Math 333 Quiz 6 Thursday, March 20, 2008

1. Find the general solution of the differential equation 6y'' - y' - y = 0.

2. Find the general solution of the differential equation y'' + 2y' - 8y = 0.

3. Find the general solution of the differential equation y'' - 2y' + y = 0.

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4. Consider the differential equation

$$t^2y'' + 2ty' - 2y = 0, \quad t > 0.$$

(a) Show that $y_1(t) = t$ is a solution of the differential equation.

(b) Find the general solution of the differential equation.