



MUSC1707

DYfZcfa UbWV '@JVcfUhc fm5

HYfa 'Hk c''##'&\$&\$

7ci fgY`Cj Yfj]Yk

GHJZZ'7cbHJW`8YHU]`g

7cbj Ybcfg

B Ua Y	9a U]	5j U]UV]]m	@cWJhcb	D\cbY
DUi `A W8Yfa cth	dUi `a WXYfa cth4 i bgk "YXi "Ui	6mYa U]	C b`bY	

GW\cc`7cbHJW`bZcfa Uh]cb

GW\cc`cZHY`5frg`UbX`A YX]U

Fcca " %&ž@Y] Y` žF cVYfhK YVghYf`6i]X]b[`f] %Ł

D\cbY. f\$&Ł- ' ,) '(,) *

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

K YVg]h: [k k k "Ufrg"i bgk "YXi "Ui #gUa](#)

H\Y`GW\cc`cZHY`5frg`UbX`A YX]U`k ci `X`]_Y`rc`F YgdYWw`m5W_bck`YX[Y`hY`HfUX]hcbU`7i ghcX]Ubgž
hY`6YXY[U`fP`Ybg]b[hcb`WJa di gŁž; UX][U`f7]mUbX`5fhi`8Yg][b`7 Ua di gYgŁ`UbX`hY`B [i bbUk U`
dYcd`Y`f5i gLfU]Ub`8YZYbVW : cfW`5WUXYa m]b`7 UbVYffUŁcZHY`UbXg`k \YfY`YUW`WJa di g`cZI`BGK`]g
`cWJhYX"

5ggYgga Ybh

⊕HUg_`%žgh XYbŕg`k]`VY`a Uf_YX`Ug`U`[fci d`"GhfUH[]Yg`cZ]bWl g]cbžW!cdYfUH]cbžUbX`a YhcXg`cZ cb]bY`W`UVcfUH]cb`k]`VY`k cf`!g\cddYX`"

⊕HUg_`&ž]bgrfi a YbhU]grg`UbX`j cWU]grg`k]`VY`a Uf_YX`Ug`UVcj`Y`"

7 ca dcg]hcb`a U`cŕg`k]`VY`a Uf_YX`]bX]j]Xi U`mXi`Y`hc`h`Y`X]ZYfYbhbiUhi`fY`cZ`h`Y]f`fUg_`"

H`Y`Z`W`g`cZ`h`Y`UggYgga`Ybh]g`cb`h`Y`W`f`U`h`j`]micZ`h`Y`gh`XYbŕg`]XYUg`"⊕]g`i`bXYfgrcX`h`U`h`U`gh`XYbŕg`k]`\`U`j`Y`j`Ufm]b[`UW`Y`gg`hc`Y`Y`W`f`cb]WUbX`X][]h`h`c`c`g`UbX`k]`bchVY`UggYggYX`cb`h`Y`Ui`X]c`ei`U`]micZ`Ubmi`f`W`f`X]b[`g`"H`Y`]X`Y`U`]g`hc`V`Y`W`f`U`h`j`Y`k`]h`h`Y`hc`c`g`U]j`U]UV`Y`hc`mci`"

5ggYgga YbhHUg_g`

5ggYgga YbhHUg_`	K`Y][`h`	8`i`Y`8`UH`Y`	Gh`XYbh`@YUfb]b[`C`i`h`W`a`Yg`5ggYggYX`
9bgYa`V`Y`W`b`f]Vi`h]cbž`dYfZc`fa`UbW`g`ž`dUfh`W`X`Y`W_]b[`h`Y`gh`	&\$i`	B`ch`5`dd`]W`U`V`Y`	(`
A`Ugh`Y`f`W`U`gg`W`f]h]ei`Yg`	%)`i`	B`ch`5`dd`]W`U`V`Y`	`
D`Y`f`Z`c`f`a`U`b`W`g`#`d`f`Y`g`Y`b`h`U`h]c`b`H`&`	`)`i`	B`ch`5`dd`]W`U`V`Y`	%ž&`
D`f`U`W`f]W`Y`I`U`a`]b`U`h]c`b`	`)`\$i`	B`ch`5`dd`]W`U`V`Y`	%ž&`

5ggYgga Ybh8YhU]`g`

5ggYgga Ybh%`9bgYa`V`Y`W`b`f]Vi`h]cbž`dYfZc`fa`UbW`g`ž`dUfh`W`X`Y`W_]b[`h`Y`gh`

G`h`f`h`X`U`h`Y`.`B`ch`5`dd`]W`U`V`Y`

8`Y`h`U]`g`.

8`f`Y`W`h`Z`Y`X`V`U`W_]Xi`f]b[`f`Y`\`Y`U`f`g`U`g`U`b`X`k`c`f`_`g`\`c`d`g`U`b`X`U`Z`c`f`a`U`f`Y`d`c`f`h`U`h`h`Y`W`b`W`l`g]c`b`c`Z`h`Y`g`Y`g`g]c`b`" Gh`XYbŕg`f`W`b`f]Vi`h]cb`hc`Y`bgYa`V`Y`dYfZc`fa`UbW`g`UbX`k`cf`_`g`\`c`d`g`k]`VY`UggYggYX`h`fci`[`\`U`d`U`fh`W`X`Y`W_]b[`Y`I`U`a`]b`U`h]c`b`"

7`e`W`_`T`W`b`S`d`Z`U`W`U]`[`Y`k]`VY`i`bXYfU`_Yb`]b`h`%ž`H`&`U`b`X`H`" `⊕X]j]Xi U`mcf`]b`ga`U`" [fci dgžgh XYbŕg`k]`dYfZc`fa`k`cf`_`g`c`f`Y`I`W`f`d`g`c`Z`k`c`f`_`g`ž`gh`X]Y`X`U`b`X`d`Y`f`Z`c`f`a`Y`X`Xi`f]b[`h`Y`h`f]a`Y`g`h`f`"K` \`Y`f`Y`U`d`d`f`c`d`f]U`h`ž`Y`I`W`f`d`g`k]`VY`g`Y`Y`W`Y`X`V`m`h`Y`d`U`f`h`W`X`Y`W_]b[`Y`I`U`a`]b`Y`f`"

5ggYgga Ybh&`A`Ugh`Y`f`W`U`gg`W`f]h]ei`Yg`

G`h`f`h`X`U`h`Y`.`B`ch`5`dd`]W`U`V`Y`

@Yb[`h`.)`\$\$

8YHJ]g.

5d[f[cgWē k]~VY'gi Va]hYX'UWfcgg'H%ž'H& UbX'H' ""H\YgY'k]~VY'fY'UH'X'hc'a UghYfWUggYg'dfYgYbhYX'Vm
j]g]h['YI dYfng]b'U'fUb[Y'cZa i g]WJ'ghmYg'UbX'UW]j]hYg""7 f]hēi Y'ei Ygh]cbg'k]~VY'gWJZc'XYX'hc
YbWēi fU[Y'gh XYbng'hc]XYbh]Zm]ggi Yg'Zc'f'X]gW'gg]cbž'UbX'hc'XfUK '']b_g'Ua'cb['dYfZcfa'UbW'Y'Ya'Ybhg
UbX'gVX'c'Uf'm']hYfUhi'fY'""

Gi Va]gg]cb'bcH'g.H\]g'Ugg][ba Ybh]g'gi Va]hYX'j]U'A'ccX'Y

5ggYgga Ybh' . 'DYfZcfa'UbW'#dfYgYbhU]cb'H&

GHUfhXUH'. 'Bch5dd']WUV'Y

@Yb[h. '%\$'a]bi h'g

8YHJ]g.

h'H&hY'ZcW'g'cZgh XYbng'dYfZcfa'UbW'g'UbX'dfYgYbhU]cbg'j]g'cb'ja' dfcj]gU]cb'UbX'Wē'UVcfU]cb""H\YfY
UfY'k'c'dYfZcfa'UbW'fUg_g'k '\]X'k]~VY'dYfZcfa'YX']b'Ugg][bYX'[' fci dg": cf'HUg_%]b'k'YY_] 'U'gh XYbng
k]~Wē'UVcfU]cb'dYfZcfa]b['UbX'dfYgYbh]b['U'Wēj Y'fj Yfg]cb'cZU'dcd'gcb['cZhY'[' fci d'g'W'ccg]b[ž
hfUbgZcfa]b['hY'bh'fY'UbX'ZY'cZ'hY'cf][]bU'gcb[""

: cf'HUg_&]b'k'YY_g]- 'UbX'%\$ž]bgfhi a YbhU]ghg'UbX'j'cWU]ghgž]b'[' fci dgžk]~dYfZcfa 'U'j] Y'fYa]i' hUh
XfUK'g'cb'Y'Ya'Ybhg'cZ'hY'[' fci d'g'fYdYfrc]fY""H\Y'dfYgYbhU]cb'k]~Wēbh'i'hi'U]gY'hY'k'cf_g'XfUK'bi'dcbž
XYgW]VY'hY]f'WYU]h] Y'W'c]W'gž'UbX'cb']bY'Wē'UVcfU]h] Y'dfcW'gg'i'gYX']b'hY'WYU]cb'cZ'hY]f'fYa]i' "

7ca'dcg]h]cb'a'U'cf'g'k]~a'U_Y'U'dfYgYbhU]cb'cZ'hY]f'a'U'cf'k'cf_Zc'f'hY'mYUf'UbX'dYfZcfa'cf'dfcj]XY'U
fY'Wē'fX]b['cZU'fYa]i' YX#Y!]a'U[]bYX'j'Yfg]cb'cZ'hY'k'cf_"H\Y'dfYgYbhU]cb'k]~ZcW'g'cb'hY'U]a'g'cZ'hY
cf][]bU'k'cf_'UbX'hY'hfUbgZcfa'U]h] Y'[' cU'g'UbX'dfcW'ggYg'i'gYX']b'hY]f'fYa]i' YX'j'Yfg]cb'cZ]h'

Cb']bY'Wē'UVcfU]cb'dfcW'ggYg'UbX'dfYgYbhU]cb'a'Yh'cXg'k]~VY'k'cf_g'cddYX'k]h'DUi''A'UW

: YYXVUW_.'k f]hY'b'fYdcfng

Gi Va]gg]cb'bcH'g.]j' Y'dfYgYbhU]cb

5ggYgga Ybh(. 'DfUW]WU'YI'Ua]bU]cb

GHUfhXUH'. 'Bch5dd']WUV'Y

8YHJ]g.

: cf'dYfZcfa'UbW'gh XYbngžW]S_[' Sfa'ē'k]~VY'i' bXYfU_Yb']b'H' ""Gh XYbng'k]~dfYgYbhU'&\$!a]bi h'
dfc[fUa'a'Yž]bW'X]b['U'gh Xnž'Yh XY'cf'j'cWU]gY'cZUddfc]ja'UH'm) !a]bi h'g'fXi'fU]cbžXY]]gYX']b
bY[c]h]cb'k]h'hY]f'gdYW]U]gh'i'hc'fgž'hc'gi]h'hY]f'dYfgcbU']bh'fYghg'UbX'fU'Y'Wē'f]Yg""Gh XYbng
]XYbh]Zm]b['Ug'Unn'gdYW]U]gh'k]~dfYgYbh'W'W]b]W'k'cf_'Zca' hY'Unn'gm'UVi'g'XY]]gYX'Zc'f'h'g
Wēi'fgY""H\Y'YI'Ua]bU]cb'k]~U'gc']bW'XY'U'g'c'fng][\h'fYUX]b['h'gh'Zc'f'U'gh XYbng""H\]g'k]~VY'hY'Z]bU'

UggYgga YbhUg_ Zcf'dYfZcfa Yfg"

: cf'Wca dcg]hcb ghi XYbgi badfa [ae k]`VY'gi Va]hX'j b'H' "DcfhZ`]cg'a Um]bWi XY'Umbi a VY'cZk cf_gž
Vi hñY'hcU`Xi fU]cb'cZk cf_g'g\ci `X'VY`%) 'a]bi h'g'"GWcfYg'g\ci `X'VY'gi Va]hXžU'cb[`k]h'fYWcfX]b[g
cZU`k cf_g`"H\]g'k]`VY'h'Y'Z]bU`UggYgga YbhUg_ Zcf'Wca dcgYfg"

: YYXVUW_`K f]hYb'fYdcfhcb'dfUW]WU`YI Ua `UbX'Wca dcg]hcb'dcfhZ`]c"

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

%`9j YfmN]b[`]g`7 cbbYWX. `H\Y`Dck Yf`cZA i g]Wm8 Ub]Y`6UfYbVc]a

&``A ch]cbz`9a ch]cbz`UbX`@cj Y. `H\Y`B Uhi fY`cZ5fh]gh]WDYfZcfa UbW`Vm[H\ca Ug`7Ufgcb`A Uf`](#)

` ``@YhYfg`lc`U`Mci b[`DcYhVmF U]bYf`F `]_Y

F YWca a YbXYX`F Ygci fWg

Gi Va]gg]cb 'cZ5ggYgga YbhiHUg_g

Hi fb]h]b 'Gi Va]gg]cb

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

D`U[]Uf]ga `]g`i g]b[`hY`k cfXg`cf`]XYUg`cZc`hYfg`UbX`dfYgYbh]b[`hYa `Ug`mci f`ck b" `#WUb`hU`Y`a Ubm
Zcfa gZ`Zca `XY`]VYfU`h`V`X`Y`U`h]b[`h`U`W`Y`X`Y`b`h`U`m`W`c`d`m]b[`Z`ca `U`gci f`W`k]h`ci h`U`W`b`c`k `Y`X[`Y`a `Y`b`h`

I B G K ` [fci dg`d`U[]Uf]ga `]b`h`Y`Z`c`ck]b[`W`h`h` [cf]Yg.

7 cdm]b[.`i`g]b[`h`Y`g`U`a `Y`cf`j `Y`fmg]a]U`f`k`cf`X`g`h`c`h`Y`cf][]b`U`h`Y`h`cf`]X`Y`U`k]h`ci h`U`W`b`c`k `Y`X[]b[`h`Y`

- i bXYfghUbx'mci f'f][\hg'UbX'fYgdcbg]V]h]Yg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[]Uf]ga ž'Wcdmf][\hž' BGK 'Gh XYbh7cXY'cZ7cbXi W'Ubx'5Ww'dhUV'Y'I gY'cZ I BGK '⇒H'F Ygci fW'g'Dc`]Wm
- VY'Uk UfY'cZh'Y'ghUbxUfXg'cZVY\Uj]ci f'YI dYW'X'cZYj Yfmcby`]b'h'Y'I BGK 'Wca a i b]m
- `cWJh'gYfj]Wg'UbX'j]bZcfa Uh]cb'UVci hl BGK 'UbX'I BGK '@]VfUfm

Gca Y'cZh'YgY'UfYUg'k]`VY'ZJa]]Uf'hc'mci ž'ch'Yfg'k]`VY'byk "; U]b]b['U'gc`X'i bXYfghUbx]b['cZU`h'Y fY'UH'X'UgdYW'g'cZ9@G9'k]`Y'd'mci 'a U_Y'h'Y'a cghcZmci f'gh X]Yg'Uhl BGK ""

[\hhd.##ji V'YWf i \]XYg" \]VfUfm'i bgk "YXi "Ui #' \]gY#JVci h' \]gY](#)

5 WUXYa]W**⊖**Zcfa Uh]cb

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