

1. Calculate the amount of energy consumed by a 75W light bulb that has been on for eight hours.

Answer: 2,160 kJ

2. The previous bulb has been connected to a 220V supply. Calculate the current flowing through its filament."

Answer: 341 mA

3. A stove has been operating for one hour, consuming 5,000 kJ. Calculate its power output.

Answer: 1.39 kW

4. A 1 kΩ resistor is connected to a 45 V power source. Calculate the power dissipated and the current flowing through the resistor.

Answer: 2.025 W, 45mA

5. A 100W light bulb has been used for 8 hours, a 5 kW oven for 1 hour and a 35W DVD for 90 minutes. Calculate the total energy consumed.

Answer: 5.853 kWh

6. An electric oven contains a heating resistor. The only two properties we know about this oven are its operational power (700 W) and its ohmic resistance value (60 Ω). What voltage should the oven be connected to in order to operate properly?

Answer: 204.3 V

7. Power in cars is usually measured in horsepower (hp). Investigate the equivalence relationship between hp and W.

8. The capacity of the battery in an electric car is 18.8 kWh. How long will it take to fully charge it if it is connected to a 230 V socket providing 16 A?

9. **Calculate** the power dissipated by each resistor in the following circuit. After calculating, **verify your results** by analyzing the circuit **in Crocodile Clips**. The resistors are represented by green rectangles in the provided diagram."

