Current intensity, potential difference and resistance

1. What is the resistance of a circuit if the potential difference is 25 V and the current is 3 A?

2. What is the potential difference of a circuit if the resistance of the resistor is 100 Ω and the current is 0.5 A?

3. What is the current intensity of a circuit if the voltage is at 20 V and the resistor is a 40 Ω resistor?

4. What happens to the current if the voltage remains constant, but you replace a 50 Ω resistor with a 100 Ω resistor? Why?

5. What happens to the current if the voltage remains constant, but you replace a 50 Ω resistor with a 25 Ω resistor? Why?

6. What happens to the resistance of a circuit if the current is the same, but the voltage is increased? Why?

7. What happens to the resistance of a circuit if the current increases, but the voltage is kept the same? Why?

8. What happens to the voltage of a circuit if the resistance decreases, but the current is the same? Why?

Ohm's Law Worksheet

1. Draw the triangle used to show the formula for Ohm's law. Include the units.

2. What is the resistance of a light bulb that carries a current of 2.5 A at a potential difference of 12 V?

3. What is the current intensity of a circuit with a resistor of 1.5 Ω and a potential difference of 5.8 V?

4. A speaker has a resistance of 100 Ω and is connected to a 50 V power supply. What is the current intensity of the circuit?

5. What is the voltage needed to produce a 100 A intensity with a resistance 50 Ω?

6. What is the potential difference needed to produce a 100 A current intensity with a resistance of 8.3 Ω?

7. What is the resistance of a circuit with a voltage of 6.9 V and an current intensity of 0.08 A?

8. What is the current intensity of a microwave if it has 200 V and a resistance of 40 Ω?

9. What is the potential difference of a circuit with a current intensity of 15 A and a resistance of 10 Ω?

10. What is the current intensity of a circuit with a resistance of 15 Ω and a potential difference of 500 V?

11. Your parents had suggested buying you an I touch 4 phone for Christmas. Being the mature teen you are you threw a temper tantrum because what you really wanted was a circuit board so you can build electric circuits. Your parents gladly bought you the $19.99 circuit board.

A- When building the circuit you have a choice of putting three different resistors into the circuit. The first one has a resistance of 15 Ω, the second one has a resistance of 50 Ω and the third has a resistance of 100 Ω. Which resistor should you use which would allow a light bulb connected in the circuit to shine the brightest? Why

B- What should happen to the values of the current intensity and potential difference if you replace a 50 Ω resistor with a 100 Ω resistor? Why

C- What should happen to the value of current intensity if a power supply is increased by 10 V? Why