

Zoom In Physical Sciences Grade 11

Worksheet 4

- 1 A fisherman is fishing on the harbour wall. He notices that one wave crest passes him every 7 seconds. The distance between two consecutive wave crests is 8 m.

1.1 Calculate the:

1.1.1 frequency of the waves (2)

1.1.2 speed of the waves (3)

1.1.3 distance that one wave would travel in 2 minutes. (3)

- 1.2 The fisherman notices that seagulls floating on the water surface remain in the same place, while the waves move forward in the direction of the beach. Use your knowledge of different types of waves to explain why the seagulls do not wash up onto the beach. (2)

[10]

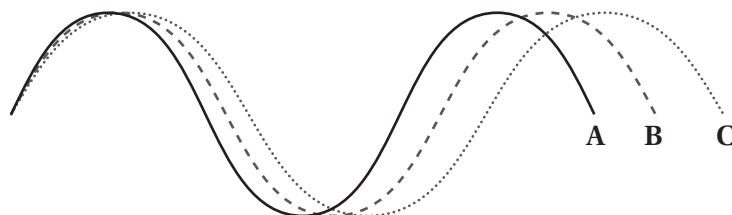
- 2 A child starts having music lessons. During her first lesson her music teacher teaches her the basic notes: *do*, *re* and *mi*. The table indicates the corresponding frequencies of the notes.

Note	Frequency (Hz)
do	256
re	288
mi	320

- 2.1 Which of the notes above has the lowest pitch? Give a reason for your answer. (2)

- 2.2 Calculate the wavelength of the sound produced by the *re* note. (The speed of sound in air is 340 m.s^{-1} .) (3)

- 2.3 An oscilloscope wave pattern is indicated for the three notes below:



- 2.3.1 Which of the wave patterns above (A, B or C) represents the *mi* note? Give a reason for your answer. (2)

- 2.3.2 Explain why sound waves do not really look like the way they are represented on the screen of the oscilloscope. (1)

[8]