This short assignment will not be graded, but you are expected to complete this assignment and know this material before midterm 1. This material can (and likely will) be included on the first midterm.

As always, this is a minimal list of problems, I strongly encourage you to do more problems than are assigned.

1. 2.6/1, 2, 3, 10, 13

2. 2.7/1, 11 (ignore the instructions/parts on the problems, follow my instructions below!!)

NOTES AND SPECIAL INSTRUCTIONS :

1. On 2.7/1: $y' = 3 + t - y$ with $y(0) = 1$.

   (a) Find the approximate value of $y(1)$ using Euler's method with $h = 0.1$. In other words, fill in the table below until you get to $y(1)$:

t	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
y(t)	1	??	??	??	??	??	??	??	??	??	??

   (b) Plot the solution on the slope field generater on the course website. The direct link is here: http://slopefield.nathangrigg.net/ After you type in the equation use the following inputs for the other values:

   t-min $= 0$, t-max $= 5$, t-ticks $= 21$
   y-min $= 0$, y-max $= 5$, y-ticks $= 15$
   $t0 = 0$, $y0 = 1$, steps $= 0.1$
   Then check the box for "Draw solution?"
   And draw the graph.

   Note: The "steps" give the step size in Euler's method. The given solution was generated using a method like you used in part (a).

   (c) Solve the differential equation. Then get the actual value of $y(1)$. What is the error?

2. On 2.7/11: $y' = 5 - 3\sqrt{y}$ with $y(0) = 2$. Using Euler's method and $h = 0.1$ approximate the value of $y(0.5)$. In other words, fill in the table below until you get to $y(0.5)$:

t	0	0.1	0.2	0.3	0.4	0.5
y(t)	2	??	??	??	??	??

3. The problems in 2.7 can be long and tedious. That is why I only assigned a couple problems. If you don't understand the procedure, you should do more problems.