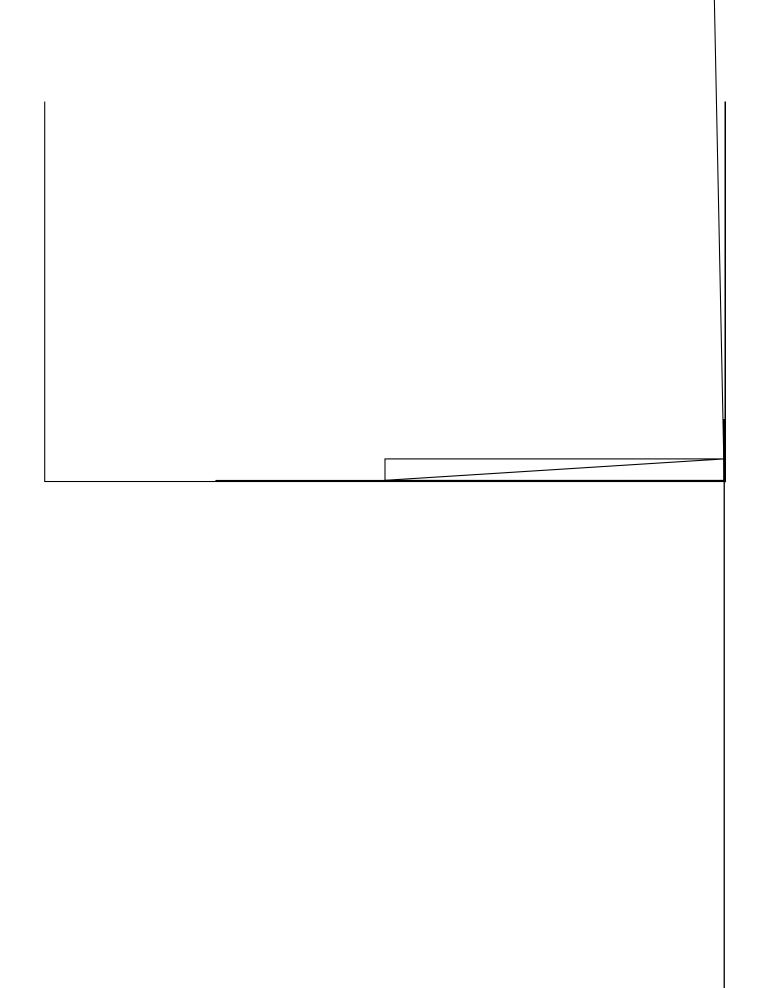
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- ; Yb_]'-₹'5b']b\Y[fU\YX'\\c'i fgY']b'Y`Ya Yb\Ufm'>UdUbYgYž'H\]fX'9X]\|cb'f&\$&\$Ł
- •; Yb_]'=2'5b']bhY[fUhYX'WcifgY']b'Y'Ya YbhUfm'>UdUbYgYz'K cf_Vcc_z'H\]fX'9X]h]cb'f&\$&\$L
- 5FHG%*' \$'=blfcXi Wcfm'>UdUbYgY'5'7ci fgY'BchYg'fUj]'UVY'Zfca 'A ccX'YŁ

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cfa U`Yj U`i Uhjobgʻk]``VY`WobXi WMXXVmA m9I dYf]YbWYž'UbX`h\Y`fYgi `hgʻk]``VY`i gYX`hoʻja dfoj Y´Z hi fY]hYfUhjobʻcZh\]gʻWoi fgY"'±bZofa U`ž'fYU`!hja Y`ZYYXVUW_`]gʻU`goʻj Yfmk Y`Woa Y`Y]h\Yf`]bʻdYfgobʻofʻh\foi [\ A ccX`Y"

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\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 UmUdd'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"

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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 bXYfgHUbX'mci f'f][\hg'UbX'fYgdcbg]V]`]h]Yg'Ug'U'ghi XYbh'Uhi BGK VY'Uk UfY'cZd`U[]Uf]ga ž'Wcdmf][\hž'I BGK 'Ghi XYbh'7cXY'cZ7cbXi Wh'UbX'5VWWdhUV`Y'I gY'cZ IBGK =7 H°F Ygci fW/g°Dc`]Wm