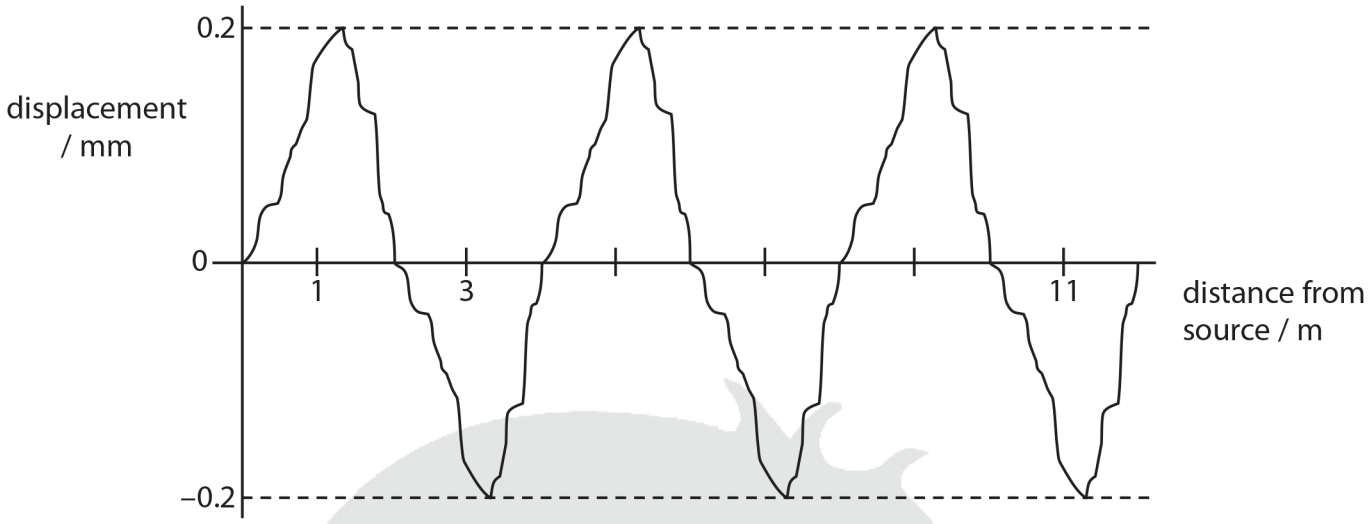
Work Sheet- 03

Date: 07/03/2020

1 (a) Here is a graph of a sound wave.



(i) Calculate the wavelength of this sound wave.

(2)

wavelength = ... m

(ii) A second sound wave has a longer wavelength but a smaller amplitude.

Sketch a graph of this second wave, on the axes above.

(2)

(b) (i) Sound is a longitudinal wave.

State another example of a longitudinal wave.

(1)

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(ii) Explain how a longitudinal wave is different from a transverse wave.

You may draw a diagram to help with your answer.

(2)

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(c) Musical notes can be made by rubbing the top of a drinking glass with a wet finger.

The photographs show four different amounts of water in the glass.

The frequencies of the musical notes produced with three amounts of water are shown.

1047 Hz

1174 Hz

1245 Hz

f Hz

(i) Which of these numbers could be the frequency, **f**, if it follows the same pattern?

Put a cross (☒) in the box next to your answer.

(1)

☒ **A** 960

☒ **B** 1109

☒ **C** 1200

☒ **D** 1290

(ii)

wavelength = speed / frequency

The speed of sound in air is 340 m/s.

A student listens to the sound from the glass when it contains the largest amount of water.

Show that the wavelength of the wave he hears is about 30 cm.

(3)