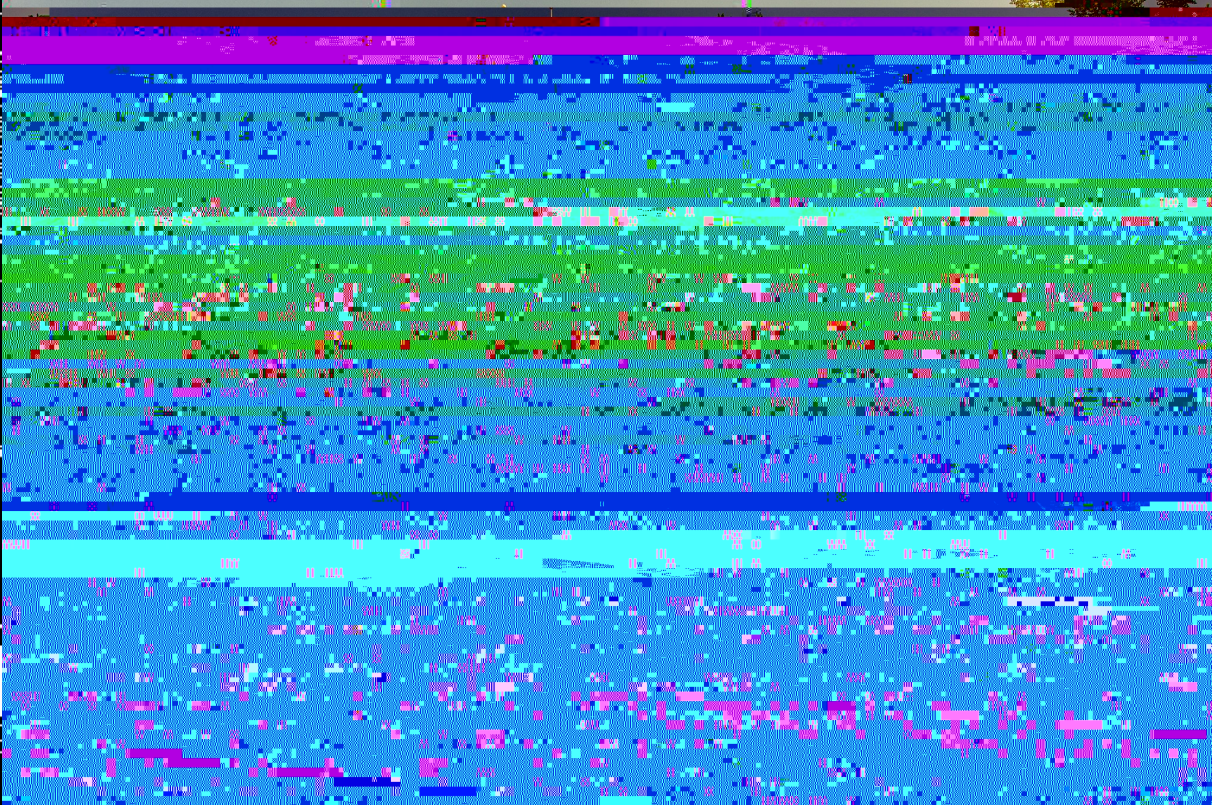


# ENGG2400

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W`i fgY`]ggi Yg`cf`dfc[ fUa !fY`UfYX`ei Yf]Yg`

[9b\[ \]bYYf\]b\[ \]ħXi ghf\]U`HfU\]b\]b\[ \]`-`ħXi ghf\]U`HfU\]b\]b\[ \]`ei Ygh\]cbg`](#)

[I\\_BGK`Gh Xm5VfcUX](#) -`gh XmUVfcUX`gh XYbhYbei ]f]Yg`fZcf`]bVci bX`gh XYbhgŁ`

[I\\_BGK`9I WU\]b\[Y](#) -`gh XYbhYI WU]b[ Y`Ybei ]f]Yg`fZcf`]bVci bX`gh XYbhgŁ`

[I\\_BGK`:\] i ħi fY`Gh XYbhg](#) -`dchYbh]U`gh XYbhYbei ]f]Yg`Y["`"UXa ]gg]cbgžZYgždfc[ fUa gžWfYX]ħfUbgZyf`

D\cbY`

fZ`\*%&Ł`-' , ) ; ) \$\$ -`Bi WYi g`Gh XYbh<i V`

fZ`\*%&Ł`-' , ) `+\*\*% -`9b[ ]bYYf]b[ ]ħXi ghf]U`HfU]b]b[ ]`

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## 7ci fgY'8YHJ`g

I b]hg'cZ7 fYX]h\*`

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

H\]g`Wci fgY`dfcj ]XYg`Ub`]bfcXi W]cb`hc`h\Y`Z bXUa YbU`g`hc`h\Y`a YWU`b]W]c`Zgc`]Xg" H\Y`hc`d]W]g`]bWi XY dfcdYfh]Yg`cZd`UbY`Wfcgg!gYW]cbU`g\UdYg`]bWi X]b[ `W]bfc]X/`df]bW]dU`gYW`bX`a ca YbhcZUfYU/ W`bW`d]g`cZgfYgg`UbX`ghfU]b/&8`hfUbgZ`fa Uhcb`cZgfYggYg`UbX`ghfU]bg`i bXYf`UI ]g`fch]cb/df]bW]dU`ghfYggYg`UbX`ghfU]bg/A`c`f`g`W]fWY`cZgfYgg`UbX`ghfU]b/ghfYgg!ghfU]b`fY`Uh]cbg\]dg/Y`Ugh]W]mz`h\Yfa U`ghfU]b]Z`Dc]ggcb`g`fUh]c`UbX`<cc\_Y`g`@Uk`/VUfg`i bXYf`UI ]U`Z`fW`/`bXYHfa ]bUh`UI ]U`Z`fW`gmgHya g/Y`Ugh]WVYbX]b[ `ghfYgg`Z`fa i`U`W`a`d`cg]H`VYUa g/YXZYW]cbg`Xi Y`hc`VYbX]b[ /gh`d`Z`bW]cbg/g]a`d`Y ]bXYHfa ]bUh`VYUa g/g\YUf`Zck`/g\YUf`W]bfc]b`cZW]fW`Uf`g`U`Zg"

## 7ci fgY'5]a g

H\Y`cV`YW]j`Yg`cZ`h]g`Wci fgY`UfY.

Hc`fY]bZ`fW`\_bck`YX[ Y`cZgh]W]g`UbX`hc`YI`dUbX`h]g`\_bck`YX[ Y`]b`h\Y`UfYUg`cZghfU]b`UbX`ghfYgg`UbU`mg]g`z`h`i`g`YbUV`]b[ `gh`XYbh`c`XYU`k`]h`a`c`fY`W`a`d`YI`UbX`]bH[`fUH`X`Yb[ ]bYf]b[ `dfcV`Ya`g`]b]c`j`]b[ A`YWU`b]W]c`ZGc`]Xg/ Hc`]bfcXi`W`gh`XYb]g`hc`h\Y`VUg]Wdf]bW]d`Yg`UbX`Uk`g`i`bXYf`m]b[ `A`YWU`b]W]c`ZGc`]Xg/ Hc`Z]a`]]Uf]nY`gh`XYb]g`k`]h`h\Y`a`cXY`]b[ `UbX`UbU`mg]g`h`W`b]ei`Yg`k`Yb`Z`fa`i`Uh]b[ `UbX`gc`j`]b[ dfcV`Ya`g`Z`f`dfYX]W]b[ `h\Y`ghU]g`cZghfYgg`UbX`ghfU]b`Z`f`VcX]Yg`]b`ghU]WYei`]]Vf]i`a`/ Hc`[ ]`Y`gh`XYb]g`Ub`cddcf]i`b]m]hc`XY`Y`cd`UbX`fYZYW]cb`[`fUXI`Uh`U]f]Vi`H`g`gi`W`Ug`W]h]W`h]b`\_]b[ `UbX`dfcV`Ya`gc`j`]b[ `z`]Z`cb[ `YUfb]b[ `g\_]`g`UbX`W`U`V`c`f`U`h]`Y`g\_]`g"

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%`F`Y`dfYg`Ybhd`m]W]`gmgHya`g`]b`U`a`UbbYf`hc`gi`Z]W]Ybhm]W]dhi`fY`h\Y`g]fi`W]fU`Y`Ya`Yb]g`fYei`]fYX`hc`dYfZ`fa`Ub`Yb[ ]bYf]b[`ghfYgg#g]h]U]b`UbU`mg]g"	D9%"%žD9%"&
&`"8]gW]fb`h\Y`fY`Yj`Ubhd]bW]d`Yg`h`Uha`i`ghVY`Udd`]YX`hc`UgW]fU]b`ghfYgg#g]h]U]b`c`f`c`UX`#XYZYW]cb`ghU]g`cZYb[ ]bYf]b[`gmgHya`g`UbX`X]gW]a`]bUh`VYH`YYb`fY`Yj`Ub]UbX`]ffY`Yj`Ub]bZ`fa`Uh]cb`]b`h\Y`W`b`h]i`h`	D9%"
`"8Ya`cbghfUH`Ub`UV`]m]hc`W`a`a`i`b]W]H`WYUf`m]UbX`dfYW]gY`m`UVci`h]h`W`b]W]`a`Uh]f]g`fY`Uh`X`hc`h\Y`A`YWU`b]W]c`ZGc`]Xg	D9%"`žD9%")
(`"5W`a`d`]g`l`dfUW]W]`h]Ug`g`h`Uh`fYei`]fY`h\Y`Udd`]W]h]cb`cZ`_bck`YX[ Y`cZ`h\Y`A`YWU`b]W]c`ZGc`]Xg	D9%"`žD9%")`žD9`&%"
)`"8Ya`cbghfUH`dfcZYgg]cbU`W`a`a`i`b]W]h]cbz`Vc`h`k`f]h]b`UbX`c`fU`z`h`Uh]bWi`XYg`a`Uh`Ya`Uh]W]z`[`fUd`]W]`UbX`X]U[`fUa`a`Uh]W`Y`Ya`Yb]g"	D9%"&žD9%"

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- @YWñ fYg`h\Uhk ]`ZcW`g`cb`h\Y`XYj`Y`cda`YbhUbX`Udd`]WU]cb`cZ[`YbYfU`]gYX`dfcV`Ya`!gc`j`]b[`dfcW`ggYg`Zc`f`h\Y`ghfYggž`ghfU]b`UbX`XYZcfa`U]cb`UbU`mg]g`cZgfi`Wñ`fYg`"@YWñ`fYg`k`j`U`gc`Ya`d\Ug]gY`h\Y`fY`U]cbg\]d`cZ`h\Y`Wc`bhY`bhlc`Yb[ ]bYf]b[ `dfUW]W`UbX`k`j`dfcj`]XY`Ub`cddcfh`b]m`Zc`f`fYZYW]cb`cb`YUfb]b[ "`H\Y`YWñ`fYg`UfY`fYWc`fYX`UbX`g`ci`X`VY`Uj`U]UV`Y`cb`h\Y`A`ccX`Y`Wc`i`fgY`dU[`Y"
- DfcV`Ya`WUggYg`k`j`Wc`bW`bfUHy`cb`ghfUHy[ ]Yg`Zc`f`gc`j`]b[ `gi`W`dfcV`Ya`g`"Gh`XYb]g`k`j`VY`YbWc`i`fU[`YXž`Zca`h]a`Y`h`h]a`Yž`h`k`cf\_]`b`ga`U`[`fci`dg`h`gc`j`Y`dfcV`Ya`g"
- A`ccX`Y`7`ci`fgY`DU[`Y`dfcj`]XYg`U`ghY`d`VmghY`d`[`i`]XY`cb`h\Y`Wc`i`fgY`"H\Y`fY`]g`U`X]gW`gg]cb`Zc`fi`a`h`Y`d`dfcj`]XY`]b]fUW]cb`UbX`Y`d`Zca`d`YYfg`"@]b\_g`h`j`]XYc`fYWc`fX]b[ `g`UbX`YUfb]b[ `a`cXi`Yg`h`Y`d`gh`XYb]g`YUfb`h\Y`gc`i`h]cb`h`W`b]ei`Yg`Zc`f`a`Ubm`c`Z`h\Y`gi`V`Y`Wñ`UfY`Ug"
- A`]Wc`gc`ZhHYUa`g`

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F Ygci fWg

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HYI hWcc\_."A YWUbjWg`cZA UHf]U'g. HYbh`9X]hcb`]b`G=I b]hg"!`F 7`< JVVY`YfZ`DYUfgcb`9Xi WWhcb

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

H\Y`GWcc`cZ7 ]j ]`UbX`9bj ]fcb a YbhU`9b[ ]bYYf]b[ `Yj U`i UH'g`YUW`Wci fgY`YUW`hja Y`]h]g`fi b`h`fci [ \ `f]k`  
h\Y`A m9I dYf]YbW`Gi fj Ymgz`UbX`f]]k: cW`g; fci d`A YYh]b[ g"5g`dUfhcZ`h\Y`A m9I dYf]YbW`dfcW`ggz`mci f`  
gh XYbhYj U`i Uh]cbg`cb`j Uf]ci g`UgdYWg`cZ`h\Y`Wci fgY`UfY [ fUXYX/h\Y`7ci fgY`7ccfX]bUhc`f`dfYdUfYg`U`  
gi a a UfmfYdcfhiZcf`h\Y`<YUX`cZGWcc""5bmidfcV`Ya `UfYUg`UfY`]XYbh]ZYX`Zcf`fYa YX]U`UW]cbz`UbX`]XYUg`  
Zcf`a U\_]b[ `]a dfcj Ya Ybhg`hc`h\Y`Wci fgY`UfY`bchX`Zcf`UW]cb`h\Y`bYI h]ja Y`h`Uh\Y`Wci fgY`]g`fi b": cW`g`  
; fci d`A YYh]b[ g`UfY`WcbXi W\X`Vmi\Y`Zci fIMYUf`A UbU[ Yfg`fUWUXYa ]WghUZZ`Zcf`Ubmigh XYbhg`k`c`k`]g`hc`  
UH\Y`bXz]b`YUW`mYUf`cZ`h\Y`Wj ]`UbX`#cf`Ybj ]fcb a YbhU`Yb[ ]bYYf]b[ `dfc[ fUa`g"Gi XYbhWca a Ybhg`cb`YUW`  
Wci fgY`UfY`Wc`YWYX`UbX`X]ggYa ]bUH\Y`hc`h\Y`@YWh`fYfg`WcbW`fbYXz`bch]b[ `Ubm]dc]bhg`k`\]W`Wb`\Y`d`  
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5 WUXYa ]W=Zcfa Uh]cb

: ]bU`9I Ua ]bUh]cbg.

: ]bU`YI Ua g ]b`H%&\$&&k ]`VY`Y`X`cb`]bY`VYrk YYb`&- h`5df]`!`%&h`A Um]bWi gj YZUbX`gi dd`Ya YbUfm  
YI Ua g`VYrk YYb`&`fX`!`&+h`A Um]bWi gj Y`Mci`UfY`fYei ]fYX`hc`VY`Uj U]UV`Y`cb`h`YgY`XUf`g`D`YUgY`Xc

5ddYbX]l . '9b[ ]bYYfg'5i ghfU`U'f95E'DfcZYgg]cbU`'9b[ ]bYYf'7ca dYhYbWm  
GHUbXUfX

Dfc[ fUa 'hYbXYX'@YUfb]b[ 'Ci hWta Yg	
? bck `YX[ Y'UbX'g_]`VUgY	
D9%"%7 ca dfY\Ybg]j YzhYcfmVUgYX'i bXYfghUbX]b[ 'cZhY'i bXYfd]bb]b[ 'bUh fU`UbX d\mg]WU`gWYbWg'UbX'hY'Yb[ ]bYYf]b[ 'Z bXUa YbH'g'Udd']WUV'Y'hc'hY'Yb[ ]bYYf]b[ 'X]gWd`]bY	
D9%"&'7 cbWdh U`i bXYfghUbX]b[ 'cZhY'a UhYa Uh]Wg'z'bi a Yf]WU`UbU'mg]g'ghUhgh]Wg'z'UbX Wta di h'f'UbX']bZ'fa Uh]cb'gWYbWg'k \]W' i bXYfd]b'hY'Yb[ ]bYYf]b[ 'X]gWd`]bY	
D9%" " 'h!XYdh'i bXYfghUbX]b[ 'cZgdYWU`]ghVcX]Yg'cZ_bck `YX[ Y'k ]h]b'hY'Yb[ ]bYYf]b[ X]gWd`]bY	
D9%"('8]gWfba YbhcZ_bck `YX[ Y'XYj Y`cda YbhUbX'fYgYUfW'X]fYW]cbg'k ]h]b'hY Yb[ ]bYYf]b[ 'X]gWd`]bY	
D9%" ) ? bck `YX[ Y'cZYb[ ]bYYf]b[ 'XYg][ b'dfUW]W'UbX'Wc'bhYi h U`ZUW'c'fg]a dUW]b[ 'hY Yb[ ]bYYf]b[ 'X]gWd`]bY	
D9%"* 'i bXYfghUbX]b[ 'cZhY'gWc'dY'z'df]bW]d'Yg'z'bc'fa g'z'UW]c'i bHUV']h]Yg'UbX'Vci bXg'cZ gi gh]bUV'Y'Yb[ ]bYYf]b[ 'dfUW]W' ]b'hY'gdYW]ZWX]gWd`]bY	
9b[ ]bYYf]b[ 'Udd']WU]h]cb'UV']]m	
D9%"%5dd`]WU]h]cb'cZYghUV]g\YX'Yb[ ]bYYf]b[ 'a Yh'cXg'hc'Wta d'Yl'Yb[ ]bYYf]b[ 'dfcV'Ya gc'] ]b[	
D9%"&'&: 'i YbhUdd']WU]h]cb'cZYb[ ]bYYf]b[ 'h'W]b]ei Yg'z'hc'g'UbX'fYgci fW'g	
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DfcZYgg]cbU`UbX'dYfgcbU`Uhf]Vi hYg	
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D9' "&'9ZYW]j Y'cfU`UbX'k f]hYb'Wta a i b]WU]h]cb']b'dfcZYgg]cbU`UbX`UmXca U]bg	
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D9' "( 'DfcZYgg]cbU`i gY'UbX'a UbU[ Ya YbhcZ]bZ'fa Uh]cb	
D9' )" 'C'fXYf'ma UbU[ Ya YbhcZgY'z'UbX'dfcZYgg]cbU`Wc'bxI W]	
D9' "*" '9ZYW]j Y'hYUa 'a Ya VYfg\]d'UbX'hYUa ``YUXYfg\]d	