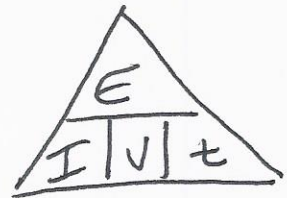
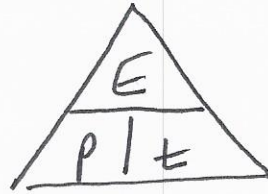
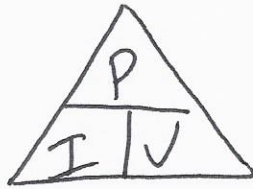
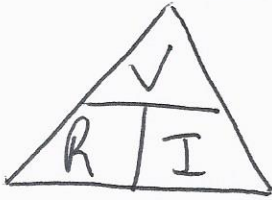


Multiple formulas Worksheet

1. Give the 4 triangles for the electricity formulas.



2. What is the resistance of a resistor if a circuit is on for 28 minutes, used 25 000 J of energy and had 3 A?

$$R = \frac{V}{I} = \frac{4.9}{3} = 1.7 \Omega$$

$$V = \frac{E}{I t} = \frac{25000}{3 \times 28 \times 60} = 4.9 \text{ V}$$

3. What is the resistance of a resistor if a circuit is on for 3 hours, used 90 000 J of energy and 120 V?

$$R = \frac{V}{I} = \frac{120}{0.069} = 1739 \Omega$$

$$I = \frac{E}{V t} = \frac{90000}{120 \times 3 \times 3600} = 0.069 \text{ A}$$

4. What is the resistance of a resistor if it used 0.9 A and 650 W of power?

$$R = \frac{V}{I} = \frac{722.9}{0.9} = 802.5 \Omega$$

$$V = \frac{P}{I} = \frac{650}{0.9} = 722.2 \text{ V}$$

5. What is the resistance of a resistor if it uses 920 V and 180 W of power?

$$R = \frac{V}{I} = \frac{920}{0.2} = 4600 \Omega$$

$$I = \frac{P}{V} = \frac{180}{920} = 0.2 \text{ A}$$

6. What is the resistance of a resistor if a circuit is on for 90 minutes, used 50 000 J of energy and 120 V?

$$R = \frac{V}{I} = \frac{120}{0.08} = 1500 \Omega$$

$$I = \frac{E}{V t} = \frac{50000}{120 \times 90 \times 60} = 0.08 \text{ A}$$

7. What is the power of an appliance if it works on 6.5 A and has a 10 Ω resistor?

$$P = I V = 6.5 \times 65 = 422.5 \text{ W}$$

$$V = R I = 10 \times 6.5 = 65 \text{ V}$$

8. What is the power of an appliance if it needs 220 V when it has a 10 Ω resistor?

$$P = IV = \frac{220 \times 22}{10} = 4840 \text{ W} \quad I = \frac{V}{R} = \frac{220}{10} = 22 \text{ A}$$

9. What is the resistance of a resistor if a circuit is on for 30 minutes, used 20 000 J of energy and had 2 A?

$$R = \frac{V}{I} = \frac{5.6}{2} = 2.8 \Omega \quad V = \frac{E}{It} = \frac{20000}{2 \times 30 \times 60} = 5.6 \text{ V}$$

10. What is the power of an appliance if it needs 610 V when it has a 200 Ω resistor?

$$P = IV = 610 \times 3.05 = 1860.5 \text{ W} \quad I = \frac{V}{R} = \frac{610}{200} = 3.05 \text{ A}$$

11. What is the potential difference when a microwave runs on 6 A and uses 900 W of power

$$V = \frac{P}{I} = \frac{900}{6} = 150 \text{ V}$$

12. What is the resistance of a resistor if a circuit is on for 80 minutes, used 70 000 J of energy and had 4 A?

$$R = \frac{V}{I} = \frac{3.6}{4} = 0.9 \Omega \quad V = \frac{E}{It} = \frac{70000}{4 \times 80 \times 60} = 3.6 \text{ V}$$

13. What is the power of an appliance if it works on 7 A and has a 3.9 Ω resistor?

$$P = IV = \frac{7 \times 27.3}{1000} = 0.19 \text{ kW}$$

14. What is the resistance of a resistor if it used 0.6 A and 850 W of power?

$$R = \frac{V}{I} = \frac{1416.7}{0.6} = 2361.1 \Omega \quad V = \frac{P}{I} = \frac{850}{0.6} = 1416.7 \text{ V}$$