

Q.2 Find the Orth. Trajs. of the family of curves  $x^2 - y^2 = C$

Soln //  $x^2 - y^2 = C$

$$2x - 2y \frac{dy}{dx} = 0$$

$$\frac{dy}{dx} = \frac{2x}{2y} = \frac{x}{y}$$

To find orth. Trajs.

$$\frac{dy}{dx} = -\frac{y}{x}$$

~~$$\int \frac{dy}{y} = \int \frac{dx}{x}$$~~

~~$$\int \frac{dy}{y} = -\int \frac{dx}{x}$$~~

$$\ln y = -\ln x + C$$

$$y \cdot x = C^*$$

