

Q. 3

$$\frac{dy}{dx} = \frac{2 \cdot 3x^2 - x^3 \cdot 0}{2^2}$$

$$\frac{dy}{dx} = \frac{6x^2 - 0}{4}$$

$$\therefore \frac{dy}{dx} = \frac{6x^2}{4}$$

For the equation of the tangent

$$m_1 = \left. \frac{dy}{dx} \right|_{x=-1}$$

$$\frac{6(-1)^2}{4} = \frac{6}{4} = \frac{3}{2}$$

$$\therefore m_1 = \frac{3}{2}$$

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

$$y - \left(-\frac{1}{2}\right) = \frac{3}{2}(x - (-1))$$

$$y + \frac{1}{2} = \frac{3}{2}(x + 1)$$

$$\frac{y + 1}{2} = \frac{3x + 3}{2}$$

$$\frac{2y + 1}{2 \times 2} = \frac{3x + 3}{2}$$

$$2(2y + 1) = 2(3x + 3)$$

$$4y + 2 = 6x + 6$$

$\therefore 4y - 6x - 4 = 0$ is the equation of the tangent
reduce to the lowest term