

- 4** A point P is moving along the curve with equation $y = ax^{\frac{5}{2}} - 12x$ in such a way that the x -coordinate of P is increasing at a constant rate of 5 units per second.

- (a) Find the rate at which the y -coordinate of P is changing when $x = 9$. Give your answer in terms of the constant a . [3]

[illegible]

- (b)** Given that the curve has a minimum point when $x = \frac{1}{4}$, find the value of a . [2]
