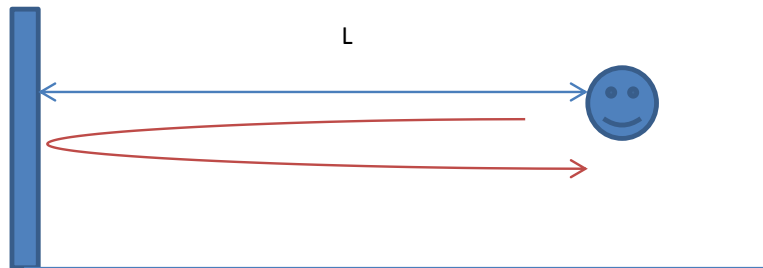


Question: the time between a clap and its echo from a wall is 0.1s . If the distance of the wall be 17.5m , calculate the speed of the sound.

Solution:

Make a sketch:



We are given:

$$L = 17.5 \text{ m}$$

$$t = 0.1 \text{ s}$$

Sound traveled to the wall and back, thus total distance is:

$$d_{total} = L + L = 2L$$

Speed is defined as:

$$v = \frac{d}{t}$$

So:

$$v_{sound} = \frac{d_{total}}{t}$$

Calculating:

$$v_{sound} = \frac{d_{total}}{t} = \frac{2L}{t} = \frac{2 * 17.5}{0.1} = 350 \frac{\text{m}}{\text{s}}$$

Answer: **350 m/s**