Math 2250 Week 1 Quiz

Name, UID, and section number: _____

Write your answer in the space provided. Show work for full credit.

1. (10 points) Verify that for every constant C, the functions $y(x) = -2+Ce^{4x}$ are solutions to the following differential equation:

$$y' - 4y = 8.$$

2. (10 points) A object moves along a number line, with position function $x(t)$ m at time t. This object is subject to an acceleration of $a(t) = 8sin(2t)$ $\frac{m}{s^2}$. Its initial position and velocity are $x_0 = 0$ m, $v_0 = 0$ $\frac{m}{s}$. Find the position function $x(t)$.