

Determine order and degree (if defined) of differential equation $\left(\frac{d^2 y}{dx^2}\right)^2 + \cos\left(\frac{dy}{dx}\right) = 0$.

Solution:

$$\left(\frac{d^2 y}{dx^2}\right)^2 + \cos\left(\frac{dy}{dx}\right) = 0$$

Highest order derivative in the given differential equation is $\frac{d^2 y}{dx^2}$. Order is 2.
Given differential equation is not a polynomial equation in its derivatives. Degree is not defined.