



HUMS1005

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HYfa `H\fYY`##`&\$&\$

7ci fgY'8YHJ]`g

7fYX]hDc]bhtg`*`

Gi a a UfmicZ\hY'7ci fgY

H\]g`Wci fgY`k]``\Y`d`mci`hc`Yb\UbW`mci`f`9b[`]g\`Ub[i U[Y`g_]`g`]Zmci`gdYU_`9b[`]g\`Ug
U`gY`WcbX`Ub[i U[Y`" `#`UXX]h]cbz`h]g`Wci`fgY`dfcj`]XYg`mci`k`]h`h`Y`g_]`g`hc`VY`Ub`Ui`hc`bca`ci`g`UbX
]bXYdYbXYbh`YUfbYf`gc`h`Uh`mci`WUb`Wcb]bi`Y`hc`Yb\UbW`mci`f`9b[`]g\`Ub[i U[Y`g_]`g`]bhc`h`Y`Z`h`fY`hc
UW\]Yj`Y`mci`f`UW\XYa`]WUbX`dfcZ]gg]cbU`[`cU`g`"Mci`k`]``]XYbh]Zmk`\]W\`UgdY`Wf]c`Zmci`f`9b[`]g\`mci
k`ci`X`_]Y`hc`]a`dfcj`Y`UbX`h`Yb`XYg][`b`UbX`]a`d`Ya`Ybh`mci`f`ck`b`dYfgcbU`dfc`Y`W`hc`U`W`W`a`d`]g\`mci`f
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7ci fgY`@YUfb]b[`Ci hWca Yg

%`5bU`mgY`UbX`]XYbh]ZndYfgcbU``Ub[i U[Y`b`Y`Y`Xg
&`5dd`m`h`c`c`g`UbX`fYgci`fW`g`Z`c`f`Ub[i U[Y`Yb\UbW`a`Ybh
'`" `8Yg][`b`UbX`W]ffmci`hU`dYfgcbU`dfc`Y`W`h`U`g`Y`X`cb`h`Y`UbU`mg]g`c`Z`d`Y`fg`cbU``Ub[i U[Y`b`Y`Y`Xg
(`" `F`Y`Z`Y`W`h`c`b`UbX`U`gg`Y`gg`h`Y`]f`ck`b`dfc[`fYgg`hc`gi`ghU]b`dYfgcbU`UbX`dfcZ]gg]cbU``Ub[i U[Y
Yb\UbW`a`Ybh
)`" `7ca`a`i`b]W`h`Y`W`]h]W`dYfgcbU``YUfb]b[`ci`hWca`Yg`k`]h`d`Y`Y`fg

HYUW\]b[`GhfUH[]Yg`

<I`A`G`%`\$`\$`)\`Y`d`g`gh`XYbhtg`hc`hU`_Y`fYgdc]bg]V]`]miZ`c`f`Yb\UbW]b[`h`Y`]f`9b[`]g\`Ub[i U[Y`g_]`g`V`m`\`Y`d]b[
h`Ya` `]XYbh]ZmUbX`UXXfYgg`h`Y`]f`ck`b`]bX]j`]Xi`U`b`Y`Y`Xg`"H\]g`]g`V`Y`W`li`g`Y`gh`XYbhtg`Uh`h]g`U`X`j`Ub`W`X`g`hU[`Y`c`Z
9b[`]g\`Ub[i U[Y`U`W`ei`]g]h]cb`\Uj`Y`X]Z`Y`f`Y`b`h`b`Y`Y`X`g`z`g`f`Y`b[`h`g`UbX`k`YU`_b`Y`gg`Y`g`":`]fa`m`V`U`g`Y`X`cb`gc`W`c`!
W`h`i`fU``Y`U`fb]b[`h`Y`c`f`m`h`U`h`U`f[i Yg`h`U`h`Y`U`fb`Y`fg`W`cb`g`f`i`W`h`h`Y`]f`ck`b`Y`U`fb]b[`h`f`ci`[`\`a`Y`Ub]b[`Z`
]b`h`Y`f`U`W]c`b`g`f`W`Z`J`m[`c`h`g`_`m`%`,`*`z`h`h]g`g`Y`Z`X]f`Y`W`Y`X`U`i`hc`bca`ci`g`W`ci`fgY`\`Y`d`g`gh`XYbhtg`hc`Yb\UbW`h`Y`]
9b[`]g\`g_]`g`V`m]Z`f`g`h`m`UbU`mg]b[`h`Y`]f`ck`b`b`Y`Y`Xg`/`g`Y`W`cbX`m`X`Y`j`Y`cd]b[`dYfgcbU`dfc`Y`W`g`/`h`]f`X`m
]a`d`Ya`Ybh]b[`h`Ya`/`Z`c`i`f`h`m`Y`j`U`i`U`h]b[`h`Y`]f`ck`b`dfc[`fYgg`/`UbX`Z]bU`m`f`Y`Z`Y`W]b[`cb`h`Y`]f`ck`b`Y`U`fb]b[`
H\`f`ci`[`\`ci`h`h`Y`W`ci`fgY`z`gh`XYbhtg`k`]``V`Y`[`i`]X`Y`X`k`]h`f`Y`Y`Ub`h`h`Y`c`f`m`z`d`f`U`W]W]`gi`[`[`Y`g]c`b`g`UbX`i`g`Y`Z`
fYgci`fW`g`]b`V`ch`"Y`W`h`fY`UbX`h`i`hc]U`g`Y`gg]c`b`g`"

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Gh XYbhg`XYg][b`hY]f`ck b`dYfgcbU`dfc`YWhi`UXXfYgg`hY]f`ck b`9b[`]g\`Ub[i U[Y`bYYXg`"H\YmUFY
fYei]fYX`h`gdYWZm`hY]f`dYfgcbU`dfc`YWhi`cU`žVUW_` fci bXž`a Yh`cXž`fYgci fW`gž`dfc[fYgg`a YUgi fYa Ybž
hja Y`]bYž`gW\YXi Y`UbX`Ubh]WdUH`X`ci hŸa Yg`"H\YmbYYX`h`XYj Y`cd`hY]f`DD8`VUgYX`cb`fY`Yj Ubh
]hYfuh fY`cZ`hY`Z]Y`X`VebW`fbYX`"H\Y`k cfX`ja]h]g`%) \$\$"

Gh XYbhg`fYW]j Y`k f]hYb`ZYXVUW_`VUgYX`cb`fi Vf]Wg`"''''

Hi fb]h]b`gYh]b[.`H\]g`Ugg][ba Ybh]g`gi Va]hYX`h`fci [\`Hi fb]h]b`UbX`gh XYbhg`WU`b`gYY`Hi fb]h]b`ga]Uf]m
fYdcfng"

5ggYgga Ybh&.`Dfc`YWhi`c[Vcc_`UbX`ci fbU`

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DD8`"H\YmUFY`fYei]fYX`h`gdYbX`" \$`ci fg`cf`a cfY`Zcf`hY]f`dYfgcbU`dfc`YWhi`

Gh XYbhg`fYW]j Y`k f]hYb`ZYXVUW_`VUgYX`cb`fi Vf]Wg`"

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

5ggYgga Ybh' .`C fU`dfYgYbhUH]cb

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

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Gh XYbthg'dfYgYbhHAY]f"YUfb]b['\][\][\hg'Zfca 'hAY]f'dYfgcbU'dfc'YWhZcf'UVci h%\$'a]bi hYg'hc']bgd]fY dYYfg'hc'Wcb]bi Y'hc'Yb\UbW'hAY]f"Ub[i U[Y'g_]`g'Yj Yb'UZhf'Wca d`Yhb['hAY'Wci fgY" H\YmUFY'fYei]fYX'hc gi Va]hUb'UVghfUWfUVci h%) '\$'k cfXgE'UVci hk \UhHAYmUFY [c]b['hc'dfYgYbhU'Wci d'Y'cZk YY_g'VYZcfY'hAY dfYgYbHh]cb'XUm' Gh XYbthg'fYW]j Y'k f]hYb'ZYXVUW_Zfca 'h'hc'f'cb'UVghfUWg'f%\$'i E'UbX'Zfca 'dYYfg'cb dfYgYbHh]cb'f%\$'i E'VUgYX'cb'fi Vf]Wg"

5XX]h]cbU`XYHU]g.

5VghfUWg'UFY'Xi Y'cb'Hi fb]hb'Vm%da žA cbXUm- 'Bcj Ya VYf'fK YY_- E'DfYgYbHh]cbg'UFY'Xi Y']b'hAY WUgg'cZ'hAY`Ughk YY_"

Hi fb]hb'gYH]b[. H\]g'Ugg][ba Ybh]g'gi Va]hYX'h'fci [\ 'Hi fb]hb'UbX'ghi XYbthg'WUb'gYY'Hi fb]hb'g]a]Uf]hm fYdcfng"

5ggYgga Ybh(. 'F YZYW]j Y'YggUm

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Gh XYbthg'UbU'm]WU`mUbX'W]h]W`m'fYZYW'icb'hAY]f"YUfb]b['YI dYf]YbW'cZ]a d'Ya Ybh]b['hAY]f'ck b'dYfgcbU'dfc'YWhUbX'di hUVX]Yj UVY'UW]cbg]b'U'd'Ub'Zcf'hAY'bYI h'YUfb]b['g]U[Y'"H\Y'k cfX`'ja]h]g'&\$\$\$"

Gh XYbthg'fYW]j Y'k f]hYb'ZYXVUW_Zfca 'h'hc'f'cb'UVghfUWg'f%\$'i H\]g'jg'hAY'Z]bU`UggYgga YbhZcf'Uhm]bXUbW di fdcgYg"

Hi fb]hb'gYH]b[. H\]g'Ugg][ba Ybh]g'gi Va]hYX'h'fci [\ 'Hi fb]hb'UbX'ghi XYbthg'WUb'gYY'Hi fb]hb'g]a]Uf]hm fYdcfng"

5 HbXUbW F Yei]fYa Ybhg

Gh XYbhg UFY gfcfb[mYbWci fU[YX hc UHbX U WUggYg UbX fYj]Yk YWfi fY fYWcfX]b[g"

7 ci fgY GWYXi Y

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Hja YHUVY

8UHr	HmdY	7cbHrYbh
K YY_%%(GYdHya VYf! %GYdHya VYf	@YWhi fY	hfcXi Wjcb hc D5 A cXY ZC dYb@YUfb]b[dUhZcfa UbX WcbhYI hUbU mg]g Ug k Y Ug X]U[bcgh]W UggYgga Ybhfc c`g
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K YY_&.%GYdHya VYf! &)GYdHya VYf	@YWhi fY	XYbhZr]b[U`a]gg]b[d]YW`]b Wca a i b]WU]cb/ YI d]W]h_bck YX[Y/ `]a d]W]h_bck YX[Y/]b]hfcXi W]b[dYfgcbU`dfc YWhiXYg][b`fDD8t
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	C b]bY`5W]j]hm	8Yj Y`cd]b[`Ub`Y]dcfhZc`]c
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	Hi hcf]U`	8]gW gg]cb`cb`hY`Zc i f`HbXYbW]Yg
K YY_*. `%C WcVYf!`& C WcVYf	C b]bY`5W]j]hm	: YUhi fYg`cZUW]XYa]WX]gWci fYg/dfc YWhiUbX`hja Y a UbU[Ya Ybh
	C b]bY`5W]j]hm	8]gW gg]cb`cb`hja Y`a UbU[Ya Ybh`
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	Hi hcf]U`	8]gW gg]b[`dYfgcbU`dfc YWhi`dfc[fYgg/dfUW]g]b[Ya U]`k f]h]b[
K YY_)`.&Bcj Ya VYf!`* Bcj Ya VYf	@YWhi fY	DfcZYgg]cbU`Wca a i b]WU]cb/Wfi W]U`Wcbj YfgU]cb g_]`g`UbX`dfYgYbhU]cb`g_]`g
	Hi hcf]U`	5VghfUWhi f]h]b[/Z]bU]g]b[`@ [Vcc`_UbX`>ci fbU`
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F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

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F YWca a YbXYX`F Ygci fWg

6cc_`-`9ggYbh]U`g`cZ9ggUmK f]h]b[.`K \UhiA Uf_Yfg`@cc_`: cf`f&\$\$%+L

6cc_`-`@YUfbYf`9b[`]g\.`5`HYUWXYffg; i]XY`tc`-bYfZYfybW`UbX`C h\Yf`DfcV`Ya g`f&\$\$%L

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

D`U[]Uf]ga]g`i]b[`hY`k cfXg`cf]XYUg`cZc`hYfg`UbX`dFYgYbh]b[`hYa`Ug`mci`f`ck`b`" #WUb`hU`Y`a`Ubm`Z`fa`g`z`Z`ca`XY`]VYfUHY`WX`YU]b[`hc`UW]XYbhU`m`W`cdm]b[`Z`ca`U`gci`fW`k`]h`ci`hUW`bck`YX[`Ya`Ybh`

I BGK ` [fci dg`d`U[]Uf]ga]bhc`hY`Zc`ck]b[`WU]Y[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`c`hU]cb`a`Uf`g`"H\`g`U`gc`Udd`Y]g`hc`]a`U[`Yg`z`Ufh`UbX`XYg][`b`dfc`YWg`z`Ug`k`Y`Ug`dFYgYbhU]cbg`k`YfY`gca`YcbY`dFYgYbh]`Ubch`Yf`g`]XYUg`cf`k`cfXg`k`]h`ci`hWYX]h`

#Uddfcdf]UHY`dUfUd`fUg]b[.`7`U]b[]b[`U`Zk`k`cfXg`UbX`d`fUgYg`k`Y`a`cghmfYU]b]b[`hY`cf][]bU`ghf`W`fY`UbX`#`f`dfc[`fYgg]cb`cZ]XYUg`cZ`hY`cf][]bU`z`UbX`]bZ`fa`U]cb`k`]h`ci`hUW`bck`YX[`Ya`Ybh`H\`g`U`gc`Udd`Y]g`]b`dFYgYbhU]cbg`k`YfY`gca`YcbY`dUfUd`fUgYg`Ubch`Yf`g`]XYUg`cf`k`cfXg`k`]h`ci`hWYX]h`UbX`hc`d]YW]b[`hc[`Y`h`Y`f`ei`c`h`g`UbX`dUfUd`fUgYg`]bhc`U`bYk`k`c`Y`z`k`]h`ci`hUddfcdf]UHY`fY`ZfYbW]b["

7 c`i`g]cb.`k`cf_]b[`k`]h`c`hYfg`Vi`hdUgg]b[`cZ`hY`k`cf_]Ug`U`dYfgcb`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`Ubch`Yf`g`h`XYbhVY`Z`fY`hY`Xi`Y`XU]Y`z`cf`Z`f`hY`di`fdcgY`cZ`hY`a`d`U[]Uf]g]b[`Uh`Ubmi]a`Y`z`dUm]b[`Ubch`Yf`dYfgcb`hc`dYfZ`fa`Ub`UWXYa`]W]Ug`_`z`gh`U`]b[`cf`UW`ei`]f]b[`Ubch`Yf`dYfgcb`g`UWXYa`]Wk`cf_]UbX`W`cdm]b[]h`z`Z]f]b[`hc`W`ca`d`Y`h`Ubch`Yf`dYfgcb`g`k`cf_]cf`gYY_]b[`dUma`YbhZ`f`W`ca`d`Y]b[`UWXYa`]Wk`cf_]`

#Uddfcdf]UHY`W]U]cb.`7`h]b[`gci`fW`g`k`]W\`Uj`Y`bchVYYb`fYUX`z`k`]h`ci`hUW`bck`YX[]b[`hY`gYW`bXUfm`gci`fW`Z`ca`k`]W\`_`bck`YX[`Y`cZ`hY`a`U`g`VYYb`c`hU]bYX`

8 i`d`]WU]cb`f]gY`Z`d`U[]Uf]ga`E`gi`Va`]h]b[`mci`f`ck`b`k`cf_]z`]b`k`c`Y`cf`]b`dUf]z`k`YfY`]h`Ug`dFY`]ci`g`m`VYYb`dFYdUfYX`cf`gi`Va`]hYX`Z`f`Ubch`Yf`UggYgga`Ybhcf`W`ei`fgY`Uhi`BGK`cf`Ubch`Yf`i`b]j`Yfg]h`

7 cffYW]fY`ZfYbW]b[`dfUW]W]g.

- DUfUd`fUg]b[`z`gi`a`a`Uf]g]b[`z`YggUm`k`f]h]b[`UbX`h]a`Y`a`UbU[`Ya`Ybh`
- 5ddfcdf]UHY`i`gY`cZ`UbX`U]h]f]Vi`h]cb`Z`f`U`fU]b[`Y`cZ`a`U]h]f]U`g`]bW`i`X]b[`hY`h]z`]a`U[`Yg`z`Z`fa`i`UY`UbX`W`cbW`d]g`

#X]j`]Xi`U`Ugg]ghU]bW`]g`Uj`U]UV`Y`cb`fYei`YghZ`ca`H\Y`@YUfb]b[`7`YbhY`f`h`hd.`#`k`k`"Wi`bgk`"YXi`"Ui`#`G`h`XYbh]UfY`U`gc`fYa`]bXYX`h`Uh`W]fY`Z`h]a`Y`a`UbU[`Ya`Ybh]g`Ub`]a`dcffU]bhdUfhcZ`gh`XmUbX`cbY`cZ`hY`]XYbh]Z]YX`W]i`gYg`cZ`d`U[]Uf]ga`]g`d`ccf`h]a`Y`a`UbU[`Ya`Ybh`G`h`XYbh]g`g`l`ci`X`U`ck`gi`Z]W]Ybh]h]a`Y`Z`f`fYgYUfW`z`XfU]Z]b[`UbX`dfcdYf`fY`ZfYbW]b[`cZ`gci`fW`g`]b`dFYdUf]b[`U`UggYgga`Ybh]hYa`g`

I BGK `@]VfUfmU`gc`U`g`hY`9`@`9`hc`Uj`U]UV`Y`hc`Ugg]ghmci`k`]h`mci`f`gh`XmUhi`BGK`"9`@`9`]g`XYg][`bYX`hc`]bhcXi`W`bYk`gh`XYbh]hc`gh`Xm]b[`Uhi`BGK`Vi`h]hW]b`U`gc`VY`U[`fYUhfY`Z]Yg`Yf`Xi`f]b[`mci`f`

- i bXYfgHUbX'mci f'f][\hg'UbX'fYgdcbg]V]]hYg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[]Uf]ga ž'Wcdmf][\hž' BGK 'Gh XYbh7cXY'cZ7cbXi WñUbX'5WwdfUV'Y'I gY'cZ I BGK '⇒H'F Ygci fW'g'Dc`]Wñ

