

Real-Life and Distance-Time Graphs - Higher

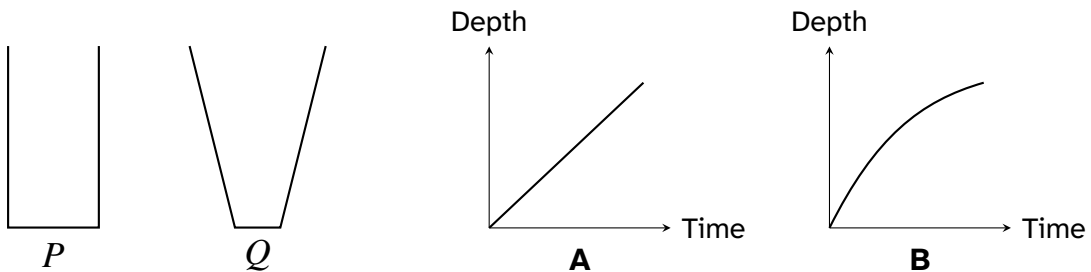
For Pearson Edexcel GCSE Mathematics (1MA1) • Higher tier

Name _____

Total marks: **28**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method. You may use a calculator.

- 1** Water is poured at a constant rate into each container.
Match each container to the graph showing how the depth of water changes over time.

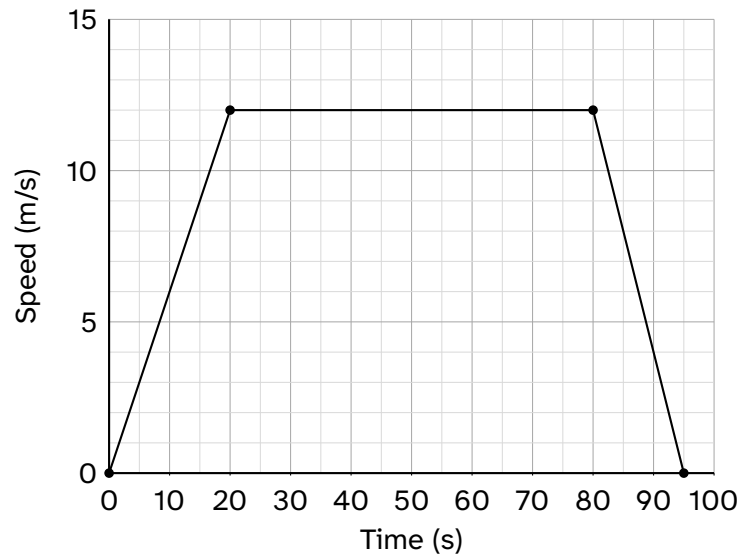


Container *P* has straight vertical sides. Container *Q* is wider at the top.
Which graph matches each container?

(2)

(Total for Question 1 is 2 marks)

- 2 The speed-time graph shows the journey of a bus from one bus stop to the next.



- (a) Work out the deceleration of the bus in the last 15 seconds.

..... m/s^2
(2)

- (b) Work out the total distance travelled by the bus.

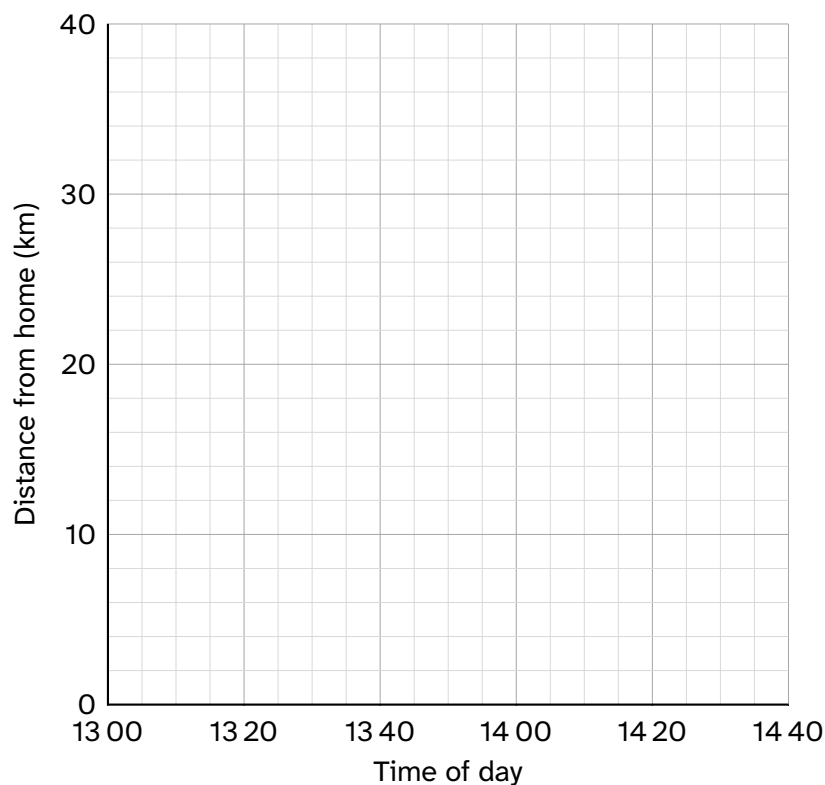
..... m
(3)

- (c) Work out the average speed of the bus for the whole journey.
Give your answer correct to 1 decimal place.

..... m/s
(2)

(Total for Question 2 is 7 marks)

- 3** Carys drives 36 km from her home to a garden centre.
She leaves home at 13 00 and drives at a constant speed of 54 km/h.



- (a) On the grid, draw the travel graph for Carys's journey to the garden centre.

(2)

- (b) Carys stays at the garden centre for 20 minutes.
She then drives straight home.
She gets home at 14 30
On the grid, complete the travel graph for Carys's journey.

(2)

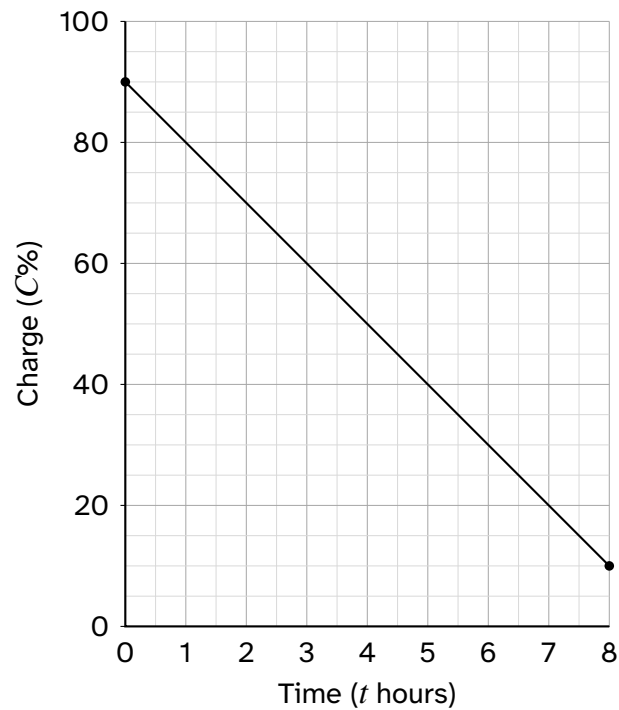
- (c) Work out Carys's average speed, in km/h, on her way home.

..... km/h

(2)

(Total for Question 3 is 6 marks)

- 4 The graph gives information about the charge, $C\%$, of the battery in Leon's phone t hours after he unplugs it from the charger.



- (a) Find the gradient of the graph.

.....
(2)

- (b) Interpret what the gradient of the graph represents.

.....
.....
(1)

(Total for Question 4 is 3 marks)

.....

- 5 A car is tested on a straight track.
Here is a sketch of its speed-time graph.
For the first 20 seconds, the car has a constant acceleration of 1.5 m/s^2

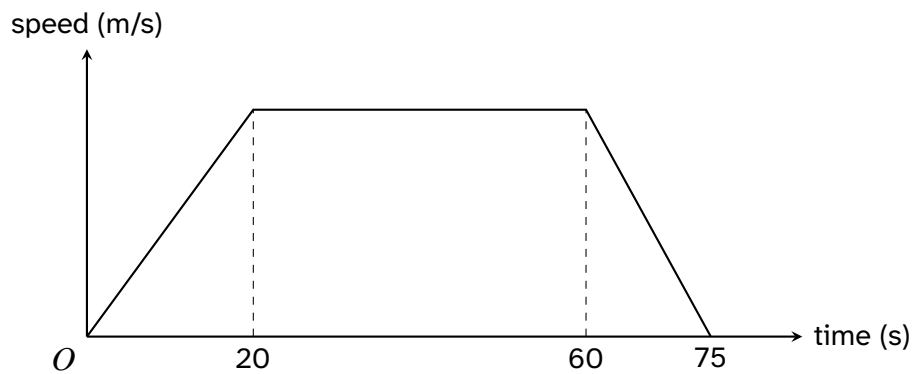


Diagram **NOT** accurately drawn

- (a) Work out the total distance the car travelled.

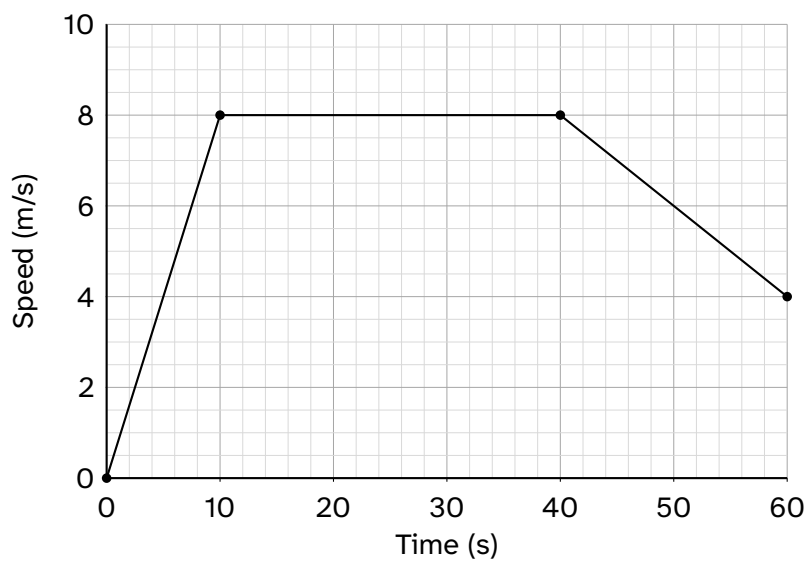
..... m
(3)

- (b) Work out the deceleration of the car in the last 15 seconds.

..... m/s^2
(2)

(Total for Question 5 is 5 marks)

- 6 Here is a speed-time graph for the first 60 seconds of a cyclist's ride.



- (a) Work out the time the cyclist takes to travel the first 200 metres.

..... seconds
(3)

- (b) Is the average speed of the cyclist for the 60 seconds more than 7 m/s?
You must show all your working.

(2)

(Total for Question 6 is 5 marks)