## 9gWUa V]U'7ci bhm'FYbUa Yg'; i `Z.'<]ghcf]W G\]Zh'hc''; i `Z'cZ'5a Yf]WU

9gWUa V]U'7ci bhm'd`Ubg'hc'fYbUa Y'cfX]bUbWYg'Zfca / ei ch/; i `Z'cZ'A YI ]Wc/ ei ch/'hc'/ ei ch/; i `Z'cZ 5a Yf]WUž/ ei ch/'Zc``ck ]b[ 'ghUhY ``Y[ ]g`Uh]cb'UbX'di V`]W \YUf]b[ g"



DYbgUWc`Už: `cf]XUž'I G5`!`Cb`i `m'%\$ž'&\$&) ž'h\Y`9gWUa V]U 7ci bhm'7ca a ]gg]cbYfg'a UXY`U`bchUV`Y`XYW]g]cbž'j ch]b[`hc Ua YbX`bi a Yfci g`Wci bhm'cfX]bUbWYg"`H\]g'g\]Zh']bj c`j YX WXUb[]b[`fYZYfYbWYg'Zfca `h\Y`; i `Z'cZ'A YI ]Wc `hc`h\Y`bYk `m XYg][bUhYX`; i `Z'cZ'5a Yf]WU" `H\]g'WXUb[Y`UZZYWhg`bYUf`m'hk c XcnYb`cfX]bUbWYgž'fY`Uh]b[`hc`U`j Uf]Yhm'cZ`cWU``]ggi Yg'gi WX`Ug DYfX]Xc`?Ym'fY[i`Uh]cbgž'Xc[`dUf\_`a UbU[Ya Ybhž'UbX``]hhYf]b[ `Uk g"`H\]g'i bUb]a ci g'XYW]g]cb`Zc``ck g'fYWYbh``Y[]g`Uh]j Y`UWh]cbgž ]bWi X]b[`V]``g'g][bYX'Vm; cj Yfbcf`Fcb'8YGUbh]g'k \]WX`cZZ]W]U``m fYWc[b]nYX'h\Y`; i`Z'Ug'h\Y`; i`Z'cZ'5a Yf]WU `]b`ghUhY``Uk`UbX hYI hVcc\_gž'U`a ]`YghcbY`h\Uh`a Uf\_g': `cf]XU`Ug'h\Y`Z]fgh`ghUhY`hc UXcdh`h\]g'hYfa ]bc`c[mž'Ug`XYhU]`YX'Vm'Bcfh\`9gWUa V]U"

H\Y`cb[c]b[`W\Ub[Yg`hc`Wcibhm`cfX]bUbWYg`fYZYWh`U`VfcUXYf

UX1 gh hc h ]g bYk hYfa ]bc c [m"

K \]`Y`7\U]f`A ] Y`?c\`Yf`\Ug`YI dfYggYX`ghfcb[`gi ddcfh`Zcf`h\Y bUa Y`W\Ub[Yž\Y`ghUhYX`U`k]``]b[bYgg`hc`fYWcbg]XYf`h\Y`XYW]g]cb g\ci`X`ZihifY``YUXYfg\]d`k]q\hc`fYjYfh`hc`h\Y`;i`Z`cZ`AYI]Wc XYg][bUh]cb"'H\Uh'ZYI ]V]`]hm'g\ckg'Ub'i bXYfghUbX]b['cZ'h\Y cb[c]b[ bUhi fY cZ`cWU`[c] YfbUbWY UbX Wca a i b]hm dfYZYfYbWyg" H\]g`X]gW'gg]cb`]g`gi fY`hc`Wcbh]bi Y`gh]ff]b[`XYVUhY`bch`cb`m`k ]h\]b h\Y'9qWUa V]U'fY[]cb'Vi h'U`gc'UWfcgg'h\Y'ghUhY'Ug']hg'fYq]XYbhq

## @cc\_]b[ 5\YUX

H\Y'di V`]W\YUf]b[ 'hc'cZZ]W]U``m'X]gW gg'UbX'Ui h\cf]nY'h\YgY WX.Ub[Yg'hcc\_'d`UWY'cb'h\Y'YjYb]b['cZ'\$`m'%\$`Uh'h\Y'9fb]Y'@YY A U[ U\U'; cj Yfba Ybh'6i ]`X]b[ ']b'Xck bhck b'DYbgUWc`U"'H\]g X]qW/qg]cb'bch'cb`m'UXXfYqqYX'h\Y'i dXUhYq'hc'h\Y'cfX]bUbW/q'Vi h U`gc`dfcj]XYX`Ub`cddcfhib]hm`Zcf`Wcaaib]hm`aYaVYfg`hc`jc]WY h\Y]f`cd]b]cbg`cb`k \Uh`]g`i bXci VhYX`m`U`dc`Uf]n]b[ `]qqi Y"

; cjYfbcf8YGUbh]ggfYWfbhX]fYWh]jYg"

5g'dUfh'cZ'h\Y']b]h]Uh]jYž'h\Y'Wcibhmg'kY`WcaY'g][b'Uh'DYbgUWc`U 6YUWX`\Ug`U`fYUXm`VYYb`i dXUhYX`hc`fYZYWh`h\]g`bYk`bUa Yž`k \]WX WUa Y k  $h^{1} = \frac{1}{2} \frac{1}$ **∞ifbU**žh\]gXYW]g]cbii `h]a UhY`mU]a ghc'Vf]b[ 'Wcbh]bi ]hmUWfcgg jUf]cig`Y[U`XcWaYbhg`UbX`dfcWyggYg`k\]`Y`Wcad`m]b[`k]h\

## H Y F c c h c I h c Z h Y 7 Ub Y

H\Y`\YUfh`cZ`h\]g`W\Ub[Y`ghYa g`bch`cb`m`Zfca `ghUhY!`YjY` a cX]Z]WUh]cbg'Vi h'U`gc'Zfca 'Ub'YI YW h]j Y'cfXYf']qqi YX'Vm'Zcfa Yf DfYg]XYbh<sup>·</sup>Hfi a dž<sup>·</sup>Zi fh\Yf<sup>·</sup>gc<sup>·</sup>]X]Zm]b[<sup>·</sup>h\Y<sup>·</sup>bUa Y<sup>·</sup>W\Ub[Y" 7ca a ]qq]cbYf'@ a cb'A Umij c]WYX'\]q'q\_Ydh]Wjqa ž'qi [ [Yqh]b[ h\Uh'k \]`Y'W\Ub[]b[ 'h\Y'bUa Y'a ][ \h'a U\_Y'`Y[ U``XcW'a Ybhg a cfY Wcbg]ghYbhži]hik ci `X bchbYWggUf]`mifYa YXmVfcUXYfi]ggi Yg `]\_Y`W]a\_UhY`W\Ub[Y`cf`g\]Zh`di V`]WgYbh]a\_Ybhq"`Cb`h\Y`cddcg]hY g]XYž7ca a ]qg]cbYf'GhYjY'GhfcVYf[Yf'Ya VfUWX'h\Y'idXUhYž j]Yk]b[`]h`Ug`fYWc[b]h]cb`cZ`h\cgY`k\c`UWh]jY`m`dfchYWh`h\Y`[i`Z"

hfYbX'k ]h\]b': `cf]XUž'hm]b[ ``cWU``]XYbh]hm'UbX'dYfWYdh]cb'WcgY`m'hc `Y[]g`Uh]j Y'XYW]g]cbg"'5g'h\Y'Wca a i b]hm'a cj Yg'Zcfk UfXž'h\Y gYbh]a Ybhgʻgi ffci bX]b[ 'h\Y' ; i `Z'cZ'5a Yf]WU 'k ]``'Wcbh]bi Y'hc Yj c`j Yž'cdYb]b[ 'fcca g'Zcf'Zi fh\Yf'X]U`c[ i Y'UbX'dcgg]V`Y'W\Ub[ Yg U\YUXž'Ug'\][ \`][ \hYX']b'Wcj YfU[ Y'Vm'K 95F 'HJ "

8YhU]`g	
Cfh	DYbgUWc`Už': `cf]XUž'IG5
EiY``Yb	• k k k "bcfh\YgWUa V]U"Wca
	• k k k "db∧"Wća
	• k Y Ufhj "Wca

## 6Ygi WXYb'G]Y'i bg'Ui Z'a Y]b!k ]Yb"bYh