

Question 1:

Solve (i)

$$y'' - y' = e^x.$$

(ii)

$$x^2 y'' + 8xy' + 6y = 0$$

(iii)

$$y'' - 2y' + 5y = \sin 2x.$$

Question 2

Solve the IVP

$$y''' + 12y'' + 36y' = 0, \quad y''(0) = -7, \quad y'(0) = 1, \quad y(0) = 0.$$

Question 3

Solve

$$2y'' + 2y' + y = 4\sqrt{x}.$$

Question 4:

Solve

$$3y'' - 6y' + 6y = \frac{e^x}{\cos x}.$$
