Determine the general solution of the given differential equation.

1. $y'' - 5y' + 6y = 0$

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

3. $y'' - 4y' + 13y = 0$

4. $y''' - 5y'' + 7y' - 3y = 0$

5. $y''' - 6y'' + 12y' - 8y = 0$

6. $y''' - y'' + y' - y = 0$