

ARTS3242

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- &" ⇒XYbhjZm_YmYl Ua d`Yg`cZgW\c`Ufg\]d`UbX`WcfY`WcbW\dhg`]b`h\Y`Z]Y`X`cZYbj]fcba YbhU`\]ghcfmžUbX fY`UhY`h\YqY`Yl Ua d`Yg`UbX`WcbW\dhg`hc`h\cqY`cZch\Yf`X]qW[d`]bYg`UbX`UfYUg`cZ\]ghcfm"
- ' " 9j U`i UHY`h\Y`ghfYb[h\g`UbX`k YU_bYggYg`cZ_YmYbj]fcba YbhU``\]ghcfmYl Ua d`Yg`UbX`WcfY WcbW'dhgz`h\Y]f`]a d`]WUh]cbg`UbX`h\Y]f`gi]hUV`Y`Udd`]WUh]cbg`]b`i bXYfghUbX]b[`Ybj]fcba YbhU` W.U``Yb[Yg`hcXUm
- ("9a d`cmWcfY`WcbWYdhg`cZYbj]fcba YbHJ``\]ghcfm]b`]bXYdYbXYbhmWcbghfi Who [ck b`Yj]XYbWY! VUgYX`fYWcbghfi Whobg`UbX`Yl d`UbUh]cbg`cZdUgh\i a Ub!Ybj]fcba Ybh']bhYfUWhcbg`UbX`h\Y]f WcbgYei YbWYg

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@YWi fY'hcd]Wg']b'h\]g'Wi fgY'UfY'cf[Ub]gYX'Vch\ 'W\fcbc`c[]WU``mUbX'h\Ya Uh]WU``m'''9UW\ k\YY_'ZYUhi fYg'U _Yma ca Ybh]b'\]ghcf]WU``\i a Ub!Ybj]fcba Ybh]bhYfUW]cbg'hc[Yh\Yf'k]h\ '_YmWcbW'dhg'UbX'gW\c`Ufg\]d]bhYfdfYh]b[']h'''H\Y'hi hcf]U`X]gW gg]cb'h\Uhk\YY_'XYU`g'k]h\ h\Y'_YmWcbW'dhfgE'UbX'cWW fg']b'ga U`` [fci dg'Ugg][bYX'ei Ygh]cbg'fYei]f]b['Udd`]WUh]cb'UbX'Wf]h]ei Y'cZh\Y'WcbW'dhfgE'UbX'cWW fg']b'ga U`` [fci dg'Ugg][bYX'ei Ygh]cbg'fYei]f]b['Udd`]WUh]cb'UbX'Wf]h]ei Y'cZh\Y'WcbW'dhfgE'''A Uf_]b['h\Y'cfU` fYgdcbgYg'cZh\Y'[fci dg'D#'\Y'dg'a ch]j UhY'X]gW gg]cb"'H\]g']g'U'Wc``UVcfUh]j Y'UggYgga YbhYbgi f]b['h\Uh U``ghi XYbhg'Wb'Uh'YUgh]XYbhJZmh\Y'WcfY'WcbW'dhfgE'cZh\Y'k\YY_'UbX'k\Uh]h]g'gi ddcgYX'hc'Xc"'=ZU'Vi nn [fci d'Udd`]Yg'h\Y'k\YY_fg'WcfY'`YUfb]b['hc'h\Y]f'ei Ygh]cb'UbX'cZZYfg'U'Wc\YfYbhUbgk Yfz']bX]j]Xi U` ghi XYbhg']b'h\Y'[fci d'a Umbchg\UfY'h\Y'D'a Uf_']Zh\YmUfY'cVgYfj YX'bchhc'dUfh]W]dUhY'Uh'U``]b'h\Y]f X]gW gg]cb"

Hc[Yh\Yf'h\YgY`X]gWigg]cb'ei Ygh]cbg'U``fY`UhY'hc'U'k YY_`m'WcbW]gY'YggUmei Ygh]cb'UbX'\Y`d'ghi XYbhg dfYdUfY'hc'k f]hY']hi d"'9UW\ghi XYbha i ghik f]hY'hk c'gi W\'WcbW]gY'YggUmg']b'h\Y'Wci fgY'cZh\Y'hYfa 'UbX\Uj Y'h\Y'cdh]cb'cZU'h\]fX'fh\Y'VYghik c'Wci bh]b[\text{E"H\Y'WcbW]gY'YggUmg'fYei]fY'ghi XYbhg'hc'YI d`U]bž'Udd`mž UbX'Wf]h]ei Y'h\Y'WcbWYdffg\text{E'ZYUhi fYX'h\Uhk YY_"

H\YfY`]g'U`gc`U`fYgYUfW.`YggUmfYei]f]b[`ghi XYbhg`hc`Yb[U[Y`]b`Ub`Yl hYbXYX`Yl d`cfUh]cb`cZgca Y`a ca Ybh]b'h\Y`\]ghcfmcZ\i a Ub!Ybj]fcba Ybh]bhYfUWlcbg`UbX`Ya d`cm]b[`WcbW'dhg`UbX`Yl Ua d`Yg`UWei]fYX`]b'h\Y Wci fgY`hc`]bhYfdfYh]b[`]h'``H\Y`hcd]W]g`W\cgYb`Zfca `U`a Ybi `cfzk]h\`Uddfcj U``UbX`Wcbghfi Wh]j Y`Ugg]ghUbW

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 $\label{thm:condition} $$H\Y'h'X]gW'gg]cbg'k]$$``ZcW'g'cb'ei Ygh]cbg'WcgY'mfY'UhYX'hc'h\Y'g\cfhYggUmhcd]WZcf'h\Y'k YY_ž'UbX'UfY]$$bhYbXYX'hc'dfYdUfY'mci 'hc'k f]hY'cb'h\Y'hcd]W'': cf'mci 'hc'VYbYZ]hž'mci 'g\ci `X'VY'gi fY'hc'Xc'h\Y'fYUX]b['Zcfh\Uh'k YY_'WUfYZ ``m']b'UXj UbW''''H\]g'k]``[fYUhmUgg]gh'mci ']Zmci 'W\ccgY'hc'k f]hY'i d'h\Y'k YY_fg'g\cfh YggUm'$

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Gi Va]gg]cb`bch/g.`YggUmg`hc`VY`i d`cUXYX`h\fci [\`XYg][bUh\'X`gi Va]gg]cb`dUh\k Umcb`Wci fYg`A ccX`Y g]h/

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

7 ci fgYgʻUfYʻdYf]cX]\W\``mfYj]Yk YX`UbX`ghi XYbhg'`ZYYXVU_`]gʻi gYX`hc`]a dfcj Y`h\Ya\": YYXVU_`]g [Uh\YfYX`Zfca `ghi XYbhg`i g]b[`a m9I dYf]Yb\\":\\\=i]g`Yb\\ci fU[YX`h\Un'ghi XYbhg`\ci a d`YhY`h\Y]f`gi fj Ymg`Vm U\\\g]b[`h\Y`dYfgcbU`]gYX`k YV``]b_j]U`h\Y`A ccX`Y`\\ci fgY`g]hY"

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

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

• fYei Yghg Zcf Yl hYbg]cb/