

SOLA5050

F YbYk UV`Y`9bYf[mDc`]Wn

HYfa %z&\$&&

7ci fgY`Cj Yfj]Yk

GHJZ`7cbHJW`8YHJ]`g

7cbj Ybcfg

BUa Y	9a Uj`	5j Uj`UVj`]m	@cWJhcb	D\cbY
5bbU`6fi W				

7ci fgY'8YHJ]`g

I b]hg'cZ7fYX]h*`

Gi a a UfmicZ`h\Y'7ci fgY

I W`hW[S f_ WaXW Wdk fd` e[f[a` žI ZSf SdWfZW[b`[USf[a` e aXfWUZ` a`hY[US^UZS` YWS` V S UMS`
W Wdk XfgdM I [^agdW Wdk XfgdWTWUW fd`eW adV[efdTgfW1 I ZSf [e fZWda` WaXfZWe_ Sd`YdV1

@YUfb]b[`Ci hMc a Y	95 `GHJ[Y`%7ca dYHbWYg
("`5VWYgg'a Uf_YhUbX`]bXi gHfmXUH`UbX`UbU`ngY`fYbYk UV`Y YbYf[mVi g]bYgg'a cXY`g`UbX`h`Y`]a dUW`g`cZa Uf_YhfY[i `Uhcfm UffUb[Ya Ybtg`UbX`dc`]Wn]bgrfi a Ybtg"	D9%" žD9%) žD9' "" žD9' "(žD9' "*
) "`7 f]h]WU`mYj U`i UH`fYbYk UV`Y YbYf[mUbX`W]a UH`dc`]Wn YZYW]j YbYggž`YZ]W]YbWž`Yei]mUbX`ZYUg]V`]mž`UbX`dfcdcgy`dc`]Wn UbX`a Uf_YhfY`cfa "	D9%" žD9%"(žD9' "&žD9' ""

HYUW]b[`GhfUH[]Yg`

5ggYgga Ybh

5ggYgga YbhWcbg]g]cZhi hcf]U`ZUW]h]h]cbz`YWhi fY`dUfh]W]dU]cbz`U`k f]h]b`Ugg][ba Ybhfk]h`]bhYfa YX]U]hY UggYgga YbhUbX`ZYXVUW`ghU[Ygkz`UbX`U`Z]bU`YI Ua]bU]h]cb`dUdYf`8YhU]g`cZUgg][ba YbhUbX`h`hcf]U`ZUW]h]h]cb`hUg_g`k]`VY`dfcj]XYX`j]U`A`ccX`Y"

5ggYgga YbhF Uh]cbU`Y

DfYdUfU]h]cb`Zcf`UbX`ZUW]h]h]cb`cZhi hcf]U`X]gW`gg]cbg`k]`YbWci fU[Y`ghi XYbhg`hc`UW]j`Y`mYb[U[Y`]b`h`Y`Wci fgY`h`fci [\ci`h`h`Y`g`Ya`Y`gh`f`K`f]h]b`Ugg][ba Ybhg`k]`f`Yei]fY`ghi XYbhg`hc`Wc`YWhi]bZcfa Uh]cb`UVci`h`YbYf[midc`]W]Yg`UbX`fY[i`Uh]cbg`z`h`Y]f`Wc`bhYi`h`z`Udd`]W]h]cb`UbX`XYhU]YX`XYg][b/hc`i`gY`a`cXY`]b[z`UbU`mg]g`UbX`ZUa`Yk`cf_g`hc`Yj`U`i`U]h`dc`]W]h]ZYW]j`YbYggz`Y`Z]W]YbW]h]UbX`]a`dUW]h]cb`X]Z]fYbhghU`Y`c`XYf[fci`dg`H`Y`Z]bU`YI`Ua`k]`h`Y`ghi`bXYfgh]UbX]b[`cZ`h`Y`Wc`bW]d]h]b]b]f]c`Xi`W]X`]b`h`Y`Wci`fgY`UbX`h`Y]f`Udd`]W]h]cb`hc`dc`]W]h]UbU`mg]g"

Hi hcf]U`g`k]`Zc`ck`cbY`cZ`h`c`Zc`fa`Uh]g.

#zEfgVW`f`W]V[eUgee]a`S`V!adSUF]h]f]Wc`d]V]S]f]W`fa`fZ]W]Ug]d]W`f`fab[Uz

; fci`dgz`YUW]`cZUfci`bX`(!*`ghi`XYbhg`z`k]`VY`Zcfa`YX`]b`h`Y`Z]fgh]h`hcf]U`":`cf`h`Y`h`hcf]U`h`cd]W]g`bi`a`VYfYX`]b`h`Y`Wci`fgY`gW]X]Xi`Y`VY`ck`z[fci`dg`k]`VY`U`cW]h]X`h`hcf]U`dfYdUfU]h]cb`UbX`ZUW]h]h]cb`hUg_g"

; i]XUbW]`UbX`UggYgga YbhW]h]f]U`k]`VY`dfcj]XYX`cb`ZUW]h]h]cb[`h`Y`h`hcf]U`":`fci`dg`UfY`YbWci`fU[YX`hc`Wc`bgi`h`h`Y]f`h`hcf`Zc`f`gi`ddc`fh]c`f`ZYXVUW`]b`fY`Uh]cb`hc`h`Y]f`dfYdUfU]h]cb`"H`Y`I`B`G`K`@`Y`Ufb]b[`7`Y`bhY`U`gc`dfcj]XYg`UX]]W`hc`ghi`XYbhg`cb`dUfh]W]dU]h]b[]b`h`hcf]U`X]gW`gg]cbg"

\$zEgbbad`XadSee]Y`_`W`f`

H`Y`Ugg][ba Ybh]g`ghU[YX`UbX`ZYXVUW`]g`dfcj]XYX`hc`gi`ddc`fh]gh`XYbh`YUfb]b[`UbX`g_]`g`XYj`Y`cda`Ybh`UbX`]a`dfcj`Ya`Ybh]c`Z`h`Y`ei`U`]h]m]c`Z`h`Y`Z]bU`gi`Va`]gg]cbg`"b`k`YY_`" `z`ghi`XYbhg`gi`Va`]h`h`Y]f`Ugg][ba Ybh`dfcdcgU`"8`i`f]b[`k`YY_`*`z`ghi`XYbhg`k]`gi`Va`]h]UbX`X]gW`gg`dUfh]&`cZ`h`Y]f`Ugg][ba Ybhk`cf`Zc`f`ZYXVUW`Zc`a`h`Y]f`h`hcf"

Mci`a`Um]ZY`h`U]h`h`Y`h]a`Y`f`Yei]fYX`hc`Wc`a`d`Y`h`h`Y`Hi`hcf]U`UbX`5gg][ba YbhYI`Yf]W]gYg`]g`X]g]d]f]c]d]c]f]h]cb]U]h`m]Uf[Y`Wc`a`dUfYX`hc`h`Y]f`k`Y][\]h]b[]b`h`Y`UggYgga Ybh]U]V`Y`<`ck`Yj`Yfz`mci`g`lci`X`g`Y`Y`h`Y`g`Y`Ug`Zc`fa`Uh]j`Y`UggYgga YbhUbX`bc`h`h`U]h]d`Yf`Zc`fa`]b[`k`Y`]b`h`Y`Z]bU`YI`Ua`k]`fY`m]cb`_`bck`YX[Y`UbX`g_]`g`XYj`Y`cd`YX`]b`h`hcf]U`g`UbX`Ugg][ba Ybhg"

5ggYgga YbhUg_	K Y][\h	8i Y`8U]Y	7ci fgY`@YUfb]b[Ci hWc`a`Yg`5ggYggYX
%`Hi`hcf]U`":`UW]h]h]cb` 	&\$i	B`ch5dd`]W]V`Y	%z`&z`z`z`(`
&`5gg][ba Ybh	(`\$i	:`]bU`fYdc`fh]Xi`Y`k`YY_`%\$`k`]h`]b]h]Y`fa`YX]U]h]Y`UggYgga`Ybh]g`Xi`Y`":`f]X]Um`k`YY_`" `UbX`Xi`f]b[`k`YY_`*`W]Ugg"	&z`z`z`z`(`

5ggYgga YbhHlg_	K Y[\ h	8i Y`8UHŸ	7ci fgY`@YUfb]b[CidWt aŸg5ggYggXX
' "':]bU`9I Ua	(\$	9I Ua `dYf]cXžXUHŸ`H67	%ž&ž'

5ggYgga Ybh%`Hi hcf]U`': UW]]hU]cb`f] fci dŁ

5ggYgga Ybh`Yb[h. `&\$`a]bi hŸg

Gi Va [gg]bb bchŸg. `b`WUg`dUg`dYf`Wci fgY`gWXYi %‰ gYV %‰ %‰ e %‰ %‰l bX`

DfYdUfU]cb`Zcf`UbX`ZUW]]hU]cb`cZh`hcf]U`X]gW`gg]cbgžk]`YbWci fU[Y`gh XYbŸg hcf`UW]]Y`mYb[U[Y`]b`h %‰

5ggYgga Ybh`Yb[h. `&`lci fg
8i Y`XUHY. `9I Ua `dYf]cXžXUHY`H67
A Uf_g`fYh fbYX. `l dcb`fY`YUgY`cZž]bU`fYgi `hg

H\Y`YI Ua `]g`U`&`lci f`k f]hY`b`YI Ua `]bU]cbž`k`\\]W`hYghg`i bXYfg]U]bX]b[`cZ`hY`W`bW`d]hg`]b]fcXi W`X`]b`hY
W`i fgY`UbX`hY]f`Udd`]W]h]cb`h`c`dc`]W]iUbU`mg]g"

5ggYgga Ybh`W]hYf]U

E i Ygh]cbg`a UmVY`XfUk b`Zca `UbmUgdYW]cZ`hY`W`i fgYži b`Ygg`gdYW]ž]W]`m]bX]W]hY`X`c`hYfk]gY`Vmi`hY
`YW]i`fYf"

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

H\YfY`]g`bc`hYI hVcc_`Zcf`h`]g`Wci fgYž`ck Yj Yfž`hd]WgdYW]ZWFYgci fWg`k]`VY`Uj U]UV`Y`j]U`A ccX`Y`" `b
UXX]h]cb`hc`[`cj Yfba YbhfYgci fWgž`Wcbgi`hUbhUbX`B; C`fYdcf]g`k]`cZ]b`VY`i gYZ`Zcf`h`]g`Wci fgY`
9bYf[mDc`]Wm]g`hY`a cghfY`Yj UbhUWXYa]Wci fbUž`UbX`fY`Yj UbhUfh]WYg`U`gc`UddYUf`]b`chYf`a cfY
hVWbc`c[mZcW`gYX`ci fbU`g`gi V\`Ug`Gi ghU]bUV`Y`UbX`F YbYk UV`Y`9bYf[mF Yj]Yk gž`F YbYk UV`Y`9bYf[mž
5dd`YX`9bYf[mž`Dfc[fYgg`]b`D`chc] c`hU]Wgž`K`]bX`9bYf[mž`Gc`Uf`9bYf[mYhW

?YYd]b[`i`d`hc`XUHY

D7 ba`fUkZdWSfW`_`VW[St`dWbadfe`S`V`WhW`fež

8i`f]b[``YW`i`fYg`UbX`h`hc]U`gž`a`UHf]U`k`]`VY`b`]b`_YX`hc`W`ffYbha`YX]U`UbX`]ggi`Yg`Ug`Uddfcdf]UH`"Gh`XYb]g

Gi Va]gg]cb`cZ5ggYgga YbhiHUg_g

K cf_gi Va]hYX`UH`k]hCi hUb`Uddfcj YX`YI H`bg]cb`VmihY`Wci fgY`Wc`cfX]bUhc`f`c`f`XY`Y[UH`X`Ui h`cf]hm]g gi V`Y`W`h`c`U`UH`d`YbU`hmcZ) i` a` Uf`_`fYXi W]cb`dYf`XUnz`Wc`bg]gh`bhk]h`c`h`Yf`GDF`99`Wci fgYgZ`UbX W]ddYX`Uh) `XUm]g`f%&\$`ci fgZ`UZ`Yf`k` \]W`U`gh`XYbh`W]bbchgi Va]hUb`UggYgga Ybhi`

H\Y`UH`d`YbU`hm]g`Udd`]YX`dYf`W]YbXUf`XUmif]bWi`X]b[`k`YY`YbXg`UbX`di`V`]W`c`]XUm]g`h`Uh`h`Y`UggYgga`Ybh]g`c`j`YfXi`Y`H\YfY`]g`bc`dfc!fU]U`c`Z`h`Y`UH`d`YbU`hm]Z`f`gi`Va`]gg]cbg`a`UXY`d`Uf`h`k`Umih`fci`[`\`U`XUm`

K cf_gi Va]hYX`UZ`Yf`h`Y`XYUX`]bY`Z`c`f`UVgc`i`h`Z]`]g`bchUW`W`d`h`X`UbX`U`a`Uf`_`c`Z`n`Y`f`c`k`]`VY`Uk`Uf`XYX`Z`f`h`Uh`UggYgga`Ybh]h`a`"

: cf`gca`Y`UggYgga`Ybh]h`a`gZ`U`UH`d`YbU`h`mia`UmbchVY`Uddfc`df]U`h`H\YgY`UfY`WYUf`m]bX]W]h`X`]b`h`Y`Wci`fgY`ci`h]bYz`UbX`gi`W`UggYgga`Ybh]g`fY`W]j`Y`U`a`Uf`_`c`Z`n`Y`f`c`]Z`bch`Wc`a`d`Y`h`X`Vmi`h`Y`gd`Y`W]Z`YX`X`U`h`"9I`Ua`d`Yg`]b`Wi`XY`.

U`K`YY`_`mcb`]bY`h`Yg]g`c`f`UV`c`f`U`h`f`mk`cf`_`k`cf`h`U`ga`U`df`c`d`c`f]cb`c`Z`h`Y`gi`V`Y`W`h`a`Uf`_`Z`c`f`

V`C`b`]bY`ei`]nnYg`k`Y`fY`Ub`gk`Y`fg`U`fY`fY`Y`Ug`YX`h`c`gh`XY`bh]g`cb`Wc`a`d`Y`h]cb`z`c`f`

W`D`fc`Z`Y`gg]cb`U`UggYgga`Ybh]h`Ug_g`z`k`Y`fY`h`Y`]b`h`b`h]cb`]g`h`c`W`Y`U`h`U`b`U`i`h`Y`bh]W`UggYgga`Ybh]h`Uh`Ug`U`b`UVgc`i`h`gi`Va`]gg]cb`X`U`h`

....cf`

X`D`Ugg`#`U`UggYgga`Ybh]h`Ug_g`"

5 WUXYa]W< cbYgmiUbX`D`U[]Uf]ga

I BGK `Ug`Ub`cb[c]b[`Wca a]ha Ybhlc`ZcghYf]b[`U`W`hi`fY`cZ`YUfb]b[`]bZcfa YX`VmiUWUXYa]W]bhY[f]m`5`
I BGK `gh`XYbhg`Uj`Y`U`fYgdcbg]V`]mhc`UX`YfY`hc`h`g`df]bW]d`Y`cZUWUXYa]W]bhY[f]m`D`U[]Uf]ga
i bXYfa]bYg`UWUXYa]W]bhY[f]m]UbX`]g`bchlc`YfUHYX`Uhl`BGK`"B`SY[Sde_`SfG@E|`[e VWX`W`Se ge[`Y`
fZWi`ad/e ad[VWSe`aXafZWde`S`V`bSee[`Y`fZW_`aXSe`kagdai`ž`

D`U[]Uf]ga`]g`U`mdY`cZ]bhY`YWfi`U`h`Y`Zi`#iW]b`hU`_Y`a`UbmiZcfa`gž`Zca`XY`]VYfUHY`WXYU]b[`hc`UWUXYbH`m`
Wcdm]b[`Zca`U`gci`fWY`k`]h`ci`hUW`bck`YX[`Ya`Ybh`I`BGK` `Ug`dfcXi`WYX`U`k`YVg]hY`k`]h`U`k`YU`h`cZ`
fYgci`fWY`g`hc`gi`ddcfhgh`XYbhg`hc`i`bXYfgHUbX`UbX`Uj`c]X`d`U[]Uf]ga`ž`]g]h`[gh`XYbh`i`bgk`"YXi`"Ui`#d`U\[\]Uf\]ga`"](#)
H\Y`@YUfb]b[`7`YbfY`Ugg]ghg`gh`XYbhg`k`]h`i`bXYfgHUbX]b[`UWUXYa]W]bhY[f]m]UbX`\ck`bchlc`d`U[]Uf]gY`
H\YmiU`gc`\c`X`k`cf_g\cdg`UbX`W]b`\Y`d`gh`XYbhg`cbY!cb!cbY"

Mci`U`fY`U`gc`fYa`]bXYX`h`UhW]fYZ`h`ja`Y`a`UbU[`Ya`Ybh]g`Ub`ja`dcffUbhdufhcZgh`XmiUbX`cbY`cZ`h`Y`
]XYbh]Z`YX`W]i`gYg`cZ`d`U[]Uf]ga`]g`d`ccf`h`ja`Y`a`UbU[`Ya`Ybh`G`h`XYbhg`g`l`ci`X`U`ck`gi`Z]WY`bh`h`ja`Y`Z`c`f`

5 WUXYa]W<Zcfa Uh]cb

7ci fgY'9j U'i Uh]cb UbX'8Yj Y'cda Ybhi

: YYXVUW_c'b'h'Y'W'ci fgY']g' [U'h'Y'f'Y'X' d'Y'f'c'X']W'`mi g]b[' j Uf]ci g'a YUbgž]bW' X]b['h'Y' i B GK
a m9l dYf]YbW' d'f'c'W'ggž]b'Z'c'f'a U'`X]g'W'gg]cb']b' h'Y' Z'b'U'`W'U'gg'Z'c'f' h'Y' W'ci fgY'ž'UbX' h'Y' G'W'cc'`g
G'hi XYb'h'G'U'Z'a Y'Y'h]b[g" M'ci f'Z'Y'X'V'U'W']g' h'U'`Y'b'g'Y'f]ci g'nž'UbX' W'c'b'h]bi U'`]a d'f'c'j Ya Y'b'h'g' U'f'Y' a U'X'Y' h'c' h'Y'
W'ci fgY' V'U'g'Y'X'ž]b' d'U'f'h'ž'c'b' g'i W'`Z'Y'X'V'U'W'`"

5`gh XYb'h'g' U'f'Y' Y' i d'Y'W'W'X' h'c' f'Y'U'X' U'b'X' V'Y' Z'J'a]]U'f'k]h' i B GK ' [i]X'Y']b'Y'g' U'b'X' d'c']W'g'`' & d'U'f'h]W' U'f'ž
gh XYb'h'g' g' \ci ' X' V'Y' Z'J'a]]U'f'k]h' h'Y' Z'`ck]b[.

[E5h'Y'b'X'U'b'W'](#)

[E B GK '9a U\]' 5XXfYgg](#)

[E G d'Y'W'U'`7 c'bg\]X'Y'f'U'h\]cb](#)

[E9l U'a g](#)

[E5 d'f'c'j Y'X'`7 U'`W' U'h'c'f'g](#)

[E5 WUXYa \]W<cbY'g'm'U'b'X'`D'`U' \]U'f\]ga](#)

[E9ei \]h'U'V'Y'`@Y'U'f'b\]b\['G'Y'f\] \]W'g](#)

⇒a U[Y'`7 f'Y'X]h

W'c'd'm'f] [\h5bbU'`6fi W'

7F ⇒7CG

7F ⇒7CG`D'f'c'j]X'Y'f'`7 c'X'Y'` \$\$\$- , ;

5W_bck`Y'X[Ya Y'b'h'ic'Z'7ci b'h'f'm

K Y'U'W_bck`Y'X[Y' h'Y'`6Y'X'Y[U'`d'Y'c'd'Y'`k \c' U'f'Y' h'Y'`f'U'X]h]c'b'U'`W' g'h'c'X]U'bg'c'Z'h'Y'`U'b'X'g'c'b'k \]W' i B GK
? Y'bg]b[h'c'b'W'a di g']g'`c'W'h'Y'X"

