

K Ufbi b['j cf'6fUbXgÀhnYb. 'G]WXYf\Y]h']b @c[]gh]_VYhf]YVYb'[YZÀ\fXYh

G]WXYf\Y]hgVY\ÒfXYb'k UfbYb'j cf'fi gg]gWXYb GUVchU[YU_hYb.'I b_cbj Ybh]cbY``Y'6fUbXgÀhnY']b'@i ZhZfUWXh [YZÀ\fXYb'@c[]gh]_']b'9i fcdU"

=b 'XYb 'YhnhYb 'K cWXYb '\UVYb 'XYi hqWXY'G]WXYf\Y]hqVY\ OfXYb 5`Ufa '[YgW\`U[Yb"'G]Y'k UfbYb'j cf'a i ha U»`]W\ ib_cbj Ybh]cbY``Yb'6fUbXgÀhnYb ž'X]Y'j cb'i bVY_UbbhYb 5VqYbXYfb ØVYf: fUW\hX]Ybgh`Y]qhYf'j YfqW\]W_h'k i fXYb"'8Yf G]WXYf\Y]hg\]bkY]gž'XYf'jcb'XYf'8YihgWXYb'DfYggY!5[Ybhif']b 6Yf`]b'j cf`]Y[hž'nY][hž'XUgg'XUg'6ibXYgUah'ZØf'JYfZUggib[ggWlihn fbZJŁi bX XUg 6i bXYg_f]a]bU`Ua h'fb? 5ŁVYfY]hg ? Ybbhb]g j cb a Y\fYfYb'JcfZÀ``Yb'\UVYb"'8]YgY'DU_YhgYbXib[Ybž'X]Y'jcb Df]j UhdYfgcbYb]b a Y\fYfYb Yi fcdA]gWXYb @AbXYfb Ui Z[Y[YVYb kifXYbžYbhnØbXYhYb`g]W\`kÀ\fYbX`XYg`HfUbgdcfhg" K Ybb'a Ub'ØVYf'XYb'JcfZU``'bUW\XYb_hž'XfÀb[h'g]W\'X]Y': fU[Y $\label{limit} \mbox{Ui Z 'K Ug 'ghY W_h'XU$']bhYf3'5i W' k Ybb']b'XYf'K Ufbi b['-Y]b }$ X]fY_hYf6Yni ['ni 'Fi gg`UbX'Yfk À\bhk]fXžk]fX']b G]WXYf\Y]hq_fY]qYb'Y]b'Ni qUa a Yb\Ub['a]h'XYb'ni bY\a YbXYb fi gg]gWXYb GUVchU[YZÀ``Yb]b 8Yi hgWX `UbX b]WX h Ui g[YgWX `cggYb" 9g gWXY]bhž·U`g·cV·X]Y·G]WXYf\Y]h·XYf·Yi fcdÀ]gWXYb·@c[]gh]_ ghUf_ $[YZA \setminus fXYh^{-}]gh^{-}$

9]b`VYgcbXYfg`VYgcf[b]gYffY[YbXYf`JcfZJ```YfY][bYhY`g]W\`]a`\\$\]
]a`8<@@c[]gh]_nYbhfi a`]b`@Y]dn]["`8]YgYg`NYbhfi a`]gh`Y]b
k Y`hk Y]hYg`8fY_fYi n`ZØf`XYb`DU_YhX]Ybgh``\]Yf`_Ua``Yg`ni
Y]bYa``6fUbXž`Ui g[Y`Ògh`Xi fW\`Y]b`Ui g`XYa``6U`h]_i a
j YfgW\]W_hYg`DU_Yh''`6Yf]W\hYb`ni Zc`[Y`\UbXY`hY`Yg`g]W\`i a``Y]bYb
6fUbXgUhnž`XYf`]b`Y]bYa``[UbnYb`: fUW\hWcbhU]bYf`: Yi Yf`Z]b["`8Yf

 $FY`Yj\ Ubn`X]YgYg`J\ cfZU``g`_ObbhY`gWk Yfk]Y[YbXY`?cbgYeiYbnYbZØf`X]Y`@c[]gh]_VfUbWkY`ibX`X]Y`OZZYbh`]WkY`G]WkYf\Y]h`\UVYb"$

$G][bU``Ui g`G]WXYfY]hg_fY]gYb$

8 Ug·6 ZJ ~\ UhrXYb·G]W\Yf\Y]hg\]bk Y]g·Ua ~&, "·5i [i gh·Ub j YfgW\]YXYbY·K]fhgW\UZhgi bhYfbY\a Yb·i bX·!j YfV\AbXY j YfgW\]W_hz·i a ~g]Y·ZØf·dchYbn]Y·`Y·G]W\Yf\Y]hgf]g]_Yb·ni gYbg]V]`]g]YfYb"·@Ui h·XYb·6Y\\OfXYb·_\ObbhYb·k Y]hYf\]b·DU_YhY·a]h i b_cbj Ybh]cbY``Yb·6fUbXj cff]W\hi b[Yb·j YfgW\]W_h·k cfXYb·gY]b cXYf·k YfXYb"·8]YgY·K Ufbi b[`n]Y`h·XUfUi Z`UVz·XUggʻI bhYfbY\a Yb]\fY·A]hUfVY]hYf·ØVYf·X]Y·; YZU\fYb·Ui Z_`AfYb·i bX·j cfVYi [YbXY A U» bU\a Yb·Yf[fY]ZYb"

± XYb a Y]ghYb V]g\Yf']XYbh]Z]n]YfhYb DU_YhYb ZUbXYb g]WX Y`Y_hfcb]gWXY; YfÀhY i bX: `Øgg][_Y]hYbž'X]Y 'Y]bYb \c\Yb J YfgUbXk Yfh'Ui Zk]YgYbž'XYf']b Y]bYa 'YI cfV]hUbhYb A]ggj Yf\À`hb]g'ni 'XYa 'hUhgÀWX`]WXYb 'K UfYbk Yfh'ghUbX"'8]YgY ± Zcfa Uh]cbYb '`UggYb 'XUfUi Z'gWX`]Y» Ybž'XUgg'\]Yf'[Yn]Y`h GWX UXYbgU_h]cbYb '[Y[Yb 'X]Y '`c[]gh]gWXY' ± ZfUghfi _hi f']b k Ygh`]WXYb 'GhUUhYb'[Yd`Ubh'k YfXYb"

Jcf:X]YgYa <]bhYf[fi bX:k Ufbh:XUg:6i bXYgUa h:ZØf
JYfZUggi b[ggWki hn:gY]h:Y]b][Yf:NY]h:j cf:a Ò[`]WkYb:fi gg]gWkYb
GUVchU[YU_h]cbYb":6YfY]hg:Ua :&* "'*;* `]:&\$&' :\ UhhY:X]Y:6Y\ÒfXY:]b
Y]bYa :G]WkYf\Y]hg\]bk Y]g:Ui Z:X]Y:Yf\Ò\hYb:; YZU\fYb
Ui Za Yf_gUa :[Ya UWkh:i bX:Ui Z:X]Y:j Yfa Y\fhYb:JcfZÀ``Y:]b:9i fcdU
\]b[Yk]YgYb":8]Y:ni bY\a YbXY:fi gg]gWkY:GUVchU[Y!:i bX
Gd]cbU[YhÀh][_Y]hž:i bhYf:UbXYfYa :Xi fWk:XYb:9]bgUhn:j cb
8fc\bYbžk i fXY:]b:X]YgYb:<]bk Y]gYb:U`g:U`Ufa]YfYbX:Y]b[Yghi Zh"

; `cVU`Y`G]W\Yf\Y]hg`U[Y`]a :: c_i g

8]Y @U[Y V Y]Vh Ub[Ygd Ubbhži bX X]Y 5i Z_`Afi b[i bX DfAj Ybh]cb j cb GUVchU[YU_hYb g]bX j cb \OWX ghYf K]WXh][_Y]h" 9g k]``g]WX nY][Ybžk]Y X]Y G]WXYf Y]hgVY \OfXYb ni _ØbZh]['Ui Z'X]YgY 6YXfc \i b[Yb fYU[]YfYb k YfXYb i bX k Y`WXY A U» bU\a Yb j cb I bhYfbY\a Yb i bX FY[]Yfi b[Yb Yf[f]ZZYb k YfXYbži a 'X]Y 6Yj O`_Yfi b[i bX X]Y \$\Delta ZfUghfi _hi f`ni gWX ØhnYb"

8 Y hU]`g

6 Ygi W Yb 'G]Y 'i bg 'Ui Z 'a Y]b!VYf`]b "bYh