PHYSICS INMOTION

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Unit 5I
Electrical Power
Practice Problems

Name:

Date:

Work each of the following problems. SHOW ALL WORK.

1. A microwave is rated at 1,200 Watts. If it receives 120 Volts of potential difference, what is the current in the microwave?

2. Using the information from the previous question, what is the resistance of the microwave?

3. What is the resistance in the filament of a 60 Watt light bulb that receives 120 volts of potential difference?

4. The current running through a toaster oven is 7.5 Amperes when it is connected to 120 volts of potential difference. What is the power rating of the toaster?

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5. Two resistors, one with 6 ohms of resistance and the other with 8 ohms of resistance, are connected in series to a 9 Volt battery. What is the power dissipated by these two resistors?

6. If the two resistors in the previous question were arranged in parallel, what would be the power dissipated by the two resistors?

7. Each resistor in the circuit below has a resistance of 2 ohms. If the potential difference supplied by the batteries in the circuit is 6 Volts, how much power is dissipated?

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8. How many Joules of energy are needed to keep a 45 Watt ceiling fan working for six hours?

9. How much does it cost to power a refrigerator for 30 days if it is rated at 200 Watts and the power company charges $0.07 per kWh?