

**Lesson 1 - Introduction to MA 205****OBJECTIVES**

- Discuss instructor student expectations.
- Do a MA205 equipment check. (laptop, book, calculator, notebook with student guide, working copy of Mathematica 5.2 or 6.0)
- Understand how to use the student course guide.
- Understand the process of mathematical modeling.
- Learn why and how to make appropriate assumptions.
- Become familiar with an accumulation problem.
- Understand summation notation.

**READ**

- Stewart A Preview of Calculus pages 3-5
- Stewart Subsection 1.2 pages 24 to 34 (Review)
- Stewart Appendix E pages A34-A37

**THINK ABOUT**

- What type of things accumulate?
- Why do we need mathematical models?

**MATHEMATICA COMMANDS AND TASKS YOU NEED TO KNOW**

**Entering and manipulating functions.** When entering a function of one variable you may use the following commands:

$f[x_]:=$  *function of x*             $g[h_]:=$  *function of h*

or you can simply use just “=” without the colon if the function is not recursive

$f[x]=$  *function of x*             $g[h]=$  *function of h*

You can then do anything you would like to with this function  $f[x]$  or  $g[h]$ ; there is no need to use the underscore anymore. You can evaluate the function at any point using  $f[4]$  or  $g[-5]$ .

**Plotting.** To plot a function you have entered into mathematica the command is:

`Plot[f[x],{x,xmin,xmax}, AxesLabel->{x,y}]`