

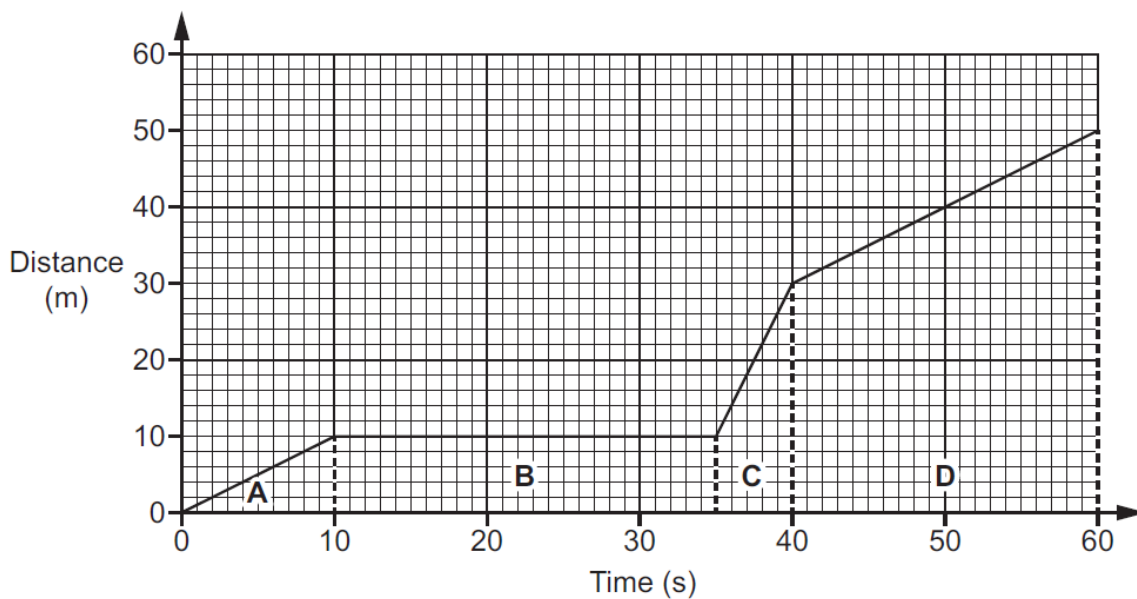
GCSE Physics A (Gateway)

J249/01 Physics A P1-P4 and P9 (Foundation Tier)

Question Set 9

1 A student investigates motion graphs.

(a) Look at a distance-time graph for the movement of a dog in a park.



(i) How far did the dog move in the park?

Distance = 50 m [1]

(ii) How long was the dog in the park?

Time = 60 s [1]

(iii) Name a piece of apparatus the student could use to accurately measure the distance the dog moved.

tape measure [1]

(b) The distance-time graph has four sections: **A**, **B**, **C** and **D**.

(i) Which section of the graph shows the **greatest** speed?

Tick (✓) **one** box.

A

B

C

D

Explain your answer.

[2]

(ii) Which section of the graph shows **zero** speed?

Tick (✓) **one** box.

A

B

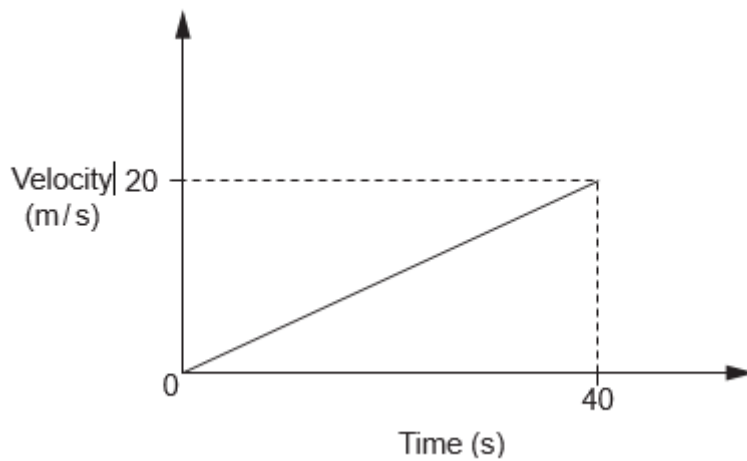
C

D

Explain your answer.

[2]

- (c) The student draws a velocity-time graph for a boat accelerating.



Acceleration is the gradient of a velocity-time graph.

Calculate the acceleration of the boat.

Use the equation: acceleration = change in velocity \div time

$$\frac{20 - 0}{40} = \frac{20}{40} = \frac{1}{2} \text{ Acceleration} = \dots\dots\dots 0.5 \dots\dots\dots \text{ m/s}^2 \quad [2]$$

Total Marks for Question Set 9: 9

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