

## 9bhXYW\_Yb'G]Y'=hU`]Ybg'; Y\Y]a h]ddg. : ØbZ'Ui ZfY[YbXY'FY]gYdYf`Yb°

9bhXYW\_Yb^G]Y^ZØbZbYi Yž~gdUbbYbXY^I f`Ui VgfY[]cbYb^]b #U`]Yb^YbgY]hg^XYf^Hcg\_UbUž~]XYU`^ZØf^BUhi f!^i bX ?i `hi fZfYi bXY"



@Y'A UfW Yž'=hU`]Yb'!'8]Y'Hcg\_UbU'V`Y]Vh'nk Uf'Y]b'VY`]YVhYg

FY]gYn]Y'ž'XcW\']b'=hU`]Yb'[Yk]bbYb'ni bY\a YbX'UbXYfY'FY[]cbYb
Ub'6YXYi hi b["'BYi YghY'6Yf]W\hY'\YVYb'ZØbZ'gdUbbYbXY'HfYbX!

FY[]cbYb'\Yfj cfž'X]Y'FY]gYbXYb'UVgY]hg'XYf'\_`Ugg]gW\Yb'DZUXY
Y]bn][Ufh][Y'9f'YVb]ggY'V]YhYb"'Gc'nY][h'g]W\'=hU`]Yb'j cb'Y]bYf
j ]Y`ZÀ`h][Yb'GY]hYž'X]Y'\_i `]bUf]gW\Y'; YbØggYž'bUhØf`]W\Y'GW\Ob\Y]h
i bX'\_i `hi fY``Y'GW\AhnY'j YfY]bh"'

9]bY'X]YgYf'Ui ZghfYVYbXYb'FY[]cbYb']gh'@Y'A UfWXYž'[Y'Y[Ybnk]gWXYb'XYb'5dYbb]bYb'i bX'XYf'5Xf]U"'G]Y'`cW\_h'a ]h']\fYb<br/>
<Ø[Y``UbXgWXUZhYb'i bX'a ]hhY`U`hYf']WXYb'GhÀXhYb'k]Y'I fV]bc'i bX<br/>
5gWc`]'D]WYbc"'A]h'%, \$'?]`ca YhYf'?ØghY']gh'X]Y'FY[]cb']XYU``ZØf<br/>
I f`Ui VYfž'X]Y'Y]bY'?ca V]bUh]cb'Ui g'9f\c`i b['i bX'9f\_i bXi b[

gi WXYb":8Yf`gUbZhY`Hci f]ga i g`]b`@Y`A UfWXY`\_cbnYbhf]Yfh`g]WX`Ui Z ZUa ]`]Yb[YZØ\fhY`5[f]hi f]ga ]`i bX`6ci h]ei Y\chY`gž'k À\fYbX`X]Y fY[]cbU`Y`?ØWXY`a ]h`K]`X[Yf]WXhYbž'HfØZZY`b`i bX`XYa `JYfX]WWX]c! K Y]b`di b\_hYh"

## 6Ug]`]\_UhU'i bX']\fY'j YfVcf[YbYb'GWX ÀhnY

8]Y'6Ug]`]\_UhU']gh'Xi fW\'X]Y'9fbYbbi b['j cb'A UfUhYU'ni f?i `hi f\Ui dhghUXh'9i fcdUg'&\$%- 'VY\_UbbhYf'[Yk cfXYb"'8]YgYFY[]cb'VYgh]W\h'Xi fW\'Y]bY'A]gW\i b['Ui g'gW\fcZZYf'BUhi fžjYf'UggYbYb'8 OfZYfb'i bX'Y]bYf'hfUX]h]cbgfY]W\Yb'?ØW\Y"'8]YAO[`]W\\_Y]hYb'ZØf'5\_h]j ]hÀhYb'g]bX'j ]Y`ZÀ`h][ž'XYbb'XYf'Dc``]bc!BUh]cbU`dUf\_'gck]Y'X]Y'?ØghYbcfhY'`UXYb'ni a'K UbXYfb'Y]b"?i`]bUf]gW\'[Y\h'Yg'Y\f`]W\Yf'ni ž'XYbb'X]Y'FY[]cb']gh'k Yb][Yfhci f]gh]gW\'U`g'XUg'Ub[fYbnYbXY'5di`]Yb"

: f]Ui `! i `]gWX 'J YbYh]Yb']a 'BcfXcghYb' #D']Ybg'j YfV]bXYh
j YfgWX]YXYbY'?i `hi fYb"'8]Y'GhÀXhY'Hf]Ygh'a ]h']\fYa
a ]hhY`Yi fcdÀ]gWXYb': `U]fž'I X]bY'a ]h'j YbYn]Ub]gWXYf'5fWX]hY\_hi f
i bX'7]j ]XU`Y'XY`: f]i `]ž'XUg'Y]bY'`Ub[cVUfX]gWXY'; YgWX]WX hY
Ui Zk Y]ghž'g]bX'bi f'Y]b][Y'XYf'\_i `hi fY``Yb'<][\`][\hg"'8]Y'FY[]cb
]gh'VYgcbXYfg'VY]'XYi hgWXgdfUWX][Ya 'Di V`]\_i a 'VY`]YVh'i bX
\_i `]bUf]gWX'gc``hYb'6Ygi WXYf'i bhYf'UbXYfYa 'Dc`YbhUž'GUb!8Ub]Y`Y!
GWX]b\_Yb'i bX'YI nY``YbhY'K Y]» k Y]bY'dfcV]YfYb"</pre>

## JYfVcf[YbY'GWXÀhnY']a 'GØXYb' =hU`]Ybg

 $8 ]Y `A c`]gY `[]`h`U`g`k Yb][ `VYUW\hYhY`FY[]cb"`Fi\][ Y`8 OfZYf`ibX k Y]hY`< \emptyset[ Y``UbXgW\UZhYb``UXYb`nif`9bhgW\`Yib][ib[`Y]b"`5`hY < UbXk Yf_g_ØbghYž'k ]Y`X]Y`; `cW_Yb[]Y» YfY]ž`g]bX`Xcfh`bcW\dfAgYbh"`A c`]gY`]gh`]XYU``ZØf`U``Yž`X]Y`UVgY]hg`XYf`A UggYb`X]Y`Fi\YibX`BUhif`giW\Yb"$ 

5a 'i bhYfYb'9bXY'XYg']hU`]Yb]gWXYb'Gh]YZY`g'`]Y[h'? U`UVf]Ybž'Y]bYFY[]cbž'X]Y'`Ub[Y'NY]h'k Yb][Yf'hci f]gh]gWX'k Uf'i bX'g]WXa]hh`YfkY]`Y'Xi fWX']\fY'UhYa VYfUi VYbXYb'?ØghYb'i bX'X]WXhYKÀ`XYf'Ui gnY]WXbYh''8]Y'8ÒfZYf'dfÀgYbh]YfYb'Y]bY'ghUf\_Y\_i `hi fY``Y'=XYbh]hÀh'i bX'X]Y'?ØWXY']gh'VY\_Ubbh'ZØf'k Øfn][Y

GdYn]U`]hÀhYb'k]Y'BXi'U'ibX'DYWcf]bc'7fchcbYgY"'Ni'XYb VY\_UbbhYb'If`UiVg[YV]YhYb'nÀ\`Yb'HfcdYUž'XUg'UiW\'U`g'DYf`Y XYf'?ØghY'XYf'; OhhYf 'VYnY]W\bYh'k]fXž'ibX'7Udc'JUh]WUbc"

8 c W 'Ui W 'XYf'GØXYb' \( \delta \) | Ybg'\ Uh'j ]Y'a Y\f'ni 'V]YhYb"'8 Yf [ YgUa hY'GØXYb']gh'VY\_Ubbh'ZØf'gY]bY'Zfi W hVUfYb'6 OXYbž'X]Y gØ» Y': fØW hY'\Yfj cfVf]b[ Ybž'i bX'XUg'i bj Yfk YW gY`VUfY'8 c'WY J ]hU"'GhÀXhY'k ]Y'DU`Yfa c']b'G]n]`]Ybž'X]Y'&\$%, 'U`g']hU`]Yb]gW Y?i `hi f\Ui dhghUXh'Ui g[ YnY]W bYh'k i fXYž'VYY]bXfi W\_Yb'a ]h']\fYf 5`hghUXh'i bX'VYXYi hYbXYb'?i bghk Yf\_Yb"'7 UhUb]Už'X]Y'bUW 'XYa 9fXVYVYb'j cb'%\*-' 'bYi 'Ui Z[ YVUi h'k i fXYž'VY\YfVYf[ h'nYbhfU`Y VUfcW\_Y'D'ÀhnY'i bX'Y]bY'`YVYbX][ Y'5ha cgd\ÀfY"'\( \delta \) A Ygg]bU'n]Y\h XUg'; `cW\_Ybgd]Y``XYg'8 ca g'hÀ[`]W '6Ygi W Yf'Ub"

Ni XYa ']gh'G]n]`]Yb'a ]h'gY]bYb'@]dUf]gW\Yb'\bgY`bž'X]Y'Y]b'I B9G7C!
K Y`hbUhi fYfVY'XUfghY``Ybž'Y]b'Cfh'j cb']a a YbgYf'j i `\_Ub]gW\Yf
5\_h]j ]h\h''8]YgY'\bgY`[ fi ddY']gh'Y]b'YW\hYf'; Y\Y]a h]dd'Z\Øf
BUhi f`]YV\UVYf''; c`ZVY[Y]ghYfhY'Z]bXYb']a '8cbbUZi [UhU'; c`Z
FYqcfh'i bX'GdU'VYqhY'6YX]b[i b[Yb'Z\Øf']\fYb'Gdcfh''

#bg[ YgUa hinY][ YbiX]Y 'Ui ZghfYVYbXYb'FY[ ]cbYb'#U`]Ybgž'XUgg'Yg
k Y]h'a Y\fini 'YbhXYW\_Yb'[ ]Vh'U`g'bi f'X]Y'\_`Ugg]gW\Yb'< ][ \`][ \hg
XYf'Hcg\_UbU"'?i `]bUf]gW\Y'J ]Y`ZU`hž'UhYa VYfUi VYbXY
@UbXgW\UZhYb'i bX'fY]W\Y'?i `hi fYb'k UfhYb'XUfUi Zž'j cb
bYi [ ]Yf][ Yb'FY]gYbXYb'Yf\_i bXYh'ni 'k YfXYb"'9]b'6Ygi W\']b'@Y
A UfW\Yž'6Ug]`]\_UhUž': f]Ui `!⇒`]gW\'J YbYh]Ybž'A c`]gY'i bX'?U`UVf]Yb
j Yfgdf]W\h'i bj Yf[ Ygg`]W\Y'9f`YVb]ggY"</pre>

 $: \varnothing f `k Y] h Y f Y ` + b Z c f a U h] c b Y b ` \varnothing V Y f `] h U `] Y b ] g W X Y `F Y [ ] c b Y b `] g h `A Y f_i f Y] b Y `k ] W X h] [ Y `5 b `U i ZghY ``Y ž `k À \ f Y b X `J ] j U ` + h U `] U `X Y h U] ``] Y f h Y 9] b V `] W_Y `] b `X Y b `g c b b ] [ Y b `G \varnothing X Y b `V ] Y h Y h "$ 

8 YhU]`g	
Cfh	@Y A UfWXYž ≢hU`]Yb
EiY``Yb	• k k k "a Yf_i f"XY
	• k k k "j ]j U!]hU`]U"]h