

## FYj c`i h]cb']a '`ÀbX`]WXYb'JYf\_Y\f. 8][]hU`Y'@Ògi b[Yb'ZØf'VYggYfYb'2 DBJ°

BYi YgʻDfc  $\Upsilon$ \_hʻj cbʻ< cW\gW\i `Yʻ< cZ'ni fʻCdh]a ]Yfi b[ʻXYg² DBJʻ]a '`ÀbX`]W\YbʻFUi a 'Xi fW\X][]hU`YʻK Yf\_nYi [Yʻi bX]bhYfa cXU`YʻJYf\_Y\fgd`Ubi b["

@UbX\_fY]g'<cZ\*8Yi hgWX`UbX'!\*8]Y'AcV]`]hAh']a '``AbX`]WXYb
FUi a 'ghY\h'j cf'[fc>Yb'<YfUi gZcfXYfi b[Yb"'Bi f'k Yb][Y
'`AbX`]WXY'FY[]cbYb'V]YhYb'Y]b'[i h'Ui g[YVUi hYg'OZZYbh']WXYg
JYf\_Y\fggmghYa "'Gc'[]Vh'Yg'\Ai Z]['bi f'gdcfUX]gWXY
GWXi `Vi gj YfV]bXi b[Yb\*X]Y'a cf[Ybg'i bX'bUWXa]hhU[g'ZU\fYb"
9]b'bYi Yg'Ghi X]YbdfcY\_h'XYf'<cW\gWXi `Y'<cZ'\_ObbhY'\]Yf'5V\]`ZY
gWXUZZYb\*\*]bXYa 'Yg'X][]hU'Y'K Yf\_nYi [Y'ni f'JYfVYggYfi b['XYg
OZZYbh']WXYb'DYfgcbYbbU\jYf\_Y\fg'fP DBJ ŁYbhk]W\_Y'h"'F]WXUfX
; OVY'\*Z'XYf': cfgWXi b[g[fi ddYb'Y]hYfZ'VYhcbhZ'XUgg'Y]bZUWXYg
HU\_h]YfYb'XYg'@|b]Ybj Yf\_Y\fg'b]WXh'Ui gfY]WXhZXU'6i ggY'cZh'YYf
i bhYfk Y[g'g]bX"'8]Yg'a UWXY'X]Y'Gi WXY'bUWX'\_fYUh]j Yb'@Ogi b[Yb
Xf]b[YbX'bchk YbX]["'DBD'VYf]WXhYhZ'XUgg']b'XYb''YhhYb'\*J\fYb
VYXUfZg[YghYi YfhY'JYf\_Y\fgUbV]bXi b[Yb'[YhYghYh'k i fXYbZ'X]Y
Xi fWX'5ddg'i bX'Ui hca Uh]g]YfhY'D'Ubi b['VYggYf'Zi b\_h]cb]YfYb"

 $: \emptyset f'XUg'Dfc'Y_h'Cdh]AcXU``\_ccdYf]Yfh'X]Y' < cW, gWXi Y' < cZ'a ]h'XYfHYWXb]gWXYb'I b]j Yfg]hAh'A <math>\emptyset b$ WXYb'gck ]Y'j YfgWX]YXYbYb  $|bhYfbY\setminus aYb'' \otimes Ug'Jcf\setminus UVYb'k ]fX'a ]h'WZ, 'A]``]cbYb'9i fc'j ca$   $6i bXYga ]b]ghYf]i a 'Z\emptysetf' \otimes ][]hU`Yg'i bX'JYf_Y\setminus f'[YZOfXYfh''N]Y``]gh 
YgZ'Y]b'ZAWXYbXYW_YbXYg'i bX'nY]hYZZ]n]YbhYg'AcV]`]hAhgUb[YVch ]a ``AbX`]WXYb'FUi a 'ni 'gWXUZZYb'' \&UVY]'k ]fX'Y]b'VYgcbXYfYf 
<math display="block"> (c_i g'Ui Z'X]Y'9bhk ]W_`i b['i bX'Cdh]a]Yfi b['j cb VYXUfZg[YghYi YfhYb'JYf_Y\fYb']b'JYfV]bXi b['a]h'Ub[YdUgghYb @]b]Ybj Yf_Y\fYb'[Y`Y[h''5`g'D]`chfY[]cb'Zi b[]Yfh'XYf'@UbX_fY]g 
< cZz'k c']bbcj Uh]j Y'?cbnYdhY'[YhYghYhi bX'k Y]hYfYbhk]W_Y`h$ 

k YfXYb"'D`Ub (6YhhYf'ZØ\fh'Ui gž'XUgg'XUVY]'Ghfi \_hi f!ž 6Yk Y[i b[g!'i bX'Bi hni b[gXUhYb'j Yfk YbXYh'k YfXYbž'i a 'X][]hU'Y K Yf\_nYi [Y'ni f'G]a i `Uh]cb'i bX'Cdh]a ]Yfi b['XYf'D`Ubi b['ni Ybhk]W\_Y`b"

## =bhY[fUh]cbjYfgWX]YXYbYfJYf\_Y\fga]hhY`

9]b'k ]W\h][Yg'9'Ya Ybh'XYg'Dfc'Y\_hg']gh'X]Y'\dhY[fUh]cb
j YfgW\]YXYbYf'JYf\_Y\fga ]hhY'z'k ]Y'6YXUfZgj Yf\_Y\fz'@]b]Ybj Yf\_Y\f
i bX'A ]hbU\a Yj Yf\_Y\f"'N]Y`']gh'Ygz'Y]bY'cdh]a U'Y'5Vgh]a a i b[
nk ]gW\Yb'j cf\UbXYbYb'JYf\_Y\fgUfhYb'ni 'YffY]W\Yb'''<]Yfni
\_ca a Yb'5bU'mgYa Yh\cXYb'i bX'a UgW\]bY``Yg'@YfbYb'ni a
9]bgUhnz'i a 'XYb'hUhg\W\']W\Yb'HfUbgdcfhVYXUfZ'XYf'A YbgW\Yb'ni
Yfa ]hhY'b"'5bcbma ]g]YfhY'A Y'XYXUhYbz': U\fnYi [VYk Y[i b[Yb'i bX
A cV]'\Z b\_XUhYb'k YfXYb'[Ybi hhz'i a 'Y]b'df\ngYg'JYf\_Y\fga cXY``
ni 'YfghY``Yb''8]YgY'G]a i `Uh]cb'Yfa \O[`]W\h'5bdUggi b[Yb'j cb
: U\fd'\AbYb'i bX'<U'hYghY``Ybz'i a 'XYfYb'5i gk ]f\_i b[Yb'Ui Z'XUg
J Yf\_Y\fgUb[YVch'ni 'UbU'mg]YfYb'''8]Y'VdV'VYgW\fY]Vhz'XUgg']a
`\AbX']W\Yb'FUi a 'Yhk U'\*\\$i 'U``Yf'GhfY\W\_Yb'a ]h'XYa '5i hc
ni f\OW\_[Y`Y[h'k YfXYbz'k Ug'X]Y'8f]b[`]W\\_Y]h'Y]bYg'j YfVYggYfhYb
2 DBJ!\DZfUghfi \_hi fUb[YVchg'i bhYfghfY]W\h'"

8 Yf 'HYbcf' XYg' Dfc 'Y\_hYg']gh'\_`Uf. '2 DB J'a i gg' ZØf' U``Y

; YbYfUh]cbYb' UhhfU\_h]j' [YghU`hYh'k YfXYbž'j cb''1 b[Yb'A YbgW\Ybž
X]Y' Ui Z'ÒZZYbh`]W\Y'JYf\_Y\fga ]hhY``Ub[Yk]YgYb'g]bXž'V]g'\]b' ni
À`hYfYb'A YbgW\Ybž'X]Y'a Ò[`]W\Yfk Y]gY'Ui Z'XUg'Y][YbY'5i hc
j Yfn]W\hYb'a ÒW\hYb"'5a '9bXY'XYg'Dfc 'Y\_hg'k]fX'Y]b
8 Ya cbghfUhcf'dfÀgYbh]Yfhž'XYf'Ui ZnY][hž'k]Y'Y]bY'a cXYfbY
JYf\_Y\fgd`Ubi b['Ui ggY\Yb'\_ObbhY"'8]Y'Ni\_i bZh'XYg'2 DBJ']a
`ÀbX`]W\Yb'FUi a 'g]Y\h'Y]bY'A]gW\i b['j YfgW\]YXYbYf
JYf\_Y\fga]hhY`'j cfž'Y]bgW\`]Y»`]W\'Ui hcbca Yf': U\fnYi [Y"'8]YgY
\_ObbhYbž'gcZYfb'g]Y'YbhgdfYW\YbX'Ub[YdUggh'k YfXYbž'Y]bY
@Òqi b['ZØf'X]Y'VYghY\YbXYb'A cV]`]hÀhqdfcV`Ya Y'V]YhYb"

## < YfUi gZcfXYfi b[Yb i bX @Ògi b[Yb

Hfchn'X]YgYf'dcg]h]j Yb'5bgÀhnY'V`Y]Vh'X]Y'AcV]`]hÀh']a '`ÀbX`]W\Yb FUi a '\_ca d`Yl "'8Yf'hÀ[`]W\Y'acV]`]hÀhqVYX]b[hY'7C&!:i »UVXfi W\_ ]gh'Xcfh'i a 'ZUgh'Y]b'J]YfhY`\Ò\Yf'U`g']b'ghÀXh]gW\Yb'; YV]YhYb" 8]Yg'k]fX'Xi fW\[[f\Oangle] YfY'8]ghUbnYb'nk]gW\Yb'nYbhfU`Y'CfhYb'k]Y 5fVY]hgd`AhnYbž'GW\[i `Yb'i bX': fY]nY]ha O[`]W\\_Y]hYb'j YfghÀf\_h''8]Y 5Vk UbXYfi b['Ui g'`AbX`]W\Yb'FY[]cbYb'ZØ\fh'ni XYa 'ni 'Y]bYa FØW\_[Ub['XYf'5fVY]hgd`AhnYi bX'j YfghÀf\_h'X]Y'DfcV`Ya Y'VY]'XYf 6YfY]hghY``i b['UXÀei UhYf'A cV]`]hÀhg`Ògi b[Yb"'8]Y'VdV'k Y]gh XUfUi Z'\]bž'XUgg']bgVYgcbXYfY'GYb]cfYb'i bX'DYfgcbYb'a]h [Yf]b[Ya '9]b\_ca a Yb'j cb'X]YgYb'8YZ]n]hYb'VYhfcZZYb'g]bX"

8 UgʻDfc Y\_hʻC dh]A cXU``\Uhʻg]W\`XUgʻN]Y``[ YgYhnhžX]Yʻ5 hhfU\_h]j ]hÀh XYgʻ² DBJ ni Yf\O\Ybʻi bXʻX]Yʻ5V\Àb[][\_Y]hʻj ca 'df]j UhYbʻ5i hc ni ʻfYXi n]YfYb"ʻ±bbcj Uh]j Yʻ@Ogi b[Ybʻk]YʻUi hcbca Ygʻ: U\fYbʻi bX 7 Ufg\Uf]b['\_ObbhYbʻXUVY]Y]bYʻYbhgW\Y]XYbXYʻFc``Yʻgd]Y`Yb" 5i hcbca Yʻ? `Y]bVi ggYʻi bXʻA ]hZU\f[Y`Y[Yb\Y]hYbʻV]YhYb ]bhYfYggUbhYʻ5bgAhnY'ni fʻJYfVYggYfi b['XYfʻJYfZØ[VUf\_Y]h'i bX : `YI]V]`]hÀhʻXYgʻ² DBJʻ]a ``AbX`]W\YbʻFUi a žʻUi W\`k YbbʻX]YgY ?cbnYdhYʻbcW\ʻ]bʻXYfʻ9fdfcVi b[gd\UgYʻg]bX"ʻ9gʻV`Y]Vh UVni k UfhYbž'k ]YʻX]YgYʻbYi YbʻHYW\bc`c[]Ybʻj cfʻXYa '<]bhYf[fi bXfYW\h`]W\YfʻFU\a YbVYX]b[i b[Ybʻi bX'[YgY``gW\UZh`]W\Yf 5\_nYdhUbn']bʻXYfʻNi \_i bZhi a [YgYhnh·k YfXYbʻ\_ObbYb"

| 8 YhU]`g |  |
|----------|--|
| Cfh      | @UbX_fY]g' <czž'8yihgw\`ubx< th=""></czž'8yihgw\`ubx<> |
| EiY``Yb  | • k k k "dbd"XY  |
|          | <ul><li>k k k "d`Ub(VYhhYf"XY</li></ul>                |
|          | • k k k "VdV"XY  |

6Ygi WXYb G]Y i bg Ui Z b!U[ "XY