

Linear Algebra & Differential Equations

Quiz 1, Fall 2007

TAs: Melanie Ruiz and Patrick Rault

NAME:

Circle One:

Tues 8:50am Tues 9:55am Tues 1:20pm
Thurs 8:50am Thurs 9:55am Thurs 1:20pm

Complete each of the following problems. Show all work. Make sure to clearly label your answer. Any work that is crossed out will not be assessed. Any incorrect work will be assessed. Make sure that all work is legible.

1. Find the particular solution of the following initial value problem.

$$\frac{dy}{dx} = 7e^{-3y+x}; \quad y(0) = 0$$

2. Consider the following differential equation.

$$y' = 2y - x; y(0) = 0$$

Construct a slope field for this DE, for the range $-5 < x < 5$ and $-5 < y < 5$. Sketch the solution curve corresponding to the initial condition. Use this solution curve to estimate the value of y when $x = 2$.