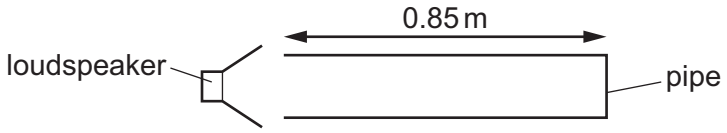
27 A pipe, closed at one end, has a loudspeaker at the open end. A stationary sound wave is formed in the air within the pipe with an antinode at the open end of the pipe.



The length of the pipe is 0.85 m.

The speed of sound in air is 340 m s^{-1}.

Which frequency of sound from the loudspeaker would **not** produce a stationary wave?

A 100 Hz **B** 200 Hz **C** 300 Hz **D** 500 Hz

28 A particle has a charge of +2.0 mC and is in a vertical uniform electric field. An electric force of 1.0×10^{-2} N acts upwards on the particle.

What is the electric field strength?

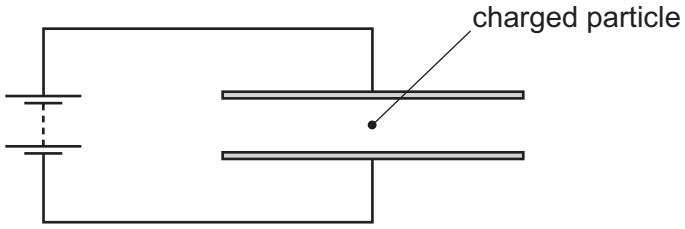
A 0.20 V m^{-1} downwards

B 0.20 V m^{-1} upwards

C 5.0 V m^{-1} downwards

D 5.0 V m^{-1} upwards

29 A charged particle is in the electric field between two horizontal metal plates connected to a battery, as shown. There is a force *F* on the particle due to the electric field.



The separation of the plates is doubled.

What is the new force on the particle?

A $\frac{F}{4}$ **B** $\frac{F}{2}$ **C** F **D** $2F$