

Determine order and degree (if defined) of differential equation $\frac{d^4 y}{dx^4} + \sin(y''') = 0$.

Solution:

$$\Rightarrow \frac{d^4 y}{dx^4} + \sin(y''') = 0$$

$$\Rightarrow y'''' + \sin(y''') = 0$$

Highest order derivative in the differential equation is y'''' . Its order is four.

Differential equation is not a polynomial equation in its derivatives. Its degree is not defined.