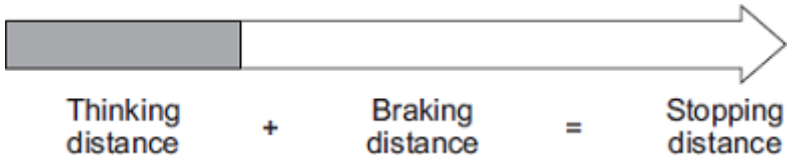
Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic: Forces (Low Demand Questions)

Name of the Student:_____
Max. Marks : 22 Marks **Time : 22 Minutes**

Q1.

The diagram shows how the thinking distance and braking distance of a car add together to give the stopping distance of the car.



(a) Use words from the box to complete the sentence.

distance	**energy**	**force**	**time**

The stopping distance is found by adding the distance the car travels during the driver's reaction _____ and the distance the car travels under the braking _____ .

(2)

(b) Which **one** of the following would **not** increase the thinking distance?

Tick (✓) **one** box.

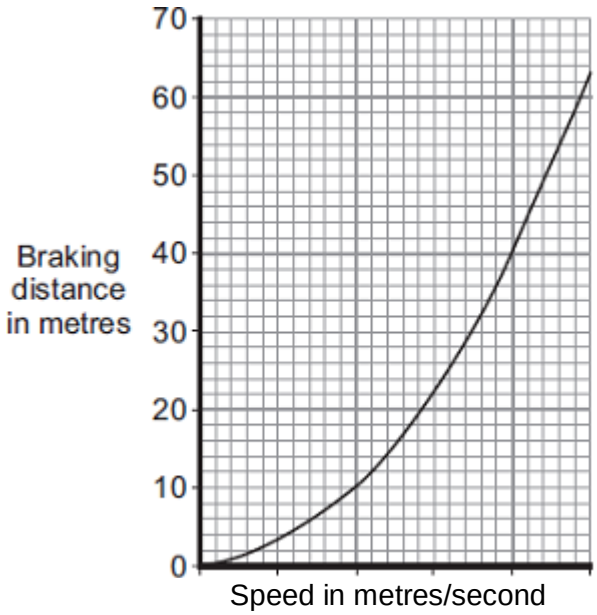
The car driver being tired. ☐

The car tyres being badly worn. ☐

The car being driven faster. ☐

(1)

(c) The graph shows how the braking distance of a car changes with the speed of the car. The force applied to the car brakes does not change.



(i) What conclusion about braking distance can be made from the graph?

_____

_____

_____

_____

(2)

(ii) The graph is for a car driven on a dry road.

Draw a line on the graph to show what is likely to happen to the braking distance at different speeds if the same car was driven on an icy road.

(1)

(d) A local council has reduced the speed limit from 30 miles per hour to 20 miles per hour on a few roads. The reason for reducing the speed limit was to reduce the number of accidents.

(i) A local newspaper reported that a councillor said:

"It will be much safer because drivers can react much faster when driving at 20 miles per hour than when driving at 30 miles per hour."

This statement is wrong. Why?

_____

_____

(1)

(ii) The local council must decide whether to introduce the lower speed limit on a lot more roads.

What evidence should the local council collect to help make this decision?

_____

_____

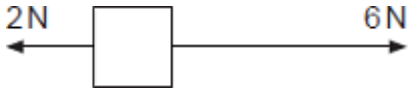
_____

_____

(2)
(Total 9 marks)

Q2.

(a) The diagram shows two forces acting on an object.



What is the resultant force acting on the object?

Tick (✓) **one** box.

8 N to the right ☐

8 N to the left ☐

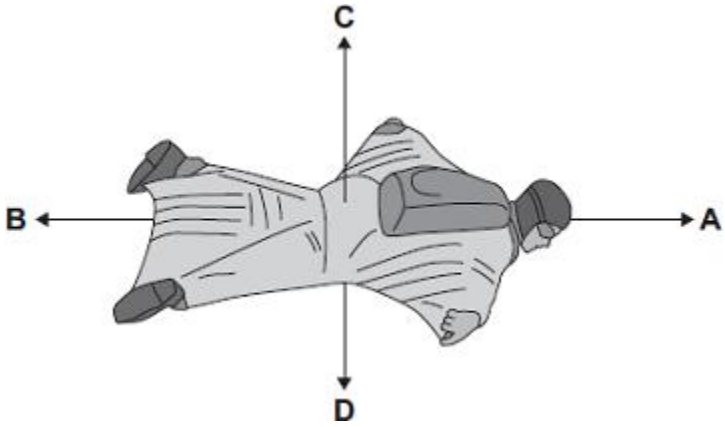
4 N to the right ☐

4 N to the left ☐

(1)

(b) BASE jumpers jump from very high buildings and mountains for sport.

The diagram shows the forces acting on a BASE jumper in flight.
The BASE jumper is wearing a wingsuit.



(i) Draw a ring around the correct answer in the box to complete each sentence.

The BASE jumper accelerates forwards when force **A**

smaller than

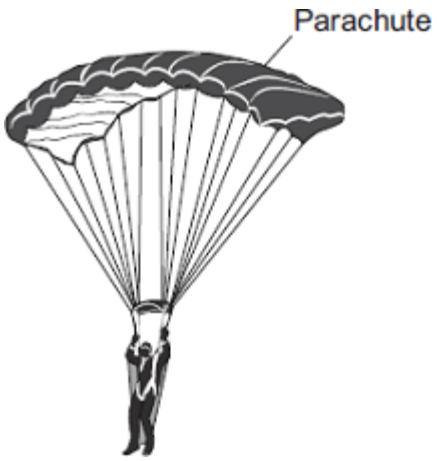
is | equal to / bigger than | force **B**.

The BASE jumper falls with a constant speed when force **C**

is | smaller than / equal to / bigger than | force **D**.

(2)

(ii) To land safely the BASE jumper opens a parachute.



What effect does opening the parachute have on the speed of the falling BASE jumper?

_____

Give a reason for your answer.

_____

_____

(2)

(Total 5 marks)

Q3.

(a) A car driver makes an emergency stop.

The chart shows the 'thinking distance' and the 'braking distance' needed to stop the car.

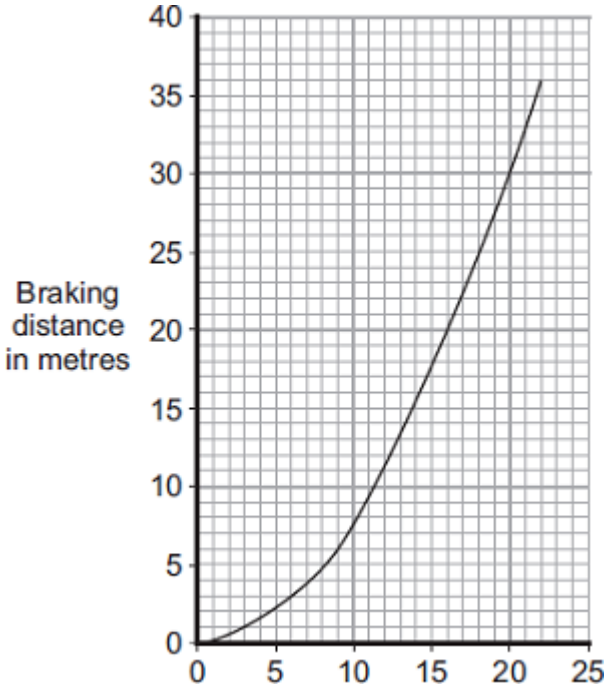
Calculate the total stopping distance of the car.

_____

Stopping distance = _____ m

(1)

(b) The graph shows how the braking distance of a car driven on a dry road changes with the car's speed.



The braking distance of the car on an icy road is longer than the braking distance of the car on a dry road.

(i) Draw a new line on the graph to show how the braking distance of the car on an icy road changes with speed.

(2)

(ii) Which **one** of the following would also increase the braking distance of the car?

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

Rain on the road ☐

The driver having drunk alcohol ☐

The driver having taken drugs ☐

(1)

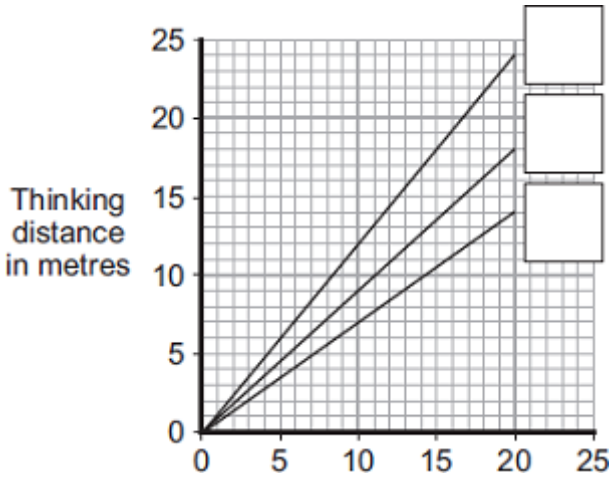
(c) The thinking distance depends on the driver's reaction time.

The table shows the reaction times of three people driving under different conditions.

Car driver	Condition	Reaction time in

		second
A	Wide awake with no distractions	0.7
B	Using a hands-free mobile phone	0.9
C	Very tired and listening to music	1.2

The graph lines show how the thinking distance for the three drivers, **A**, **B**, and **C**, depends on how fast they are driving the car.



(i) Match each graph line to the correct driver by writing **A**, **B**, or **C** in the box next to the correct line.

(2)

(ii) The information in the table cannot be used to tell if driver **C**'s reaction time is increased by being tired **or** by listening to music.
Explain why.

_____

_____

_____

_____

(2)

(Total 8 marks)