

6. Find the equation of tangent at  $(1, 2)$  to the curve  $y = 2x^2$ .

Solution:

Eq<sup>n</sup> of curve,

$$y = 2x^2 \dots (i)$$

Slope of (i),

$$m = \frac{dy}{dx} = 4x$$

Since, the tangent & curve meets at  $(1, 2)$ .

Slope at  $(1, 2)$  is;

$$m = 4 \cdot 1 \\ = 4$$

Eq<sup>n</sup> of tangent passing through  $(1, 2)$ ;

$$y - y_1 = m(x - x_1)$$

or,  $y - 2 = 4(x - 1)$

or,  $y - 2 = 4x - 4$

or,  $4x - y - 2 = 0$

$\therefore$  The required eq<sup>n</sup> of tangent is;

$$4x - y - 2 = 0$$