

Solutions

2.1 A Current is the same through components in series. Potential differences add around the series path. In parallel, branches share the same potential difference, while branch currents sum at a junction.

2.2 $R = V/I = 12/0.40 = 30 \, \Omega$.

2.3 False. Current is not used up by a lamp. A filament heats up, so its resistance need not remain constant as voltage changes.

2.4 current. current means Rate of flow of charge.

3.1 $R = 15 \, \Omega$, $I = 0.80 \, \text{A}$, $P = 9.6 \, \text{W}$. Each branch draws $0.40 \, \text{A}$ and $4.8 \, \text{W}$. One resistor alone draws $0.40 \, \text{A}$ and $4.8 \, \text{W}$; the same voltage does not imply the same total current.