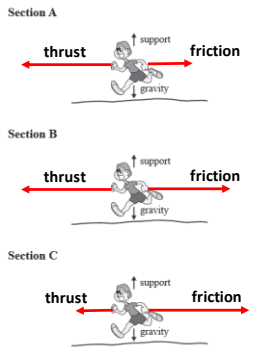
Science 1.1 AS 90940 Demonstrate understanding of aspects of mechanics

Writing Excellence answers to **Net Force** questions

Net Force QUESTION	
Question: Referring to your force diagrams in part (b), explain the link between the **net force** acting on the runner in sections A, B, and C of the graph, and the type of motion. In your answer you should: • describe what is meant by net force • explain the link between net force and motion for EACH section • compare the direction of the net force and the direction of the motion for EACH section.	

ANSWER	
1. give the **definition** for Net force	A net force is the resultant force when multiple (more than one) forces interact. (are acting on the same object)
2. link the **size** and **direction** of the forces (arrows) to the size of the Net force	If the forces are pointing in the same direction, the forces add, giving a larger net force. If the forces are in opposite direction, the forces subtract, giving a smaller net force (including a zero net force).
3. link the **Net force** to your example	Net forces determine whether the runner is accelerating, decelerating or maintaining constant speed.
4. link Net force to **acceleration**	If the net force is pointing in the same direction as the direction of motion, the object accelerates
5. link Net force to **deceleration**	If the net force is pointing in the opposite direction to the direction of motion, the object decelerates.
6. link Net force to **stationary** motion and **constant speed**	If there is no net force, the object maintains constant speed or is stationary.
7. discuss section **A** linked to Net force and the size of the forces name them)	The runner is accelerating. This is because there is a <u>net force pointing forwards</u>. This occurs when the thrust force is greater than friction.
8. discuss section **B** linked to Net force and the size of the forces name them)	The runner has constant speed. This is because there is <u>no overall net force</u>. This occurs when the thrust force is equal to friction.
9. discuss section **C** linked to Net force and the size of the forces name them)	The runner is decelerating. This is because there is a <u>net force pointing in the opposite direction to the motion</u>.

NOTE: The white column is how your answer would appear on your test paper so make sure you **write out complete sentences**. The grey area is just to help you structure your answer and would not appear in the question.