MAT 161-005 and MAT 161-300
MAPLE OPERATION #2
9/2/14

SOME MORE MAPLE PLOTTING FEATURES:

1. **y-ranges**
   Prescribing a restricted range of y-values is optional (for example when a function has a denominator that can be zero)
   The syntax is **> plot(f(x) , x = a .. b , y = c .. d);**

2. **Graphing two or more functions simultaneously—enclose them in braces**
   The syntax is **> plot ({ f(x) , g(x) } , x = a .. b);**

3. **exp** and **ln**

Usual notation	Maple
e^x	exp(x)
$\ln x$	ln(x)

4. **Defining and evaluating functions**

   To define a function g(x) and evaluate it at a, the syntax is
   > g := x -> (formula for g) ;
   > g(a);

5. **Finding multiple values of a function**

   To evaluate a function g on a list of numbers:
   > map(g, [list with commas]);

5. **evalf**

   This stands for "evaluate in floating point form"; that is, in decimal form. For example, to find a decimal approximation to π, do this:

   > evalf(Pi);

   To evaluate the immediately preceding expression as a decimal: **> evalf(%);**

OPTIONAL

6. There are two prepared worksheets on Dr. Spackman's Web site (http://people.uncw.edu/spackmank for your use:
   Multigrapher – edit to produce multiple graphs on the same axes with pre-defined colors
   Inverse-grapher – edit to graph a function and its inverse on the same axes

7. **Choosing your own graph colors**

   To see the color options you have for coloring graphs yourself, do
   > ?plot,color

   To plot f(x) in magenta you would do this:
   > plot(f(x),x=a..b,color=magenta);

   To plot g(x) in Teal, do this:
   > plot(g(x),x=a..b,color="Teal");

8. **Thickness**

   The thickness of a graph can be controlled as in this example—the greater the number, the thicker the curve. (Color and thickness options can be used together.)
   > plot(f(x),x=a..b,thickness=2);