

**Math 207 Quiz #3**  
**April 20, 2010**

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

Show all work and answers on a separate sheet with a box around your final answer. No calculators.

1. Solve the following.

(a) (5 pts.)  $(2x^2 + y)dx + (x^2y - x)dy = 0$  (You can leave your answer written implicitly.)

(b) (5 pts.)  $\frac{dy}{dx} = \frac{x \sec(y/x) + y}{x}$  (Write your answer explicitly.)

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**Notes:** This quiz covers exact equations, special integrating factors, and homogeneous equations.

The special integrating factors:  $\mu(x) = \exp\left(\int \frac{\partial M/\partial y - \partial N/\partial x}{N} dx\right)$        $\mu(y) = \exp\left(\int \frac{\partial N/\partial x - \partial M/\partial y}{M} dy\right)$