**ELECTRICAL POWER – CALCULATIONS P = I x V P = I2 x R**

**BASIC**

1. Calculate the **power** **P** for each of the following:
2. I = 8 A and V = 20 V
3. I = 5 A and R = 2.5 Ω
4. I = 2 A and V = 0.2V
5. I = 0.1 A and R = 0.2 Ω
6. Calculate the **current** **I** for each of the following:
7. V = 20 V and P = 10 W
8. V = 10 V and P = 0.2 W
9. P = 5.5 W and R = 2.2 Ω
10. P = 0.2 W and R = 1.5 Ω
11. Calculate the **resistance** **R** for each of the following:
12. I = 4 A and P = 20 W
13. I = 20 A and P = 50,000 W
14. I = 0.015 A and P = 0.055 W

**MEDIUM**

1. A light bulb is connected to a 2V supply and experiences a current of 6.4A. What is the power rating of the bulb?
2. A kettle has a power rating of 1500w. What is the potential difference that it must be supplied with to have a current flowing through it of 30A?
3. A student attaches a 10V supply to a bulb with a power rating of 100w. What is the current running through the bulb?
4. The student now instead connects a 25w bulb to the same supply. What is the difference between the current going through this bulb compared to the 100w bulb?
5. An electric radiator has a power of 2,000 W, and a resistance of 20 Ω. Calculate the current in the circuit.
6. A household circuit can deliver a maximum of 13 Amps at a voltage of 230V. Calculate the maximum power this circuit can output.

**To go from kW to W → × 1000**

**HARD**

1. An electric radiator has a power of 3 kW, and a current of 3 Amps. Calculate the resistance in the circuit.

**To go from mA to A → ÷ 1000**

1. An electric transformer outputs a voltage of 500 kV, and a current of 100 mA is drawn from the circuit. Calculate the power drawn by the circuit.
2. A microwave has a power of 1 kW, and a resistance of 55 Ω. Calculate the current in the circuit.
3. An iPhone charger outputs a current of 3,000 mA at a power of 50 W. Calculate the voltage given out by the charger.
4. A desktop computer uses a power of 0.5 kW, at a current of 5 A. Calculate the resistance of the computer.