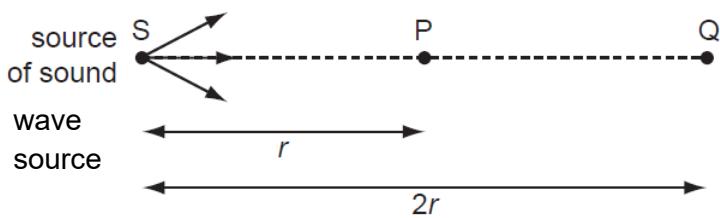


- 16** The intensity  $I$  of a sound at a point P is inversely proportional to the square of the distance  $r$  of P from the source of the sound.



At point Q, distance  $2r$  from source S, air molecules oscillate with amplitude  $6.0 \mu\text{m}$ . Point P is at distance  $r$  from S.

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

- A**  $0.75 \mu\text{m}$
- B**  $1.5 \mu\text{m}$
- C**  $3.0 \mu\text{m}$
- D**  $12.0 \mu\text{m}$

