

Name \_\_\_\_\_  
Student I.D. \_\_\_\_\_

**Math 2250-10**  
**Quiz 1**  
**January 10, 2014**

1a) Consider the differential equation for  $y = y(x)$ :

$$y' = 2y + 6$$

Show that the functions  $y(x) = C e^{2x} - 3$  solve this differential equation.

(2 points)

1b) Find a solution to the initial value problem

$$y' = 2y + 6$$

$$y(0) = 5$$

(2 points)

2) The brakes of a car are applied when it is moving  $40 \frac{m}{s}$ , and they provide a constant deceleration of  $8 \frac{m}{s^2}$ . How far does the car travel before coming to a stop? Hint: find formulas for the velocity and position functions, and use those to answer the problem.

(6 points)