MATH 286 PROBLEMS DUE MARCH 7, 2001

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1. Solve:

$$y'' - 4y' + 4y = 0, \quad y(0) = 1, \quad y'(0) = 3.$$

2. Assuming you know that one solution of

$$y' + \frac{y'}{t} - \frac{4y}{t^2} = 0$$

is $y_1 = t^2$, find the other fundamental solution.

3. Solve:

$$y'' - 3y' + 2y = t + 2, \quad y(0) = 1, \quad y'(0) = 2.$$

4. Find the general solution of

$$y'' - 3y' + 2y = (t+1)e^t.$$

5. Find the general solution of

$$y'' + 9y = t\sin(3t).$$

6. Find the general solution of

$$y'' - 2y' + y = \frac{2e^t}{1+t^2}.$$