

7ci fgY`Cj Yfj JYk

`GHUZZ7cbhUWhi8YHUJ`g`

`7cbj Ybcfg`

B Ua Y	9a Uj`	5j Uj`UVj`]m	@cWWhcb	D\cbY
A jWUY`<ccdYf	a "\ccdYf4 i bgk "YXi "Ui	6mUddc]bra Ybh	F K `%%{	

GWcc`7cbhUWhi`bZcfa Uh]cb

Fcca "` %&Z`Yj Y`` `F cVYfhK YVghYf`6i]X]b[

D\cbY. f\$&L`- ' ,) `(,) *

9a Uj: [gUa 4 i bgk "YXi "Ui](#)

K YVg]hY: [\hdg.#gUa "Ufng"i bgk "YXi "Ui](#)

H\Y`GWcc`cZhY`5fng`UbX`A YX]U`k ci `X``_Y`hc`F YgdYWwZ`m5W_bck`YX[Y`hY`HfUX]h]cbU`7i g]cX]Ubgz`hY`6YXY[U`fP`Ybg]b[hc b`WJa di gLz; UX][U`f7]mUbX`5fh/`8Yg][b`7 Ua di gYgE`UbX`hY`B [i bbUk U`dYcd`Y`f5i g]fU]Ub`8YZYbVW` : cfW`5WUXYa m]b`7 UbVYffU`cZhY`UbXg`k \YfY`YUW`WJa di g`cZI`BGK`]g`cWWhYX"

7 ci fgY'8YHJ]`g

7 fYX]hDc]bhr '*`

Gi a a UfmicZ\hY'7 ci fgY

Gi VYWh5fYU.'? ge[U

⊕`h]g`Vci fgY'mci `k]`YUfb`U'fUb[Y'cZghfUHY[]Yg'Zcf'ZcW g]b[`cb'a i g]W]b`XYHJ]"Mci `k]`VY`hJi [\h\ck
hc`UbU'mY'a i g]W]b`U'gi ghJ]bYX'UbX'dUfh]W`Uf'a UbbYf"A cfY`VfcUX'mžmci `k]`[U]b`U'VYHfYf
i bXYfghUbX]b[`cZgca Y'cZ\hY'dfcVYa g!'cZHYWb]jei YžcZYI dYf]YbWžcZXYgW]dh]cb!'h.Uha ch]j UHY'a i g]W
UbX`]rg`UbU'mg]g"Gc`]b`UXX]h]cb`hc`gdYW]Z]Wk Umg`cZUbU'm]b[`a i g]WžhY`Vci fgY`k]`]bW`XY`X]gW gg]cbg`cZ
fYUX]b[g`h.UhUfY`fY`Yj Ubhlc`YUW`a`YhcX""5h\hY`YbX`cZ\hY`Vci fgY'mci `k]`Uj`Y`U`[ccX`[fci bX]b[`]b
hY`dfUW]W]`g_]`g`bYXYX`hc`UbU'mY'a i g]WžUbX`]b`UbU'mg]g`Ug`Ub`]bHY`YWh`U`di fgi]h'

7 ci fgY'@YUfb]b[`Ci hWca Yg

%`5dd`mXYHJ]YX`k cf_]b[`_bck`YX[Y'cZUb`UbU'm]W]`a`YhcX"
&"`8Ya`cbghfUHY`hY`g][b]Z]W]bW]cZa`U_]b[`X]gV]d`]bYX`XYW]g]cbg`k`Yb`i`bXYfU_]b[`Ub`UbU'mg]g"
'`"i`bXYfghUbX`hY`]a`]rg`cZUb`UbU'm]W]`a`YhcX`UbX`Ufh]W`UHY`hcgY`]a`]rg`h.fci [\`U`W]gY`gh`Xm'

HYUW]b[`GhfUHY[]Yg`

H\Y`YWh`fY`k]`]bfcXi`W`hY`YggYbh]U`UgdYW]g`cZYUW`UbU'm]W]`a`YhcXžhc`dfcj]XY`U`VUg]g`Zcf`Z`fhYf
X]gW`gg]cb`]b`hY`h`hc]U`gž`UbX`hc`dfcj]XY`hY`VUg]W_bck`YX[Y`Zcf`hY`UggYgga`Ybh`H\Y`h`hc]U`h]a`Y`k]`
VY`X]j]XYX`VY`k`YYb`gh`XYbh`YX`dfYgYbh]h]cb#X]gW`gg]cb`cZfYUX]b[g`UggcV]UHY`X`k]h`Ub`UbU'm]W]
hYWb]jei`Y`fU`]ghk]`VY`dfcj]XYXž`UbX`U`X]gW`gg]cb`cZ\hY`Vca`dcbYbh]g`cZ\hY`dcfh]c`cZUbU'mg]Ygž
hc[YhYf`k]h`Ub`cddcfh`b]hmhc`dfUW]W]`UbU'm]W]`hYWb]jei`Y`H\Y`U]a`cZ\hY`h`hc]U`]g`hc`[]j`Y`gh`XYbh]U
W]UbW]hc`Xc`gca`Y`f]UbXg!cbfk`cf_]b`hY`gUa`Y`Zcf`a`]b`k`\]W`X]gW`gg]cbg`UfY`U`gc`hU_]b[`d`UW]"

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5ggYgga YbhHUg_	K Y][\h	8i Y`8UH	Gh XYbh@YUfb]b[Ci Hwta Yg`5ggYggYX
5bU`mg]g`=	' \$	&) #/\$#&\$%- '\$) . \$\$`DA	%z&z
5bU`mg]g`=	')	%g/#/\$#&\$%- '\$) . \$\$`DA	%z&z
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5ggYgga Ybh8YHJ]`g

5ggYgga Ybh%`5bU`mg]g`=

GHUfhXUH. `Bch5dd`]WUV`Y

8YHJ]`g.; fUd\]Wk cf_`Uddfcd]UH`hc`h\Y`a YhcXzUbX`U`ZcW`gYX`YI d`UbU]cb`]b`dfcgY`cZbc`a`cfY`h\Ub
%\$\$\$`k`cfXg`Gh`XYbtg`k`]`fYVW]j`Y`k`f]Hb`ZYXVUW`UbX`U`a`Uf`_`

5XX]h]cbU`XYHJ]`g.

GYY`A ccXY

Hi fb]h]b`gYH]b[. `H\]g`]g`bchU`Hi fb]h]b`Ugg][ba Ybh

5ggYgga Ybh&.`5bU`mg]g`=

GHUfhXUH. `

8YHJ]`g.; fUd\]Wk cf_`Uddfcd]UH`hc`h\Y`a YhcXzUbX`U`ZcW`gYX`YI d`UbU]cb`]b`dfcgY`cZbc`a`cfY`h\Ub
%\$\$\$`k`cfXg`Gh`XYbtg`k`]`fYVW]j`Y`k`f]Hb`ZYXVUW`UbX`U`a`Uf`_`

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Hi fb]h]b`gYH]b[. `H\]g`]g`bchU`Hi fb]h]b`Ugg][ba Ybh

5ggYgga Ybh' .`5bU`mg]g`=

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8YHJ]`g.; fUd\]Wk cf_`Uddfcd]UH`hc`h\Y`a YhcXzUbX`U`ZcW`gYX`YI d`UbU]cb`]b`dfcgY`cZbc`a`cfY`h\Ub
%\$\$\$`k`cfXg`Gh`XYbtg`k`]`fYVW]j`Y`k`f]Hb`ZYXVUW`UbX`U`a`Uf`_`

5XX]h]cbU`XYHJ]`g.

GYA ccXY

Hi fb]h]b'gYh]b[. 'H\]g']g'bchU'Hi fb]h]b'Ugg][ba Ybh

Gi Va]gg]cb`cZ5ggYgga YbhHUg_g

Gi Va]gg]cb`cZ5ggYgga YbhHUg_g

Hi fb]hb`Gi Va]gg]cb

≠mci`YbWci`bhYf`U`dfcV`Ya`k`Yb`U`H`Ya`dh]b[`hc`gi`Va`]hmc`i`f`Ugg][`ba`Ybh`h`fci`[`\`Hi`fb]hb`z`d`YUgY`
H`Y`d`l`cb`Y`9I`H`fb`U`Gi`ddcfh`cb`-`,`)`'`'`'`%`cf`Ya`U`H`Ya`cb`YI`H`fb`U`H`h`gi`ddcfh`4`i`bgk`"YXi`"Ui`"Gi`ddcfh`
`l`ci`fg`UfY`,`.\$\$Ua`-`%\$.\$\$da`cb`k`YY`XUmg`UbX`-`.\$\$Ua`-`).\$\$da`cb`k`YY`YbXg`f`l`*)`XUmg`U`m`Y`Uf`l`"≠mci`
UfY`i`bUV`Y`hc`gi`Va`]hmc`i`f`Ugg][`ba`Ybh`Xi`Y`hc`U`Z`U`h`k`]h`Hi`fb]hb`mci`a`Um`Udd`m`Z`f`Ub`YI`H`bg]cb`z`Vi`hmc`i`
a`i`gh`f`Y`h]b`mci`f`h]W`Y`h`bi`a`VY`f`Z`ca`9I`H`fb`U`Gi`ddcfh`f`U`cb[`k`]h`Ub`m`c`h`Y`f`f`Y`j`Ub`h`X`c`W`a`Y`b`h`g`l`hc`
]b`W`i`X`Y`U`g`Y`j`]X`Y`b`W`hc`gi`ddcfh`mci`f`YI`H`bg]cb`Udd`]W`h]cb"≠mci`Ya`U`9I`H`fb`U`Gi`ddcfh`mci`k`j`
Ui`h`ca`U`h]W`m`f`Y`W`j`Y`U`h]W`Y`h`bi`a`VY`f`z`Vi`h]Z`mci`H`Y`d`l`cb`Y`mci`k`j`b`Y`Y`X`hc`gd`Y`W`Z`W`m`U`g`_`Z`f`cb`Y`
Hi`fb]hb`U`gc`d`fc`j`]X`Y`g`i`d`X`U`H`g`i`cb`h`Y`j`f`g`m`g`h`Ya`g`h`U`h`g`i`cb`H`k`]h`Y`f`"

;`Yb`Y`f`U`m`z`Ugg`Y`gga`Y`bh`h`U`g`_`g`a`i`gh`V`Y`gi`Va`]h`Y`X`Y`Y`W`f`cb]W`m`j`]U`Y`]h`Y`f`Hi`fb]hb`cf`U`A`cc`X`Y`
Ugg][`ba`Y`bh`h`b`]b`g`h`U`b`W`g`k`Y`f`Y`h`l`g`]g`b`ch`id`c`g`g]V`Y`z`]h`k`j`V`Y`g`h`U`H`X`cb`mci`f`W`ci`fg`Y`g`A`cc`X`Y`g`]h`k`]h`
U`h`f`b`U`h]`Y`gi`Va`]gg]cb`X`Y`h]g`"

:`cf`]b`Z`fa`U`h]cb`cb`\`ck`hc`gi`Va`]h`Ugg][`ba`Y`bh`g`cb`]b`Y`j`]U`A`cc`X`Y`.\`h`td`g`#`gh`X`Y`bh`i`bgk`"YXi`"Ui`#`ack`!
gi`Va`]h`Ugg][`ba`Y`bh`a`cc`X`Y`"

5 WUXYa]W<c bYghmUbX`D`U[]Uf]ga

D`U[]Uf]ga]g`i g]b[`hY`k cfXg`cf]XYUg`cZchYfg`UbX`dfYgYbh]b[`hYa`Ug`mci`f`ck`b" `hWUb`hU`Y`a`Ubm`Z`fa`g`z`Z`ca`XY`]VYfUHY`WXYU]b[`hc`UW]XYbhU`mW`dm]b[`Z`ca`U`gci`fW`k`]h`ci`hUW`bck`YX[Ya`Ybh`

I`BGK`[`fci`dg`d`U[]Uf]ga`]b`hc`hY`Z`ck`]b[`W]HY`[`cf]Yg.

7`cdm]b[.`i`g]b[`hY`gUa`Y`cf`j`Yfmg]a`]Uf`k`cfXg`hc`hY`cf][`]bU`hY`hcf`]XYU`k`]h`ci`hUW`bck`YX[]b[`hY`gci`fW`cf`i`g]b[`ei`chU]cb`a`Uf`g" `H`g`U`gc`Udd`Yg`hc`]a`U[Yg`z`Uf`h`UbX`XYg][`b`dfc`YW`g`z`Ug`k`Y`U`g`dfYgYbhU]cbg`k`Y`fY`gca`YcbY`dfYgYbh]b[`Ubc`h`Y`f`g`]XYUg`cf`k`cfXg`k`]h`ci`hW`YX]h`

hUddfcdf]UHY`dUfUd`fUg]b[.`7`U`b[]b[`U`Z`k`k`cfXg`UbX`d`fUgYg`k`Y`a`cghmifYU]b]b[`hY`cf][`]bU`g]fi`W`fY`UbX`#`f`dfc[`fYgg]cb`cZ]XYUg`cZ`h`Y`cf][`]bU`z`UbX`]b`Z`fa`U]cb`k`]h`ci`hUW`bck`YX[Ya`Ybh`H`g`U`gc`Udd`Yg`]b`dfYgYbhU]cbg`k`Y`fY`gca`YcbY`dUfUd`fUgYg`Ubc`h`Y`f`g`]XYUg`cf`k`cfXg`k`]h`ci`hW`YX]h`UbX`hc`d]YW]b[`hc[`Y`h`Y`f`ei`chYg`UbX`dUfUd`fUgYg`]b`hc`U`b`Y`k`k`Y`c`Y`z`k`]h`ci`hUddfcdf]UHY`fY`ZY`fY`bW]b["

7`c`i`g]cb.`k`cf_]b[`k`]h`c`h`Y`fg`Vi`hdUgg]b[`cZ`h`Y`k`cf_]Ug`U`d`Y`fgcb`g`]bX]j`]Xi`U`k`cf_"`7`c`i`g]cb`U`gc`]bW`i`XYg`dfcj`X]b[`mci`f`k`cf_]hc`Ubc`h`Y`f`gh`XYbhVY`Z`fY`h`Y`Xi`Y`XU`h`z`cf`Z`f`h`Y`di`fdcgY`cZ`h`Ya`d`U[]Uf]g]b[`Uh`Ubm]h]a`Y`z`dUm]b[`Ubc`h`Y`f`d`Y`fgcb`hc`d`Y`Z`fa`Ub`UW`X`Ya`]W`h`Ug`z`gh`U`]b[`cf`UW`ei`]f]b[`Ubc`h`Y`f`d`Y`fgcb`g`UW`X`Ya`]W`k`cf_]UbX`W`dm]b[`]h`z`cZ]f]b[`hc`W`ta`d`Y`h`Ubc`h`Y`f`d`Y`fgcb`g`k`cf_]cf`g`Y`Y_]b[`dU`ma`Y`bh`Z`f`W`ta`d`Y`h]b[`UW`X`Ya`]W`k`cf_"

hUddfcdf]UHY`W]h]cb.`7`h]b[`gci`fW`g`k`Y`W`U`j`Y`bchVYYb`fYUX`z`k`]h`ci`hUW`bck`YX[]b[`hY`gY`W`b`X`U`fm`gci`fW`Z`ca`k`Y`W`_`bck`YX[Y`cZ`h`Ya`U`g`V`Y`Y`b`c`V`h]bYX"

8`i`d`]W]h]cb`f`f`gY`Z`d`U[]Uf]ga`"L`gi`Va`]h]b[`mci`f`ck`b`k`cf`z`]b`k`Y`c`f`]b`d`U`f`z`k`Y`fY`]h`U`g`d`fYj`]ci`g`m`V`Y`Y`b`d`fY`d`U`f`Y`X`c`f`gi`Va`]h]X`Z`f`Ubc`h`Y`f`UggY`gga`Y`bhcf`W`ci`fgY`U`h`I`BGK`c`f`Ubc`h`Y`f`i`b]j`Y`fg]m`

7`c`f`f`Y`W`i`f`Y`Z`f`Y`bW]b[`d`f`U`W]W`g.

- DUFUd`fUg]b[`z`gi`a`a`Uf]g]b[`z`Y`gg`U`mk`f]h]b[`UbX`h]a`Y`a`UbU[Ya`Ybh`

5 WUXYa]W]bZcfa Uh]cb`

: cf`YggYbh]U`ghi XYbh]bZcfa Uh]cb`fY`Uh]b[`hc.

- fYei Yghg`ZcfYI hYbg]cb/
- `UhY`gi Va]gg]cbg`[i]XY`]bYg/
- fYj]Yk `cZa Uf_g/
- I BGK `<YU`h`UbX`GUZY`midc`]WYg/
- YI Ua]bUh]cb`dfcVWXi fYg/
- gdYW]U`Vc]bg]XYfUh]cb`]b`hY`Yj Ybhcz]`bYgg`cf`a]gUXj Ybh fY/
- ghi XYbhYei]m]UbX`X]gUV`]m/
- UbX`chYf`YggYbh]U`UWUXYa]W]bZcfa Uh]cbz`gYY

[\hfdg.#k k k "Ufmg"i bgk "YXi "Ui #W ffYbh\]ghi XYbh\]bZcfa Uh\]cb`dfc\]Vc`g!\[i \]XY`\]bYg#](#)

⇒ U[Y`7 fYX]h

A <

7F ⇒ CG

7F ⇒ CG`Dfcj]XYf`7cXY.`\$\$\$- ;