

2) The solution of the differential equation $2x \cdot \frac{dy}{dx} - y = 3$ represents a family of:

Solution: Given equation can be written as:

$$\frac{2dy}{y+3} = \frac{dx}{x} \Rightarrow 2 \log(y+3) = \log x + \log e = \log ex$$

$$\Rightarrow (y+3)^2 = ex.$$

This represents a family of parabolas.