

14/11/20

a) Equation of tangent

$$y - y_1 = m(x - x_1)$$
$$y - 8 = 8(x - 2)$$
$$y - 8 = 8x - 16$$
$$y - 8x = -16 + 8$$
$$y - 8x = -8$$
$$y - 8x + 8 = 0$$

b) Equation of the normal

$$m_1 = -1/m \quad m_1 = 1/8$$

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

$$y - 8 = -1/8(x - 2)$$

$$8y - 64 = -x + 2$$

$$8y + x = 2 + 64$$

$$8y + x - 66 = 0$$

3)  $y = x^{3/2}$  at the point  $(-1, -1/2)$

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

$$m = \left. \frac{dy}{dx} \right|_{x=-1} = (x^{3/2})$$

$$m = (-1)^{3/2}$$

$$m = -1/2$$

$$m = -1/2$$