

9fghUi b`]W\Y'9bhXYW_i b['Ui Z'XYa 'A Ufg. 7i f]cg]hm'Ybh\Ø``h'[Y`VY GW\k YZY`_f]ghU``Y

8 Yf'A Ufgfcj Yf'/ ei ch/7i f]cg]hm/ ei ch/'YbhXYW_hY j YfgY\Ybh`]WX'[Y`VY'GWk YZY`_f]ghU``Yž'X]Y'Ui Z'i bYfk UfhYhY I a k Y`hVYX]b[i b[Yb'\]bk Y]qYb"

. .

8]Y'i bYfk UfhYhY'9bhXYW_i b['XYg 7i f]cg]hm !Fcj Yfg

± Y]bYf'VYa Yf_Ybgk YfhYb'K YbXi b['XYf'9fY][b]ggY'\Uh'XYf B5G5!A Ufgfcj Yf' 7i f]cg]hm 'VY]'gY]bYf'9f_i bXi b['XYg'fchYb D`UbYhYb'j YfgY\Ybh`]W\'ØVYf'Y]bYb': Y`gYb'[YghYi Yfh'i bX'XUVY] ZUgn]b]YfYbXY'[Y`VY'?f]ghU``Y'ZfY][Y`Y[h"'8]YgY'VYghY\Yb'Ui g fY]bYa 'GW\k YZY'ž'k Ug'Y]bY'DfYa]YfY']b'XYf'A UfgZcfgW\i b[XUfghY``h"'9]b'gc`W\Yg'J cf_ca a Yb'k Uf'V]g\Yf'i bVY_Ubbhž'i bX'X]Y 9bhXYW_i b[k]fZh'j]Y`Y': fU[Yb'Ui Z"

9]bV`]W_Y`]b`X]Y`A UfgcVYfZ`ÀWXY

8 Yf' 7 i f]cg]hm !Fcj Yfž'XYf'gY]h'gY]bYf'@UbXi b[']a '\\\f'&\\\'Ui Z XYa 'A Ufg'U_h]j ']ghž'\Uh'VYfY]hg'nU\`fY]W\Y'W\Ya]gW\Y'i bX a]bYfU`]gW\Y'<]bk Y]gY'Ui Z'Y]bY'dchYbn]Y``Y'6Yk c\bVUf_Y]h'XYg D`UbYhYb`[YgUa a Y`h"'8]Y`'Øb[ghY`9bhXYW_i b[`]gh`'YXcW\
VYgcbXYfg`VYXYi hYbXž`XU`g]Y`Ui Z`XUg`J cf\UbXYbgY]b`j cb
Y`Ya YbhUfYa `GW\k YZY``\]bk Y]gh"'8]YgY`gdYn]Y``Yb`6YX]b[i b[Ybži bhYf`XYbYb`g]W\`gc`W\Y`?f]ghU``Y`V]`XYb`_ObbYbž`g]bX`ZØf`X]Y
K]ggYbgW\UZh`Yf`bYi `i bX`_ObbhYb`5i ZgW\`i gg`ØVYf`X]Y
[Yc`c[]qW\Yb`DfcnYgqY`Ui Z`XYa `A Ufg`[YVYb"

8]YFYU_h]cbXYf:cfgWXYf

8 Ug: cfgWX YfhYUa 'Ài » YfhY 'g]WX 'Ybh\i g]Ugh]gWX 'ØVYf'X]Y
9bhXYW_i b["'5g\k]b'J UgUj UXUž'Dfc 'Y_hk]ggYbgWX UZh`Yf'j cb
7i f]cg]hm ž'VYnY]WX bYhY 'XUg':]bXYb'Y]bYg'i a ZUggYbXYb': Y`XYg
Ui g'\Y``Ya ž'fY]bYa 'GWX k YZY`'U`g' Y]bY'C UgY']b'XYf'K ØghY "'8]YgY
5i ggU[Y'j YfXYi h`]WX h'X]Y'8f]b[`]WX_Y]hž'X]Y'<]bhYf[fØbXY'X]YgYf
9bhXYW_i b['ni 'Yf[fØbXYb"': fØ\YfY'5bU`mgYb'\UhhYb'VYfY]hg'Ui Z
XUg'J cf\UbXYbgY]b'j cb'A]bYfU`]Yb'Ui Z'GWX k YZY`VUg]g
\]b[Yk]YgYbž'XcWX'fY]bYf'GWX k YZY`'ZY\`hY'V]g`Ub[']b'XYb'8 UhYb"

9]b bYi Yg? Ud]hY`XYfA UfgZcfgWXi b[

 $8]Y `9bhXYW_i b[`XYg` 7i f]cg]hm !Fcj Yfg`_ObbhY`k Y]hfY]WXYbXY ?cbgYei YbnYb`ZØf`X]Y`ni _ØbZh][Y`9fZcfgWXi b[`XYg`A Ufg`\UVYb" K À\fYbX`XYf`Fcj Yf`k Y]hYf\]b`X]Y`C VYfZÀWXY`XYg`D`UbYhYb UbU`mg]Yfhž`_ObbhY`X]Y`I bhYfgi WXi b[`X]YgYf`?f]ghU``Y`Ui Z`bYi Yž i bYfk UfhYhY`9f_Ybbhb]ggY`ØVYf`X]Y`A Ufg[Yc`c[]Y`\]bk Y]gYb"`8]Yg]gh'Y]b`k YgYbh`]WXYf`HY]``XYf`k]ggYbgWXUZh`]WXYb`A Yh\cXYž`X]Y Xi fWX`i bj cf\Yf[YgY\YbY`9fY][b]ggY`bYi Y`: cfgWXi b[gZfU[Yb`i bX < mdch\YgYb`YbhghY\Yb``Àggh"$

: Un]h. 8 Yf 9]bZi gg Ui ZX]Y K]ggYbgW UZh

8]Y'9f_i bXi b[Yb'XYg' 7i f]cg]hm!Fcj Yfg'nY][Yb'Y]bXfØW_`]WXž'k]Yk]W\h]['ni Z\hanker][Y'9bhXYW_i b[Yb']b'XYf'K]ggYbgWXUZh'g]bX"'Gc`WXYJcf_ca a b]ggY'ZØ\fYb'b]W\hibi f'ni 'bYi Ya 'K]ggYb'ØVYf'UbXYfYD`UbYhYbž'gcbXYfb'Ui W\hii'Y]bYa 'h]YZYfYb'JYfgh\hanker\banker\

 $\label{eq:Kappa} $$K = [ggYbgWkUZh^*VYfY]hk \ \hat{A}^h"$$

B5;

8 Y hU]`g

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