Math 352 **Quiz 01**

February 14, 2013; 10 minutes Name: _____

This quiz is *open-note*, but no books or calculators may be used. Show your work.

1. Let $x = c_1 e^{-t} + c_2 e^{3t}$.

   (a) Verify that x is a solution to $x'' - 2x' - 3x = 0$ by substituting.

   (b) Find $x(t)$ if $x(0) = 5$ and $x'(0) = 1$.

(b) _____

2. If e^{5t} is a solution to the differential equation

$$\frac{d^2y}{dt^2} - 13\frac{dy}{dt} + ky = 0,$$

   find the value of the constant k.

2. _____