

Circle One:

Name: _____

11:00-11:55 (325)

3:30-4:20 (333)

Math211-2, Fall 2007

Quiz #9: 12-5-07

No Calculators. Feel free to use the backside as well.

1. Suppose $\frac{dy}{dx} = xy - x$.
 - a. (3 Points) Find a general solution for $y(x)$.
 - b. (1 Point) Check your solution.
 - c. (2 Points) If $y(0) = 2$, find $y(x)$.

2. (4 Points Total) A drug is being intravenously fed to a patient at a constant rate of 100 milligrams per hour. At the same time, the drug is being eliminated from the patient's bloodstream at a rate that equals 10% of the amount present at any given time.

- a.** (1 Point) Write a differential equation for $y(t)$, the amount in the patient's bloodstream at a time t , with t in hours and y in milligrams.
- b.** (3 Points) If there is an initial amount of 50 milligrams in the patient's bloodstream, how much will there be at the end of 10 hours.