Electricity and circuit formulas
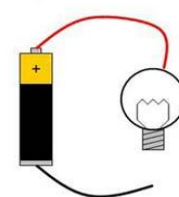
Circuit def:_____
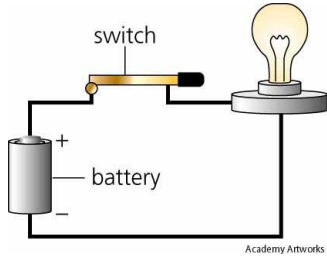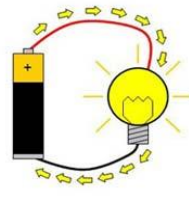
Variables

	Definition	Symbol	Unit
Current intensity			
Potential Difference			
Resistance			
Power			
Energy			
Time			

Conversions:

Minutes to seconds _____   J to kJ_____
Seconds to minutes_____   J to kWh_____
Hours to seconds _____   W to kW _____
Seconds to hours _____

Formulas Given on Tests and Exams: Formula not given:
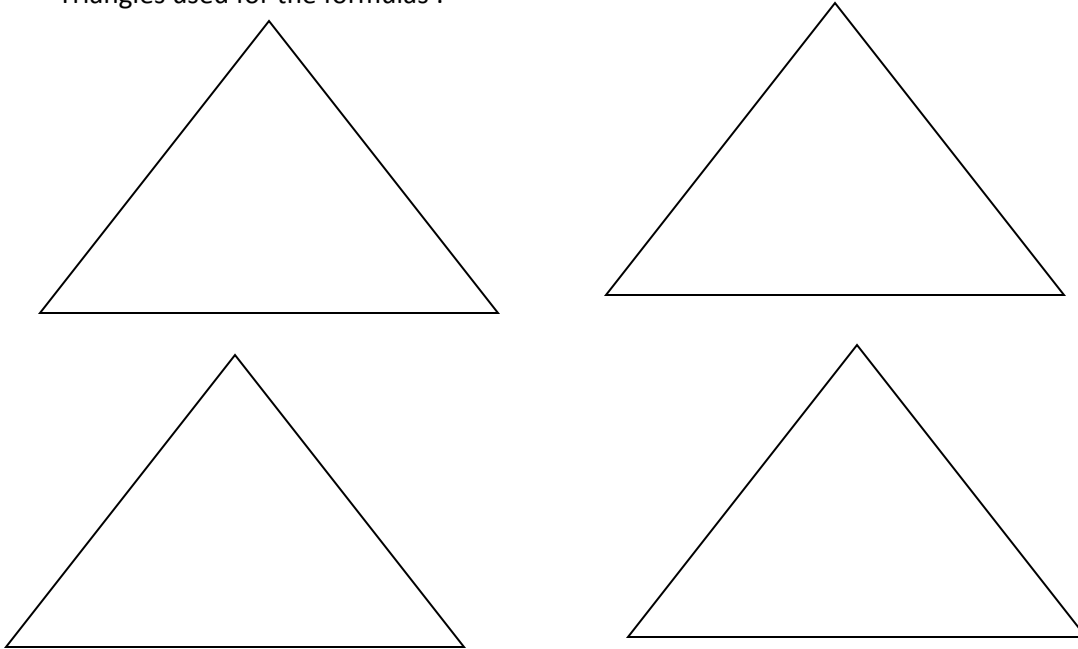V = RI   P = IV   E = Pt   E = IVt
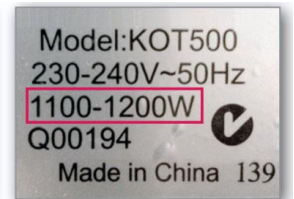
Triangles used for the formulas :

Rating plates: Information given on electrical appliances that allows its power and energy power to be calculated.

Practice questions

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

2. A radio is on for 2 hours and has 700 W of power. How much energy was used in J?

3. A radio is on for 2 hours and has 700 W of power. What is the energy in kJ and kWh?

4. How much power did it take to use a microwave for 90 seconds and consumed 70 000 J of energy?

5. A hairdryer is used for 20 minutes a day. It runs on 190 V and 3 A. How much energy is used in J ?

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

7. How much energy in kJ does a computer use if it is on for 3 hours and uses 200 V and 2.0 A.

8. If a computer used 950 000 J of energy and 100 W of power. How long did you use the computer for?

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

10. If a TV used 950 000 J of energy and 90 W of power. How many hours did you watch TV for?

11. What is the power used in kW when a dishwasher used 120 V and 1.5 A?

12. How much power did it take when a dishwasher ran for 55 minutes and consumed 50 000 J of energy?

13. A hairdryer uses 220 V and 7 A. If the hairdryer used 525 000 J of energy, how much time did you use it for in minutes?

14. A computer is on for 160 minutes and needs 220 V to work. If the computer used 925 000 J of energy, what was the current intensity for the computer?

15. What is the power used when a dishwasher used 220 V and 1.5 A?

16. What is the current intensity for a lamp that uses 200 W of power and 220 V?

17. What is the potential difference when a microwave runs on 2.2 A and uses 400 W of power?

18. What is the voltage of a circuit if the resistance of the resistor is 100 Ω and the current is 0.5 A?