

- 16** A speaker of a public address system operates at 2000 W and radiates sound uniformly in all directions.

If a typical adult ear has a surface area of  $2.1 \times 10^{-3} \text{ m}^2$  and assuming that the sound from the speaker strikes the surface of the ear perpendicularly, how much power is intercepted by the ear of an adult standing 78 m away from the speaker?

- A**  $5.49 \times 10^{-5} \text{ W}$
- B**  $2.20 \times 10^{-4} \text{ W}$
- C**  $4.28 \times 10^{-3} \text{ W}$
- D**  $2.61 \times 10^{-2} \text{ W}$