

; GA!Gi ddcfh'i `"'8cVfY[c'DUghYfnU'%\$&#) ž' %! (%* '?fU_Œk a cV]`Y'Ž(, '*\$, %\$+()) ž'B=D', %' ''), *\$- 'F9; CB.'%, %\$, %' '(k k k "[ga!gi ddcfh'bYh

8 i U`g]a 'UWnji Y'V`i Yhoch\ 'UXUdhYf'; ccXHU` 'Zcf']D\cbY'#']DUX





Ci f'j]XYc'k \]W\'g\ck g'\ck '; ccXHU_'k cf_g'

?Ym'5Xj UbhU[Yg.

-]D\cbYg'VYWca Y'8i U``G=A 'd\cbYgž'k]h\'&'G=A g'UWh]j Y'Uh'h\Y'gUa Y'h]a Y
- 9bUV`Y`Ub`5dd`Y`]DcX`Hci W\`k]h\`d\cbY`ZYUhi fYg
-]DUXg'WUb'gi fZ'h\Y'bYh'Ubmk\YfYž'Ubmh]a Y
- ; ccXHU`_']g'cbY'cZ'h\Y'ga U``Yghž'g`YY_Ygh'Wca dUb]cb'XYj]WYg'Uj U]`UV`Y
- BC '>5=@6F 95? 'bYYXYX

Hi fb 'mci f']D\cbY']bhc'U'8i U'G=A'd\cbY""

- 5XX'8i U`'G=A 'WUdUV]`]h]Yg'hc'mci f']D\cbY
- < Uj Y'&'G=A 'WUf'Xg'UWh]j Y'Uh'h\Y'gUa Y'h]a Y
- BC >5=@6F 95? fYei]fYX

 $\label{eq:condition} $$ D\cbYg'cb'm'U'`ck g'mci'hc'\Uj Y'\% g]a' WufX'UWhjj Y'Uh'U'hja Y'''6i'h'; ccXHU'_'U'`ck g'mci'hc'\Uj Y'U'gYWcbX'G=A' WufX'UWhjj Y'cb mci f'd\cbY''$

8c mci '\Uj Y'a cfY'h\Ub'cbY'G=A 3'8c mci 'hfUj Y'ZfYei Ybhm'UbX'\Uj Y'hc'gk Ud'VYhk YYb '`cWU'`G=A gz'cf'WUffm'Ub'Yl hfU'd\cbY3

Bck 'mci 'Xcbfh`\Uj Y'hc"': cf'h\Y'Z]fgh'h]a Y'mci 'WUb'hfUbgZcfa 'mci f'd\cbY']bhc'U'8i U`'G=A'd\cbY'k]h\'fXi U`'ghUbXVmfi'hk c'UVM]j Y G=Ag"

H\Uh'a YUbgʻhk cʻG=AgʻUWhjj YʻUhʻh\YʻgUa Yʻhja Yʻcbʻmci fʻ]D\cbYž'k]h\`Uʻg]b[`Yʻ7cbhUWhgž'GAGž'WU````c[gž'YhW'=hfigʻUgʻg]a d`YʻUg

 $\label{thm:linear} Hi fb `mci f'] DcX' Hci WX'] bmc' Ub'] D\cbY' I gYfg'cZ'] DcX' Hci WX' WUb' WcbbY Wh'mc'; ccXHU'_' UbX' Ui ma Uh] WU'`m'YbUV'Y' U```] D\cbY ZYUhi fYgZ' k]h\' h\Y'UXX] h] cb'cZ'j c] WY' WU'`g' UbX'ga g'j]U'; ccXHU'_fg'; DFG#98; 9"$

5b']DcX'Hci W\'Wghg'a i W\'Ygg'h\Ub'Ub']D\cbY'UbX']b'a cgh'WugYg'i gYfg'k]``'bYj Yf'bYYX'hc'g][b'U'WbhfUWh'k]h\'U'Wbff]Yf"

G]a d`m]bgYfh'Ubm; GA 'G=A 'WufX'UbX'H fb'mci f`]DcX'Hci W\']bhc'Ub']D\cbY" : cf']DUX'I gYfg"""'I gYfg'cZ'5dd`Y']DUX'Wub^]b_'k]h\'; ccXHU`_'Zcf'j c]W'UbX'ga g"

A cgh'DUX'i gYfg'cb`m'Vi m'h\Y'K]:]'cdh]cb"'6i h'K]:]'DUXg'WUbh'VY'i gYX'Yj Yfmk \YfY"'Bck 'k]h\'; ccXHU`_ž'U``'DUX'i gYfg'WUb'a U_Y d\cbY'WU`g'UbX'gYbX'hYI hg'Ubmk \YfY"

<]XXYb`dck Yf`; ccXHU`_`]g`h\Y`ga U``Yghž`h\]bbYghž``][\hYghž`a cgh`dcfhUV`Y`Wta dUb]cb`XYj]WY`k Yfji Y`Yj Yf`gc`X"`=h`Wta a i b]WUhYg k]h\`mci f`d\cbY`j]U`6`i Yhcch\`k]h\]b`U`%) a `fUb[Yž`gc`mci `WUb`\]XY`]h`]b`U`dcW_Yh`cf`VU["



 $G]a \ d`Y`hc`I \ gY'; \ ccXHU`_']g`YUgm'hc`i \ gY''`G]a \ d`m]bgYfh'mci \ f`gYWcbX`G=A`]bhc`h\Y'; \ ccXHU`_'''H\Yb`]bghU```; \ ccXHU`_ffg`Udd`Zfca \ d`m]bgYfh'mci \ f`gYWcbX`G=A`]bhc`h\Y'; \ ccXHU`_'''H\Yb`]bghU```; \ ccXHU`_ffg`Udd`Zfca \ d`m]bgYfh'mci \ f`gYWcbX`G=A`]bhc`h\Y'; \ ccXHU`_''''H\Yb`]bghU```; \ ccXHU`_ffg`Udd`Zfca \ d`m]bgYfh'mci \ f`gYWcbX`G=A`]bhc`h\Y'; \ ccXHU`_''''' \ ccXHU`_ffg`Udd`Zfca \ d`m]bgYfh'mci \ f`gYWcbX`G=A`]bhc`h\Y''; \ ccXHU`_'''''' \ ccXHU`_ffg`Udd`Zfca \ d`m]bgYfh'mci \ f`gYWcbX`G=A`]bhc`h\Y'''; \ ccXHU`_'''''' \ ccXHU`_ffg`Udd`Zfca \ d`m]bgYfh'mci \ f`gYWcbX`G=A`]bhc`h\Y'''' \ ccXHU`_'''''' \ ccXHU`_ffg`Udd`Zfca \ d`m]bgYfh'mci \ f`gYWcbX`G=A`]bhc`h\Y'''' \ ccXHU`_ffg`Udd`Zfca \ d`m]bgYfh'mci \ f`gYWcbX`G=A`]bhc`h\Y''''' \ ccXHU`_ffg`Udd`Xfca \ d`m]bgYfh'mci \ f`gYWcbX`G=A`]bhc`h\Y''''' \ ccXHU`_ffg`Udd`Xfca \ d`m]bgYfh'mci \ f`gYWcbX`G=A`]bhc`h\Y''''' \ ccXHU`_ffg`Udd`Xfca \ d`m]bgYfh'mci \ f`gYWcbX`G=A`]bhc`h\Y'''''' \ ccXHU`_ffg`Udd`Xfca \ d`m]bgYfh'mci \ f`gYWcbX`G=A`]bhc`h\Y'''''' \ ccXHU`_ffg`Udd`Xfca \ d`m]bgYfh'mci \ f`gYWcbX`G=A` \ f`gYWcbX`G=A` \ f`gYWcbX`G=A` \ f`gYWcbX`G=A` \ f`gYWcbX$

 $\label{lem:conditional} $$k \setminus]WX^-]g^-]b^-i gY''^-; ccXHU^-_U^*gc^-]bX]WUhYg^-k \setminus]WX^-G=A^-]bW^*ca^-]b[^-WU^*g^-UfY^-a^-UXY^-hc''^-]$

HYVXb]WU`GdYWJZJWUh]cb

- ; GA 'Ei UX '6UbX.',) \$#- \$\$#% \$\$#% \$\$ 'A < n
- % Di g\! Di g\ A]Wfc G=A 7 UfX G`chA]Wfc I G6
- 6'i Yhcch\ ("\$'98F GHJbXVmH]a Y. '' *\$ \ci fg
- HU'_'H]a Y. '('\ci fg8]a Ybg]cbg.'), a a 'l '', a a 'l '%a a
- K Y][\h_.'' [
- 7c`cf. '6@57?
- G]a 'WUfX'a i gh'\Uj Y'D=B'WcXY'fYei Ygh'C::

SUPPORT

¥ &\$&& k k "[ga !gi ddcfh"bYh





