

Question 1

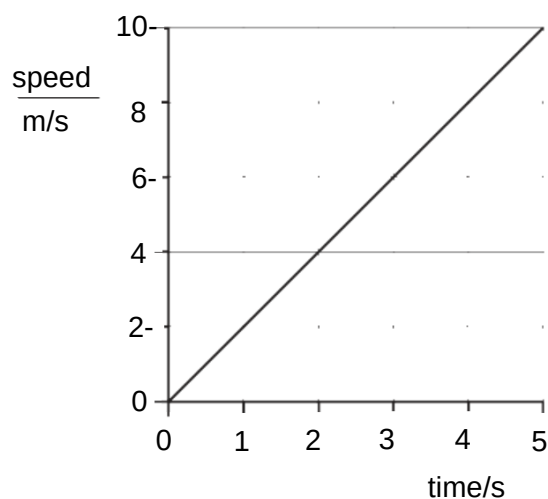
A speed–time graph is used to describe the motion of an object.

Which is correct?

	gradient of the graph	area under the graph
A	acceleration	distance travelled
B	acceleration	total journey time
C	distance travelled	acceleration
D	total journey time	distance travelled

Question 2

The graph represents the motion of a car.



How far has the car moved between 0 and 5s?

- A** 2m **B** 10m **C** 25m **D** 50 m

Question 3

A stone is dropped from a tall tower and falls a distance of 50 m to the ground.

The stone has a mass of 3.0 kg.

At which speed does the stone hit the ground?

- A** 17 m/s **B** 31 m/s **C** 54 m/s **D** 150 m/s

Question 4

Which quantity can be determined from the area under a speed-time graph?

- A acceleration
- B distance
- C speed
- D velocity

Question 5

A model car has a mass of 0.50 kg.

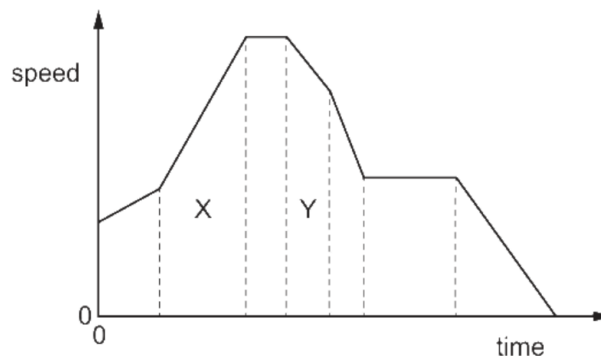
It is accelerated from rest by a constant resultant force of 2.0 N for a time of 3.0 s.

What is the maximum speed of the model car?

- A** 3.0 m/s **B** 4.0 m/s **C** 6.0 m/s **D** 12 m/s

Question 6

The speed–time graph represents a journey.



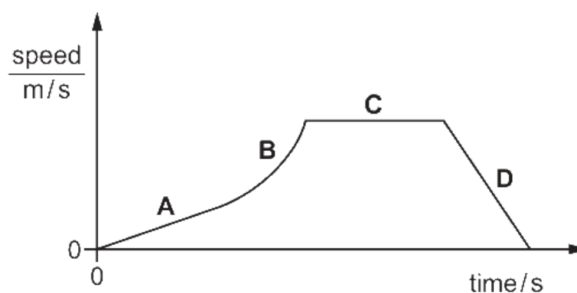
How does the graph show that the distance travelled in section X of the journey is greater than the distance travelled in section Y?

- A** The area below section X of the graph is greater than the area below section Y.
- B** The gradient of section X of the graph is greater than the gradient of section Y.
- C** The speed at the end of section X of the journey is greater than the speed at the end of section Y.
- D** The time for section X of the journey is greater than the time for section Y.

Question 7

The graph shows the speed of a car travelling through a town.

Which section of the graph represents a period when the car is decelerating?



Question 8

Which quantity is equal to acceleration?

- A** area under a distance–time graph
- B** area under a speed–time graph
- C** gradient of a distance–time graph
- D** gradient of a speed–time graph

Question 9

The diagram shows a series of images of a moving object taken at regular intervals.

The object is moving from left to right.



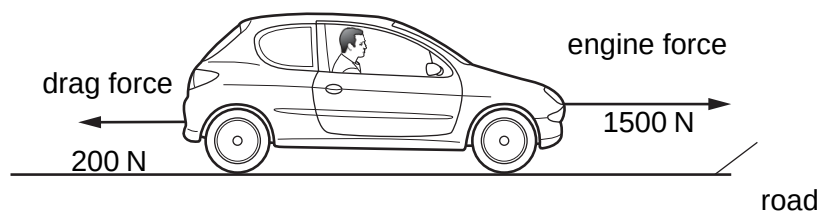
Which statement describes the motion of the object?

- A The object accelerates continuously.
- B The object decelerates continuously.
- C The object travels at constant speed and then accelerates.
- D The object travels at constant speed and then decelerates.

Question 10

The diagram shows a car moving along a road.

The force due to the engine is 1500 N and the total drag force is 200 N.



What is the motion of the car?

- A decreasing speed forward
- B increasing speed forward
- C reversing
- D constant speed

Question 11

A car is moving in a straight line on a level road. Its engine provides a forward force on the car. A second force of equal size acts on the car in the opposite direction.

Which statement describes what happens?

- A The car changes direction.
- B The car moves at a constant speed.
- C The car slows down.
- D The car speeds up.