

Name of the Student: _____

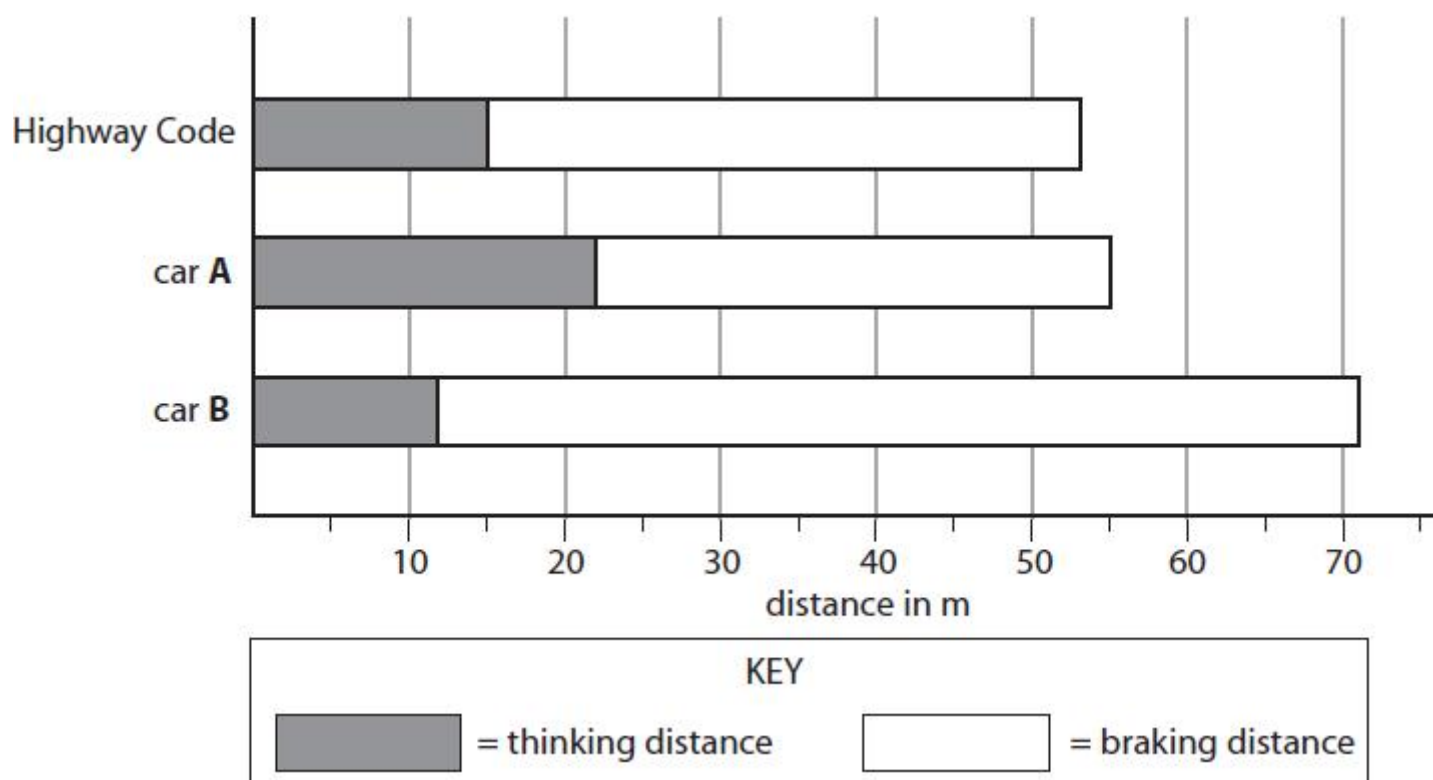
Max. Marks : 19 Marks

Time : 19 Minutes

Q1.

* The chart shows the thinking, braking and stopping distances for an average car and driver stopping from 50 miles per hour as shown in the Highway Code.

It also shows the thinking, braking and stopping distances for drivers of cars **A** and **B**, both stopping from 50 miles per hour.



A and **B** are different cars on different roads.

Use the factors that can affect thinking and braking distances to explain the differences in stopping distances for cars **A** and **B**.

(6)

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Q2.

A student needs to measure the average speed of an accelerating trolley between two marks on a bench. Figure 3 shows the arrangement of some apparatus that the student can use.

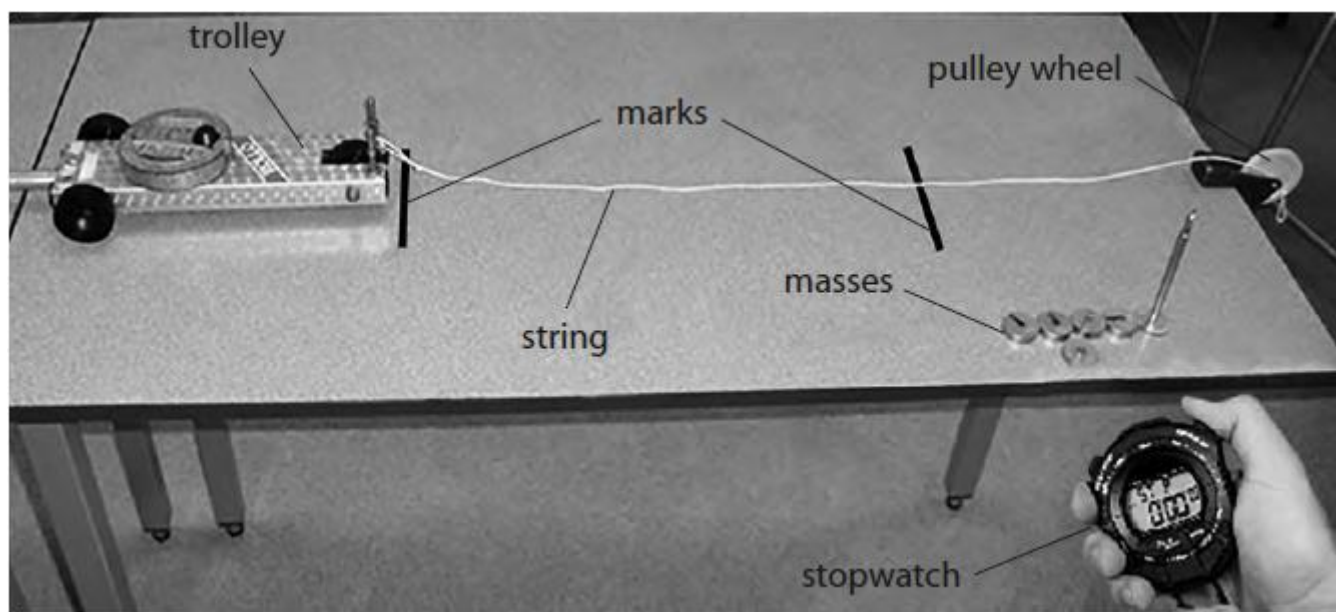


Figure 3

(i) One piece of apparatus is missing from the diagram.

This piece of apparatus is needed to determine the average speed.
State the extra piece of apparatus needed to determine the average speed.

(1)

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(ii) Describe how the student can make the trolley accelerate along the bench.

(2)

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(iii) The student wishes to develop the experiment to determine the acceleration of the trolley.

State **one other** measurement that the student must make to determine the acceleration of the trolley.

(1)

Q3.

* Figure 12 is a speed-time graph for a car moving on a horizontal road.

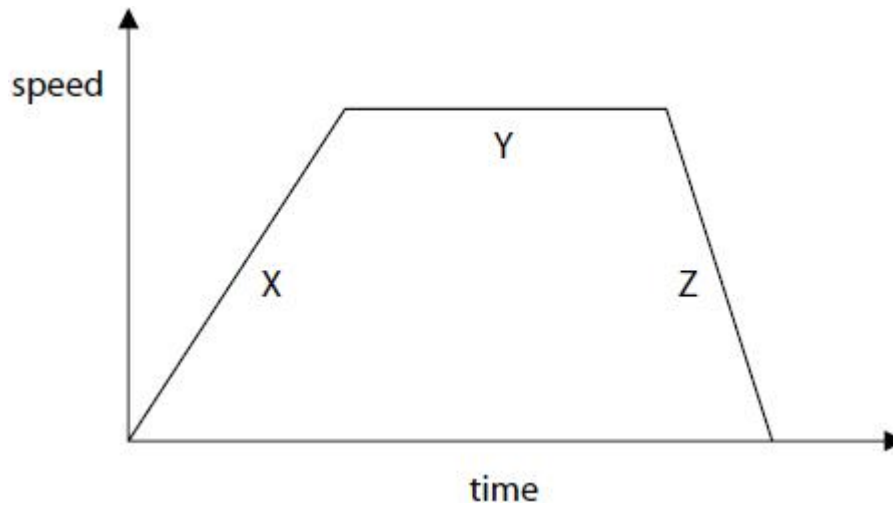


Figure 12

Describe the energy transfers taking place during the movement of the car.

You should refer to energy stores as well as transfers between energy stores for all three sections of the graph.

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Q4.

Figure 10 is a velocity / time graph for 15 s of a cyclist's journey.

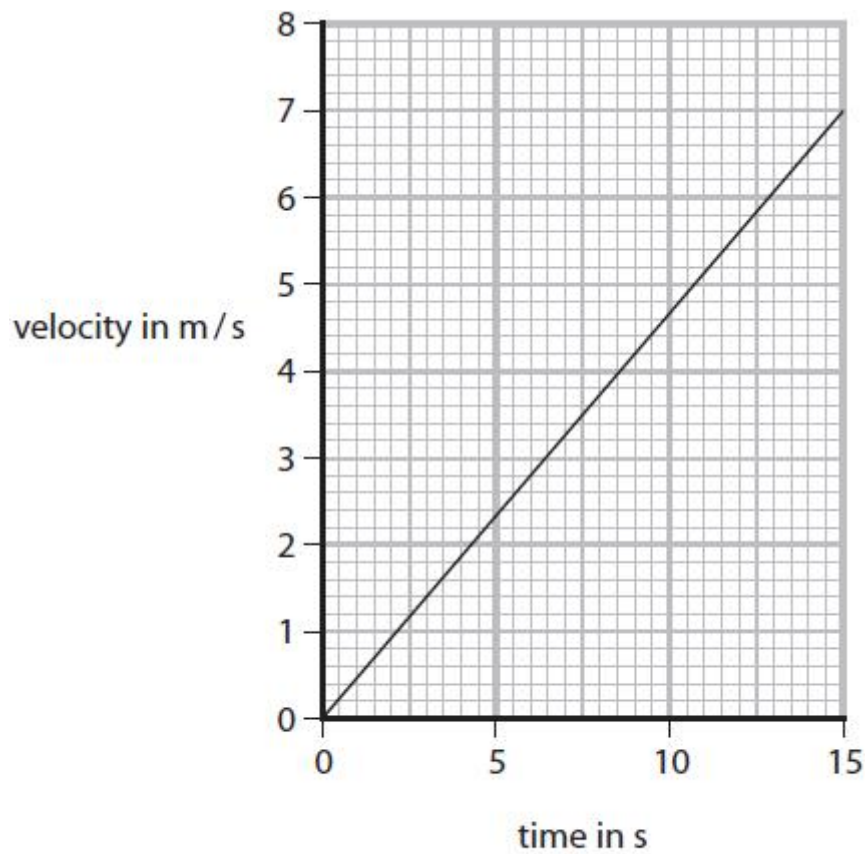


Figure 10

Calculate the distance the cyclist travels in the 15 s.

(3)

distance = m

(Total for question = 3 marks)