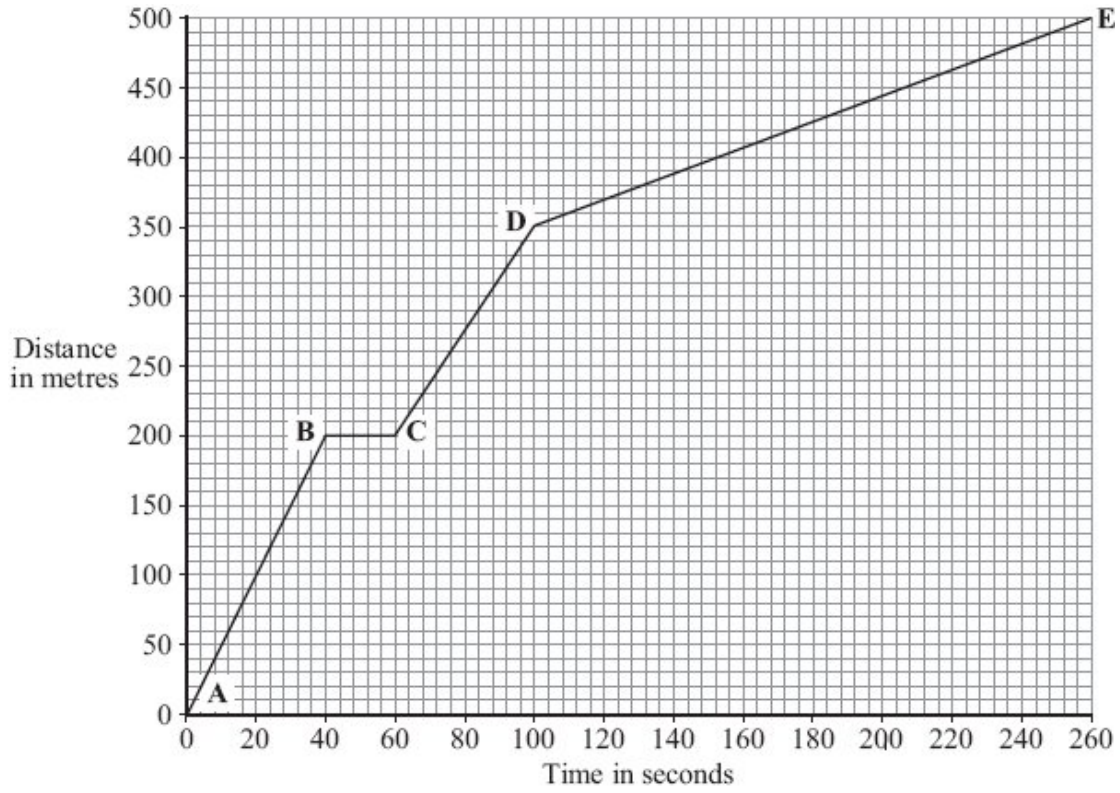


- Q1.** Part of a bus route is along a high street.
The distance – time graph shows how far the bus travelled along the high street and how long it took.



- (a) The bus travels the **slowest** between points **D** and **E**.

How can you tell this from the graph?

.....

(1)

- (b) Between which two points was the bus travelling the **fastest**?

Put a tick (✓) in the box next to your answer.

Points	
A – B	
B – C	
C – D	

(1)

(c) There is a bus stop in the high street.
This is marked as point **B** on the graph.

(i) What is the distance between point **A** on the graph and the bus stop?

Distance metres

(1)

(ii) How long did the bus stop at the bus stop?
Show clearly how you work out your answer.

.....

Time = seconds

(2)

(d) A cyclist made the same journey along the high street.
The cyclist started at the same time as the bus and completed the journey in 200 seconds. The cyclist travelled the whole distance at a constant speed.

(i) Draw a line on the graph to show the cyclist's journey.

(2)

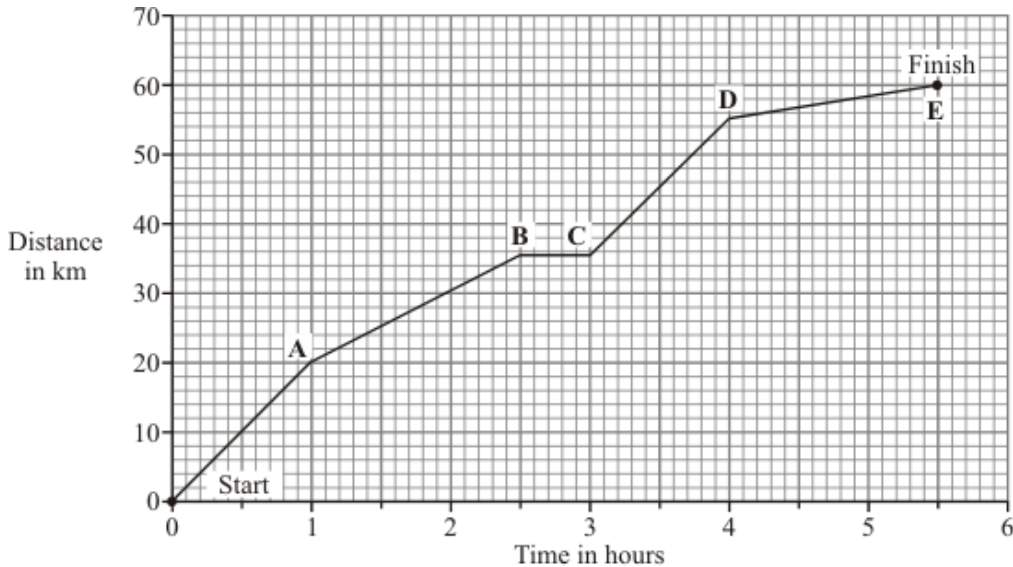
(ii) After how many seconds did the cyclist overtake the bus?

The cyclist overtook the bus after seconds.

(1)

(Total 8 marks)

Q2. A horse and rider take part in a long distance race. The graph shows how far the horse and rider travel during the race.



(a) What was the distance of the race?

distance = km

(1)

(b) How long did it take the horse and rider to complete the race?

.....

(1)

(c) What distance did the horse and rider travel in the first 2 hours of the race?

distance = km

(1)

(d) How long did the horse and rider stop and rest during the race?

.....

(1)

(e) Not counting the time it was resting, between which two points was the horse moving the slowest?

..... and

Give a reason for your answer.

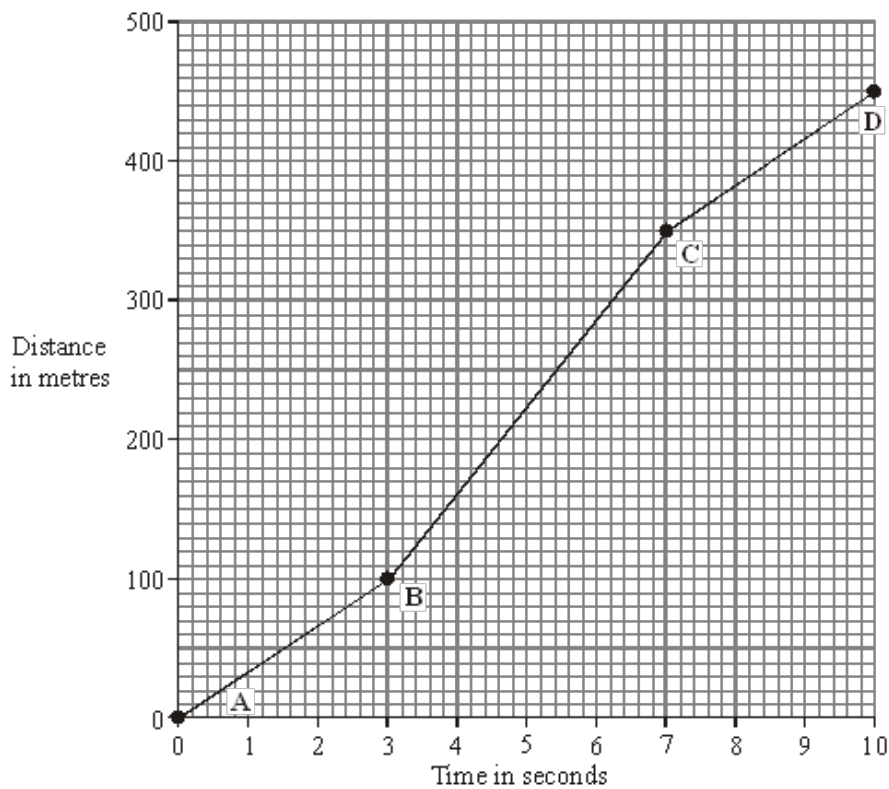
.....

.....

(2)

(Total 6 marks)

Q3. The distance-time graph represents the motion of a car during a race.



- (a) Describe the motion of the car between point **A** and point **D**. You should not carry out any calculations.

To gain full marks in this question you should write your ideas in good English. Put them into a sensible order and use the correct scientific words.

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

(3)

- (b) Calculate the gradient of the graph between point **B** and point **C**. Show clearly how you get your answer.

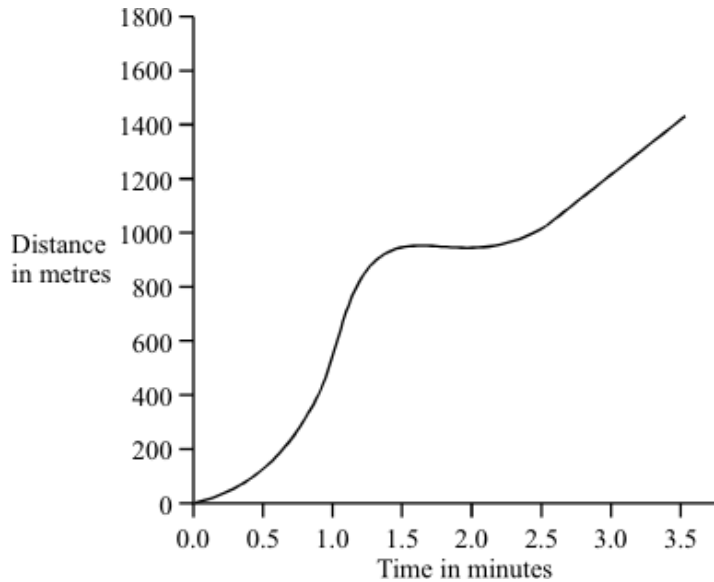
.....
.....
.....

gradient =

(3)

(Total 6 marks)

- Q4.** The graph shows how the distance travelled by a car changes with time during a short journey.



(i) Describe fully the motion of the car during the first **two** minutes of the journey.

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

(3)

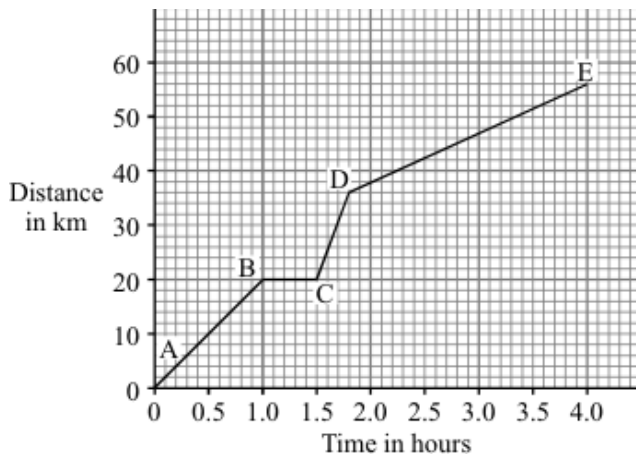
(ii) During the last minute of the journey the velocity of the car changes although the speed remains constant. How is this possible?

.....
.....

(1)

(Total 4 marks)

Q5. A cyclist goes on a long ride. The graph shows how the distance travelled changes with time during the ride.



(i) Between which **two** points on the graph was the cyclist moving at the fastest speed?

.....

(1)

(ii) State **one** way cyclists can reduce the air resistance acting on them.

.....
.....

(1)

(iii) How long did the cyclist stop and rest?

.....

(1)

(iv) Write down the equation which links distance, speed and time.

.....

(1)

(v) Calculate, in km/hr, the average speed of the cyclist while moving.

.....

.....

.....

.....

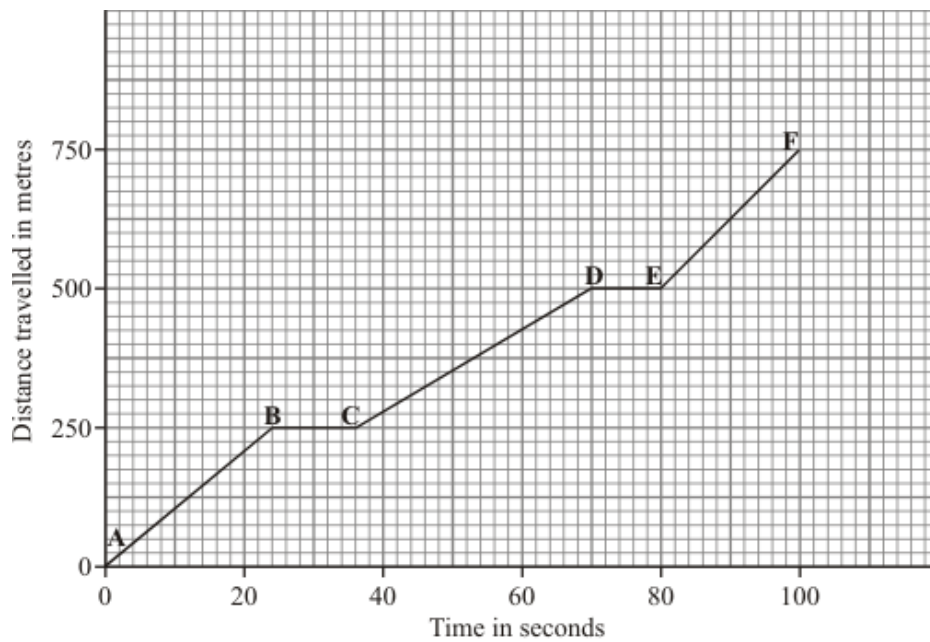
Average speed = km/hr

(3)

(Total 7 marks)

Q6. This question is about a car travelling through a town.

(a) The graph shows how far the car travelled and how long it took.



(i) Between which points was the car travelling fastest? Tick (✓) your answer.

Points	Tick (✓)
A – B	
B – C	
C – D	
D – E	
E – F	

(1)

(ii) Between which points was the car stationary?

.....
.....

(1)

(b) Complete the sentences by writing the correct words in the spaces.

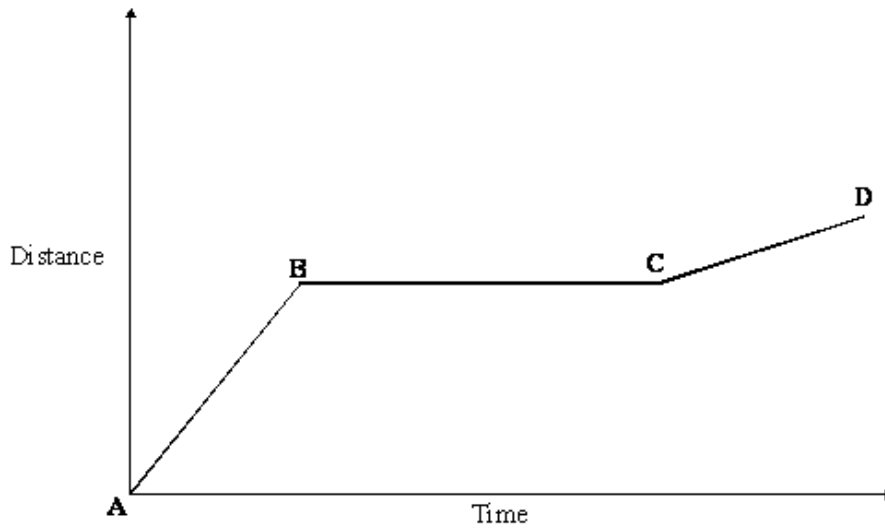
When a car has to stop, the **overall** stopping distance is greater if:

- the car is poorly maintained;
- there are adverse weather conditions;
- the car is travelling ;
- the driver's reactions are

Also, the greater the speed of the car, then the greater the braking
needed to stop in a certain time.

(3)
(Total 5 marks)

Q7. The graph shows the distance a person walked on a short journey.



(a) Choose from the phrases listed to complete the statements which follow. You may use each statement once, more than once or not at all.

standing still

walking at constant speed

walking with an increasing speed

walking with a decreasing speed

(i) Between points **A** and **B** the person is

.....

(1)

(ii) Between points **B** and **C** the person is

.....

(1)

(b) Complete the sentence.

You can tell that the speed of the person between points **A** and **B** is

than the speed between points **C** and **D** because

.....

(2)

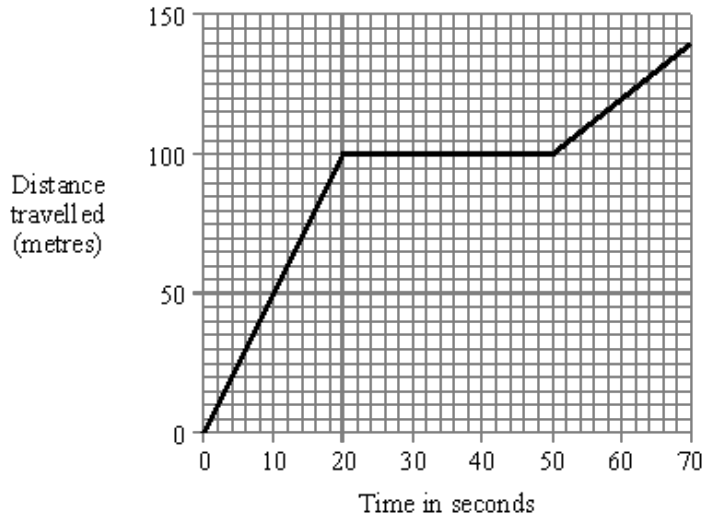
(c) Write the equation which relates distance, speed and time.

.....

(1)

(Total 5 marks)

- Q8.** A child goes out to visit a friend.
The graph shows the child's journey.



- (a) Calculate the child's average speed for the whole journey.
[Show your working and give the units in your answer.]

.....

(3)

- (b) How many times faster is the child travelling in part A of the graph than in part C?
[You should show how you obtained your answer.]

.....

(2)

(Total 5 marks)

