Ordinary Differential Equation (ODE)

Q1: What is Differential equation? An equation which involves derivatives of a **definition** with respect to one or more **independent variables** is called differential Equation.

Now what is dependent and independent

on is usually written in this form like y=f(x) We know that

 \Box In y=f(x) we clearly see/notice that y value is depend upon x. So, y is dependent variable and x is independent variable At here, **x** is depends upon y. So result is x is dependent and y is independent variable. x=f(y) Example:

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

$$\frac{1}{x}\frac{d^2y}{dx^2} - y^3 = 3x$$

$$\frac{dy}{dx} - \ln y = 0$$

$$\frac{d^3y}{dx^3} - 2\frac{d^2y}{dx^2} + \frac{dy}{dx} = 2\sin x$$

Example of Differential Equations with respect to one independent variable which is x