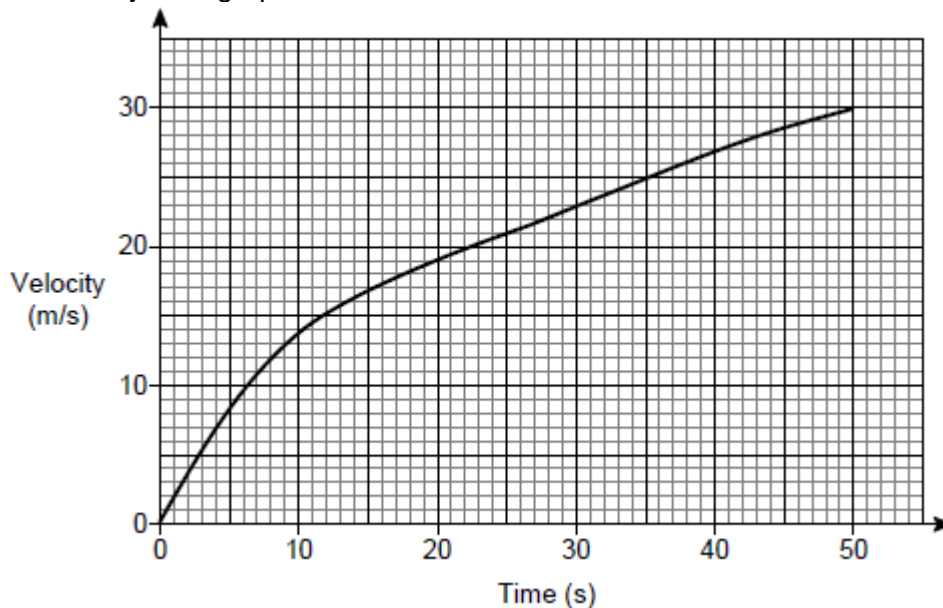


Q1.

Here is the velocity-time graph of a car for 50 seconds.



(a) Work out the average acceleration during the 50 seconds.

Give the units of your answer.

.....

.....

.....

Answer .....

(2)

(b) Estimate the time during the 50 seconds when  
the instantaneous acceleration = the average acceleration

You **must** show your working on the graph.

.....

Answer .....

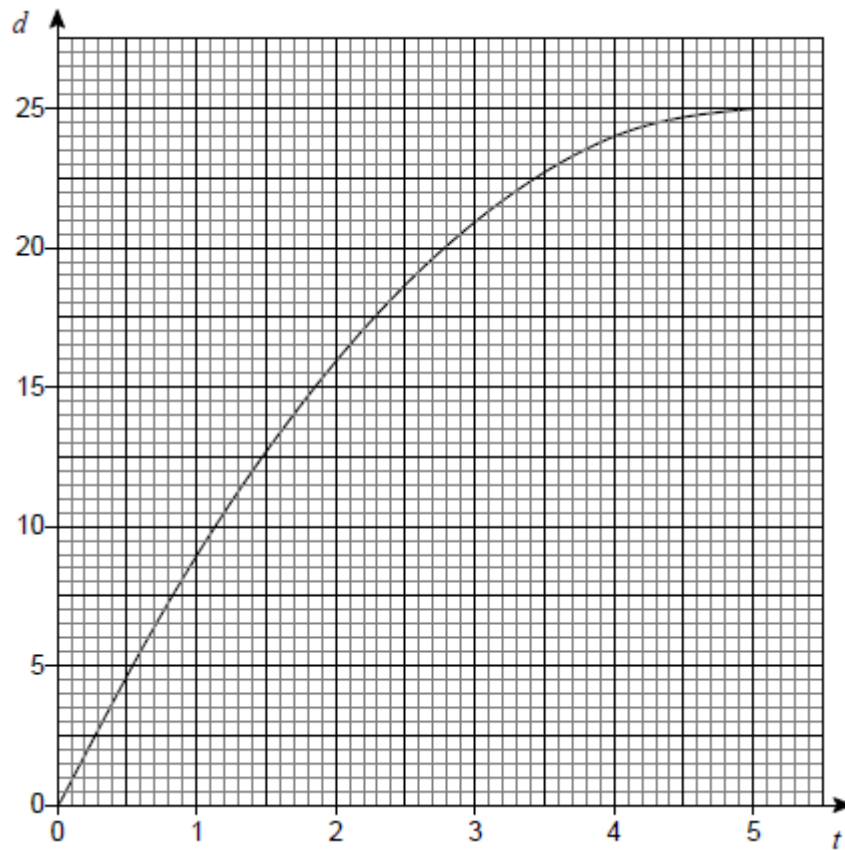
(2)

(Total 4 marks)

**Q2.**

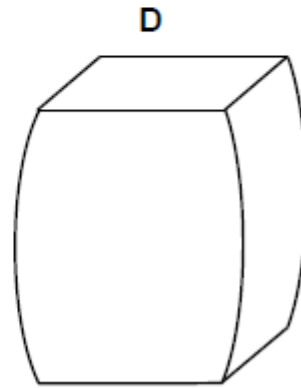
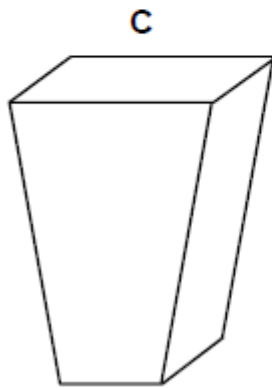
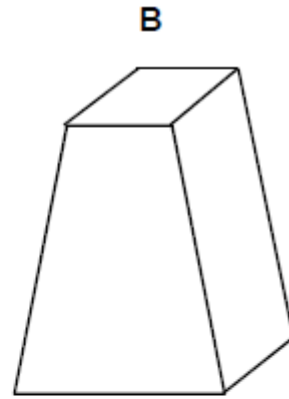
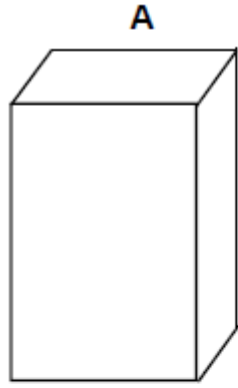
A container is filled with water in 5 seconds.

The graph shows the depth of water,  $d$  cm, at time  $t$  seconds.



- (a) The water flows into the container at a constant rate.

Which diagram represents the container? Circle the correct letter.



(1)

- (b) Use the graph to estimate the rate at which the depth of water is increasing at 3 seconds.

You **must** show your working.

.....

.....

.....

.....

Answer ..... cm/s

(2)  
(Total 3 marks)

**Q3.**

The graph shows the speed of a snowboarder for 2 minutes.



Answer .....

(4)

(b) Work out the gradient of the graph at 70 seconds.

.....  
.....  
.....

Answer ..... m/s<sup>2</sup>

(3)

(Total 7 marks)