

11.04 Key

1. 6.76Ω
2. $1.96 \times 10^{-8} \Omega \cdot \text{m}$
3. $5 \times 10^{-3} \text{ m}$ (5 mm)
4. $R_{\text{wire}} = 1.076 \times 10^{-3} \Omega \rightarrow I = 1.9993 \text{ A}$ (would be 2 neglecting wires)
 - a. 11.996 V
 - b. 0.00215 V (each)
 - c. 23.983 W
 - d. 0.0043 W (each)
5.
 - a. 10 V
 - b. 20Ω
 - c. $(1 \text{ W} - 1.44 \text{ W}) / (1.44 \text{ W}) = -30.6 \%$
6.
 - a. 80 J
 - b. 66.7 J
 - c. 13.3 J
7. parallel, if a lightbulb burns out, other lights on the circuit do not go out, or something similar.
8. 75 A
9. 3 toasters