

2.

**In this question you must show all stages of your working.
Solutions relying entirely on calculator technology are not acceptable.**

A particle P moves along the x -axis.

At time t seconds, $t \geq 0$, the velocity of P is $v \text{ m s}^{-1}$, where

$$v = 3t^2 - 8t + 5$$

(a) Find the values of t for which P is instantaneously at rest.

(2)

(b) Find the total distance travelled by P in the interval $0 \leq t \leq 2$

(4)