

## 6fi ggY`g'5]f`]bYg'fYj c`i h]cb]Yfh D]`chYbUi gV]`Xi b[ 'a ]h'J]fhi U`'FYU`]hm°

6fi ggY`g`5]f`]bYg`bi hnh`gY]h´¬¬¬`]`&\$&) `JF!HYW\bc`c[]Y`ni f D]`chYbUi gV]`Xi b[`]a `5' &\$ži a `HfU]b]b[`fYU`]gh]gW\Yf`i bX YZZ|n]YbhYf`ni `[YghU`hYb"



: fUb\_Zi fhž:8 Yi hgW `Ub X '! '\ 'Y b Y jb Y f `NY jhž' jb 'XY f 'HY W. bc `c [ ]Y 'i b X \dot bc j Uh]cb '< Ub X '[ Y \ Y b ž'a UW. h '6 fi ggY `g '5 ]f `]b Y g'a ]h 'XY f 9]b ZØ\ fi b[ 'j cb 'J ]fhi U` F Y U` jhm flJ F Ł' jb 'XY f 'D] `ch Y b Ui gV] `Xi b[ Y ]b Y b '[ Y k U` h][ Y b 'G W. f]h h 'b U W. 'j cfb Y " '8 ]Y '5 ]f `]b Y '\ Uh 'j cf'? i fn Y a VY [ cbb Y b ž' J F 'ni 'bi hn Y b ž' i a 'X Ug 'H f U ]b ]b [ '] \ f Y f 'D] `ch Y b 'ni f Y j c` i h]cb ]Y f Y b 'i b X 'X ]Y '5 i gV] `Xi b [ 'f Y U` ]gh ]g W. Y f 'ni '[ Y gh U` h Y b " 8 ]Y g Y 'gd Ub b Y b X Y '9 b h k ] W\_` i b [ 'k ]f X ']b b Y f \ U` V 'X Y f '@ Zh \ Ub g U! ; fi d d Y 'U` g 'k Y [ k Y ]g Y b X 'Ub [ Y g Y \ Y b " K ]Y '[ ]b [ 'Y g X Uni 3

6fi ggY`g`5]f`]bYg`\Uh`XUg` HmdY`FUh]b[ 'HfU]b]b[ 'ZØf`XYb`5]fVi g 5' &\$`a ]h'JF!HYW\bc`c[]Y`cdh]a ]Yfh"`B]Wc`7UfXcbYž`GdfYW\Yf`XYf 5]f`]bYž'Yf\_`Àfhž'XUgg`JF`j cf`XYa '\_`Ugg]gW\Yb': `i [!G]a i `Uhcf Y]b[YgYhnh'k]fXž'i a 'XYb`D]`chYb`Y]b`VYggYfYg`JYfghÀbXb]g`ZØf`]\f ni \_ØbZh][ Yg:7cW\_d]hini 'j Yfa ]hhY`b"'5bghUhh'bi f'h\YcfYh]gW\'ØVYf X]Y'5bcfXbi b[ 'XYf'GW\U`hYf'ni '`YfbYbž'\_ÒbbYb'X]Y'D]`chYb'Yhnh']b Y]bYf']a a Yfg]j Yb'l a [ YVi b[ 'bUj ][ ]YfYb'i bX'X]YgY'GW\U`hYf gY`Vgh' Yf`YVYb "'7UdhU]b'; Ui h\]Yf'@YgWYi ž'7\]YZ'H\YcfYh]WU`?bck `YX[ Y'=bghfi Whcfž'\YVh'\Yfj cfž'XUgg'X]Y'bYi Y'A Yh\cXY'b]W\h bi f'YZZY\_h]j Yf']ghž'gcbXYfb'Ui W\'Y]b']bhYbg]j YfYg HfU]b]b[ gYf`YVb]g'V]YhYh"

## 9]b A Y] YbghY]b ]b XYf 5i gV] Xi b[

8 UgʻJ F!HfU]b]b[ž'XUgʻnk]gWX YbʻXYaʻ&"i bXʻ("'\*\*\`]'&\$&) 'Yfgha Uʻg Y]b[YgYhnhik i fXYžʻghY``hʻXYbʻYfghYbʻ9]bgUhnʻX]YgYfʻHYWX bcʻc[]Y XUfžʻXYfʻhfUX]h]cbY``YʻHfU]b]b[g[YfÀhYʻc\bYʻX]Yʻ5i Zg]WX hʻY]bYg HfU]bYfgʻYfgYhnh"'@Ui hʻVY`[UbYk gU[YbWm"Yi 'Yfa Ò[`]WX hʻX]Y bYi YʻGcZhk UfYžʻX]Yʻ]bʻNi gUa a YbUfVY]hʻj cbʻ@ Zh\UbgUʻ5j ]Uh]cb HfU]b]b[ii bXʻ5]fVi gʻYbhk]W\_Y`hik i fXYžʻY]bʻj c``ghÀbX][]a a Yfg]j YgʻHfU]b]b[gYf`YVb]g"'8]YgʻVf]b[hʻb]WX hʻbi fʻY]bYʻVYggYfY @YfbYfZU\fi b[žʻgcbXYfbʻZÒfXYfhʻUi WXʻX]Yʻ: U\fg]WXYf\Y]hʻXi fWX XYbʻ5i ZVUi 'j cbʻA i g\_Y`[YXÀWX hb]g"

8]Y 'YfghY b 'nk Y]'J F!GmghYa Y'k i fXYb 'VYfY]hg'YfZc`[ fY]W\']b 'XYb HfU]b]b[ gnYbhfYb'j cb'@ Zh\UbgU'5j ]Uh]cb'HfU]b]b[ ']b': fUb\_Zi fh i bX'K]Yb']bghU``]Yfh"'8 Ug'N]Y``]gh'Y]bY'ZYI]V`Y'Bi hni b[ 'XYg GmghYa g'Ub'j YfgW\]YXYbYb'GhUbXcfhYbž'UV\Àb[][ 'j cb'XYf 9bhk]W\_`i b[ 'XYf'VYbOh][ hYb'<UfXk UfY"'Ni XYa 'k]fX'X]Y'GcZhk UfY b]W\h'bi f'ZØf'XUg'5' &\$!HfU]b]b[ ž'gcbXYfb'Ui W\'ZØf'ni \_ØbZh][ Y 5'' \$!'i bX'5') \$!A cXY``Y'dfc[ fUa a ]Yfh"'Gc'k]fX'b]W\h'bi f'XUg HfU]b]b[ 'a cXYfb]g]Yfhž'gcbXYfb'Ui W\'Ui Z'j YfgW\]YXYbY : `i [ nYi [ hmdYb'Ui g[ Yk Y]hYhž'k Ug'X]Y'5bdUggi b[ gZÀ\][ \_Y]h'XYf 5i gV]`Xi b[ 'Yf\YV']W\'j YfVYggYfh"

## 9]b 6`]W\_ ]b X]Y Ni \_i b Zh

 $8 ]Y `9]b ZØ \ fi b[ `XYg `J]fhi U `Dfc W Xi fY `HfU]b Yf `fJ DHŁ ]gh Y]b \\ k ]W h][ Yf `GW f]hh `ZØf `X]Y `Ub[ Ygd fc W Yb Y `9ZZ]n]Yb ngh Y][ Yfi b[ `]b \\ XYf `D]`ch Yb Ui gV]`Xi b[ "`Ni `XYb `b Å W gh Yb `GW f]hh Yb `[ Y \ Òfh X]Y \\ gW f]hh Y ]gY `9]b ZØ \ fi b[ `XYg `J F ! HfU]b]b[ g `VY] `U ``Yb `%$ \\ 5' & $!6 Yhf Y] V Yfb `]b b Yf \ U `V `XYf `@ Zh \ UbgU!; fi dd Y `gck ]Y `X]Y$ 

9bhk ]W\_`i b[ 'ni gÀhn`]W\Yf'HfU]b]b[ ga cXi `Y'ZØf'UVbcfa U`Y JYfZU\fYb"'8 Ug'J DH!Dfc[ fUa a 'k i fXY'gdYn]Y```Ybhk ]W\_Y`hž'i a 'Y]b ZYI ]V`Yg'i bX'bUW\\U`h][ Yg'5i gV]`Xi b[ ggmghYa 'ni 'gW\UZZYbž'k Ug g]W\'Ui W\']b'XYf'Yb[ YfYb'Ni gUa a YbUfVY]h'j cb'
`i Zh\UbqU[ fci d"Wca 'i bX'5]fVi g'nY][ h"

 $6fi ggY`g`5]f`]bYg`\ Uh`g]W\&\ U`g`D]cb]Yf`dcg]h]cb]Yfhž`]bXYa ~g]Y`U`g 9fgh_i bXY`]bbYf\U`V`XYf`@ Zh\UbgU!; fi ddY`X]YgYb`]bbcj Uh]j Yb 5bgUhn`]b`XYf`D]`chYbUi gV]`Xi b[ `i a gYhnh"`8]YgY`$\phi]h]Uh]j Y`k]fX b]W&h`bi f`X]Y`5fh`i bX`K Y]gYž`k]Y`D]`chYb`Ui g[ YV]`XYh`k YfXYbž [ fi bX`Y[ YbX`j YfAbXYfbž`gcbXYfb`_ObbhY`Ui W&`X]Y`[ YgUa hY 6fUbWXY`VYY]bZi ggYb"`$\phiY]bYf`NY]hž`]b`XYf`9ZZ]n]Ybn`i bX BUW&\U`h][ _Y]h`]a a Yf`k]W&h][ Yf`k YfXYbž`]gh`Yg`Y]b`[ i hYg <\hat{AbXW}Ybž`]b`HYW&bc`c[]Yb`k]Y`J F`ni`]bj Ygh]YfYb"$ 

±0.5 b V Y h f U W h 'U ``` X] Y g Y f '9 b h k ] W\_`i b [ Y b 'V `Y] V h 'U V n i k U f h Y b ž k ] Y g] W X] Y g Y 'b Y i Y 'H f U] b] b [ ga Y h \ c X Y 'U i Z' X] Y 'D] `c h Y b 'g Y ` V g h i b X ' X] Y : `i [ g] W Y f \ Y] h ' k Y h k Y] h 'U i g k ] f \_ Y b ' k ] f X " '9] b Y g '] g h ' Y X c W 'g] W Y f . 8 ] Y 'N i \_ i b Z h ' X Y f 'D] `c h Y b U i g V] `X i b [ '] g h `\ ] Y f ž i b X 'g] Y 'g] Y \ h j ] Y `j Y f g d f Y W Y b X 'U i g"

8 Y hU]`g	
Cfh	: fUb_Zi fhž·8 Yi hgWX`Ub X
EiY``Yb	<ul><li>kkk"VY`[UbYkgU[YbWm"Yi</li></ul>
	<ul><li>dfYgg"Vfi ggY`gU]f`]bYg"Wca</li></ul>
	• ]bbcj Uh]cb!
	fi bk Um"`i Zh\ UbgU[ fci d "Wca

6 Y gi W Y b 'G ] Y 'i b g 'U i Z 'k ca , + "X Y