1. Solve the IVP $y'' + 4y' + 4y = 0$ with $y(0) = 4$ and $y'(0) = 1$.

2. Find the general solution to $y^{(3)} - 4y^{(2)} + y' + 26y = 0$.

3. Find a particular solution to $y'' + 3y' - 10y = 1 + \cos t$. Hint: first find a family of solutions that contains 1 and $\cos t$ and is closed under differentiation.

4. Find the general solution to $y'' + 3y' - 10y = 1 + \cos t$.