

- 9** A curve is such that  $\frac{dy}{dx} = \frac{12}{(2x+1)^2}$  and  $P(1, 5)$  is a point on the curve.
- (i) The normal to the curve at  $P$  crosses the  $x$ -axis at  $Q$ . Find the coordinates of  $Q$ . [4]
- (ii) Find the equation of the curve. [4]
- (iii) A point is moving along the curve in such a way that the  $x$ -coordinate is increasing at a constant rate of 0.3 units per second. Find the rate of increase of the  $y$ -coordinate when  $x = 1$ . [3]