

$F \setminus Y]b!G]Y[!? fY]g. `9bhXYW_Y`GhÀXhYž\\ B Uhi f`i bX`_i`]bUf]gWXY`<][\setminus`][\setminus hg°$

9bhXYW_Y`X]Y`J]Y`ZU`h`XYg`F\Y]b!G]Y[!?fY]gYg.`a U`Yf]gW\Y GhÀXhYž`fY[]cbU`Y`?Ògh`]W_Y]hYbž`BUhi fYf`YVb]ggYž`_i `hi fY``Y GW\AhnY`i bX`ZUa]`]YbZfYi bX`]W\Y`5_h]j]hAhYb°



K]``_ca a Yb']a 'a U`Yf]gW\Yb'F\Y]b!G]Y[!?fY]gžY]bYf'FY[]cbžX]Y
fY]W\`Ub'; YgW\]W\hY'DYf`Y']b'BcfXf\Y]b!K YghZU`Yb'V]YhYhY]bY
dYfZY_hY'A]gW\ib['Uig'W\Ufa UbhYb'Gh\AXhYbž'UhYa VYfUi VYbXYb
@UbXgW\UZhYb'i bX'`YV\UZhYb'J YfUbghU'hi b[YbžX]Y'YXYb
6Ygi W\Yf'VY[Y]ghYfb'k YfXYb'''9[U`ž'cV'Xi 'Y]b'@]YV\UVYf'XYf
BUhi f'V]ghž'_i `]bUf]gW\Y'9I dYf]a YbhY'gi W\gh'cXYf'X]Y'_i `hi fY``Yb
GW\AhnY'XYf'FY[]cb'YbhXYW_Yb'a OW\hYgh''\]Yf'Z]bXYghXi 'ZØf
YXYb'Yhk Ug'''A UW\'X]W\'VYfY]hž'X]Y'GW\Ob\Y]hi bX'J]Y'ZU'h'XYg
F\Y]b!G]Y[!?fY]gYg'ni 'YbhXYW_Ybžk \A\fYbX'k]f'Xi fW\'d]hhcfYg_Y
Gh\AXhY'gW\`YbXYfbž'fY[]cbU'Y'?Ogh`]W_Y]hYb'dfcV]YfYb'i bX
gdUbbYbXY'5_h]j]h\AhYb'ZØf'X]Y'[UbnY': Ua]`]Y'j cfghY``Yb'''@Ugg'i bg
[YaY]bgUa'Ui Z'9bhXYW_i b[gfY]gY'[Y\Yb''

9bhXYW_Y'X]Y'a U`Yf]gWXYb'GhÀXhY']a 'F\Y]b! G]Y[!?fY]g

8 Yf'F\Y]b!G]Y[!?fY]g']gh'Y]b'k U\fYg'\(\fix\)k Y\']b'BcfXf\Y]b!

K YghZU\Yb\fXUg'a]h'gY]bYf'VYY]bXfi W_YbXYb'@UbXgW\UZh'i bX

W\Ufa UbhYb'Gh\fXhYb'VY[Y]ghYfh''8]YgY'FY[]cb'V]YhYh'Y]bY

A]gW\i b['Ui g'hfUX]h]cbY\`Yf'5fW\]hY_hi f\f\f\acxyfbYb

5bbY\a\`]W_Y]hYb'i bX'Y]bYf'fY]W\Yb'?i\hi f\f\f\acxyfyY'Yg'k Yfh']gh\f\f\acxyfy\W_h'ni k YfXYb'''<]Yf'g]bX'Y]b][Y'XYf'a U`Yf]gW\ghYb'Gh\f\acxyfy''
]a 'F\Y]b!G]Y[!?fY]g\f\acxyfy'Xi' Ui Z'_Y]bYb': U``'j YfdUggYb'gc``hYgh''

G[Y[Vif[8]Y]ghcf]gWXY < UidhghUXh XYg?fY]gYg

 $G]Y[Vif[\check{z}X]Y`?fY]gghUXh\check{z}\setminus UhY]bY`VYaYf_YbgkYfhY`;YgWX]WXhY\check{z}X]Y`V]g`]b`X]Y`F OaYfnY]h`nif@W_fY]WXh''`6YgcbXYfg`gY\YbgkYfh`]ghX]Y`Gh''`GYfjUh]ig!6Ug]`]_Už`X]Y`a]h`]\fYf`fcaUb]gWXYb <math display="block"> 5fWX]hY_hif`VYY]bXfiW_h`ibX`Y]bYb`\Yff`]WXYb`6`]W_`UiZ`X]Y`GhUXhV]YhYh''`9]b`kY]hYfYg`<][\`][\h']gh`X]Y`6if[`G]Y[Vif[ž`X]YYf]bYb`6`]W_`]b`XY]YfXYf`GhUXh`h\fcbh`ibX`Y]bYb`6`]W_`]b`X]Ya]hhY`U`hYf`]WXY`JYf[Ub[Yb\Y]h`X]YgYf`FY[]cb`[Yk Å\fh'']$

6UX < cbbYZ DYf`Y Ua F\Y]b

6UX < cbbYZ'VYgh]WX h'Xi fWX 'gY]bY'a U`Yf]gWX Y '@U[Y'Ua 'F\Y]b'i bX X]Y'k i bXYfgWX ÒbY'5`hghUXh"'8]Y'? U]gYfghfU» Y'a]h']\fYb\]ghcf]gWXYb'; YVÀi XYb'i bX'[Ya Øh`]WXYb'7UZÅg'`ÀXh'ni a 6i a a Y`b'Y]b"'5i WX'X]Y'F\Y]bdfca YbUXY']gh'Y]b'VY`]YVhYf'Cfh ni a '9bhgdUbbYb'i bX'; Yb]Y» Yb'XYf'j cfVY]n]Y\YbXYb'GWX]ZZY" K Ybb'Xi 'Ui Z'XYf'Gi WXY'bUWX'9f\c`i b['V]ghž'V]YhYh'X]Y'GhUXh nU\`fY]WXY'K Y``bYgg!5b[YVchY']b']\fYb'fYbca a]YfhYb'H\Yfa Yb"

< YbbYZ BUhi f hf]ZZh?i `hi f

8]Y'GhUXh'<YbbYZ'jYfV]bXYh'Y]bXfiW_gjc``BUhif'a]h'?i`hif"'9]bVY`]YVhYg'N]Y`']gh'XUg'GWX`cgg'<YbbYZž'ia[YVYb'jcb'Y]bYakibXYfgWX`ObYb'DUf_ž'XYf'dYfZY_h'ZØf'YbhgdUbbYbXYGdUn]Yf[Àb[Y']gh''<YbbYZ']gh'YVYbqc'ZØf'qY]bY'j]Y`Yb'KUbXYf!

i bX`FUXk Y[Y`VY_UbbhžX]Y`Xi fW\`X]Y`fY]nj c``Y`@UbXgW\UZh`XYf I a [YVi b[`ZØ\fYb"`8 Ug`GhUXhnYbhfi a `a]h`gY]bYb : UW\k Yf_\Ài gYfb`V]YhYh`Y]bY`Y]b`UXYbXY`5ha cgd\ÀfY`ZØf 6Yqi W\Yf`i bX`9]b\Y]a]gW\Y`[`Y]W\Yfa U»Yb"

?]fWX Yb ' '9]b 'C fh'a]h'; YgWX]WX hY

8]Y'GhUXh'?]fW\Yb']gh'b]W\h'bi f'ZØf']\fY'\]ghcf]gW\Y'5`hghUXh
VY_Ubbhž'gcbXYfb'Ui W\'ZØf']\fY'\DXi ghf]Y_i `hi f''<]Yf'Z]bXYgh'Xi
XUg'A i gYi a 'XYf'GhUXh'?]fW\Ybž'XUg'gdUbbYbXY'9]bV`]W_Y']b
X]Y'JYf[Ub[Yb\Y]h'XYf'FY[]cb'V]YhYh'i bX'X]Y'9bhk]W_`i b['j ca
5[fUf!'ni a '\DXi ghf]YnYbhfi a 'j YfXYi h`]W\h''8]Y'k i bXYfgW\ÒbY
I a [YVi b['`ÀXh'ni 'Ui g[YXY\bhYb'GdUn]Yf[Àb[Yb'i bX'FUXhci fYbY]b"

5`hYb_]fWXYb']gh'j cb'Y]bYf'UhYa VYfUi VYbXYb'BUhi f`UbXgWXUZh
i a [YVYb'i bX'V]YhYh'nU\`fY]WXY': fY]nY]ha Ò[`]WX_Y]hYb"'8]Y'GhUXh
gY`Vgh'\Uh'Y]bYb'WXUfa UbhYb'A Uf_hd`Uhnži a [YVYb'j cb
\]ghcf]gWXYb'; YVÀi XYb'i bX'Y]b`UXYbXYb'; YgWXÀZhYb"'9]b
VYgcbXYfYg'<][\`][\h']gh'XYf'5`hYb_]fWXYbYf'K U`Xž'XYf'g]WX
]XYU`'ZØf'GdUn]Yf[Àb[Y'i bX'Ci hXccf!5_h]j]hÀhYb'Y][bYh"'8]Y'GhUXh
]gh'Ui WX'Y]b'[i hYf'5i g[Ub[gdi b_h'ZØf'5i gZØ[Y']b'X]Y
i a `]Y[YbXYb'BUhi fgWXi hn[YV]YhY"

=bZc!6cl A U`Yf]gWXY GhÀXhY]a F\Y]b!G]Y[!?fY]g

GhUXh	6YgcbXYf\Y]hYb	GY\Ybgk ØfX][_Y]hYb
G]Y[Vif[<]ghc f]gW\ Y	?U]gYfghfU»Yž¨Gh"
	< Ui dhghUXh	GYfj Uh]i g!6Ug]`]_U
6UX '< cbbYZ	DYf`Y'Ua'F\Y]b	F\Y]bdfca YbUXYž
		?U]gYfghfU»Y
< Y b b Y Z	BUhifibX?i`hif	GW\`cgg` <ybbyzž< td=""></ybbyzž<>
		K UbXYfk Y[Y
?]fW\Yb	⇒xighf]Y_i`hif	AigYia 'XYf'GhUXh
		?]fW\Yb
5`hYb_]fWXYb	; fØbY GhUXh	5`hYb_]fWXYbYf

8 Yf'F\Y]b!G]Y[!?fY]g']gh'b]W\h'bi f'ZØf'gY]bY'VYY]bXfi W_YbXYbGh\AXhY'VY_Ubbh\z'gcbXYfb'Ui W\'ZØf'X]Y'j]Y\'Z\A\'h][Yb:fY]nY]ha \(\Omega[\cdot]W_Y]hYb\z'X]Y'\]Yf'[YVchYb'k YfXYb'''CV'Xi 'Ub; YgW\]W\hY\z'BUhi f'cXYf'Y]b\ZUW\'bi f'Ua'; Ya\\@h']W\Yb']bhYfYgg]Yfh\V]gh\z'X]Y'FY[]cb'\Uh'Z\@f'\YXYb'Yhk Ug'ni 'V]YhYb'''5\`gc'gW\\bUdd'X]f\XY]bY'?Ua\YfU'i bX'YbhXYW_Y'X]Y'GW\\Ob\Y]hYb'XYg'F\Y]b!G]Y[!?fY]qYg'

? $i `]bUf]gWXY' <][\ `][\ hg'i bX'fY[]cbU`Y GdYn]U`]hÀhYb$

 $8 \ Yf \ F \ Y]b!G]Y[!?fY]g']gh'b]W h'bi f'ZØf'gY]bY'a U'Yf]gW Yb @Ub XgW UZhYb'i bX'\]ghcf]gW Yb'GhÀXhY'VY_Ubbhž'gcbXYfb'Ui W 'ZØf gY]bY'j]Y`ZÀ'h][Y'i bX'gW a UW_\UZhY'? ØW Y''8]Y'FY[]cb'j YfY]bh HfUX]h]cb'i bX'A cXYfbY'i bX'V]YhYhY]bY'VfY]hY'DU'YhhY'Ub _i `]bUf]gW Yb'; Yb ØggYb'''GW cb'VY]a 'YfghYb'6]ggYb'gd Øfh'a Ub X]Y'@Y]XYbgW UZhi bX'X]Y'`c_U`Yb'DfcXi _hYž'X]Y']b'j]Y`Yb ; Yf]W hYb'j YfUfVY]hYh'k YfXYb'''<]Yf'g]bX'Y]b][Y'XYf \YfUi gfU[YbXYb'_i `]bUf]gW Yb'<][\`][\`][\hg'i bX'fY[]cbU`Yb GdYn]U`]hÀhYbž'X]Y'G]Y'k À\fYbX'\Rightarrow fYg'5i ZYbh\U`hg'i bVYX]b[h dfcV]YfYb'gc``hYb''$

$%"F \setminus Y]b]gWXYGdYn]U^hAhYb$

8]Y'f\Y]b]gW\Y'?ØW\Y']gh'[YdfÀ[h'jcb'\Yfn\UZhYb'; Yf]W\hYbž kcVY]'<]a a Y`ibX'ŸÀX'fk]a a Y`ibX'9fXYŁ'Y]bY'VYgcbXYfY 8Y`]_UhYggY'XUfghY``h''8]YgYg'; Yf]W\h'VYghY\h'Uig'?UfhcZZY`dØfYYž 5dZY`aig'ibX'6`ihkifghibX'jYfY]bh'UiZ'Y]bn][Ufh][Y'KY]gY'gØ»YibX'\Yfn\UZhY'5fcaYb'''\=b'nU\`fY]W\Yb'; UghghÀhhYb'XYg'F\Y]bg]Y[!?fY]gYg'Z]bXYb'G]Y'X]YgYg'; Yf]W\h']b'jYfgW\]YXYbYb'JUf]Uh]cbYb''

$\&"6\dot{A}W_YfY]YbibXigØ_Yi@YW_YfY]Yb$

8]Y'FY[]cb'\Uh'Ui W\'Y]bY'[fc»Y'6ÀW_YfY]hfUX]h]cbži bX'XUg'
F\Y]b]gW\Y'GW\k UfnVfch']gh'Y]b'UVgc`i hYg'A i gg"'8i b_Y`ž'\Yfn\UZh
i bX'Ufca Uh]gW\' 'XUg'hfUX]h]cbY``Y'Fc[[YbVfch'k]fX'cZh'a]h
fY[]cbU`Yb'5i Zghf]W\Yb'gYfj]Yfh"'Ni XYa 'gc``hYb'G]Y'i bVYX]b[h'X]Y

GhUXhVÀW_YfY]']b'G]Y[Vif['VYgi WXYbž'X]Y'ZØf']\fY'_Ògh`]WXYb; YVÀW_Y'ibX'; i[Y`\idZ!?fYUh]cbYb'VYfØ\ah']gh''K Yf'Yg'gØ» a U[ž'k]fX'X]Y'G]Y[Vif[Yf'6Yf']bYf'`]YVYb'''Y]bY'`c_U`Y'JUf]UbhYXYg'hfUX]h]cbY``Yb'DZUbb_i WXYbg''

' "'6]Yf'i bX'K Y]b'Ui g'XYf'FY[]cb

 $8 \ Yf \ F \ Y]b!G]Y[!?fY]g.V]YhYhYhIUi \ W. Y]bY.J]Y.nU\ YUb.C_U.Yb\\ 6fUi \ YfY]Yb".6Ygi \ W. Yb.G]Y.X]Y.F \ Y]b]gW.Y.6fUi \ YfY]']b.6cbb.cXYf\\ X]Y.6]Yfa \ Ubi \ ZU_hi \ f.]b.K.]bXYW_z'k c.G]Y.Zf]gW. [YVfUi hYg\\ fY[]cbU.Yg.6]Yf.dfcV]YfYb._ObbYb".8]Y.FY[]cb.Y][bYhig]W. ni XYa \ Yfj cffU[YbX.ZØf.XYb.K.Y]bVUi z'i bX.X]Y.K.Y]bVUi [YV]YhY.]a\\ G]YVYb[YV]f[Y.g]bX.ZØf.]\fY.\Yfj cffU[YbXYb.F]Yg.]b[Y.i bX.GdAhVi f[i bXYf.VY_Ubbh".6Y].Y]bYf.K.Y]bj.Yf_cghi b[.]b.Y]bYa.XYf j]Y.Yb.K.Y]b[ØhYf.YfbYb.G]Y.X]Y.Y]bn][Ufh][Yb.5fca Yb.i bX.X]Y.DUgg]cb.XYf.k.]bnYf]gW.Yb.?i bgh._YbbYb"$

("'A Àf_hY'i bX'`c_U`Y'DfcXi nYbhYb

%XYb 8 cbbYfghU['i bX': fY]hU['[]Vh'Yg']b'j]Y`Yb 'GhÀXhYb 'XYg
F\Y]b!G]Y[!?fY]gYg'K cWXYba Àf_hYž'Ui Z'XYbYb'fY[]cbU`Y
DfcXi _hY'X]fY_h'j ca '9fnYi [Yf'Ub[YVchYb'k YfXYb'''<]Yf'Z]bXYb
G]Y'Zf]gWXY'C Vgh!'i bX'; Ya ØgYgcfhYbž'\UbX[YdfYgghY'² `Y'i bX
gY`Vgh[Ya UWXhY'A Ufa Y`UXYb'''DfcV]YfYb'G]Y'Y]b'GhØW_''
< Ui ga UWXYf'K i fgh'cXYf'X]Y'_Ògh`]WXYb'? ÀgYj Uf]Uh]cbYb'j cb
`c_U`Yb'?ÀgYfY]Ybž'X]Y'XUg'< Yfn'YXYg': Y]bgWXa YW_Yfg'\Ò\Yf
gWX`U[Yb'`UggYb''</pre>

) ": Y]bY'FYghUi fUbhg'i bX'_i `]bUf]gWXY'JYfUbghU`hi b[Yb: Øf'; ci fa Yhg'\À`h'XYf'F\Y]b!G]Y[!?fY]g'Ui WX'Y]bY'5i gk U\``UbYl ei]g]hYb'FYghUi fUbhg'VYfY]h"'J]Y'Y'j cb']\bYb'bi hnYb'gU]gcbU'Yi bX'fY[]cbU`Y'DfcXi _hYži a '_fYUh]j Y'; Yf]WXhY'ni '_fY]YfYb"'8]Y': YhhY'?i \']b'6cbb']gh'VY_Ubbh'ZØf']\fY'6i f[Yf'a]h'Zf]gWXYbNi hUhYbž'k À\fYbX'XUg'FYghUi fUbh'BUbgYb']b'6UX'<cbbYZ'Y]bYgdUbbYbXY'?ca V]bUh]cb'Ui g'Ug]Uh]gWXYb'i bX'fY[]cbU`Yb9]bZØggYb'V]YhYh"'\#\Zcfa]YfYb'G]Y'g]WX'Ui WX'\ØVYf'X]Y_i`]bUf]gWXYb'JYfUbghU'hi b[Yb'k]Y'X]Y'F\Y]bJgWXY'HUdUg!BUWXhcXYf'XUg'; ci fa Yh!: Ygh]j U'ž'k c'G]Y'j YfgWX]YXYbY'?Ògh`]WX_Y]hYbUb'Y]bYa'Cfh'[Yb]Y*Yb'_ObbYb"

* "'?i`]bUf]gWY'9bhXYW_i b[gfY]gY'Xi fWXUg G]YVYb[YV]f[Y

8 UgʻG]YVYb[YV]f[Yʻ]ghʻb]Wkhʻbi fʻY]bʻDUfUX]YgʻZØfʻK UbXYfYfž gcbXYfbʻUi WkʻZØfʻ: Y]bgWka YW_Yf"ʻNU\`fY]WkYʻ; Ugh\Ài gYfʻV]YhYbfY[]cbU`YʻGdYn]U`]hÀhYbʻUbžʻX]Yʻa]hʻXYfʻk i bXYfgWk ÒbYbʻ?i `]ggYXYfʻ6Yf[Yʻ_ca V]b]Yfhʻk YfXYb"ʻDfcV]YfYbʻG]YʻXYbʻ8fUWkYbZYʻg!6i f[YfʻcXYfʻ[Yb]Y»YbʻG]YʻY]bYbʻ_`Ugg]gWkYbʻF]bXYffci `UXYbkÀ\fYbXʻG]YʻXYbʻ6`]W_ʻØVYfʻXUgʻF\Y]bhU``[Yb]Y»Yb"'8 UgNi gUa a Ybgd]Y`jcbʻ?i `]bUf]_i bX'BUhi fʻ]ghʻ\]YfʻY]ba U`][°

9]b '6Ygi W\']a 'F\Y]b!G]Y[!?fY]g'c\bY'X]Y'_i `]bUf]gW\Yb'<][\`][\hg ni 'dfcV]YfYbž'k ÀfY'i bj c``gh\AbX]["'Jcb'hfUX]h]cbY``Yb'; Yf]W\hYb \emptyset VYf'gØ» Y'@YW_YfY]Yb'V]g'\]b'ni '\Yfj cffU[YbXYb'K Y]bYb'i bX 6]YfYb' 'X]Y'a YX]hYffUbYb'9]bZØggY'i bX'X]Y'`c_U`Yb'DfcXi_hY [UfUbh]YfYb'Y]b'i bj Yf[Ygg`]W\Yg'; YgW\a UW_gYf`YVb]g"'9bhXYW_Yb G]Y'X]Y'[YgW\a UW_`]W\Yb': UWYhhYb'X]YgYf'k i bXYfgW\ObYb'FY[]cb i bX'`UggYb'G]Y'g]W\'j cb'XYf'; UghZfYi bXgW\UZh'XYf'9]b\Y]a]gW\Yb VY[Y]ghYfb'

5_h]j ']b 'XYf'B Uhi f. 'K Ub XYf!'i b X 'F UXk Y[Y]a 'F \ Y]b!G]Y[!?fY]g

 $8 \ Yf'F \ Y]b!G]Y[!?fY]g']ghY]b'k \ U\ fYg'DUfUX]Yg'ZØf'B Uhi f']YV\ UVYfib X'CihXccf!9bh\ig]UghYb'''A]h'Y]bYf'J]Y`nU\`'j cb'K UbXYf!'i bX FUXk Y[Yb'V]YhYh'X]Y'FY[]cb'X]Y'dYfZY_hY'?i `]ggY'ZØf'U_h]j Y 9f\c`i b[']b'XYf'B Uhi f'''I a [YVYb'j cb'a U`Yf]gWXYb'@UbXgWXUZhYbZX]WXhYb'K À`XYfb'i bX'gUbZhYb'<<math>\emptyset$ [Y`b'Yfk UfhYb'X]WX'nU\`fY]WXY qdUbbYbXY'Fci hYbž'X]Y'ZØf'YXYg':]hbYqq`Yj Y`'[YY][bYh'q]bX''

K UbXYfk Y[Y ZØf ^YXYg B]j YUi

8]Y'K UbXYfk Y[Y']a 'F\Y]b!G]Y[!?fY]g'g]bX'gcf[ZÀ`h][Ui g[YgWk]`XYfh'i bX'ZØ\fYb'Xi fWk'UhYa VYfUi VYbXY BUhi f`UbXgWkUZhYb"'<]Yf'g]bX'Y]b][Y'XYf'VYghYb'K UbXYfk Y[Yž'X]Y Xi 'b]Wkh'j YfdUggYb'gc``hYgh

• G]Y[ghY][.'8]YgYf'&\$\$'?]`ca YhYf'`Ub[Y'K UbXYfk Y[|Yf`Ài Zh'Ybh`Ub['XYf'G]Y['ibX'V]YhYh'gdY_hU_i`ÀfY

- 5i qV`]W Y`Ui Z'XUq': `i qqhU`i bX`X]Y`i a `]Y[YbXYb`6Yf[Y"
- K YghYfk U`XGhY][.'9]b'HY]`'XYg'K YghYfk U`XGhY][g'ZØ\fh
 Ui W\Xi fW\XYb'F\Y]b!G]Y[!?fY]g'i bX'V]YhYh'K UbXYfYfb
 X]Y'A Ò[`]W_Y]hž'X]Y'i bVYfØ\fhY'BUhi f'XYg'K YghYfk U`XYg
 ni 'Yf_i bXYb"
- < O\Ybk Y['XYf'K U\bYf'< Y]XY. '9]b'fY]nj c``Yf Fi bXk Y[ž'XYf'Xi fW\'Y]b'Y]bn][Ufh][Yg'BUhi fgW\i hn[YV]Yh ZØ\fh'i bX'nU\`fY]W\Y'; Y`Y[Yb\Y]hYb'V]YhYhž'Y]bXfi W_gj c``Y DZUbnYb!'i bX'H]YfUfhYb'ni 'VYcVUW\hYb"

: Ua]`]YbZfYi bX`]WXY'K UbXYfi b[Yb

 $\label{eq:continuous} $J = Y'Y'K = UbXYfk Y[Y'g]bX'VYgcbXYfg'ZUa]']YbZfYi bX']WX'i bX'V]YhYb = UVk YWXg'i b[gfY]WXY'9f'YVb]gghUh]cbYb'ZØf'?]bXYf'' $6Y]gd]Y'gk Y]gY.$

- 8 Yf' < Yl Ybk Y[']b'A i WX. '5i Z'X]YgYa 'gdUbbYbXYb H\Ya Ybk Y['_ObbYb'?]bXYf'X]Y'; YgWX]WXhYb'fi bX'i a < Yl Yb'i bX'A mh\Yb'XYf'FY[]cb'YbhXYW_Yb"
- 8 Y f 'K] 'X d U f _ '] b 'B Øa V f Y W h. '9] b Y '_i fn Y 'K Ub X Y f i b [
 ZØ\fh'ni 'Y] b Ya 'K] 'X d U f _ ž 'k c '?] b X Y f '\ Y]a] g W X Y 'H] Y f Y '] b
]\fY f 'b UhØf`] W Y b 'I a [Y V i b ['V Y c V U W h Y b '_ O b b Y b "
- 8 Yf'A ÀfWX Ybk Y[']b'< YbbYZ. '9bh`Ub['X]YgYg'K Y[Yb
 []Vh'Yg'nU\`fY]WXY'A ÀfWX YbghUh]cbYbž'X]Y'; fc» 'i bX'? `Y]b
 ni a 'GhUi bYb'Vf]b[Yb"

$FUXkY[YZØf^{Y}XYbFUXZU\fYfhmd]$

8]Y'FY[]cb'\Uh'Ui W\'Y]bY'J]Y`nU\``j cb'FUXk Y[Ybž'X]Y'g]W\']XYU`ZØf'FUXhci fYb'a]h'XYf': Ua]`]Y'cXYf'gdcfh`]W\Yb < YfUi gZcfXYfi b[Yb'Y][bYb"'<]Yf'g]bX'Y]b][Y'XYf'VYghYbFUXk Y[Y.

- G]Y[!FUXk Y[.'8Yf'VY`]YVhY'G]Y[fUXk Y['YfghfYW_h'g]W\
 ØVYf'WU"'%\$\$'_a 'Ybh`Ub['XYf'G]Y['i bX'V]YhYh
 UhYa VYfUi VYbXY'@UbXgW\UZhYb'gck]Y'Y]bY'J]Y`nU\`'j cb
 FUgha Ò[`]W_Y]hYb"
- $\bullet \ \ F \setminus Y]bfUXk\ Y[\ .~`8\ Yf~`F\ UXk\ Y[\ ~`Ybh`Ub[\ `XYg~`F\ \setminus Y]bg~`ZØ\backslash fh$

- 6]_YdUf_']b'K]bXYW_. : Øf'5VYbhYi fYf'[]Vh'Yg']a
 6]_YdUf_'K]bXYW_'j YfgWX]YXYbY'HfU]`gž'X]Y
 YfUi gZcfXYfi b[Yb'ZØf'A ci bhU]bV]_Yf'V]YhYb"

8]Y VYghYb Gdchg ZØf Y]bY DUi gY

 $B \ UWX \ Y]b \ Ya \ Ub' \ Ab \ Yb' \ B \ Uhi \ f'[\]Vh' Yg' \ nU \ Yb']WX \ Yb \ MY \ Ub' \ Yb' \ Ab \ Yb' \ B \ Ub' \ Yb' \ Yb' \ B \ Ub \ Yb' \ Yb' \ B \ Ub \ Yb'' \ Yb' \ Yb$

- ? bY]dYb i bX 6]Yf[ÀfhYb. J]Y Y K UbXYf! i bX F UXk Y[Y ZØ\fYb Ub hfUX]h]cbY ``Yb ; UghghÀhhYb j cfVY]ž X]Y fY[]cbU Y GdYn]U`]hÀhYb UbV]YhYb"
- D]W_b]W_d`AhnY. '9bh`Ub['XYf'K Y[Y'[]Vh'Yg'j]Y`Y'dYfZY_hY
 D]W_b]W_d`AhnY'a]h'UhYa VYfUi VYbXYf'5i gg]W\hž'X]Y'ni a
 J Yfk Y]`Yb'Y]b`UXYb"
- B Uhi fgWki hn[YV]YhY. 'GWk ObY '@]Y[Yk]YgYb']b

 B Uhi fgWki hn[YV]YhYb'g]bX']XYU`ži a 'X]Y'Fi \Y'XYf'B Uhi f

 ni '[Yb]Y» Yb'i bX'X]Y'GYY'Y'VUi a Y`b'ni '`UggYb"

l bgYf H]dd ; YZØ\fhY Hci fYb

I a 'X]Y'FY[]cb'bcW\']bhYbg]j Yf'ni 'YbhXYW_Ybž'Ya dZY\`Yb'k]fž'Ub Y]bYf'[YZØ\fhYb'K UbXYfi b['cXYf'FUXhci f'hY]`ni bY\a Yb"'<]Yf YfZÀ\fgh'Xi 'b]W\h'bi f']bhYfYggUbhY': U_hYb'ØVYf'X]Y'FY[]cbž gcbXYfb'k]fgh'Ui W\'j cb'YfZU\fYbYb'; i]XYg'ni 'j YfghYW_hYb D`ÀhnYb'[Y`Y]hYhž'X]Y'a Ub'gc`c'j]Y``Y]W\h'ØVYfgY\Yb'k ØfXY"

D`Ubi b[XY]bYf Hci f

6Yj cf'Xi 'X]WX 'Ui Z'XYb 'K Y['a UWX ghž'Ya dZ]Y\`h'Yg`g]WX ž'X]Y

K YhhYfj cf\YfgU[Y 'ni 'WX YW_Yb 'i bX 'Yb hgd fY WX Yb XY '? `Y]Xi b['ni k À\`Yb"' + DZcfa]YfY 'X]WX 'Ui WX 'ØVYf 'Òfh`]WX Y '? UfhYb 'i bX '5 ddgž'X]Y

K UbXYf! i bX 'F UXk Y[Y 'UbnY][Ybž'gc XUgg'Xi ']a a Yf'Ui Z'XYa

: Øf'a Y\f' ⇒ Zcfa Uh]cbYb'ØVYf'K UbXYf!'i bX'FUXk Y[Y']a 'F\Y]b!G]Y[!?fY]g'_Ubbgh'Xi 'X]Y'cZZ]n]Y``Y'K YVgY]hY'XYg'F\Y]b!G]Y[!?fY]gYg'VYgi W\Yb"'8cfh'Z]bXYgh'Xi 'Ui W\'XYhU]``]YfhY'Fci hYbž H]ddg'ni f'5bfY]gY'i bX'k Y]hYfY'5b[YVchY'ZØf'BUhi f`]YV\UVYf"

<]ghcf]gWXY'GWXÀhnY'i bX'_i `hi fY``Y 9f`YVb]ggY</pre>

%"'GW\`cgg'8fUW\YbVif[.'9]bYg'XYf'VY_UbbhYghYb'GW\`ÒggYf']b XYf'FY[]cb']gh'GW\`cgg'8fUW\YbVif[ž'XUg'a U'Ygh\h]gW\'Ui Z'XYa 8fUW\YbZY`g'h\fcbh"'9fVUi h']a '%- "'\\J\f\i bXYfhž'V]YhYh'XUg GW\`cgg'b]W\h'bi f'Y]bYb'UhYa VYfUi VYbXYb'6`]_'Ui Z'XYb'F\Y]bž gcbXYfb'Ui W\'Y]bY'VYY]bXfi _YbXY'5fW\]hY_hi fž'X]Y'X]Y'6Ygi W\Yf]b'Y]bY'UbXYfY'NY]h'YbhZ\\f\"8Ug'GW\`cgg'_Ubb'VYg]\\h\h][h k YfXYbž'i bX'Ub'Y]b][Yb'K c\\YbYbXYb'Z]bXYb'\]Yf'VYgcbXYfY J YfUbghU'hi b[Yb'i bX': \\O\fi b[Yb'ghUhh'']

&"'G]YVYb[YV]f[Y.'8Ug'G]YVYb[YV]f[Yž'Y]b'HY]`'XYg'BUhi fdUf_g F\Y]b`UbXž']gh'b]W\h'bi f'Y]b'VY`]YVhYg'K UbXYf[YV]Yhž'gcbXYfb Ui W\'j c``'j cb'\]ghcf]gW\Yf'6YXYi hi b["'<]Yf'ghY\Yb'j]Y`Y'6i f[Yb i bX'Fi]bYbž'k]Y'X]Y'6i f['@Òk YbVi f['i bX'X]Y'6i f[FY]W\YbghY]bž'X]Y'gdUbbYbXY'; YgW\]W\hYb'ØVYf'X]Y'; YgW\]W\hYb'\ZYf'FY[]cb'Yfn\\`Yb"

'"'A i gYi a g`UbXgWX UZh. '8Yf'F\Y]b!G]Y[!?fY]g'V]YhYh'Y]bY

J]Y`nU\``j cb'AigYYbž'X]Y'j YfgWX]YXYbY'5gdY_hY'XYf'fY[]cbU`Yb

; YgWX]WXhY'i bX'?i `hi f'VY`Yi WXhYb"'8Ug'GhUXha i gYi a

G]Y[Vi f['nY][h'Yl nY``YbhY'GUa a `i b[Yb'ni f'; YgWX]WXhY'XYf

GhUXh'gck]Y'UfWXÀc`c[]gWXY':i bXY"'9]b'kY]hYfYg'VYgcbXYfYg

AigYi a ']gh'XUg'<Y]a Uha i gYi a '6cbbž'k c'`c_U`Y'HfUX]h]cbYb

("'?i`hi fY``Y'J YfUbghU`hi b[Yb.'=a 'F\Y]b!G]Y[!?fY]g'Z]bXYb XUg'[UbnY'≯J\f'ØVYf'nU\`fY]W\Y'_i`hi fY``Y'J YfUbghU`hi b[Yb'ghUhh" 8Uni '[Y\ÒfYb.

- 8]Y '>UnnBÀW hY. '9]b 'VY`]YVhYg'9j Ybhž'XUg'>Unn`]YV\UVYf Ui g'XYf'[UbnYb'FY[]cb'Ubn]Y\h"
- ? i `hi fZYgh]j U``C VYf_UggY`. '9]b': Ygh]j U`ž'XUg'`c_U`Y ? Øbgh`Yf'i bX'_i `hi fY``Y'8 UfV]Yhi b[Yb'ZÒfXYfh"
- F\Y]b]gW\Y'?UfbYjU`.'8Yf'?UfbYjU`']b'X]YgYf'FY[]cb']gh Y]bY'`YV\UZhY':Y]Yf'a]h'lanØ[Ybž'Aig]_'ibX'HUbn']b'XYb GhfU»Yb"

) "'FY`][]ÒgY'GhÀhhYb.'8]Y'FY[]cb'VY\Y]a UhYh'Ui W\'j]Y`Y?]fW\Yb'i bX'?`ÒghYfž'X]Y'k]W\h][Y'NYi [b]ggY']\fYf'NY]h'g]bX"'8]Y'\
5\VhY]'GW\kY][Yfb']gh'VY]gd]Y`gk Y]gY'Y]b'Cfh'XYf'Fi\Y'i bX
Gd]f]hi U`]hÀhž'VY_Ubbh'ZØf']\fY'k i bXYfgW\ÒbYb'6UfcW_UfW\]hY_hi f"
9\Ybgc'VYY]bXfi W_YbX']gh'XYf'8ca 'j cb'6cbbž'XYf'Y]bY'XYf
À`hYghYb'?]fW\Yb'8Yi hgW\`UbXg'XUfghY``hii bX'Ø\Yf
VYY]bXfi W_YbXY'fca Ub]gW\Y'?i bghk Yf_Y'j YfZØ[h"

*"?i`hi fY``Y`HfU]`g.: Øf`X]YYb][YbžX]Y`a Y\f`ØVYf`X]Y`?i`hi fibX; YgW\]W\hY`XYg`F\Y]b!G]Y[!?fY]gYg`YfZU\fYb`a ÒW\hYbž`g]bXX]Y`_i`hi fY``Yb`K UbXYfk Y[Y`]XYU`"'9]bY`XYf`Fci hYb`ZØ\fh`Xi fW\X]Y`a U`Yf]gW\Yb`8 ÒfZYf`i bX`Gh\AXhYž`X]Y`j c```j cb`\]ghcf]gW\Yb; YV\Ai XYb`i bX`8Yb_a \A`Yfb`g]bX"'GhY``Yb`G]Y`g]W\Y]bYYbhgdUbbYbXY`K UbXYfi b[`Ybh`Ub[`XYg`?i`hi fdZUXYg`j cfžk\A\fYbX`G]Y`Ub`CfhYb`k]Y`XYf`Gh"'5i [igh]big`?]fW\Y`]bBYi b_]fW\Yb`cXYf`XYf`K UggYfa Ø\`Y`]b`G]Y[Vif[j cfVY]_ca a Yb"

; Ubn'[`Y]W\ž'cV'G]Y'g]W\'ZØf'; YgW\]W\hYž'5fW\]hY_hi f'cXYf
`YVYbX][Y'?i`hi fj YfUbghU`hi b[Yb']bhYfYgg]YfYbž'XYf'F\Y]b!G]Y[!
?fY]g'\Uh'ZØf''YXYb'Yhk Ug'ni 'V]YhYb"'6YghY\Yb'G]Y'XUfUi Zž'XUg
`c_U`Y'9fVY'ni 'YbhXYW_Ybž'i bX'`UggYb'G]Y'g]W\'j cb'XYb
; YgW\]W\hYbž'X]Y'X]YgY'FY[]cb'ni 'YfnÀ\`Yb'\Uhž'j YfnUi VYfb"

+": Un]h. '8]Y`\]ghcf]gW\Yb`GW\ÀhnY`i bX`_i `hi fY``Yb`9f`YVb]ggY`]a
F\Y]b!G]Y[!?fY]g`g]bX`i bYf\Òfh'j]Y`ZÀ`h]['i bX``UXYb`XUni 'Y]bž
YbhXYW_h'ni 'k YfXYb"'D`UbYb`G]Y`Y]bYb`6Ygi W\']b`X]YgYf
k i bXYfgW\ÒbYb`FY[]cbži a 'X]Y`JYfV]bXi b['j cb'; YgW\]W\hYž
?i `hi f`i bX`UhYa VYfUi VYbXYf`BUhi f`\Ui hbU\`ni 'Yf`YVYb"

JYfUbghU`hi b[Yb'i bX': YghY'ZØf'^YXYb; YgWXa UW_

8 Yf'F\Y]b!G]Y[!?fY]g']gh'b]W\h'bi f'ZØf'gY]bY'VYY]bXfi W_YbXY
B Uhi f'i bX'[YgWX]W\hghfÀW\h][Yb'GhÀXhY'VY_Ubbhž'gcbXYfb'Ui W\
ZØf'Y]b'fY]W\\U`h][Yg'JYfUbghU`hi b[gUb[YVchž'XUg'XUg'[UbnY'\\\]\f
ØVYf'ZØf'I bhYf\U`hi b['gcf[h"'CV'hfUX]h]cbY``Y': YghYž'Ui ZfY[YbXY
A Àf_hY'cXYf'_i `hi fY``Y'9jYbhg' '\]Yf']gh'ZØf'YXYb'; YgW\a UW_
Yhk Uq'XUVY]"

 $9]bYf'XYf'<O\backslash Ydib_hY']a~JYfUbghU'hi~b[~g_U`YbXYf']gh'XUg~G]Y[~Yf'AbXYf'GW\@hnYbZYghž'XUg'^A\f`]W\']b~j~YfgW\]YXYbYb~GhAXhYb~XYg'?~fY]gYg'[~YZY]Yfh'k~]fX''~8~]YgYg'hfUX]h]cbY```[~]b[~Xi~fW\gY]bY'ZYgh`]W\Y'5ha~cgd\AfY'i~bX'X]Y'Ui~ZfY[~YbXYb~GW\@hnYb\z'~gb\Y']b~6Ygi~W\']gh'b]W\h'bi~f'Z@f'GW\@hnYb\z'~gcbXYfb~Ui~W\'Z0f']bhYfYgg]YfhY';~AghY'Y]b~9f`YVb]g''~8Yf'l~a~ni~[~XYf'GW\@hnYb~a~]h'df\AW\h][~Yb~:~U\bYb~i~bX~[~YgW\a~@W_hYb~:~Yghk~U[~Yb~gcf[~h'Z0f'Y]b~ZfO\`]W\Yg'A~]hY]bUbXYf'i~bX'Y]b~hc~`Yg~5a~V]YbhY']b~XYb~Gh\AXhYb"$

9]b'k Y]hYfYg'<][\`][\hig]bX'X]Y'K Y]\bUW\hga Àf_hYžX]Y'YXYg'\J\f
]b'j]Y`Yb'CfhYb'XYg'F\Y]b!G]Y[!?fY]gYg'ghUhhZ]bXYb"'8]YgY'A Àf_hY
g]bX'XYf'dYfZY_hY'Cfhži a 'g]W\'Ui Z'X]Y'ZYgh`]W\Y'GU]gcb
Y]bni gh]a a Yb"'6Ygi W\Yb'G]Y'ni a '6Y]gd]Y`'XYb'K Y]\bUW\hga Uf_h
]b'G]Y[Vi f[žk c'G]Y'g]W\'j cb'XYf'ZYgh`]W\Yb'6Y`Yi W\hi b['i bX'XYb
j]Y`Yb'GhÀbXYb'a]h'\UbX[YZYfh][hYb'; YgW\Yb_Yb'i bX'fY[]cbU`Yb
8Y`]_UhYggYb'j YfnUi VYfb'`UggYb'_ObbYb"'<Y]»Y'GW\c_c`UXY'i bX
; `Ø\k Y]b'XØfZYb'\]Yf'bUhØf`]W\'b]W\hZY\`Yb'

 $9bhXYW_Yb^*G]Y^*Ui **YfXYa^*X]Y^*: f\emptyset ``]b[g!^ibX^*< YfVghZYghYz^*X]Y^*]b[j]Y^Yb^*8 OfZYfb^*UV[Y^U^hYb^k YfXYb^*8]YgY^*: YghY^V]YhYb^*Y]bY; Y^Y[Yb^Y]hz^*fY[]cbU^Y^DfcXi_hY^ni^*dfcV]YfYbz^*g]W^*ØVYf^*c_U^Y$

<UbXk Yf_Y ni ']bZcfa]YfYbž'i bX'X]Y'_i `hi fY``Yb'K i fnY`b'XYf
FY[]cb'_YbbYbni `YfbYb"'5a 'YfghYb'GcbbhU[']a 'GYdhYa VYf
Z]bXYh'XUg'hfUX]h]cbY``Y'6fi WXYbV]YfZYgh']b'Hfc]gXcfZ'ghUhhž'k c
7fUZh!6]Yfž'@]j Y!A i g]_'i bX'Y]b'j]Y`ZÀ`h][Yg'F U\a Ybdfc[fUa a 'Ui Z
X]Y'6Ygi WXYf'k UfhYb"</pre>

±0. F\Y]b!G]Y[!?fY]g'[]Vh'Yg'Ui W\'Y]bY'`YVYbX][Y'H\YUhYfgnYbY"
8 Ug'?i`hi fDi f!: Ygh]j U`ž'XUg'bcfa U`Yfk Y]gY']a ': fØ\gca a Yf
ghUhhZ]bXYhž'V]YhYh'Y]bY'UVk YW\g`i b[gfY]W\Y'A]gW\i b['Ui g
H\YUhYf!ž'Aig]_!'i bX'HUbnUi ZZØ\fi b[Yb'Ui Z'j YfgW\]YXYbYb
6Ø\bYb'i bX']gh'Y]b': Ygh'ZØf'X]Y'[YgUa hYb'G]bbY"'9g'n]Y\h'gck c\`
; ÀghY'Ui g'XYf'I a [YVi b['U`g'Ui W\'Hci f]ghYb'Ubž'X]Y'bUW\'bYi Yb
_i`hi fY``Yb'9fZU\fi b[Yb'gi W\Yb"

 $: \varnothing f @] YV \setminus UVYf' j \ cb' a \ i \ g] _U`] gWXYb' 9 j \ Yb \ hg'] gh' X Ug' G] Y [\ Vi \ f[\ Yf A \ i \ g] _ZYgh' Y] b' A \ i \ gg''' 9 g' k \ Yf X Yb' \] Yf' j \ Yf gWX] Y X Yb Y A \ i \ g] _'\ gWYf' \ J\ hi \ b [\ Yb' \ df A g Y b \ h] Yf hž' j \ cb' _` Ugg] gWX Yf' A \ i \ g] _'\ \ \ Yb' \ @] Y X Yf a \ UWX Yf b''' 8] Y'? cb n Yf hY' \ Z] b X Yb'] b' X Yf \ \] ghc f] gWX Yb' \ 5 `hghU Xh' j \ cb' G] Y [\ Vi \ f['ghUhh' i \ b X' V] YhY b' b] WX h' b i f a \ i \ g] _U`] gWX Y' < \O\ Ydi \ b _hY \ z'' gc b X Yf b'' Ui \ WX' Y] b' Y] b n] [\ Uf h] [\ Yg 5 a \ V] Y b hY''$

 $8]Y \cdot 5g] U!?i `hi fk cWXYb']b'6cbbž'X]Y \cdot hY]`k Y]gY']a `F \Y]b!G]Y[!?fY]g ghUhhZ]bXYbž'V]YhYb'Y]bY']bhYfYggUbhY'DYfgdY_h]j Y'Ui Z'Ug]Uh]gWXY?i `hi f'i bX'?ØWXY''<]Yf'_ObbYb'G]Y'; YgWXa ÀW_Yf'i bX'?`Àb[Y'Ui g j YfgWX]YXYbYb'Ug]Uh]gWXYb'@AbXYfb'Yf`YVYbž'K cf_g\cdg VYgi WXYb'i bX'gdUbbYbXY'<math>\oplus$ Zcfa Uh]cbYb'ØVYf'X]Y'?i `hi fYb Yf\U`hYb"

9]b VYgcbXYfYg 9fY][b]g]b XYf FY[]cb]gh XUg Gca a YfZYgh]a 5 hYbVYf[Yf 8 ca ž XUg]b XYf]Xm]gW Yb I a [YVi b[XYf FY[]cb XYg 6Yf[]gW Yb @UbXYg ghUhhZ]bXYh <]Yf Yfk UfhYh X]Y 6Ygi W Yf Y]b Vi bh Yg Dfc[f Ua a a]h A i g]_ž H\YUhYf Ui \nequal \nequal

 $K Y]hYfY'fY[Y`a \grave{A}"][ghUhhZ]bXYbXY'JYfUbghU`hi b[Yb'g]bX.$

- F\Y]b!G]Y[!?fY]g!HU[.'9]b': Yghž'XUg'X]Y'J]Y`ZU`h'XYf FY[]cb'dfÀgYbh]Yfh"
- ?i bgh! i bX < UbXk Yf_Yfa Àf_hY. G]Y V]YhYb
 ?i bgh\UbXk Yf_i bX DfcXi _hY j cb fY[]cbUYb ? ØbghYfb i bX ?i bgh\UbXk Yf_Yfb"
- : `c\a Àf_hY. `FY[Y`a À»]['k YfXYb '[fc»Y': `c\a Àf_hY cf[Ub]g]Yfhž'X]Y 'X]Y 'A Ò[`]WX_Y]h'V]YhYbž'GWXbÀddWXYb 'ni Yf[UhhYfb"

 $\label{thm:continuous} I a `X]Y`VYghYb`FYgd]hY`ZØf`X]Y`VYj cfghY\YbXYb`JYfUbghU`hi b[Ybni `Z]bXYbž`_O`bbYb`G]Y`X]Y`cZZ]n]Y``Y`K YVgY]hY`XYg`F\Y]b!G]Y[!?fY]gYg`i bhYf`k k k "f\Y]b!g]Y[!_fY]g"XY`VYgi W\Yb"`<]Yf`k]fX Y]bY`i a ZUggYbXY`, VYfg]W\h`U``Yf`9fY][b]ggY`]a `$J\f`Ub[YnY][hž XUa]h`G]Y`b]W\hg'j YfdUggYb"$

9[U``ni 'k Y`W\Yf`*J\fYgnY]h'G]Y`ni '6Ygi W\`_ca a Ybž']a 'F\Y]b!G]Y[!?fY]g'Z]bXYb'G]Y`nU\`fY]W\Y'J YfUbghU`hi b[Yb'i bX': YghYž'X]Y gck c\```c_U`Y'HfUX]h]cbYb'U`g'Ui W\']bhYf_i `hi fY``Y'6Y[Y[bi b[Yb ZÒfXYfb"'GY]Yb'G]Y'XUVY]'i bX'Yf`YVYb'G]Y'X]Y'J]Y`ZU`h'X]YgYf `YVYbX][Yb'FY[]cb°

H]ddg ZØf : Ua]`]Ybhci fYb i bX _]bXYfZfYi bX`]WX Y 5_h]j]hÀhYb

 $8 \ Yf \ F \ Y]b \ IG]Y \ [!?fY]g']gh'a \ Y \ f'U \ g'bi f'Y]b \ Y']Xm \ [gWX Y \ F Y \] cb$ $nk \ [gWX Y b' F \ Y]b' i b \ X'G]Y \ [''' Yf' V]YhYh'Ui WX'nU \ YY]WX Y$ $A \ O[']WX \ _Y]hYb' \ Z\emptyset f': \ Ua \]']Yb \ Z'X]Y' \ [Ya Y]bgUa' i bj Yf \ [Ygg']WX Y$ $9f \ YVb \ [ggY' gWX \ UZZYb'a \ OWX \ hYb''' <]Yf'g]b \ X'Y]b] \ [Y' \ _]b \ XYfZfYi \ b \ X']WX Y$ $5 \ _h]j \]hAhYb' i b \ X'H]ddg' \ Z\emptyset f': \ Ua \]']Ybhci fYb \ Z'X]Y'g]WX YfghY``Yb \ Z'XUgg YXYf']b' \ XYf': \ Ua \]']Y'Ui \ Z'gY]bY'?cghYb' \ _ca \ a \ h''$

%"'9f`YVb]qk Y`h'BUhi f

 $8]Y `B Uhi f`]a `F Y]b!G]Y[!?fY]g`]gh'Y]b`DUfUX]Yg`ZØf`_`Y]bY\\ 9bhXYW_Yf''`C V`VY]a `K UbXYfbž`F UXZU\fYb`cXYf`VY]`Y]bYa\\ D]W_b]W_` `X]Y`FY[]cb`k UfhYh`a]h`Y]bYf`J]Y`nU\``Ub`; Y`Y[Yb\Y]hYbUi Zž`X]Y`GW\`Ob\Y]h`XYf`@UbXgW\UZh`ni `[Yb]Y»Yb''`<]Yf`g]bX`Y]b][Y<][\`][\hg.$

- FibXk UbXYfk Y[Y.J]Y`Y`[ih'Uig[YgWk]`XYfhY
 FibXk UbXYfk Y[Yž'k]Y`nia '6Y]gd]Y``XYf' G]Y[ghY][ž
 ZØ\fYb'XifWk'a U`Yf]gWkY'K À`XYf'ibX'K]YgYbž']XYU``ZØf
 : Ua]`]Yb'a]h'?]bXYfb"
- FUXk Y[Y.'8]Y'FUXk Y[Y'Ybh`Ub['XYf'G]Y['g]bX'`Y]W\h
 VYZU\fVUf'i bX'V]YhYb'Ui W\'; Y`Y[Yb\Y]hYb'ZØf'_`Y]bYfY
 FUXhci fYb'a]h'?]bXYfb"
- 5 V Y b hY i Y f d U f _ g. '6 Y g i W Y b 'G]Y 'X Y b ' K U `X! 'i b X 5 V Y b hY i Y f g d]Y `d `U hn ']b 'G]Y [V i f [ž'k c '?]b X Y f '_`Y hhY f b ž g W U i _ Y `b 'i b X 'g d]Y `Y b '_`Obb Y b "

&" 6Ygi WXY]b Nccg i bX H]YfdUf_g

9]b'6Ygi W\']a 'Ncc'cXYf'H]YfdUf_']gh']a a Yf'Y]b'hc``Yg'5VYbhYi Yf ZØf': Ua]`]Yb"'=a 'F\Y]b!G]Y[!?fY]g'[]Vh'Yg'a Y\fYfY'Cdh]cbYb.

- Ncc']b'K i ddYfhU`. 'Bi f'Y]bY'_i fnY': U\fh'YbhZYfbhž
 _`ObbYb'?]bXYf'\]Yf'Yl ch]gW\Y'H]YfY'VYghUi bYb'i bX
 Ui ZfY[YbXY'H]YfZØhhYfi b[Yb'Yf`YVYb"
- K]`XdUf_']b'F\Y]b`UbX!DZU`n.'8]YgYf'K]`XdUf_']gh']XYU`ZØf': Ua]`]Ybž'X]Y'\Y]a]gW\Y'H]YfY']b'Y]bYf'bUhi fbU\Yb I a [YVi b['VYcVUW\hYb'a ÒW\hYb"

' "=bhYfU_h]j Y A i gYYb

9]b'k Y]hYfYf'gdUbbYbXYf'Di b_h'ZØf': Ua]`]Yb'g]bX'X]Y']bhYfU_h]j Yb AigYYb'XYf'FY[]cbž'X]Y'XifWX'gdUbbYbXY'5igghY``ib[Yb'ibX Dfc[fUa a Y'ZUgn]b]YfYb.

- G]Y[Vi f[.'GhUXha i gYi a .'<]Yf'_ÒbbYb'?]bXYf'j]Y`'ØVYf X]Y'; YgWX]WXhY'XYf'GhUXh'YfZU\fYb'i bX']b'j]Y`Yb 5i gghY``i b[Yb'qY`Vgh'U_h]j'k YfXYb"
- D\UbhUg]U`UbX`i bX`UbXYfY: fY]nY]hdUf_g. K Ybb`X]Y
 Ua]`]Y`Ui Z'XYf`Gi WXY`bUWX`5Wh]cb`]ghž`V]YhYb`g]WX`X]Y
 H\Ya YbdUf_g`]b`XYf`BÀ\Y`Ub"`8Yf`HU[`Xcfh`]gh`[YZØ``h`a]h
 Ui ZfY[YbXYb: U\f[YgWXÀZhYb`i bX`G\ck g"

("Gd]Y`d`AhnYibX:fY]nY]hUb`U[Yb

8]Y 'F Y []cb ']gh'VY_Ubbh'ZØf']\ fY 'nU\ `fY]W\ Yb 'Gd]Y `d` \dot{A} hnY 'i bX : fY]nY]hY]bf]W\ hi b[Ybž'X]Y 'ZØf' \dot{A} b['i bX '5 `h'Yhk Ug'V]YhYb.

- Gd]Y`d`Uhn`]a '?i fdUf_'j cb'6UX' < cbbYZ.'9]b'gWX ObYf
 DUf_'a]h'Gd]Y`d`AhnYbž'X]Y']XYU`Y'6YX]b[i b[Yb'ZØf'Y]bYb
 : Ua]`]YbUi gZi ['V]YhYb"
- G]fcbU!Gd]Y`d`Uhn. '⇒'? Òb][gk]bhYfž'X]YgYf'Gd]Y`d`Uhn']gh a]h'_fYUh]jYb'Gd]Y`[YfÀhYb'Uig[YghUhhYh'ibX'`]Y[h aU`Yf]gW\'Ua':i»'XYg'8fUW\YbZY`g"

) "JYfUbghU`hi b[YbZØf:Ua]`]Yb

 $= F Y b!GY[!?fY]g'Z]bXYb'XUg'[UbnY'*JVf'ØVYf'nU\`fY]WXY JYfUbghU`hi b[Yb'ghUhhž'X]Y'gdYn]Y```Ui Z': Ua]`]Yb'Ui g[Yf]WXhYh g]bX.$

- GhUXhZYghY. '6Y]'XYb''À\f`]W\Yb'GhUXhZYghYb'[]Vh'Yg'cZh Y]b'i a ZUb[fY]W\Yg'?]bXYfdfc[fUa a 'a]h'Gd]Y`ghÀbXYb i bX'A]ha UW\U_h]cbYb"
- K Y]\bUW\hga Àf_hY. =a '8YnYa VYf'g]bX'X]Y

 K Y]\bUW\hga Àf_hY'b]W\h'bi f'fca Ubh]gW\ž'g]Y'V]YhYb'Ui W\
 j]Y`Y'5_h]j]hÀhYb'i bX'@YW_YfY]Yb'ZØf'?]bXYf"
- Gca a YfZYghY. J]Y`Y`GhÀXhY`cf[Ub]g]YfYb`: YghY`a]h 5hhfU_h]cbYbž`@]j Y!A i g]_ž`?]bXYfh\YUhYfb`i bX`a Y\f"

*"?i`]bUf]gWXY'9bhXYW_i b[gfY]gY'a]h'XYf': Ua]`]Y

A UbW\a U``a i gg'Ui W\`XYf'<i b[Yf'[Ygh]``h'k YfXYb"'8]Y'FY[]cb'\UhY]b][Y'_]bXYfZfYi bX`]W\Y'FYghUi fUbhg'i bX'7UZ\^gz'X]Y'`YW_YfY ; Yf]W\hY'i bX'Y]bY'_]bXYfZfYi bX`]W\Y'5ha cgd\\AfY'V]YhYb.

- : Ua]`]YbfYghUi fUbhg. '8]Y 'a Y]ghYb 'F YghUi fUbhg']a F\Y]b!G]Y[!?fY]g'V]YhYb 'gdYn]Y``Y'?]bXYf[Yf]WXhY'i bX gc[Uf'Gd]Y`a Ò[`]WX_Y]hYbž'k À\fYbX'X]Y'9`hYfb YbhgdUbbYb'_ObbYb"
- 6YgcbXYfY'9f`YVb]ggY. 6Ygi WXYb'G]Y'Y]bY'XYf'j]Y`Yb ?cWxkYf_ghÀhhYb']b'XYf'FY[]cbž'X]Y'?cWx_i fgY'ZØf ?]bXYf'UbV]YhYb"

+"H]ddg ZØf XYb dYfZY_hYb : Ua]`]YbhU[

<]Yfg]bXY]b][Y'nigAhn`]WXY'H]ddg'ZØfY]bYb'[Y`ib[YbYb:Ua]`]YbhU[.

9j Ybh	Cfh	5_h]j]hÀhYb
: Ua]`]Ybk UbXYfi b[G]Y[hU`	K UbXYfbž [·] D]W_b]W_
Ncc!6Ygi W	KiddYfhU`	H]YfY 'VYcVUW hYbž
		: ØhhYfi b[Yb
Gd]Y`d`UhnVYgi WX	6UX '< cbbYZ	Gd]Y`Ybž'9bhgdUbbYb

K Ybb'G]Y'Ub'Y]bYa '6Ygi W\']a 'F\Y]b!G]Y[!?fY]g']bhYfYgg]Yfh'g]bXž _\ObbYb'G]Y'g]W\'j cfUV'Ui Z'XYf'cZZ]n]Y\'`Yb' < ca YdU[Y'\ØVYf hcif]gh]g\\Y'5b[Y\VchY'i b\X'\U_hi Y\'`Y'\J\Yf\Ubgh\U`hi b[Yb']b\Zcfa]\Yf\Vb'' Gc'k]f\X'\YXY': Ua]\']Ybhcif'ni 'Y]bYa' [Y`ib[YbYb'\9f\Y\Vb]g\'

8 YhU]`g

6Ygi WXYb G]Y i bg Ui Z Y]bY!fY]gY "XY