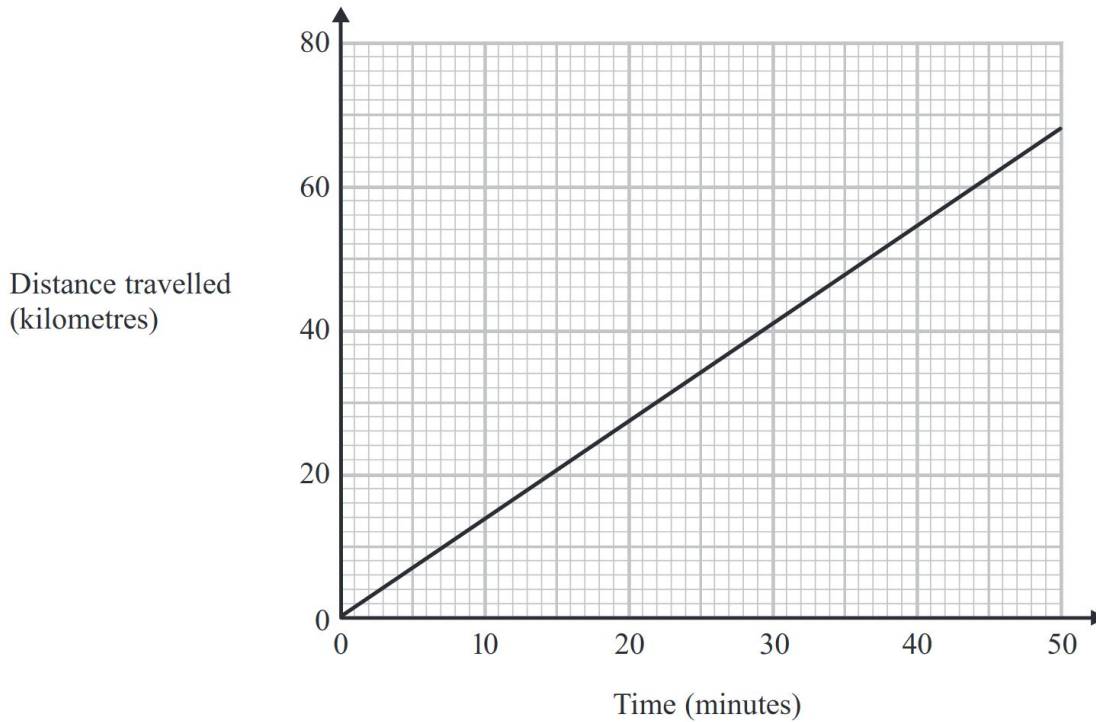


## GCSE Physics & Maths - Distance-Time Graph Practice Questions

1. The graph shows information about the distances travelled by a lorry.



The graph is a straight line.

(a) Work out the gradient of the straight line.

(2 marks)

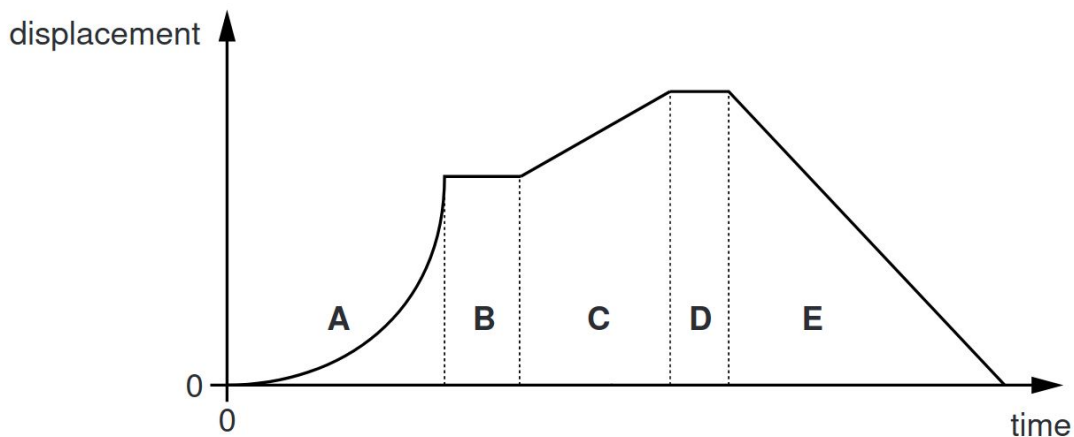
(b) Write down a practical interpretation of the value you calculated in part (a).

(1 mark)

*Edexcel Mathematics B Paper 1, June 2016*

2. Alex goes for a ride on his bike.

The graph shows how his displacement from the start of his ride changes with time.



The graph has been divided into five regions, A, B, C, D and E.

Which region or regions show each type of motion?

Put ticks (✓) in the correct box or boxes for each row. You may tick more than one box in a row.

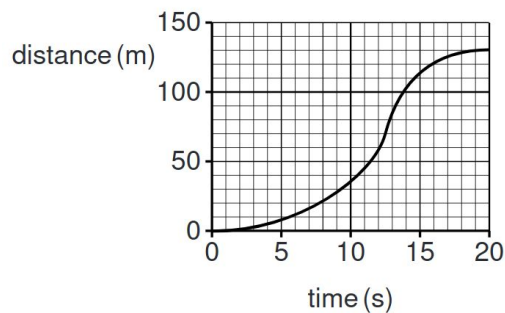
Type of motion	Region				
	A	B	C	D	E
Stationary					
Moving with constant speed					
Fastest instantaneous speed					

(2 marks)

OCR Physics Paper 2, June 2015

3. Lorries are fitted with tachometers that automatically record their speed and distance travelled. The data from the tachometer can be used to produce graphs.

(a) Here is the distance-time graph for a journey lasting 20s.



Use the graph to determine:

(i) The time when the lorry has the greatest instantaneous speed.

time = ..... s  
(1 mark)

(ii) The average speed for this journey.

average speed = ..... m/s  
(2 marks)

(iii) Here are some descriptions of the motion of the lorry during this 20 s journey.

Put a tick (✓) in the box next to the correct description.

Speed increases, then decreases until the lorry becomes stationary.

Speed increases, then decreases until the lorry is moving at constant speed.

Speed increases until the lorry moves at constant speed.

Speed increases until the lorry becomes stationary.

(1 mark)

OCR Physics Paper 2, June 2016

4. (a) A car driver sees the traffic in front is not moving and brakes to stop his car. The stopping distance of a car is the thinking distance plus the braking distance.

(i) What is meant by the 'braking distance'?

(1 mark)

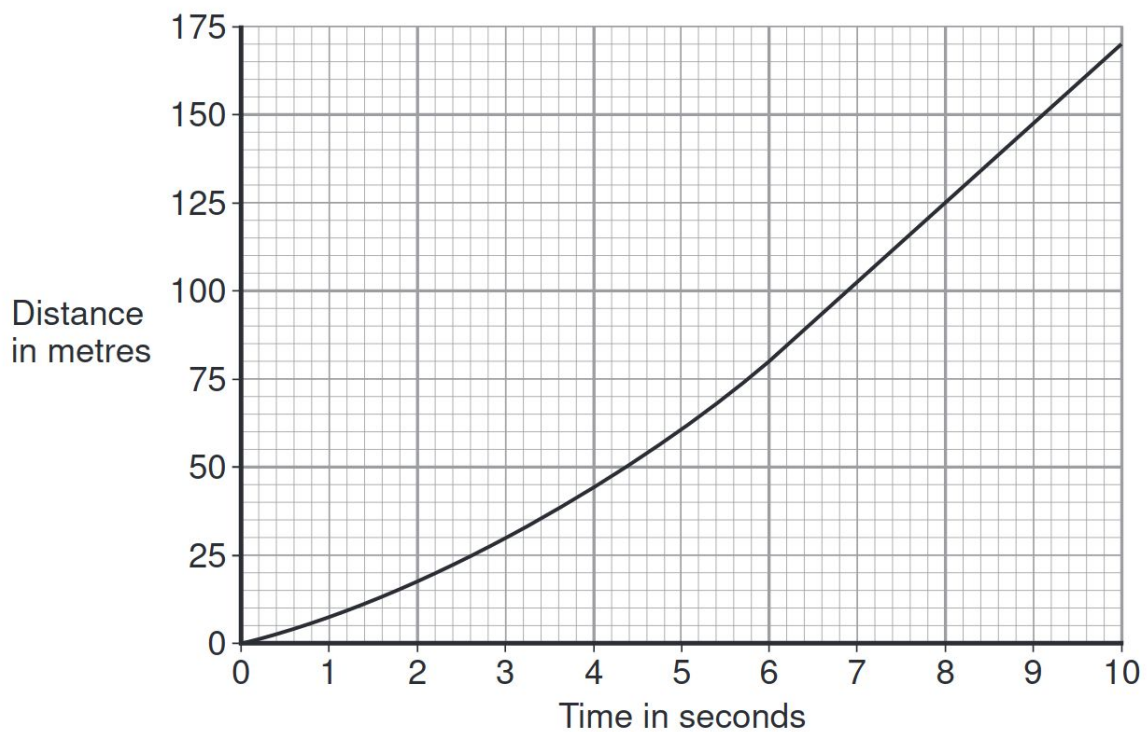
(ii) The braking distance of a car depends on the speed of the car and the braking force. State one other factor that affects braking distance.

(1 mark)

(iii) How does the braking force needed to stop a car in a particular distance depend on the speed of the car?

(1 mark)

(b) Figure 1 shows the distance-time graph for the car in the 10 seconds before the driver applied the brakes.



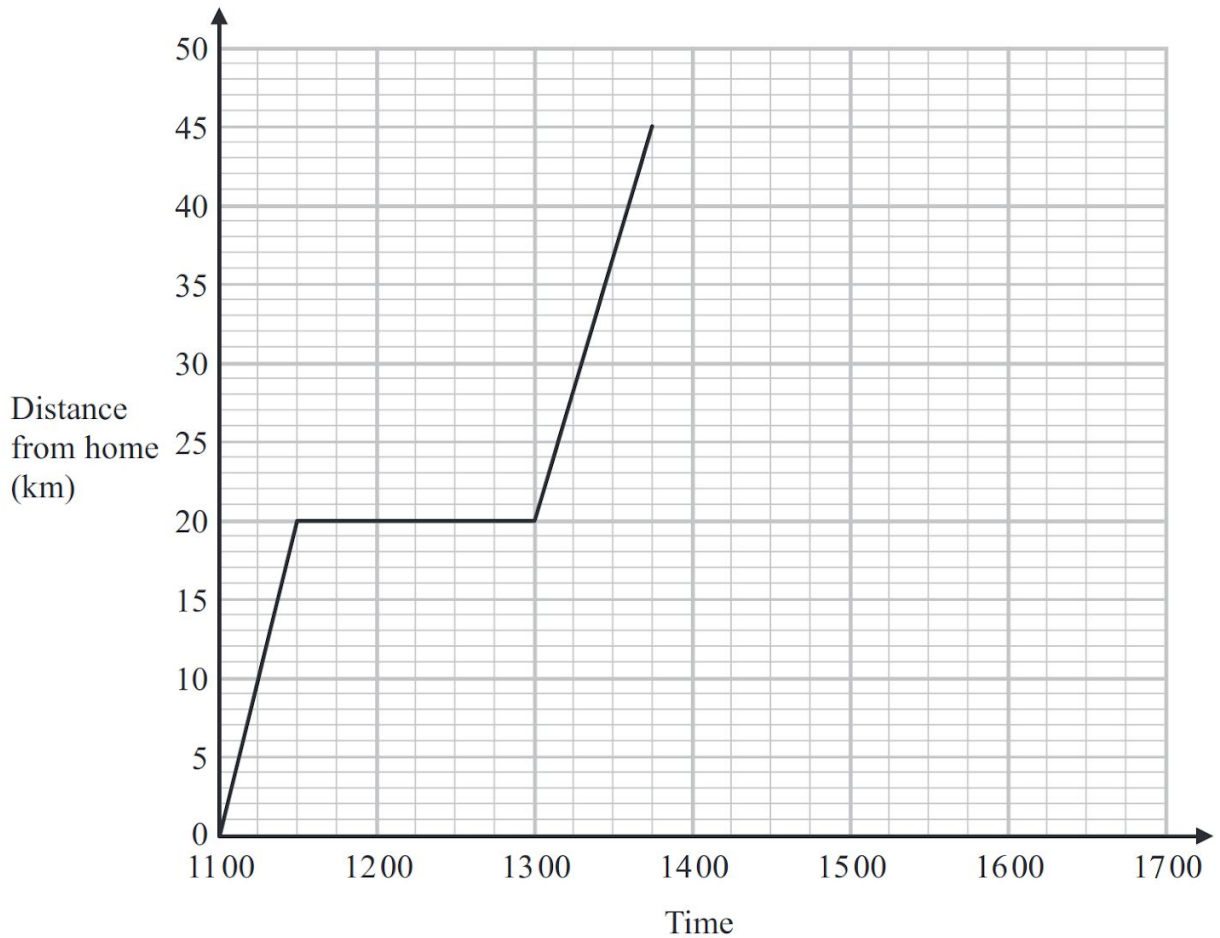
**Figure 1**

Use Figure 1 to calculate the maximum speed the car was travelling at. Show clearly how you work out your answer.

(2 marks)

*AQA Physics Paper 2, June 2015*

5. Lia left home at 11 00 to drive to a shopping centre.  
 On her way, she stopped at a friend's house.  
 Here is the distance-time graph for her journey to the shopping centre.



(a) (i) For how many minutes did Lia stay at her friend's house?

(1 mark)

(ii) How far is it from her friend's house to the shopping centre?

(1 mark)

Lia stayed at the shopping centre for  $1\frac{1}{2}$  hours.  
 She then drove back home.  
 She arrived home at 16:30.

(b) Show all this information on the distance-time graph.

(2 marks)