

I bZU``Z`i Wh']b A YXYVUW. Dcg]h]j Yf 8fc[YbhYgh'VY] %, !À\f][Yb

6Y]'Y]bYa 'I bZU``']b'A YXYVUW\'_c``]X]YfhY'Y]b'%, ! λ \f][Yf'a]h Y]bYa 'F UXZU\fYf"'8Yf'8fc[YbhYgh'XYg': U\fYfg'Z]Y`'dcg]h]j Ui g"

I bZU```a]h': U\fYfZ`i W\h'i bX`8fc[Yb_cbgi a]b A YXYVUW\

5a '%" 5i [i gh'&\$&('YfY][bYhY'g]W\ ']b 'A YXYVUW\ 'Y]b

J Yf_Y\fgi b ZU``ž'XYf']b 'XYf'; Ya Y]bXY'b]W\ h'bi f'ZØf'5i ZfY[i b[
gcf[hYž'gcbXYfb 'Ui W\ 'Yfbgh\ UZhY': fU[Yb'ni '8fc[Yb_cbgi a 'i bX
J Yf_Y\fgg]W\ Yf\Y]h'Ui Zk UfZ"

8YhU]`g`XYg`JcfZU``g

8 Yf'I b ZU```ZUb X`Ua `B UW\a]hhU[`nk]gW\Yb`XYb`C fhghY]`Yb`6Yf[Y i b X`8 fY]g`Uf`]b`Y]bYa `K U`X[YV]Yh`ghUhh"'9]b`%, !Â\f][Yf`A Ubb`Ui g A YXYVUW\`k Uf`a]h`gY]bYa `?`Y]b_fUZhfUX`i bhYfk Y[gž`U`g`Yf`a]h Y]bYa `&(!Â\f][Yb`F UXZU\fYfž`YVYbZU``g`Ui g`A YXYVUW\ž_c``]X]YfhY"'8 Yf`F UXZU\fYf`ghØfnhY`VY]`XYa `5 i ZdfU```i bX`Yf`]hh `Y]W\hY`J Yf`Yhni b[Yb"'8]Y`[YbUi Yb`I a ghÀbXY`XYg Ni gUa a Ybghc» Yg`g]bX`[Y[Ybk Àfh][`bcW\`i b_`Uf"

$: U \setminus fYfZ'i W h'i b X'8fc[YbhYgh]$

 $B \ UWX \ "XYf"? \ c ``]g] cb \ "YbhZYfbhY'g] WX \ "XYf" \ b [Y :: U \setminus fYf'i \ bYf`Ui \ Vh'j \ ca \\ I \ b \ ZU``cfh" \ '8]Y \ "Dc`]nY]' _cbbhY'] \setminus b' \ "YXcWX \ "gWX \ bY```ni \ '< Ui \ gY \\ UbhfY \ ZZYb"' \ 6Y]' XYf', \ VYfdf ØZi \ b [\ "ghY``hY'g] WX \ YfUi \ gž' XUgg'Yf' Ø VYf _Y]bY' [Ø`h][Y '6Yhf] Y VgYf`Ui \ Vb]g'i \ b X' _Y]bYb$

 $\label{eq:continuous} $JYfg]WXYfib[gbUWXkY]g`ZØf`gY]b`?fUZhfUX`jYfZØ[hY"`9]b$ $XifWX[YZØ\fhYf`8fc[YbhYgh`nY][hY`UbgWX`]Y*YbX`Y]b`dcg]h]jYg$ $9f[YVb]gž`kUg`Yfbgh\UZhY`fYWXh`]WXY`?cbgYeiYbnYb`bUWX`g]WXn]Y\Yb`_ObbhY"$ $$$

9fa]hh`i b[Yb``Ui ZYb

a '5bgW\`i gg'Ub'XYb'8fc[YbhYgh'k i fXY']a '?fUb_Yb\Ui g'Y]bY
6`i hdfcVY'[Ybca a Ybž'i a '[YbUi YfY' ± Dzcfa Uh]cbYb'ØVYf'XYb
8fc[Yb_cbgi a 'ni 'Yf\U`hYb"'8]Y'Dc`]nY]'`Y]hYh'bi b'Y]b
9fa]hh`i b[gj YfzU\fYb'[Y[Yb'XYb'%, !À\f][Yb'Y]b"'8]YgY
9bhk]W_`i b[Yb'g]bX'b]W\h'bi f'ZØf'XYb'6YhfczZYbYb'j cb
6YXYi hi b[ž'gcbXYfb'k YfzYb'Ui W\'Y]b'@|W\h'Ui Z'X]Y'DfcV'Ya Uh]_
j cb'8fc[Yb'Ua 'GhYi Yfž'X]Y'Y]bXf]b[`]W\Y'K Ufbi b[Yb'i bX
A U» bU\a Yb'gY]hYbg'XYf'6Y\ÒfXYb'YfzcfXYf`]W\'a UW\Yb'_ObbhYb"

; $YgY^gWXUZh^gWXY'=ad^gUh]cbYb$

8]YgYf'JcfZU```\Uh']b'XYf'; Ya Y]bgW\UZh'A YXYVUW\'VYfY]hg
8]g_i gg]cbYb'ØVYf'X]Y'G]W\Yf\Y]h']a 'GhfU» Ybj Yf_Y\f'i bX'XYb
I a [Ub['a]h'8fc[Yb'Ui g[Y`Ògh''8]Y'6Øf[Yf'ZcfXYfb'j YfghÀf_hY
5i Z_`Àfi b[ga U» bU\a Yb'i bX'?cbhfc``Ybž'i a 'gc`W\Y'JcfZÀ``Y']b
Ni _i bZh'ni 'j Yf\]bXYfb'''JYf_Y\fgg]W\Yf\Y]h']gh'b]W\h'bi f'Y]b
]bX]j]Xi Y``Yg'5b`]Y[Ybž'gcbXYfb'VYfØ\fh'XUg'K c\``XYf'[YgUa hYb; Ya Y]bgW\UZh''

8 Yf J cf ZU```j ca '%" 5 i [i gh'j Yf XY i h`] W h X] Y '8 f]b[`] W _Y]hž X] Y V Ygh Y \ Yb XY b 'A U » b U \ a Yb 'n i f 'J Yf \]b X Yf i b['j c b 8 f c [Yba]gg V f U i W '] a 'Ghf U » Yb j Yf _Y \ f 'n i 'Y j U` i] Yf Yb 'i b X 'n i j Yf V Ygg Y f b " 8] Y '6 Y ZØ f W hi b [']ghž X Ugg 'gc `W Y 'I b ZÀ``Y '] a a Yf \ Ài Z] [Yf 'U i Zhf Y h Y b '_ Obbh Y b ž k Yb b '_Y] b Y 'i a Z Ugg Y b X Y b 'G W f] h Y i b M Y f b ca a Yb 'k Yf X Y b "

: Un]h

 $8] Y ?? c ``] g] cb 'nk] g W Y b 'X Y a '? `Y] b _ f U Z h f U X 'i b X 'X Y a ': U \ f f U X 'g h Y ``h b] W h 'b i f 'Y] b Y b '9] b n Y `Z U ``` X U f ž 'g c b X Y f b 'k] f Z h 'U i W 'Y] b '@] W h 'U i Z$

Y]b'k UW\gYbXYg'DfcV`Ya ']bbYf\U`V'XYf'; YgY``gW\UZh"'9g']gh YbhgW\Y]XYbXž'XUgg'U``Y'6YhY]`][hYbž'j cb'XYf'Dc`]nY]'V]g'\]b'ni f ; Ya Y]bXYž'ni gUa a YbUfVY]hYbž'i a 'X]Y'J Yf_Y\fgg]W\Yf\Y]h'ni Yf\Ò\Yb'i bX'8fc[Yba]ggVfUi W\'YbhgW\]YXYb'Ybh[Y[Ybni k]f_Yb"

B5;

8 YhU]`g

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