

Figg`UbXg`GWXf]hh`nif`FY[i`]Yfib[`jcb?fmdhckÀ\fib[Yb`a UWXh`UbXYfY`@ÀbXYf Ui Za Yf_gUa

8]Y fi gg]gWXY NYbhfU`VUb_ i bX DfÀg]XYbhK `UX]a]f Di h]b a $\emptyset ggYb^{-}]\fY^{-}i bhYfgWX]YX^{}WYb^{-}5bg]WXhYb^{-}ni^{-}X][]hU^{}Yb^{-}$ JYfa Ò[Ybgk YfhYb]b'9]b_`Ub[Vf]b[Yb'5i Z'XUg'@UbX YbhZU``Yb'%%'ı 'XYg'k Y`hk Y]hYb'6]hWc]b!A]b]b[gž'k Ug'XYa ; YgYhn[YVYf'Y]bYb'[fc)Yb'5bfY]n'[]Vhž'X]Y'6fUbWXYUb[Ya YggYb ni 'fY[i `]YfYb Fi gg`UbXg b]W\h ØVYffUgWXYbXYf 'GWXf]hh'ni f'FY[i`]Yfi b['XYf ?fmdhck À\fi b[k]fX``Ui h'6fUbWXYbhY]`bY\a Yfb jcfUigg]W\h`]W\`UbXYfY`@\bXYf`XUni`UbgdcfbYbž`X]YgYa 6Y]gd]Y`ni Zc`[Yb"BUW\UFU\aYbJcbXYffigg]gW\Yb FY[]Yfib['ibX'NYbhfU`VUb_'Uiq[YUfVY]hYhž'k]fX'jcb'XYb dc`]h]gWXYb'9bhgWXY]Xib[ghfÀ[Yfb'YfkUfhYhž'XUgg'g]Y'bYiY ; YgYhnY'YfUfVY]hYb'cXYf'VYghY\YbXY'; YgYhnY'ÀbXYfbž'i a ?fmdhc'U`g'K À\fi b['ni 'ØVYfk UWXYb"'8]Y'A U»bU\a Yb k YfXYb "`Ui h'Fi gg`UbX'U``Y'VfY]hYfYb'k]fhgW\UZh`]W\Yb 5i gk]f_i b[Yb X][]hU`Yf J Yfa O[Ybgk YfhY / Ua dAY``]d/

- 8]Y'fi gg]gW\Y'NYbhfU`VUb_'i bX'Df\(\hat{A}\)g]XYbh'K `UX]a]f'Di h]b
 a \(\tilde{Q}\)ggYb']\\fY'i bhYfgW\]YX`]W\Yb'5bg]W\\hYb'ni 'X][]hU`Yb
 J Yfa \(\hat{O}\)[Ybgk YfhYb']b'9]b_`Ub['Vf]b[Yb
- 5i Z'XUg'@UbX'YbhZU``Yb'%%'ı 'XYg'k Y`hk Y]hYb'6]hWc]b!

 A]b]b[gž'k Ug'XYa '; YgYhn[YVYf'Y]bYb'[fc» Yb'5bfY]n'[]Vhž

 X]Y'6fUbW\Y'Ub[Ya YggYb'ni 'fY[i `]YfYb

Figg`UbXg' b]W\h'ØVYffUgW\YbXYf 'GW\f]hh'ni f'FY[i`]Yfi b['XYf?fmdhck À\fi b['k]fX'`Ui h'6fUbW\YbhY]`bY\a Yfb'j cfUi gg]W\h`]W\UbXYfY'@\bXYf'XUni 'UbgdcfbYbž'X]YgYa '6Y]gd]Y``ni 'Zc`[Yb"

BUWX 'U'FU\a Yb'Jcb'XYf'fi gg]gWXYb'FY[]Yfi b['i bX'NYbhfU`VUb_Ui g[YUfVY]hYhž'k]fX'j cb'XYb'dc`]h]gWXYb'9bhgWXY]Xi b[ghfÀ[YfbYfk UfhYhž'XUgg'g]Y'bYi Y'; YgYhnY'YfUfVY]hYb'cXYf'VYghY\YbXY; YgYhnY'ÀbXYfbž'i a '?fmdhc'U`g'K À\fi b['ni 'ØVYfk UWXYb"'8]Y A U» bU\a Yb'k YfXYb'`Ui h'Fi gg`UbX'U``Y'VfY]hYfYb'k]fhgWXUZh`]WXYb5i gk]f_i b[Yb'X][]hU`Yf'JYfa Ò[Ybgk YfhY'ghUV]`]g]YfYb"

5 b hc 'DUfc]Ub ž'7\]Y Z'C d Y f Uh]b ['C ZZ]WW f'X Y g'8][]hU`'5 gg Y hg

= bj Y g ha Y b h': i b X'5 F?' * ž'g U [h Y ž'F i gg`Ub X g'F Y U_h]c b 'Ui Z'X Y b

5 i Zgh]Y ['j c b''? f md hc 'gd]Y [Y`Y'Y]b Y'V f Y]h Y f Y'J Y f g W X]Y V i b [']b 'X Y b

B Uh]c b Y b 'k]X Y f ž'X]Y 'Y]b f À i a Y b ž'X Ugg'X]Y 'H Y W b c`c []Y'\]Y f

V`Y]V Y b 'k] f X'''

#bg[YgUa h'6Y\OfXYb'OUfY'ghUfh]b['hcQ9f_YbbYb'G]Yž'XUgg'?fmdhc
]a 'X][]hU`Yb'NY]hU`hYf'ni 'Y]bYa 'gc'h]YZ'j Yfk i fnY`hYb'6YghUbXhY]`
XYf'5fh'i bX'K Y]gY'k]fXž'k]Y'A YbgW\Yb'ØVYf'; Y`X'XYb_Yb'i bX
XUa]h'i a [Y\Ybž'XUgg'X]Y'dc`]h]gW\Yb'i bX'k]fhgW\UZh`]W\Yb'?cghYb
Y]bYg'J YfVchg'k Y]hUi g'[fO)»Yf'ni 'gY]b'gW\Y]bYb'U`g'XUg'F]g]_cž
XUg'XUa]h'j YfVi bXYb']ghž'Yg'a]h'XYb'U`hYb':]bUbngmghYa Yb'ni
_cYl]gh]YfYb' ž'hY]`hY'DUfc]Ub'6`cW_k cf_g'dYf'9!A U]`'a]h"

@Ui h'B]W_'Xi '7fcgž'< YUX'cZ'7ca d`]UbWY'UbX'FY[i `Uhcfm'5ZZU]fg VY]'7c]bG\UfYgž']gh'X]Y'NY]h'j cb'YbhgW\Y]XYbXYf'6YXYi hi b[ž VYj cf']bhYfbUh]cbU`Y'; fYa]Yb'VY[]bbYbž'X]Y'Dc`]h]_'ni VYY]bZi ggYb"

8]YgY'JcfgWX`À[Y'k YfXYb'k U\fgWXY]b`]WX'X]Y'6chgWX UZh
Ui ggYbXYbž'XUgg'X]Y'@ÀbXYf'gWXbY````c_U`Y'JcfgWXf]ZhYb'Yf`UggYb
i bX'b]WXh'XUfUi Z'k UfhYb'gc``hYb'Q fci d'cZ'GYj YbQ]bhYfbUh]cbU`Y
GhUbXUfXg'ni 'gYhnYb ž'gU[hY'Xi '7fcg'i bX'j Yfk]Yg'Ui Z'XUg
dc`]h]gWXY': cfi a ž'XUg'g]WX'Ui g'?UbUXUž': fUb_fY]WXž'8Yi hgWX`UbXž
#\U`]Ybž'\JdUbž'XYa 'JYfY]b][hYb'?\Ob][fY]WX'i bX'XYb'I G5
ni gUa a YbgYhnh"

5bh\cbm'Dca d`]Ubcž; fØbXYf'j cb'Dca d'\bj Ygha YbhgžgWkf]YV']b Y]bYa 'A]hhk cWkg!BYk g`YhhYfž'XUgg'Fi gg`UbXž'k Ybb'Yg'?fmdhc'Y]b gma dUh\]gWkYg 'C\f'ni k YbXYh' 'Y]bgWk`]Y»`]Wk'XYf'5i ZbU\a Y X][]hU`Yf'JYfa Ò[Ybgk YfhY']b'gY]bY'6]`Ubn' 'X]Y'JYfY]b][hYb GhUUhYb'ni a '9]b[fY]ZYb'nk]b[Yb 'k ØfXY"

9gʻ]ghʻY]bʻ[`cVUʻYfʻK YhhVYk YfVʻ]aʻ; Ub[Yžʻ]bʻXYggYbʻA]hhY`di b_h Y]bʻXYnYbhfU`]g]YfhYgžcZZYbYgʻGmghYaʻghY\hVʻYXYfʻ_Ubbʻg]W\ʻUb XUgʻGmghYaʻUbgW\`]Y \Rightarrow Yb žʻgW\f]YVʻDca d`]Ubc"ʻ8]YʻGd]Y`h\Ycf]Y VYgU[hžʻXUggʻb]Ya UbXʻX]Yʻ?Ug_UXYʻghUfhYbʻk]``žʻUVYfʻgcVU`Xʻ=\f; Y[bYfʻYgʻhi hžʻg]bXʻG]Yʻ[Ynk i b[Ybž'X]YʻHYW\bc`c[]Yʻni ØVYfbY\aYbžcXYfʻG]Yʻf]g_]YfYbž'ni fØW_[Y`UggYbʻni kYfXYb"

8]Y I G5 k YfXYb YXYbZU``g'X]Y '9bhk]W_`i b[Yb']b'Fi gg`UbX'[YbUi VYcVUW\hYbž'XUg'V]g'ni a '%, "': YVfi Uf'; YgYhnY'Ui gUfVY]hYb'k]fXž Y]bgW\`]Y `]W\'GhUbXUfXg'ZØf'X]Y '6YghYi Yfi b['j cb'?fmdhc"'

8]Y'AU» bU\aYb'_ca aYb'bUW\XYffi gg]gW\Yb'NYbhfU`VUb_']a jYf[Ub[YbYb'AcbUh'jcf[YgW\`U[Yb'6YgW\fÀb_i b[XYf N]f_i`Uh]cb'i bX'XYg'5i ghUi gW\g'jcb'?fmdhck À\fi b[Ybž'JYfVch jcb'?fmdhc!=bjYgh]h]cbYb'Xi fW\':]bUbn]bgh]hi hY'i bX'JYfVch'jcb ?fmdhc!A]b]b["

GY]hXYa 'gU[hY'XYf'fi gg]gWXY'DfÀg]XYbh'K `UX]a]f'Di h]bž'Yf i bhYfghØhnY'Y]bYb'D`Ub'ni f'6YghYi Yfi b['i bX'FY[i `]Yfi b['XYg

6Yf[VUi g'i bX'j Yfk]Yg'Ui Z' K YhhVYk YfVgj cfhY]`Y ž'X]Y'Fi gg`UbX Ui g'XYa '?fmdhc!A]b]b['n]Y\Yb'_ÒbbhY"

A]h[`]YXYf`XYg`I G!?cb[fYggYg`\UVYb`i bhYfXYggYb`]b`XYb``YhnhYb A cbUhYb`5b\Òfi b[Yb`ni `?fmdhc`UV[Y\U`hYbži bX 6fUbW\YbVYcVUW\hYf`Yfk UfhYb`]b`X]YgYa `*\J\f`a Y\f fY[i`Uhcf]gW\Y`?`Uf\Y]h"`9]b`dUfhY]ØVYf[fY]ZYbXYf`; YgYhnYbhk i fZž XYf``YhnhY`K cW\Y`Y]b[YZØ\fh`k i fXYž`gW\`i [`GhYi YfVYZfY]i b[Yb ZØf`?fmdhc!HfUbqU_h]cbYb`j cb`&\$\$```cXYf`k Yb][Yf`j cf"

8]Y'I G5'i bX'Fi gg`UbX'\UVYb'VY]XY'[fc»Y'k]fhgW\UZh`]W\Y
5bfY]nYžY]bYb'D`Ub'i a ni gYhnYbž'k Ybb'a Ub'VYXYb_hž'XUgg
`YhnhYfYg'`Ui h'5b[UVYb'XYf'I b]j Yfg]hm'cZ'7Ua Vf]X[Y'Yhk U''%'i
XYg'k Y`hk Y]hYb'6]hWc]b!A]b]b[g'Ui ga UW\h'i bX'YfghYfYg'') i
_cbhfc``]Yfh'6]hWc]b!Ghfca j YfVfUi W\g]bXYI "'6Y]XY'@\AbXYf
Yf\O\hYb']\fY'<Ug\fUhY'bUW\'7\]bUg'A]b]b[!JYfVch"

K \]h;]VVgž·79C j cb·7ca dUgg·A]b]b['XUg·nk Y]·6Yf[VUi Ub`U[Yb]b·G]V]f]Ybž·Fi gg`UbXž·VYhfY]Vh' 'VYnY]W\bYhY'XYb·5bgUhn'XYg@UbXYg·U`g' Xc!bc!\Ufa 'i bX'ZØ[hY \]bni ž·XUgg·Fi gg`UbX'[fc» Y : cfhgW\f]hhY'VY]'XYf'K YfVi b['ZØf']bhYfbUh]cbU`Y'=bj YghcfYb[Ya UW\h\\UVYži a 'Xcfh·6Yf[VUi VYhf]YVY'Y]bni f]W\hYb"

#W. 'XYb_Yž'X]Y 'a Y]ghYb 'B Uh]cbYb 'Yfk À[Yb 'VYfY]hgž'À\b`]WW.Y
A U» bU\a Yb 'ni 'Yf[fY]ZYbž'i a '6]hWc]b i bX'?fmdhck À\fi b[Yb 'U`g
K À\fi b['Ubni Yf_YbbYb ž'gU[hY';]VVg" 8]YgYg'dcg]h]j Y'9f[YVb]g
VYY]bZi ggh'\cZZYbh`]WW. 'UbXYfY'B Uh]cbYbž'X]Y'[`Y]WW.Y'cZZ]n]Y``Y
< U`hi b['Y]bni bY\a Yb"</pre>

п тп

8 Yf'6Y]hfU['Figg`UbXg'GW\f]hh'ni f'FY[i`]Yfi b['XYf?fmdhck À\fi b['a UW\h'UbXYfY'@ÀbXYf'Ui Za Yf_gUa ']gh'_Y]bY Z]bUbn]Y``Y'6YfUhi b["

6Ygi WXYb'G]Y'i bg'Ui Z'_fmdhc!bYk g"Uh