

MODL5112

HfUbg`Uhjcb'UbX' + bhYfdfYhjb['DfUWhjW a '6

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

7ci fgY⁻Cj Yfj]Yk

GHJZZ7cbHJWh8YHJ]`g`

'7cbj Ybcfg'

B Ua Y	9a U]`	5j U]`UV]`] m	@cWJhjcb	D\cbY
GYUb [.] 7\Yb[gYUb"W 4 i bgk "YXi "Ui	H\i fgXUm'%\$!%&	A 6 °&+,	Ž*%'&'-',)
				&' %(

GWXcc``7cbHJWhʻ±bZcfa Uh]cb

GWkcc`cZ<iaUb]hJYg'UbX'@Ub[iU[Yg

@c\\U||cb. G\\cc``C\\Z|\\\žA\cfj\Yb'6fck\b'6i]\X]b[\z'@\j\Y``&z'&),

CdYb]b['<ci fg. 'A cbXUm! ': f]XUmž'- Ua '!') da

D\cbY.'Ž*%'&'-',)'%*,%

: UI . 'Ž * %'&'-' ,) ', +\$)

9a U]`. \<u>\U`4 i bgk "YXi "Ui</u>

 $\label{thm:condition} \mbox{U cb[$'$h,Y'dfc[fYgg'cZh,Y'dfc'YWgz'UbX'hc'[]j'Y'Wcbghfi Whj Y'ZYXVUW_'U'cb[$'h,Y'k Um'' \mbox{$U$ cb[$'h,Y'k Um''$

H\]g`Wci fgY`\Ug`U`fk c!\ci f`ZJWY!fc!ZJWY`gYa]bUf`k YY_`m'`\\Th\Y`k YY_`migYa]bUfgžgfi XYbfg`k]```\Uj Y`fja Y fc`a YYhi d`fc`X]gW gg`UbX`a UbU[Y`f\Y]f`dfc`YWg`fc[Yf\Yf"`H\Y`WcfX]bUfcf`k]```Ugg][b`UbX`YI d`U]b`f\Y dfc`YWg`fc`gfi XYbfgž\Y`d`gfi XYbfg`fc`Zcfa `fYUa gž`[i]XY`f\Ya `]b`d`Ubb]b[žYI YW fjcb`UbX`Wca a i b]WUfjcbž X]gW gg`gdYWJZJWIfUbg`Ufjcb`]ggi Yg`k]f\`f\Ya ž'UbX`Yj U`i UfY`f\Y]f`dfc[fYgg`UbX`[]j Y`Wcbgffi Wfj Y ZYYXVUW_"

5 hm/b XUb VW F Yei]fYa Ybhg

 $\hbox{Ghi XYbhg'UfY'ghfcb[`mYbWci fU[YX'hc'UhhYbX'U```WUggYg'UbX'fYj]Yk ``YWhi fY'fYWcfX]b[g''] } \\$

7ci fgY GWX YXi `Y

J]Yk 'WUgg'hja YhUV'Y

H]a YtUV`Y

8 UhY	Hmd Y	7 cbhYbh
K YY_'% '%* 'GYdhYa VYf'!	GYa]bUf	GYa]bUf'%'fl i ``'WUggŁ
&\$'GYdHYa VYf		• ≢blfcXiVMjcbihcih\YiWcifgY

	c

FYgci fWfg

DfYgWf]VYX F Ygci fWYg

B#5

FYWca a YbXYX FYgci fWYg

B#5

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

7 ci fgYgʻUfYʻdYf]cX]\W\``mfYj]Yk YX`UbX`gh XYbhg'`ZYYXVU_`]gʻi gYX`hc`]a dfcj Y`h\Ya "

: YYXVUW_`]g`[Uh\YfYX`Zfca `ghi XYbhg`i g]b[`a m9I dYf]YbWY"`Ghi XYbhg`UfY`YbWci fU[YX`hc`Wca d`YhY`h\Y]f gi fj Ymg`VmUWWYgg]b[`h\Y`dYfgcbU`]gYX`k YV``]b_`j]U'h\Y`A ccX`Y`Wci fgY`g]hY"

Gi Va |gg|cb cZ5ggYgga YbhHUg_g

Gi Va |qq|cb cZ5qqYqqa YbhHUq_q

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

☐ Interpret Amori YbWci bhYf'U'dfcV'Ya k \Yb'UhYa dhjb['hc'gi Va]hmci f'Ugg][ba Ybhh\fci [\'Hi fb]h]bž'd'YUgY

HY'Yd\cbY'9l hYfbU''Gi ddcfhcb'-',) '' '' %cf'Ya U]''h\Ya 'cb'Yl 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" ☐ 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'Yl hYbg]cbž'Vi hmci

a i ghfYhJ]b'mci f'h]\\\Yhbi a VYf'Zfca '9l hYfbU''Gi ddcfhfU'cb['k]h\'Ubmch\Yf'fY'Yj UbhXcW a YbhgŁ'hc

]bWi XY'Ug'Yj]XYbW' 'hc'gi ddcfhmci f'Yl hYbg]cb'Udd']\\\Wh]cb'''☐ mci 'Ya U]''9l hYfbU''Gi ddcfhmci 'k]'`

Ui hca Uh]\\\W''mfYW']j Y'U'h]\\\Yhbi a VYfž'Vi h]Zmci 'hY'Yd\cbY'mci 'k]'`'bYYX'hc'gdY\\\ZJ\\W''mUg_'Zcf'cbY''

Hi fb]h]b'U'gc'dfcj]XYg'i dXUhYg'cb'h\Y]f'gmghYa 'ghUh' g'cb'Hk]hYf''

; YbYfU``mž'UggYgga YbhiHug_g'a i ghVY'gi Va]hhYX'Y`YVWfcb]\W)``mj]U'Y]h\Yf'Hi fb]hjb'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`hYfbUhj Y'gi Va]gg]cb'XYHJ]`g''

cfi]bZcfa Uh]cbicbi\ckihcigi Va]hUgg][ba Ybhgicbi]bYij]UiA ccXiY.i\hdg.#gh XYbh'i bgk "YXi "Ui #\ck! qi Va]hUgq][ba Ybha ccXiY

5 WUXYa]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"'=hWJb'hU_Y`a Ubm Zcfa gžZfca `XY`]VYfUhY`W\YUh]b['hc`UWW]XYbhU`mWcdm]b['Zfca `U`gci fWY'k]h\ci hUW_bck `YX[Ya Ybh'

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

7 cdm]b[.'i g]b['h\Y'gUa Y'cf'j Yfmg]a]`Uf'k cfXg'hc'h\Y'cf][]bU`hYl h'cf']XYU'k]h\ci h'UW_bck `YX[]b['h\Y gci fW'cf'i g]b['ei chUh]cb'a Uf_g"'H\]g'U`gc'Udd`]Yg'hc']a U[Ygž'Ufh'UbX'XYg][b'dfcYWhgž'Ug'k Y``'Ug dfYgYbhUh]cbg'k \YfY'gca YcbY'dfYgYbhg'Ubch\Yf'g']XYUg'cf'k cfXg'k]h\ci h'WfYX]h'

⇒ Uddfcdf]UhY 'dUfUd\fUg]b[...7\Ub[]b['U'ZYk 'k cfXg'UbX'd\fUgYg'k \]'Y 'a cghmfYhJ]b]b['h\Y'cf][]bU` ghfi Wh fY 'UbX#cf'dfc[fYgg]cb'cZ]XYUg'cZh\Y'cf][]bU'žUbX']bZcfa Uh]cb'k]h\ci hUW_bck `YX[Ya Ybh'H\]g'U`gc Udd`]Yg']b'dfYgYbhUh]cbg'k \YfY'gca YcbY'dUfUd\fUgYg'Ubch\Yf'g']XYUg'cf'k cfXg'k]h\ci hWfYX]hUbX'hc d]YW]b['hc[Yh\Yf'ei chYg'UbX'dUfUd\fUgYg']bhc'U'bYk 'k \c`Yžk]h\ci hUddfcdf]UhY'fYZYfYbW]b["

7 c``i g]cb.'k cf_jb['k]h\ch\Yfg'Vi hdUgg]b['cZZh\Y'k cf_'Ug'U'dYfgcb'g']bX]j]Xi U``k cf_"'7 c``i g]cb'U`gc]bWi XYg'dfcj]X]b['mci f'k cf_'hc'Ubch\Yf'ghi XYbhVYZcfY'h\Y'Xi Y'XUhYžcf'Zcf'h\Y'di fdcgY'cZh\Ya d`U[]Uf]g]b['UhiUbmh]a Yž'dUm]b['Ubch\Yf'dYfgcb'hc'dYfZcfa 'Ub'UWUXYa]WhUg_ž'ghYU']b['cf'UWei]f]b[Ubch\Yf'dYfgcb'g'UWUXYa]Wk cf_'UbX'Wcdm]b[']hz'cZYf]b['hc'Wca d'YhY'Ubch\Yf'dYfgcb'g'k cf_'cf'gYY_]b[dUma YbhZcf'Wca d'Yh]b['UWUXYa]Wk cf_"

±bUddfcdf]UhY`W]hUh]cb.`7]h]b[ˈgci fWYg'k\]WX`\Uj Y`bchVYYb`fYUXžk]h\ci hUW_bck`YX[]b[`h\Y`″gYWcbXUfm″gci fWY`Zfca 'k\]WX`_bck`YX[Y`cZh\Ya`\Ug'VYYb`cVhU]bYX"

8 i d`]\WUh]cb`ffgY`Zd`U[]\Uf]ga "Ł gi Va]\h]b[`mci f`ck b`k cf_ž]b`k \c`Y`cf`]b`dUfhžk \YfY`]h\Ug`dfYj]ci g`m VYYb`dfYdUfYX`cf`gi Va]\hYX`Zcf`Ubch\Yf`UggYgga Ybhcf\Wci fgY`UhI BGK `cf`Ubch\Yf`i b]j Yfg]\m'

7 cffYWnfYZYfYbWlb['dfUWnWyg.

- DUfUd\fUg]b[žgi a a Uf]g]b[žYggUmk f]h]b['UbX h]a Y a UbU[Ya Ybh
- 5ddfcdf]UhY'i gY'cZUbX'Uhtf]Vi h]cb'Zcf'U'fUb[Y'cZa UhYf]U`g']bWi X]b['hYl hž']a U[Ygž'Zcfa i `UY'UbX WcbWYdhg"

- i bXYfgfUbX mci f'f][\hg'UbX'fYgdcbg]V]`]hJYg'Ug'U'gh XYbhUhl BGK
- VY`Uk UfY`cZd`U[]Uf]ga ž`Wcdmf][\hzil BGK `Gh XYbh7cXY`cZ7cbXi WhUbX`5VWWdhUv`Y`I gY`cZ I BGK `=\forall H`F Ygci f\W\g`Dc`]\wh
- 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

5 WUXYa]W = DZcfa Uhjcb

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

- fYei YghgʻZcfʻYl hYbg]cb/ `UhY`gi Va]gg]cbg`[i]XY`]bYg/ fYj]Yk 'cZa Uf_g/
- I BGK < YU`h\ UbX GUZYhmdc`]W]Yg/

f bhmiddllWYa/f ` bh midc'lWYa/