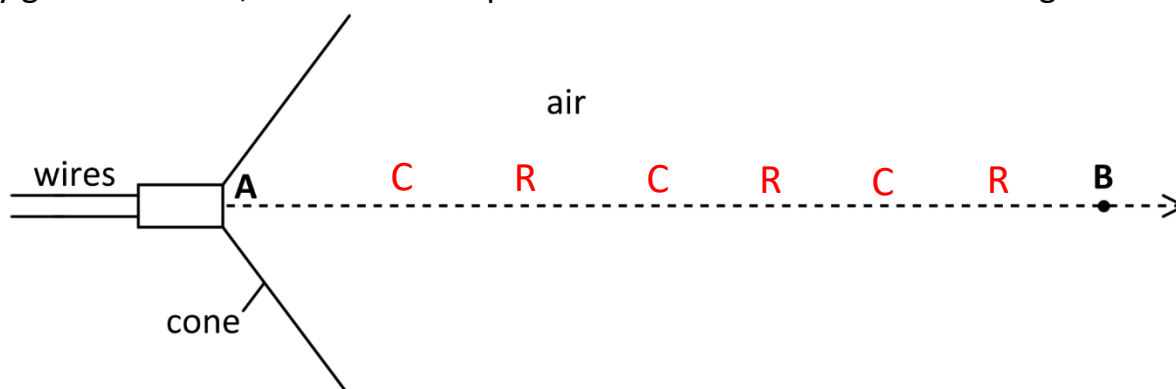


Name:

Class:



The figure below shows the cone of a loudspeaker that is producing sound waves in air. At any given moment, a series of compressions and rarefactions exist along the line AB.



- i. On the figure above use the letter **C** to mark three compressions and the letter **R** to mark three rarefactions along AB.

C R, C R, C R marked on the figure along the line A to B.

- ii. Explain what is meant by;

A compression: **the above normal/ higher air pressure or particles close together.**

A rarefaction: **the lower than normal/ lower air pressure or particles further apart.**

- iii. There is a large vertical wall 50 m in front of the loudspeaker. The wall reflects the sound waves. The speed of sound in air is 340 m/s.

Calculate the time taken for the sound wave to travel from A to the wall and back to A.

$$\text{Time} = \text{distance} \div \text{speed}$$

$$\text{Time} = 50 \div 340$$

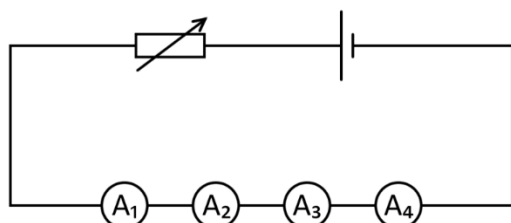
$$\text{Time} = 0.147 \text{ s}$$

This is the time it takes to cover 50 m. But the distance is 100 m so we need to double it.

$$\text{Time} = 0.147 \text{ s} \times 2 = 0.29 \text{ seconds}$$

Time taken = **0.29 seconds**

Two faulty ammeters and two perfect ammeters are connected in series in the circuit shown.



The readings on the ammeters are

A₁ 2.9 A A₂ 3.1 A A₃ 3.1 A A₄ 3.3 A

Which two ammeters are faulty?

A A₁ and A₂

B A₁ and A₄

C A₂ and A₃

D A₃ and A₄