

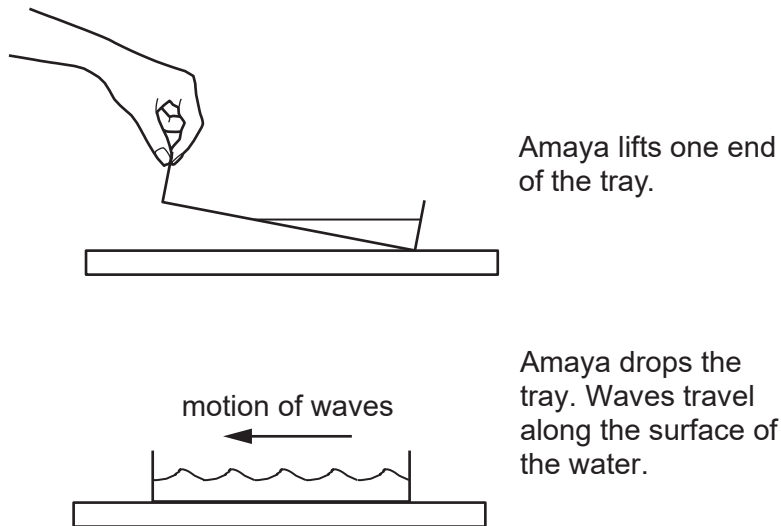
GCSE Physics B (Twenty First Century Science)
J259/03 Depth in physics (Higher Tier)

Question Set 34

1 Amaya is investigating waves using a tray of water.

She makes waves by dropping one end of the tray so that waves travel up and down the length of the tray.

The diagram shows her method.



It takes less than 1 second for the waves to travel the length of the tray.

(a) (i) Describe how to accurately determine the **speed** of the waves.

You should include in your answer how accurate measurements can be obtained from the apparatus used.

[3]

(ii) Amaya finds that she gets a different result every time she repeats the measurements.

She thinks this is because her method makes slightly different waves every time.

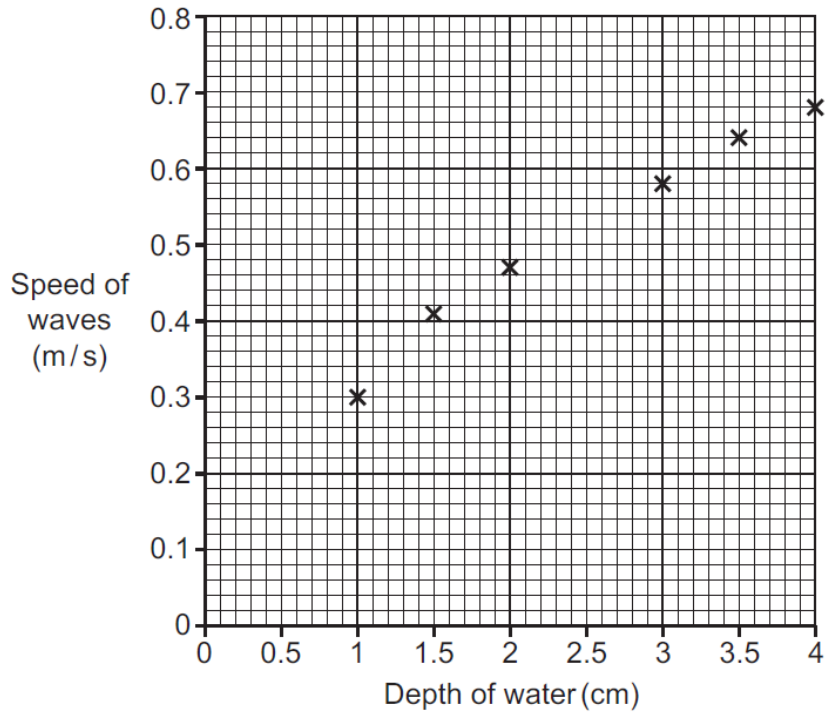
Suggest how Amaya can make her method more **repeatable**.

[1]

(b) Amaya investigates how the speed of the waves depends on the depth of the water.

The table and graph show her results.

Depth of water (cm)	Speed of waves (m/s)
1.0	0.30
1.5	0.41
2.0	0.47
2.5	0.53
3.0	0.58
3.5	0.64
4.0	0.68



(i) Plot the missing point on the graph. [1]

(ii) Describe **two** key features of the pattern shown by the data. [2]

(iii) Estimate the speed of waves in a depth of water of 0.5 cm.

Show your working on the graph.

Speed =m/s [2]

Total Marks for Question Set 34: 9

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