Due Thursday, March 3 at the beginning of class.

1. Find the general solution to the given differential equation.

   (a) $y'' + 2y' - 8y = 0$

   (b) $y'' + y' + 1.25y = 0$

2. Given that $y_1(t) = t^{-1}$ is a solution of the equation

$$t^2y'' + 3ty' + y = 0, \quad t > 0.$$

   Find a second solution of the equation.

3. Find the general solution of the following equations:

   (a) $y'' - y' - 12y = e^{4t}$.

   (b) $y'' - 9y' = 36x + 5$.

   (c) $y'' + 4y = \sin t - \cos t$