

JYf_Y\fgi bZU```]b`6Yj Yfi b[Yb.`K YbXYb ZØ\fh`ni '?c``]g]cb'Ui Z'@', '+

9]b'JYf_Y\fgi bZU```]b'6Yj Yfi b[Yb'bUW\'Y]bYa K YbXYa UbÒj Yf'ZØ\fhY'ni '`Y]W\hYb'JYf`Yhni b[Yb'VY]'VY]XYb : U\fYfb"'8YhU]`g'\]Yf $^\circ$

I bZÀ``Y']a 'GhfU» Ybj Yf_Y\f. '9]b '6`]W_'Ui Z'X]Y : c`[Yb

6Yj Yfi b[Yb fchgŁ

 $\label{thm:continuous} J \ Yf_Y \ fgi \ b \ Z\ Y \ fgi \ b \ Z\ Y \ fgi \ b \ Z\ Y \ fgi \ b \ for \ fgi \ b \ fgi \ for \ fgi \ b \ fgi \$

8Yf'l bZU``\Yf[Ub[

 $8]Y `A`hYfY `8 Ua Y` \ UhhY `j cfž]b` < O \ Y `Y]bYf`Ni ZU \ fh`ni `k YbXYbž k Yg \ U`V `g]Y`] \ fY `; YgWk]bX][_Y]h`fYXi n]YfhY"`$ f $$ \ |bhYf \ YfZU \ fYbXYf `A b[Yf': U \ fYf VYa Yf_hY `X]Yg` `YXcW\ `ni `gdAh i bX `_c``]X]YfhY`a]h`]\fYa `: U \fnYi ["`8]Y`VY]XYb`: U \fYf`Yf`]hhYb [`\OW_`]W\ Yfk Y]gY`bi f``Y]W\ hY`J Yf`Yhni b[Ybž`YXcW\ `k i fXYb`VY]XY 5 i hcg`ghUf_`VYgW\ AX][h`i bX`k UfYb`b]W\ h`a Y \f`ZU \fVYfY]h"$

 $8]YFc``YXYfJYf_Y\fgg]WXYfY]h$

I bZÀ``Y`k]Y`X]YgYf`_ÒbbYb`ZØf`X]Y`6YhfcZZYbYb`a Y\f`U`gʻbi f
__ÒfdYf`]W\Y`JYf`Yhni b[Yb`a]h`g]W\`Vf]b[Yb"8]Y`dgmW\]gW\Yb`i bX
Ya ch]cbU`Yb`: c`[Yb`Y]bYgʻI bZU``gʻg]bX`cZh`YVYbgc`[fUj]YfYbX"
DUggUbhYb`i bX`A]hfY]gYbXY`g]bX`hfUi a Uh]g]Yfhž`i bX`XYf`JYf`i gh
j cb`: U\fnYi []bgUggYb`_Ubb`ni `Yfbgh\UZhYb`gYY`]gW\Yb
6Y`Ughi b[Yb`ZØ\fYb"`5i »YfXYa `k YfZYb`gc`W\Y`JcfZÀ``Y`: fU[Yb
ni a `H\Ya U`JYf_Y\fgg]W\Yf\Y]h`Ui Z"`9g`ghY``h`g]W\X]Y`: fU[Yž
k Y`W\Y`A U» bU\a Yb`Yf[f]ZZYb`k YfXYb`_ÒbbhYbž`i a `gc`W\Y
I bZÀ``Y`]b`Ni _i bZh`ni `j Yfa Y]XYb"

8]Y 5i gk]f_i b[Yb 'Ui Z'X]Y '; Ya Y]bgW UZh

8 Yf J cf ZU```]b '6 Yj Yfi b[Yb'_Ubb'U`g'5 bghc "ni f'8]g_i gg]cb' ZØf j Yf V Y gg Yfh Y J Yf_Y \ fgg] W \ Yf \ Y]hga U "b U \ a Yb']bb Yf \ U`V' X Yf ; Ya Y]b X Y' [Yg Y \ Yb 'k Yf X Yb'''6]` Xi b[g_Ua dU[b Yb'ni f G Y bg] V]`]g] Yfi b['ZØf'g] W \ Yf Yg': U \ fj Yf \ U`h Y b ž' V Ygcb X Yfg' V Y]a K Yb X Yb'i b X '5 V V] Y [Yb ž'_Obb h Y b' Ygg Y b h] Y``'g Y] b ž'i a 'X Ug' F]g]_c j cb'5 i ZZU \ fi b ZÀ``Yb'ni 'j Yff] b[Yfb'''9g'_Obb h Y' X Yf'=a di `g' ZØf _ca a i b U`Y' J Yf_Y \ fga Yggi b[Yb'i b X'j Yf Ubhk cfhi b[g V Yk i ggh Y: U \ f Yfn] Y \ i b[']b' X Yf' F Y[]cb'g Y] b'' Ni X Ya 'gh Y``Yb' \ Ài Z][Yf Y? cbhfc``Yb' Xi f W X] Y 'Dc`]n Y] 'g] W Yf ž' X Ugg'g] W 'U``Y J Yf_Y \ fgh Y]`b Y \ a Yf' Ub' X] Y F Y[Y`b' \ U`h Yb''

: Un]h

Gc`WXYJYf_Y\fgi bZÀ``Y`_ObbYb`Ui WX`U`gʻ5i gXfi W_'Y]bYg
[fÒ» YfYb DfcV`Ya gʻ]a '6YfY]WX`XYfJYf_Y\fgg]WXYf\Y]h\VYhfUWXhYh
k YfXYb"'8]Y`fUgUbh`ghY][YbXY`NU\``j cb`: U\fnYi [Yb`YfZcfXYfh`Y]b
I a XYb_Yb`]b`XYb`6YfY]WXYb`5i Z_`Àfi b[`i bX`DfÀj Ybh]cb"'8]Y
; YgWXY\b]ggY`]b`6Yj Yfi b[Yb`_ObbYb`gca]h`U`g`k]WXh][Yf
K YW_fi Z`ZØf`X]Y`Bchk YbX][_Y]h`j cb`j YfghÀf_hYb
G]WXYf\Y]hga U» bU\a Yb`]a `GhfU» Ybj Yf_Y\f`Ub[YgY\Yb`k YfXYb"
9g`V`Y]Vh`ni `\cZZYbž`XUgg`ni _ØbZh][Y`\b]h]Uh]j Yb`i bX`A U» bU\a Yb
XUni `VY]hfU[Yb`k YfXYbž`X]Y`JYf_Y\fgg]WXYf\Y]h`ni `Yf\O\Yb`i bX
XYfUfh][Y`JcfZÀ``Y`ni 'j Yfa Y]XYb"

8 YhU]`g

6 Ygi WX Yb 'G]Y 'i bg 'Ui Z. 'b!U["XY