Exercise 1 (6 points)

Find the solution of differential equation \( 4x^2 y'' + y = 0 \) if one solution is \( y_1 = x^{\frac{1}{2}} \ln x \) (show all your steps)

Exercise 2 (9 points)

Solve the differential equation \( y''' - 3y'' + 4y' - 2y = 0 \) (show all your steps)
Exercise 1 (6 points)
Find the solution of differential equation $x^2 y'' - 3xy' + 5y = 0$ if one solution is $y_1 = x^2 \cos(\ln x)$ (show all your steps)

Exercise 2 (9 points)
Solve the differential equation $y^{(4)} - 4y''' + 8y'' = 0$ (show all your steps)