

- 31** Two copper wires of equal length are connected in parallel. A potential difference is applied across the ends of this parallel arrangement. Wire S has a diameter of 3.0 mm. Wire T has a diameter of 1.5 mm.

What is the value of the ratio  $\frac{\text{current in S}}{\text{current in T}}$ ?

**A**  $\frac{1}{4}$

**B**  $\frac{1}{2}$

**C** 2

**D** 4

- 32** A  $100\ \Omega$  resistor conducts a current with changing direction and magnitude, as shown.