

Figg`UbX`fØghYh'UiZ.'8fc\bYbhfiddYb ^Yhnh'HY]`'XYf'5faYY°

Figg`UbX'd`Ubh'XYb'5iZVUi'Y][YbYf'8fc\bYbhfiddYbž'k]Y jcb'DfÀg]XYbh'Dih]b'Ub[Y_ØbX][hž'ia'ibVYaUbbhY KUZZYbgmghYaY'ni'ghÀf_Yb"

Gi a mž I _fU]b Y ! 5a '%' "'⇒ b]'&\$&) '\Uh'Fi gg`Ub X i bhYf`XYf

: Ø\fi b['j cb 'DfÀg]XYbh'K `UX]a]f'Di h]b 'XYb '5i ZVUi 'Y][YbYf

8 fc\bYbhfi ddYb 'U`g'ZYghY'K UZZYb[Uhhi b[']b 'XYf'5fa YY

Ub[Y_ØbX][h"'8]YgY '9bhgWX Y]Xi b['fYZY_h]Yfh'X]Y'k UWXgYbXY

6YXYi hi b['i bVYa UbbhYf': `i [[YfÀhY']a 'a cXYfbYb'? Ua dZ''@Ui h'

GØX_i f]Yf'ghUa a Yb Yhk U'X]Y' < À`ZhY 'XYf'nYfghÒfhYb'cXYf

VYgWXÀX][hYb'N]Y`Y'VYfY]hg'j cb'9]bgÀhnYb'X]YgYf'8fc\bYbd]`chYb"

₺ 'XYf'U_hi Y``Yb'@U[Y'[fY]ZYb'fi gg]gWXY'? Ua dZXfc\bYb']b'XYf

I _fU]bY'N]Y`Y'Ubž'k À\fYbX'[`Y]WXnY]h]['@ ZhU`Ufa ']a 'C ghYb'XYg

@UbXYg'Ui g[Y`Ògh'k]fX"

8]Y '9bhk]W_`i b['bYi Yf'K UZZYbgmghYa Y ']gh'Ui W\ 'U`g'5bhk cfh'Ui Z XYb'g]W\ 'j YfgW\ ÀfZYbXYb'?cbZ]_h']b'XYf'I _fU]bY'ni 'j YfghY\Yb" Fi gg]gW\Yb'?Ua dZ'i [nYi [Yb']gh'Yg']b'XYb'`YhnhYb'HU[Yb [Y`i b[Ybž'a Y\fYfY'6ca VUfXYa Ybhg']b'XYb'FY[]cbYb'Gi a m'i bX 8cbYn_'Xi fW\ni ZØ\fYbž'k cVY]'V]g\Yf'_Y]bY'5b[UVYb'ØVYf'HfYZZYf cXYf'GW\ ÀXYb'j YfOZZYbh`]W\ h'k i fXYb"'DUfU``Y``XUni 'gYhnYb'VY]XY ?f]Y[gdUfhY]Yb'XYb'5i ghUi gW\'j cb'?f]Y[g[YZUb[YbYb'Zcfhž'i a gW\k Yf'_fUb_Y'cXYf'j Yf`YhnhY'Gc`XUhYb'ni fØW_ni \c`Yb"

5 i gVUi i bVYa UbbhYf GmghYa Y

8]Y'fi gg]gW\Yb'8fc\bYbhfi ddYb'gc``Yb''YXcW\'b]W\h'bi f XYZYbg]j Y'A U» bU\a Yb'ghÀf_Ybž'gcbXYfb''Ui W\'X]Y CZZYbg]j _UdUn]hÀhYb'j YfVYggYfb"'8Yf'i _fU]b]gW\Y ?ccfX]b]Yfi b[gghUV'ZcfXYfh'Fi gg`UbX'bUW\XfØW_`]W\'ni 'Y]bYf fUgW\Yb': cfhgYhni b['XYg'5i ghUi gW\Yg'Ui Z'i bX'VYnY]W\'bYh'X]Y A cg_Ui Yf'6Yf]W\'hY'ØVYf'X]Y'FØW_bU\\a YZ\\][_Y]h'XYf'I _fU]bY'U`g]ffYZØ\fYbX"'6YfY]hg']a \Rightarrow b]'&\$&('\Uh'X]Y'I _fU]bY'Y][YbY 8fc\bYbVf][UXYb'Y]b[Yf]W\'hYhž'X]Y'j YfgW\]YXYbY': `i [Xfc\bYb gck]Y'GYYXfc\bYb'i bX'? Ua dZfcVchYf'Y]bgYhnYb'i bX k Y]hYfYbhk]W_Y`b"

6YcVUW\hYf'j Yfk Y]gYb'Ui W\'XUfUi Zž'XUgg'XYf'I _fU]bY!?cbZ]_h'U`g HYghZY`X'ZØf']bbcj Uh]j Y'?f]Y[gZØ\fi b['X]Ybh"'K YfXYb i bVYa UbbhY'GmghYa Yž'k]Y'g]Y'Ui W\']b'UbXYfYb'?cbZ]_hYb k Y`hk Y]h'ni a '9]bgUhn'_ca a Ybž'ni bY\a YbX'ni f', VYfk UW\i b[ž ZØf'dfÀn]gY'5b[f]ZZY'i bX'ni f'Y`Y_hfcb]gW\Yb'?f]Y[gZØ\fi b[YVfUi W\hž'k]fX'X]Y'Fc``Y'XYf'8fc\bYb']a a Yf'nYbhfU`Yf"'=a; Y[YbgUhn'ni 'XYb'hfUX]h]cbY``Yb'a]`]hÀf]gW\Yb'5bgÀhnYb Yfa Ò[`]W\Yb': DJ!8fc\bYb'i bX'À\b`]W\Y'GmghYa Y'XYb GhfY]h_fÀZhYbž']b'9W\hnY]h'ØVYf'XUg'GW\`UW\hZY`X'ni 'U[]YfYb'i bX [fÒ»YfY'DfÀn]g]cb'ni 'Yfn]Y`Yb"

8]Y'A O[`]W_Y]hYb'XYf'?f]Y[gZØ\fi b['Xi fW\'8fc\bYb'g]bX
]a a Ybg"'G]Y'_ObbYb'6ca VYb'UVk YfZYbž'FU_YhYb'UVZYi Yfb'cXYf
[Yn]Y`hY'5b[f]ZZY'Xi fW\ZØ\fYb"'8Ug'a UW\h'g]Y'ni 'Y]bYa 'k]W\h][Yb

Dephfi a Ybh'gck c\`'ZØf'cZZYbg]j Yg'U`g'Ui W\'XYZYbg]j Yg

A]`]hÀf\UbXY`b"'5i W\']a '?cbhYl h'XYf'l _fU]bY'\UVYb'g]W\'gY]h

S&&'nU\`fY]W\Y'l bhYfbY\a Yb'YhUV`]Yfhž'X]Y'g]W\'Ui Z'X]Y

A UggYbdfcXi _h]cb'j cb'8fc\bYb'gdYn]U`]g]Yfh'\UVYbž'k Ug'XYb

?cbZ']_h'ni gÀhn`]W\'Ub\Y]nh'i bX'X]Y'HU_h]_Yb'VY]XYf'GY]hYb

[fi bX`Y[YbX'j YfÀbXYfh"

GWX k]Yf][_Y]hYb i bX < YfUi gZcfXYfi b[Yb

 $\label{thm:prop:standard} Figg`UbX``Uh`Ub[YXYi hYhžY]b`i b]j YfgY``Yg': `i [UVk Y\fgmghYa `ni Ybhk]W_Y`bž'i a `Ub[fY]ZYbXY': `i [cVY_hY`YZZY_h]j Yf`UVni k Y\fYb'' CVk c\``X]Y`fi gg]gW\Y`5fa YY`ØVYf`Y]b`[fc»Yg`5fgYbU``Ub : `i [UVk Y\fgmghYa Yb`j YfZØ[hž]gh`X]Y`5Vk Y\f`]a `<]bhYf`UbX UbgW\Y]bYbX`k Yb][Yf`ghUf_`Ui g[YdfÀ[h'`Ni XYa `nY][h`X]Y`@U[Y`Ub XYf`: fcbhž`XUgg`X]Y`i _fU]b]gW\Yb`@Ub[ghfYW_YbXfc\bYb a]`]hÀf]gW\Y'i bX`]bXi ghf]Y``Y`5b`U[Yb`\]bhYf`XYb`: fcbh`]b]Yb$

8]Y'8 mbUa]_Yb'XYg'I _fU]bY!?f]Y[g'k YfZYb'j]Y'Y': fU[Yb'ØVYf'X]Y GhfUhY[]Yb'i bX'HU_h]_Yb'XYf'6YhY]'][hYb'Ui Z'''9g'V'Y]Vh UVni k UfhYbž'k]Y'k Ygh']W\Y'A]']hÀfg'i bX'X]Y'F Øghi b[g]bXi ghf]Y]\fY'5bg\han\Y'UbdUggYb'k YfXYb'''9I dYfhYb'VYhcbYbž'XUgg'XYf ?cbZ']_h'X]Y'Bchk YbX][_Y]h'Y]bYg'fcVi ghYb'J YfhY]X][i b[g!'i bX G]W\Yf\Y]hggY_hcfg'Ui ZhY][h''Ni ['Y]W\'a ØggYb'Yfbgh\UZhY, VYf'Y[i b[Yb'Ub[YghY``h'k YfXYbž'gck]Y'FY[i `Uh]cbYb'ni 8fc\bYb'i bX'Ui hcbca Yb'A]`]h\han\frac{h}{h}W\Wbc`c[]Ybži a 'X]Y'XUa]h j YfVi bXYbYb'F]g]_Yb'ni 'UXfYgg]YfYb''

8 Yf??f]Y[']b'XYf'I _fU]bY'dfÀ[h'b]W\h'bi f'XUg'HU[Yg[YgW\Y\Ybž gcbXYfb'k]fX'Ui W\'U`g'Y]b'YbhgW\Y]XYbXYf'HYgh'ZØf'X]Y
]bXi ghf]Y``Y'6Ug]g'i bX'\bcj Uh]cbg_fUZh'XYf'VYhY]`][hYb'@ÀbXYf
VYhfUW\hYhž'k]Y'Ui W\'\D; 'UbU`mg]Yfh''6Y]XY'GY]hYb'g]bX'[YZcfXYfhž
]\fY'a]`]hÀf]gW\Yb'GhfUhY[]Yb'i bX'HYW\bc`c[]Yb'_cbh]bi]Yf`]W\'ni
ØVYfXYb_Yb'i bX'Ubni dUggYbžia']a a Yf'XmbUa]gW\Yf
k YfXYbXYb'?cbZ]_h'YfZc`[fY]W\'ni 'gY]b''

8 Y hU]`g	
J c f ZU``	?f]Y[
I fgUWXY	8fc\bYbUb[f]ZZY
Cfh	Gi a mž'l _fU]bY
EiY``Yb	• k k k "gi YX_i f]Yf"XY
	XY"k]_]dYX]U"cf[
	• k k k "]d[!^ci fbU`"XY

6 Y gi W Y b 'G] Y 'i b g 'U i Z 'b ! U ["b Y h