Math 333
Homework: Higher Order Linear Differential Equations

In each of the following problems, find the general solution of the given differential equation.

1. $y''' - 3y'' + 3y' - y = 0$

2. $y^{(4)} - 5y'' + 4y = 0$

3. $y^{(4)} - 8y' = 0$

4. $y''' + 5y'' + 6y' + 2y = 0$

5. $y^{(4)} - 7y''' + 6y'' + 30y' - 36y = 0$

6. $y^{(4)} - y = 3t + \cos t$

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

8. $y^{(4)} - 4y'' = t^2 + e^t$