

Newton's Third Law

Question Paper

Level	GCSE (9-1)
Subject	Combined Science: Trilogy - Physics
Exam Board	AQA
Topic	6.5 Forces
Sub-Topic	Newton's Third Law
Difficulty Level	Bronze Level
Booklet	Question Paper

Time Allowed: 7 minutes

Score: /7

Percentage: /100

Grade Boundaries:

Q1.(a) The diagrams, **A**, **B** and **C**, show the horizontal forces acting on a **moving** car.

Draw a line to link each diagram to the description of the car's motion at the moment when the forces act.

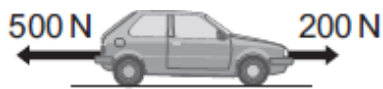
Draw only **three** lines.



A



B



C

stationary

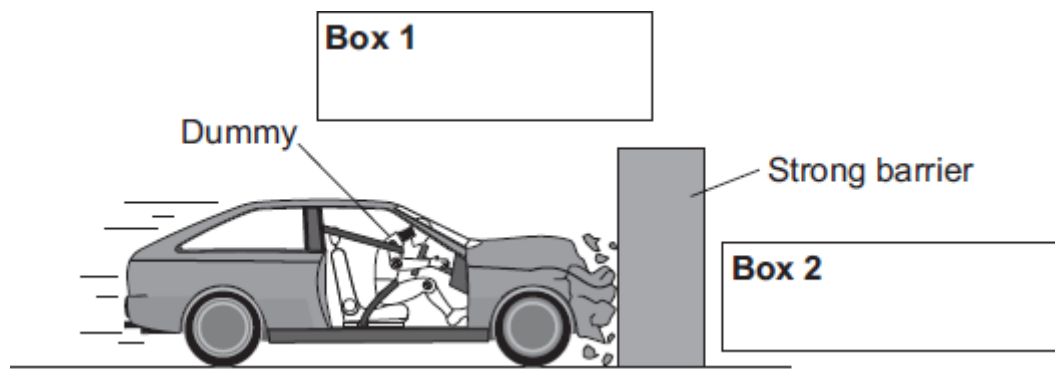
constant speed

slowing down

accelerating forwards

(3)

- (b) The front crumple zone of a car is tested at a road traffic laboratory. This is done by using a remote control device to drive the car into a strong barrier. Electronic sensors are attached to a dummy inside the car.



- (i) Draw an arrow in **Box 1** to show the direction of the force that the car exerts on the barrier.

(1)

- (ii) Draw an arrow in **Box 2** to show the direction of the force that the barrier exerts on the car.

(1)

- (iii) Complete the following by drawing a ring around the correct line in the box.

The car exerts a force of 5000 N on the barrier. The barrier does not move.
The force

exerted by the barrier on the car will be

more than
equal to
less than

5000 N.

(1)

- (iv) Which **one** of the following gives the most likely reason for attaching electronic sensors to the dummy?

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

To measure the speed of the car just before the impact.

☐

To measure the forces exerted on the dummy during the impact.

☐

To measure the distance the car travels during the impact.

☐

(1)
(Total 7 marks)