CS 151L – Summer 2017
Programming Assignment 4

Due: Wednesday, July 5, 2017 at 11:59 PM

You will need to submit your program on learn for grading. The name of the file should be **cs151su17assn4.m**. Be sure to include your name and section number as comments in the m-file.

A vehicle is being tested and measurements are taken to determine equations to define the distance, velocity and acceleration. The equations are given to you for you to plot two different ways. First, you need to plot them all on the same graph with different colors. Next you need to plot them all on separate subplots within the same figure window. The first equations given are for times between 0 and 100 seconds and the second set of equations are for times between 100.1 and 150 seconds. You will need to create time variables for the first set of equations in 0.1 second increments and the second set of equations in 0.1 second increments. Also find the overall maximum velocity and the overall maximum distance.

The equations for times between 0 and 100 seconds to perform the calculations are:

$$d = \frac{t^3}{1000} + \frac{t^2}{25} - 2t + 25$$

$$v = \frac{3t^2}{1000} + \frac{2t}{25} - 2$$

$$a = \frac{3t}{500} + \frac{2}{25}$$

The equations for times between 100.1 and 150 seconds to perform the calculations are:

$$d = t^2 - 200t + 11225$$

$$v = 2t - 200$$

$$a = 2$$

Change the y axis for the velocity to (-150, 250) and the y axis for the acceleration to (-5, 5).

Example Output

```
maxv =
   100

maxd =
   3725
```

Figure 1 – Combined Data

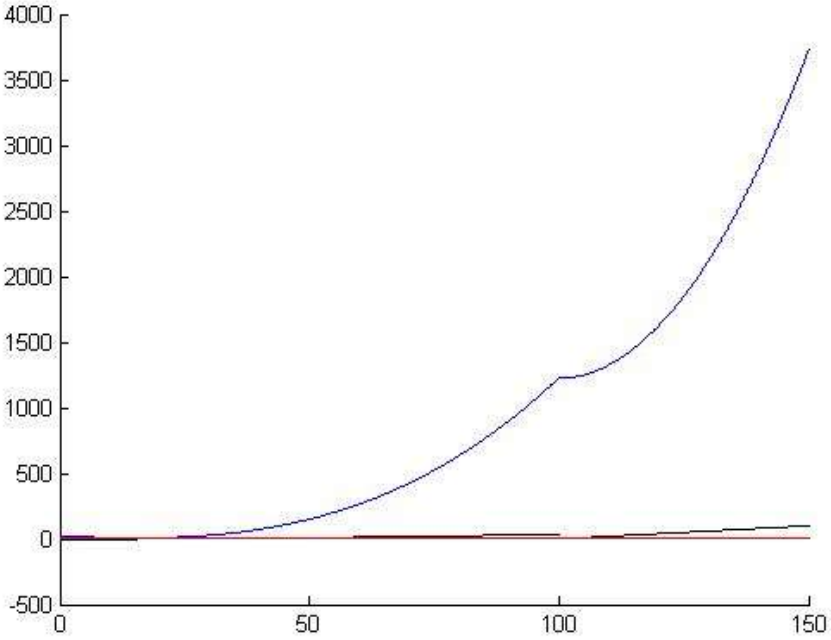

Figure 2 – Distance, Velocity and Acceleration on Separate Plots