

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	Gold Level
Booklet	Question Paper

Time Allowed: 10 minutes

Score: /10

Percentage: /100

Grade Boundaries:

Q1. When two objects interact, they exert forces on each other.

- (a) Which statement about the forces is correct?

Tick (✓) **one** box.

	Tick (✓)
The forces are equal in size and act in the same direction.	
The forces are unequal in size and act in the same direction.	
The forces are equal in size and act in opposite directions.	
The forces are unequal in size and act in opposite directions.	

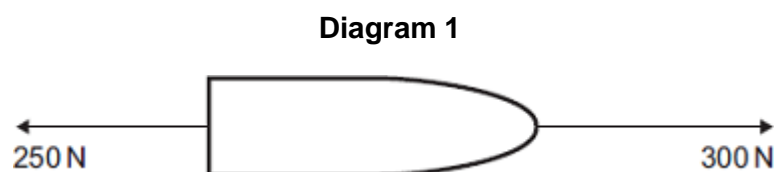
(1)

- (b) A fisherman pulls a boat towards land.

The forces acting on the boat are shown in **Diagram 1**.

The fisherman exerts a force of 300 N on the boat.

The sea exerts a resistive force of 250 N on the boat.



- (i) Describe the motion of the boat.

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(2)

- (ii) When the boat reaches land, the resistive force increases to 300 N.
The fisherman continues to exert a force of 300 N.

Describe the motion of the boat.

Tick (✓) **one** box.

Accelerating to the right

☐

Constant velocity to the right

☐

Stationary

☐

(1)

(iii) Explain your answer to part (b)(ii).

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(2)

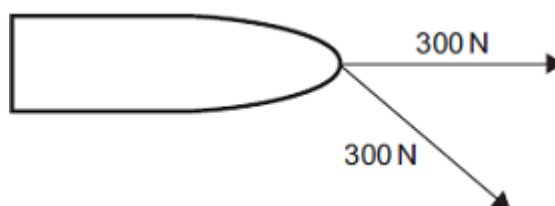
(iv) Another fisherman comes to help pull the boat. Each fisherman pulls with a force of 300 N, as shown in **Diagram 2**.

Diagram 2 is drawn to scale.

Add to **Diagram 2** to show the single force that has the same effect as the two 300 N forces.

Determine the value of this resultant force.

Diagram 2



Resultant force = N

(4)

(Total 10 marks)

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