

6 Echo sounding is used to detect fish in the sea.

Sound waves are emitted from a fishing boat. Some of the sound waves are reflected by fish and detected back at the boat.

- (a) The shortest time between the sound waves being emitted and detected is 0.26 s.

The speed of sound in water is 1.5 km/s.

Calculate the distance between the boat and the nearest fish.

(4)

distance = m

- (b) Each sound wave is emitted for a very short time.

The reflected sound wave received at the boat lasts for a longer time.

Suggest a reason for this difference in time.

(2)

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(Total for Question 6 = 6 marks)

