

## Formula review 2

1. If a TV used 400 000 J of energy and 600 W of power. How many hours did you watch TV for?

$$t = \frac{E}{P} = \frac{400\,000}{600} = \frac{666.7}{3600} = 0.19 \text{ hrs}$$

2. What was the potential difference of a computer that used 55 000 J of energy when it was on for 2 hours and had 1.2 A?

$$V = \frac{E}{It} = \frac{55\,000}{1.2 \times 2 \times 3600} = 6.4 \text{ V}$$

3. How much time passed in minutes when a computer did 700 000 J of work and had 550 W of power?

$$t = \frac{E}{P} = \frac{700\,000}{550} = \frac{1272.7}{60} = 21.2 \text{ min}$$

4. What was the current intensity of a clock radio that used 50 000 J of energy when it was on for 5 hours and had 210 V?

$$I = \frac{E}{Vt} = \frac{50\,000}{210 \times 5 \times 3600} = 0.03 \text{ A}$$

5. What was the potential difference of a circuit that used 90 000 J of energy when it was on for 50 minutes and had 5.2 A?

$$V = \frac{E}{It} = \frac{90\,000}{5.2 \times 50 \times 60} = 5.8 \text{ V}$$

6. What was the potential difference of a computer that used 55 000 J of energy when it was on for 5 hours and had 9.2 A?

$$V = \frac{E}{It} = \frac{55\,000}{9.2 \times 5 \times 3600} = 0.33 \text{ V}$$

7. A radio is on for 6 hours and has 700 W of power. What is the energy in kWh?

$$E = Pt = \frac{700 \times 6 \times 3600}{3\,600\,000} = 4.2 \text{ kWh}$$

8. What was the current intensity of a clock radio if it used 100 V and a 100 Ω resistor?

$$I = \frac{V}{R} = \frac{100}{100} = 1 \text{ A}$$

9. What is the resistance of a resistor if it uses 200 V and 5 A of current?

$$R = \frac{V}{I} \quad 200/5 = 40 \Omega$$

10. What is the power in kW when a dishwasher used 20 V and 2.5 A?

$$P = IV \quad \frac{20 \times 2.5}{1000} = 0.05 \text{ kW}$$

11. How much time elapsed in hours if a TV used 50 000 J of energy and needs 40 W of power?

$$t = \frac{E}{P} \quad \frac{50000}{40} = \frac{1250}{3600} = 0.347 \text{ hrs}$$

12. A hairdryer is on for 15 minutes and uses 220 V and 5.5 A how much energy will be used in kWh?

$$E = IVt \quad \frac{220 \times 5.5 \times 15 \times 60}{3600000} = 0.3 \text{ kWh}$$

13. What is the potential difference of a circuit if it has a 6.5  $\Omega$  resistor and 3.0 A?

$$V = RI \quad 6.5 \times 3 = 19.5 \text{ V}$$

14. What is the resistance of a resistor if the power supply is set at 8 V and the current intensity is 2 A?

$$R = \frac{V}{I} \quad \frac{8}{2} = 4 \Omega$$

15. An appliance is on for 90 minutes and uses 400 W of power how much energy will be used in J?

$$E = Pt \quad 400 \times 90 \times 60 = 2160000 \text{ J}$$

16. How much time elapsed in minutes if a TV used 55 000 J of energy and needs 150 W of power?

$$t = \frac{E}{P} \quad \frac{55000}{150} = \frac{366.7}{60} = 6.1 \text{ min}$$