

2. The curve C has equation

$$y = 2x^2 - 12x + 16$$

Find the gradient of the curve at the point $P(5, 6)$.

(Solutions based entirely on graphical or numerical methods are not acceptable.)

(4)

$$\begin{aligned} \frac{dy}{dx} &= 2 \times 2x^{2-1} - 12 \\ &= 4x - 12 \end{aligned} \quad (2 \text{ marks})$$

at $(5, 6)$,

$$\frac{dy}{dx} = 4(5) - 12 = 8 \quad (2 \text{ marks})$$

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