

7 The equation of a curve is $y = 2 + \frac{3}{2x - 1}$.

(i) Obtain an expression for $\frac{dy}{dx}$. [2]

(ii) Explain why the curve has no stationary points. [1]

At the point P on the curve, $x = 2$.

(iii) Show that the normal to the curve at P passes through the origin. [4]

(iv) A point moves along the curve in such a way that its x -coordinate is decreasing at a constant rate of 0.06 units per second. Find the rate of change of the y -coordinate as the point passes through P . [2]