

Problem : 0580/41/O/N/21/ Q8B(III)

Find the equation of the tangent to the graph of $y = 18 - 3x - x^2$ at $x = 4$.
Give your answer in the form $y = mx + c$.

$$\underline{\text{Sol}} \quad \frac{dy}{dx} = -3 - 2x$$

$$x = 4 \quad \frac{dy}{dx} = -3 - 2 \times 4 = -11$$

$$y = 18 - 3 \times 4 - 4^2 = -10$$

Eq of tangent

$$y = -11x + c$$

$$-10 = -11 \times 4 + c$$

$$c = 34$$

$$y = 34 - 11x$$