

- 21** Two cylindrical carbon resistors P and Q connected in series have a combined resistance of $84.0\ \Omega$. The length of resistor P is three times that of resistor Q. The cross-sectional area of P is half that of Q.

What is the resistance of resistor Q?

- A** $12.0\ \Omega$ **B** $33.6\ \Omega$ **C** $42.0\ \Omega$ **D** $72.0\ \Omega$

- 22** A cell with internal resistance is connected to a variable resistor, as shown. The resistance of the