

10 A curve is defined for $x > 0$ and is such that $\frac{dy}{dx} = x + \frac{4}{x^2}$. The point $P(4, 8)$ lies on the curve.

(i) Find the equation of the curve. [4]

(ii) Show that the gradient of the curve has a minimum value when $x = 2$ and state this minimum value. [4]