

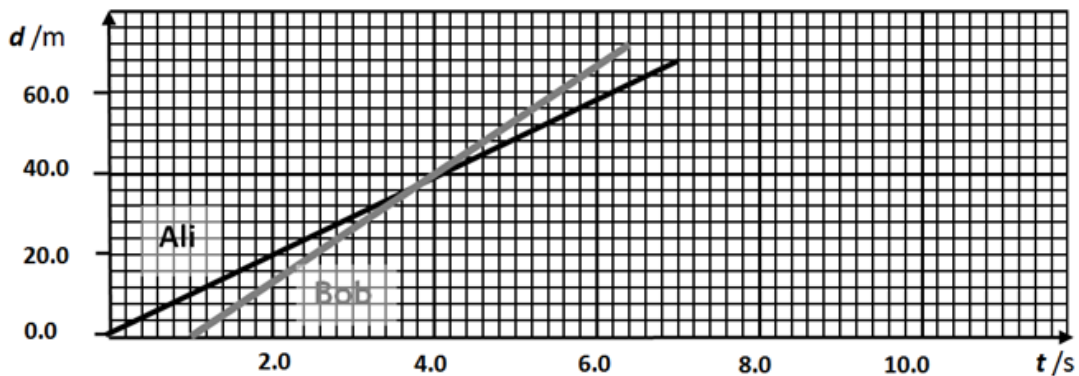
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Physics

Here are some questions you may like to do during your summer holidays, in preparation for studying A Level Physics. They are graded **E** for **easier**, **C** for more **challenging** and **A** when a more **advanced** response is required.

Be as clear as possible about the reasons for your answers. You may find that a written-out calculation or a statement in words or symbols will convey your logic.

1 The 60m Dash The graph shows distance d against time t for sprinters Ali and Bob.



1.1 [E] Who wins the race? _____

Reason _____

1.2 [C] What is the time lag between them crossing the 60m line? _____

Reason _____

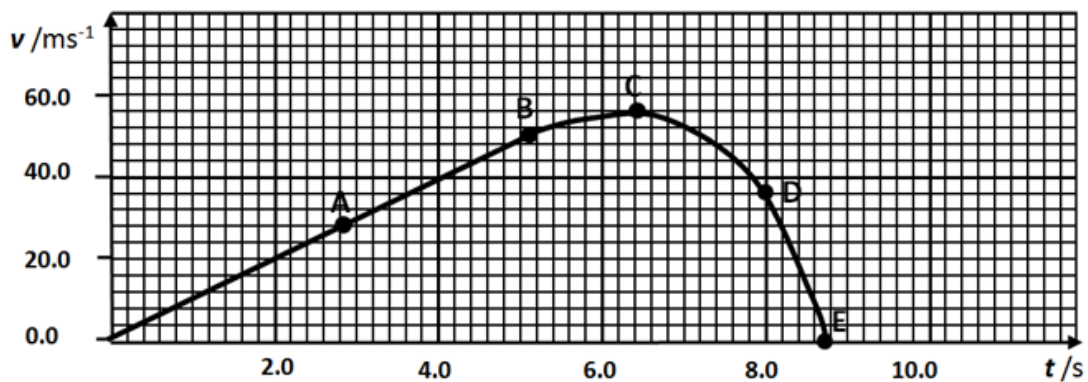
By 9 seconds, they are both standing still, with Ali 4 m further from the start than Bob.

1.3 [A] Draw on the grid and continue both graphs up to 10 seconds.

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2 The Bungee Jumper *This one can seem confusing - take your time and think carefully.*

The graph shows velocity v against time t for a bungee jumper, from the start of the fall to the lowest point of the jump (Note: The graph shows downward velocities as positive numbers).



Which point shows...

2.1 [E] The fastest speed? _____

Reason _____

2.2 [C] The jumper not moving up or down? _____

Reason _____

2.3 [A] The jumper moving downwards and losing speed at the same time? _____

Reason _____

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3 A circuit with a battery and 3 bulbs

3.1 [E] The current through bulb X is _____

Reason _____

3.2 [C] The current through bulb Y is _____

Reason _____

3.3 [A] The resistance of bulb X is _____

Reason _____

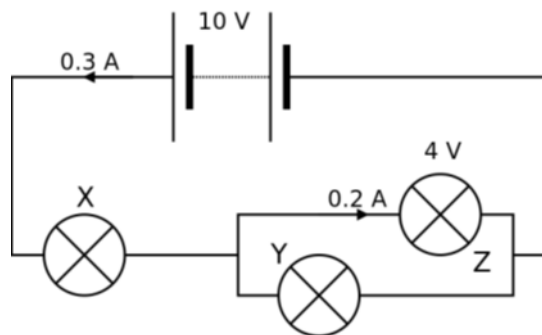


Image from BPhO 2016

4 Icebergs in seawater Icebergs float with 89% of their volume below the sea's surface.

4.1 [E] Why do icebergs float in seawater?

Reason _____

4.2 [C] Earth's gravity pulls down on the iceberg. What holds the iceberg up? How does it do this?

What _____

How _____

4.3 [A] "Ice cubes float at the top of a glass of water in the International Space Station."

TRUE / FALSE

Reason _____



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More **Physics** on the Internet

Why not check out the www.physics.org page on [carbon nanostructures](#) or the [IOP's 16-19 membership](#)?

Please note: we follow the [Edexcel A Level 2015](#) syllabus using the 'context led' Salters Horners approach.



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