

Q. 2- Find the slope of the tangent to the curve  $y=x^3-x+1$  at the point whose  $x$ -coordinate is 2.

Ans: The given curve is  $y=x^3-x+1$

$$\therefore \frac{dy}{dx} = 3x^2 - 1$$

The slope of the tangent to a curve at  $x_0, y_0$  is  $\left. \frac{dy}{dx} \right|_{x_0}$

It is given that  $x_0 = 2$

$$\left. \frac{dy}{dx} \right|_{x=2} = 3x^2 - 1 \Big|_{x=2} = 11$$