

B) Resistance (_____) - Symbol - _____

1) $R = \frac{V}{I}$

V - Potential difference (voltage) between ends of conductor

I - current (amps)

2) The resistance in a **wire** depends on:

a) **Resistivity** - R - - metals structural resistance to electron flow

b) _____ (_____) of the wire

c) _____) of the wire

Resistance of a wire = $R L_{(in\ meters)} / A_{(m^2)}$

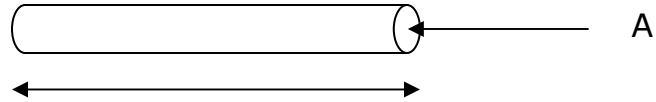
3) Resistance and Temperature

Metals - When temperature _____, resistance _____

• **Nonmetals** - When temperature _____, resistance _____

• Superconductor - conductor with _____

Resistance in a wire



1) What is the resistance of 30 cm length of copper wire that has a cross-sectional area of $.50 \text{ cm}^2$?

a) How could you alter the dimensions of this wire to reduce the resistance?

To reduce the resistance in a wire you could _____

2) If the length of a wire were halved, how would that change the wire's resistance?

3) Which material on your reference table would produce a wire that would allow current to flow the best?

4) What is the resistance of .3 m of copper wire that has a cross-sectional area of $5 \times 10^{-5} \text{ m}^2$?