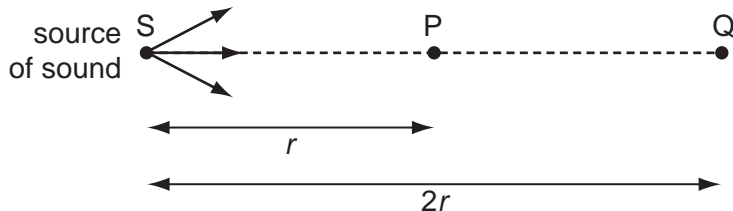


- 26** The intensity  $I$  of a sound at a point P is inversely proportional to the square of the distance  $x$  of P from the source of the sound. That is

$$I \propto \frac{1}{x^2}.$$



Air molecules at P, a distance  $r$  from S, oscillate with amplitude  $8.0\ \mu\text{m}$ .

Point Q is situated a distance  $2r$  from S.

What is the amplitude of oscillation of air molecules at Q?

- A**  $1.4\ \mu\text{m}$       **B**  $2.0\ \mu\text{m}$       **C**  $2.8\ \mu\text{m}$       **D**  $4.0\ \mu\text{m}$