Find the general solution to the following 2nd order differential equations.

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

2. $y'' + 2y' - 3y = e^{3t}$

3. $y'' + 2y' - 3y = 6t^2 + t - 2$
4. \( y'' + 2y' - 3y = 5 \sin 3t \)