

**Math 207 Quiz #4**  
**April 27, 2010**

Name: \_\_\_\_\_

Show all work and answers on a separate sheet with a box around your final answer. You should use a calculator on this quiz.

1. (5 pts.) Find the general solution to the equation  $\frac{dy}{dx} = \frac{y^2}{x^2} + \frac{2y}{x}$ .
2. (5 pts.) The air in a small room 12 feet by 10 ft by 10 ft is 4% carbon monoxide (CO). Starting at  $t = 0$ , fresh air (with no carbon monoxide) is blown into the room at a rate of  $50 \text{ ft}^3/\text{min}$ . If the air in the room flows out through a vent at the same rate, when will the carbon monoxide in the room be reduced by half? (Assume the air is well-mixed in the room. Round your answer to 4 decimal places.)

