Name_____

Student I.D._____

Math 2250-1
Quiz 7
October 19, 2012

1) Consider the differential equation for $y(x)$

$$y'' - y' - 6y = 0 .$$

1a) Find the general solution to this differential equation.

(5 points)

1b) What is the dimension of the solution space above?

(1 point)

2) Now consider the non-homogeneous differential equation

$$y'' - y' - 6y = 12.$$

Notice that a particular solution to this differential equation is the constant function $y_P = -2$. Use this particular solution and your work in problem (1) in order to solve the initial value problem

$$y'' - y' - 6y = 12$$
$$y(0) = 0$$
$$y'(0) = 1 .$$

(4 points)