



HUMS1008

A i g]Wcb`A mA]bX. `Dgm\Xc`c[mUbX`A i g]W

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

7ci fgY`Cj Yfj JYk

GHJZZ7cbHJW`8YHJ`g

7cbj Ybcfg

B Ua Y	9a Uj`	5j Uj`UVj`]m	@cWJhcb	D\cbY
8f`5b`h`cbm7`a`jY`	Ub`h`cbm`V`a`jY`4`i`b`g`k`"Y`X`i`"U`i`	VmUddc]b`h`a`Y`b`h`	K`6`%`*`z` F`c`V`Y`f`h` K`Y`V`g`h`f` 6`i`j`X`]`b`[`	

GW`cc``7`cb`H`J`W`h`b`Z`c`f`a`U`h`j`c`b`

GW`cc``c`Z`h`Y`5`f`g`U`b`X`A`Y`X`J`U`

F`c`c`a`"``%`&`z`@`Y`j`Y`"``z`F`c`V`Y`f`h`K`Y`V`g`h`f`6`i`j`X`]`b`[``f`l`%`Ł`

D`l`c`b`Y`."`f`\$`&`Ł`-``'``)``(``,)``*`

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

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

H`Y`G`W`c`c``c`Z`h`Y`5`f`g`U`b`X`A`Y`X`J`U`k`c`i`"X`"``_`Y`h`c`F`Y`g`d`Y`W`z`"``m`5`W`b`c`k`Y`X`[`Y`h`Y`H`f`U`X`]`h`c`b`U``7`i`g`h`c`X`]`U`b`g`z`
h`Y`6`Y`X`Y`[`U`"`f`P`Y`b`g`]`b`[`h`c`b`W`a`d`i`g`Ł`z`;`U`X`[`U`"`f`7`]`m`U`b`X`5`f`h`/`8`Y`g`[`b`7`U`a`d`i`g`Y`g`Ł`U`b`X`h`Y`B`[`i`b`b`U`k`U`
d`Y`c`d`Y`f`b`i`g`h`f`U`]`U`b`8`Y`Z`Y`b`W`:`c`f`W`5`W`U`X`Y`a`m`]`b`7`U`b`V`Y`f`f`U`Ł`c`Z`h`Y`"U`b`X`g`k`Y`Y`f`Y`U`W`W`a`d`i`g`c`Z`I`B`G`K`"j`g`
"c`W`J`h`Y`X`"

7ci fgY'8YHJ`g

7fYX]hDc]bng`*`

Gi a a UfmicZh\Y'7ci fgY

H\]g`Wci fgY`Ug_g`ei Ygh]cbg`UVci ha i g]Ww[b]h]cb`UbX`VY\Uj]ci f.`<ck`Xc`k`Y`dYfW]j`Y`a i g]Wb`K` \m`Wb`Ub`]bglfi`a`Ybhgci`bX`a i g]WU`3`<ck`Xc`k`Y`fYgdc`bX`hc`UbX`dfc`W]gg`h`Y`gci`bX`3`K` \Uh`\Udd`Ybg`k` \Yb`k`Y`UfY`dfY`dUf]b[`UbX`dYfZ`fa`]b[`a i g]Wb`K` \m`Wb`dYfZ`fa` Yfg`VY`Wca` Y`XYV]`]h]b[`mbYfj`ci`g3`K` \Uh]g`h`Y`fY`U]cb`VY`k`YY`b`a i g]Wz`gYI`UbX`W`YY`gY`WU`_Y3`7`Ub`a i g]Wa`U`_Y`mci`ga`UfY`fz`UbX`k` \Uh]g`h`Y`A`cn`Ufh`9`ZY`Wb`K` \m`Xc`Yg`h`Uh`h`bY`[`Y`h`g`h`W`_]b`a`m` \Y`UX3`<ck`c`X`a i gh`U`dY`fg`cb`VY`VY`Z`fY`h`Y`m`Wb` \Y`Uf`UbX`Udd`fY`W]U`h`a i g]Wb`M`ci`k`]`U`XX`fY`gg`h`Y`gY`UbX`fY`U`h`X`ei`Y`gh]cbg`h`fci`[`\`Y`I`Ua`]b`U]cb`c`Z`h`Y`a i g]W`dgm`W`c`c`[`m`]`h`f`U`h`f`Y`z`UbX`h`Y`W]h]W`Y`j`U`i`U`h]cb`c`Z`mci`f`ck`b`a i g]WU`U`h]h`XY`g`z`VY`]Y`Z`g`UbX`VY`Uj`]ci`fg`

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

%`9I`d`U]b` \ck`a i g]W]g`XY`Z]b`YX`Z`ca`U`dgm`W`c`c`[`]WU`dc]b`h`c`Zj`]Y`k`"
&`" `X`Y`b`h]z`m` \ck`a i g]Wdgm`W`c`c`[`]g`h`]b`j`Y`gh]`[`U`h`Y`ei`Y`gh]cbg`UVci`ha`i`g]W`
'`" `F`Y`Wc`[`b]gY`h`Y`gci`f`W]g`UbX`k`U`m`g`]b`k` \]W`a i g]Wdfc`W]gg]b[`]g`i`b`XY`f`g`h`c`X`z`UbX`Wca`d`UfY`h`Y`gY`
k`]h`Zc`_`dgm`W`c`c`[`]WU`UbX`]b`h`]h]`Y`i`b`XY`f`g`h`U`b`X]b[`g`

HYUW]b[`GhfUHY[]Yg`

H\Y`Wci`fgY`k`]`VY`d`fY`gY`b`h`X`h`fci`[`\`Z]W]h`!`h`!`Z]W]`Y`W]h`fY`g`"Hi`h`f]U`g`UfY` \Y`X`cb`]b`Y`z`k` \]W`a`Y`U`bg`mci`g` \ci`X`Y`I`d`Y`W]h`c`X`Y`j`c`h`Y`i`d`h`c`b`Y` \ci`f`d`Y`f`k`YY`_`f`b`c`h]b`W]`X]b[`d`f`Y`d`U`f`U`h]cb`UbX`Ugg`Y`gga`Y`bh]h`a`Y`E`h`c`b`]b`Y`]b`X]j`]X`i`U`U`W]j`]h]Y`g`UbX`Wc`U`V`c`f`U`h]j`Y`U`W]j`]h]Y`g`k`]h`c`h`Y`f`g`h`X`Y`b`h]g`"C`h`Y`f`Ugg`Y`gga`Y`bh]h]g`g`k`]`VY`Wca`d`Y`h`X`]b`X`Y`d`Y`b`X`Y`b`h`m]b`U`X`X]h]cb`h`c`h`Y`cb`]b`Y`h`h`c`f]U`k`c`f`_`";`fci`d`Y`U`fb]b[`z`W]h]W]`f`Y`Z`Y`W]cb`UbX`gY`Z`Ugg`Y`gga`Y`bhk`]`VY`X`Y`j`Y`c`d`Y`X`]b`g`Y`Y`W]h`X`h`h`c`f]U`h]g`g`h`c`Y`b`Wci`fU`[`Y`X]j`Y`fgY`a`c`X`Y`g`c`Z`Y`U`fb]b[`]b`U`X`X]h]cb`h`c`h`f`U`X]h]cb`U`Udd`f`c`U`W]h`Y`g`"

5ggYgga Ybh

5ggYgga YbhHUg_g'

5ggYgga YbhHUg_			

8YHJ]g.

H\Y`HYghUggYggYg`YW`i fY`W`bHYbhbchUggYggYX`]b`h\Y`E i]n``E i Ygh]cbg`k]``dfcVY`VUg]W`W`bW`dHg`
dfYgYbH`X`]b`h\Y`W`i fgY`W`bHYbHg``H\Y`H`Yghk]`W`bg]ghcZa i `hd`Y`W`c]W`UbX`g\cfhUbgk Yf`]H`a`g``

: YYXVUW`k]`W`bg]ghcZU`bi a Yf]W`a Uf_``

5XX]h]cbU`XYHJ]g.

GYY`A ccX`Y`Zcf`Z fH`Yf`XYHJ]

F Ygci fWg

DfYgWfjVYX`F Ygci fWg`

BchiUj UjUVY

F YWca a YbXYX`F Ygci fWg

BchiUj UjUVY

7ci fgY`9j U`i Uh]cb`UbX`8Yj Y`cda Ybh

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]b['hY'k cfXg'cf]XYUg'cZcH.Yfg'UbX'dfYgYbh]b['hYa 'Ug'mci f'ck b" #WUb'hU_Y'a Ubm
Z'fa gžZ'ca 'XY'VYfUHY'WX.YU]b['hc'UW]XYbhU'mWcdm]b['Z'ca 'U'gci fW'k]h'ci hUW_bck 'YX[Ya Ybh'

I BGK '[fci dg'd`U[]Uf]ga]bhc'hY'Z'ck]b['WU] [cf]Yg.

7 cdm]b[.i]g]b['hY'gUa Y'cf'j Yfmg]a]Uf'k cfXg'hc'hY'cf][]bU'hYi 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'Y]g'hc]a U[Ygž'Ufh'UbX'XYg][b'dfc YWgž'Ug'k Y''Ug
dfYgYbhU]cbg'k \YfY'gca YcbY'dfYgYbhg'Ubch.Yf'g]XYUg'cf'k cfXg'k]h'ci hWYX]h'

#Uddfcdf]UHY'dUfUd\UfUg]b[.7\Ub[]b['U'Z'k 'k cfXg'UbX'd\UfUg'k \]Y'a cghmfYU]b]b['hY'cf][]bU'
ghf' W' fY'UbX'cf'dfc[fYgg]cb'cZ]XYUg'cZ'cH.Y'cf][]bU'ž'UbX']bZ'ca 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\UfUg'g'Ubch.Yf'g]XYUg'cf'k cfXg'k]h'ci hWYX]h'UbX'hc
d]YW]b['hc[Y'hY'f'ei chYg'UbX'dUfUd\UfUg'g]bhc'U'bYk 'k \c'Yž'k]h'ci hUddfcdf]UHY'fYZYfYbW]b["

7 c`i]g]cb.'k cf_]b['k]h'c'hYfg'Vi hdUgg]b['cZ'cH.Y'k cf_'Ug'U'dYfgcb'g']bX]j]Xi U'k cf_"7 c`i]g]cb'U'gc
]bWi XYg'dfcj]X]b['mci f'k cf_'hc'Ubch.Yf'g]h'XYbhVY'Z'fY'hY'Xi Y'XUHY'ž'cf'Z'f'hY'di fdcgY'cZ'cH.Ya
d`U[]Uf]g]b['Uh'Ubmi]h'a Yž'dUm]b['Ubch.Yf'dYfgcb'hc'dYfZ'ca 'Ub'UWXYa]W]Ug_ž'gh'U']b['cf'UW'ei]f]b[
Ubch.Yf'dYfgcb'g'UWXYa]Wk cf_'UbX'Wcdm]b[]h'c'Z'Z]f]b['hc'W'ca d'YHY'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'bhVYYb'fYUXž'k]h'ci hUW_bck 'YX[]b['hY''gYW'cbXUfm'
gci fW'Z'ca 'k \]W'_bck 'YX[Y'cZ'cH.Ya '\Ug'VYYb'c'fU]bYX"

8 i d']W]cb'ffgY'Z'd`U[]Uf]ga 'E'gi Va]h]b['mci f'ck b'k cf_ž]b'k \c'Y'cf]b'dUf]ž'k \YfY']h\Ug'dfYj]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'fYZYfYbW]b['dfUW]W]g.

- DUfUd\UfUg]b[ž'gi a a Uf]g]b[ž'YggUmk f]h]b['UbX'h]a Y'a UbU[Ya Ybh
- 5ddfcdf]UHY'i gY'cZ'UbX'Uhf]Vi h]cb'Z'f'U'fU]b[Y'cZ'a UHYf]U'g']bWi X]b['hYi hž]a U[Ygž'Z'ca i 'UY'UbX
W'cbW'dhg"

#X]j]Xi U'Ugg]gh'UbW']g'Uj U]UV'Y'cb'fYei Ygh'Z'ca 'H\Y'@YUfb]b['7 YbhY'f'hd.## k k "Wi bgk "YXi "Ui #"
Gh'XYbhg'UfY'U'gc'fYa]bXYX'h'Uh'W]fY'Z']h]a Y'a UbU[Ya Ybh]g'Ub']a dcfU]bhdUfhcZ'gh'Xm'UbX'cbY'cZ'cH.Y
]XYbh]Z'YX'W]i gYg'cZ'd`U[]Uf]ga]g'dccf'h]a Y'a UbU[Ya Ybh'Gh'XYbhg'g'lc'i 'X'U'ck'gi Z]W]Ybh]h]a Y'Z'f'
fYgYUfW'ž'XfU]Z]b['UbX'dfcdYf'fYZYfYbW]b['cZ'gci fW'g']b'dfYdUf]b['U''UggYgga Ybh]h'a g"

I BGK '@]VfUfm'U'gc'\Ug'hY'9@G9'hc'Uj U]UV'Y'hc'Ugg]gh'mci 'k]h'mci f'gh'Xm'Uhi BGK "'9@G9']g
XYg][bYX'hc']bhc'Xi W'bYk'gh'XYbhg'hc'gh'Xm]b['Uhi BGK 'Vi h]h'W]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][\hžI BGK 'Gh XYbh7cXY'cZ7cbXi WñUbX'5WwdfUV'Y'I gY'cZ I BGK '⇒H'F Ygci fW'g'Dc`]Wñ

5 WUXYa]W=Zcfa Uh]cb

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

- fYei Ygth]Zc`f`YI h`bg]cb/
- `Uh`gi Va]gg]cbg[[i]XY`]bYg/
- fYj]Yk `cZa Uf_g/
- I BGK `<YU`h`UbX`GUZY`mdc`]WYg/
- YI Ua]bUh]cb`dfcW`Xi fYg/
-