Math 333
Quiz 7 Solutions
Thursday, March 27, 2008

1. Find the general solution of the differential equation

$$y'' + 7y' + 10y = e^{2t}.$$

   Solution. $y(t) = k_1 e^{-5t} + k_2 e^{-2t} + \dfrac{1}{28} e^{2t}$

2. Find the general solution of the differential equation

$$y'' - 5y' + 4y = e^{4t}.$$

   Solution. $y(t) = k_1 e^{t} + k_2 e^{4t} + \dfrac{1}{3} t e^{4t}$

3. Find the general solution of the differential equation

$$y'' + 4y = 6 + t^2 + e^t.$$

   Solution. $y(t) = k_1 \cos(2t) + k_2 \sin(2t) + \dfrac{1}{4} t^2 + \dfrac{11}{8} + \dfrac{1}{5} e^t$