

8 Sound travels as a wave.(a) Which of these statements about sound waves is **incorrect**?

(1)

- ☐ **A** they can be reflected
- ☐ **B** they can travel through a vacuum
- ☐ **C** they can be refracted
- ☐ **D** they transfer energy

(b) Sound waves are a type of wave known as longitudinal waves.

(i) Name the other type of wave.

(1)

(ii) Give **one** example of this other type of wave.

(1)

(c) A buzzer produces a sound wave of frequency 2.9 kHz and wavelength 12 cm.

(i) State the equation relating wave speed, frequency and wavelength.

(1)

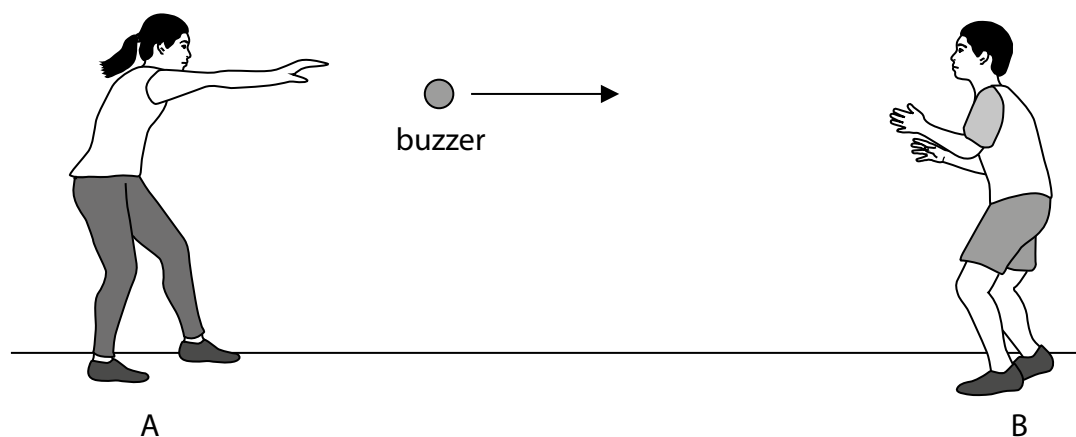
(ii) Calculate the speed of the sound wave.

(3)

speed = m/s

(d) Two students investigate the Doppler effect by throwing a buzzer to each other.

Student A throws the buzzer to student B.



When the buzzer is thrown, student A notices that the sound produced changes.

Explain how the sound heard by student A changes.

You may include a diagram in your answer.

(3)

(Total for Question 8 = 10 marks)