Math 333
Homework 7 Solutions
Forced Second-Order Linear Differential Equations

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1. $y(t) = k_1 e^{3t} + k_2 e^{-t} - e^{2t}$
2. $y(t) = k_1 e^{3t} + k_2 e^{-t} + \frac{3}{16} t e^{-t} + \frac{3}{8} t^2 e^{-t}$
3. $y(t) = k_1 \cos(3t) + k_2 \sin(3t) + \frac{1}{162}(9t^2 - 6t + 1)e^{3t} + \frac{2}{3}$
4. $y(t) = k_1 e^{-t} + k_2 t e^{-t} + t^2 e^{-t}$
5. $y(t) = k_1 e^{-t} + k_2 e^{-t/2} + t^2 - 6t + 14 - \frac{3}{10}\sin t - \frac{9}{10}\cos t$
6. $y(t) = k_1 \cos t + k_2 \sin t - \frac{1}{3} t \cos(2t) - \frac{5}{9}\sin(2t)$
7. $y(t) = e^t - \frac{1}{2} e^{-2t} - t - \frac{1}{2}$
8. $y(t) = \frac{7}{10}\sin(2t) - \frac{19}{40}\cos(2t) + \frac{1}{4}t^2 - \frac{1}{8} + \frac{3}{5}e^t$
9. $y(t) = k_1 e^{-t} + k_2 t e^{-t} + \frac{1}{2} t^2 e^{-t}$
10. $y(t) = c/q$