PHYSICS IN MOTION
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Unit 5I
Parallel and Complex Circuits
Practice Problems

Name:

Date:

Work each of the following problems. SHOW ALL WORK.

1. A microwave oven has a power rating of 1,200 W. If it receives 120 V 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 W light bulb that receives 120 V of potential difference?

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

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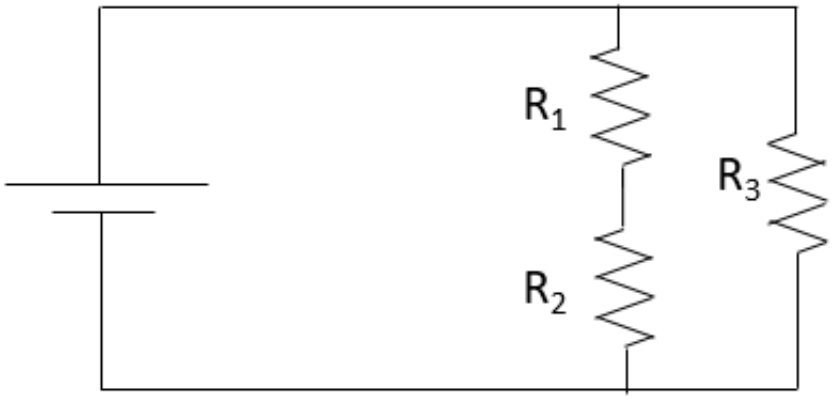
5. Two resistors, one with 6 Ω of resistance and the other with 8 Ω of resistance, are connected in series to a 9 V battery. How much power is dissipated by these two resistors?

6. If the two resistors from the previous question were arranged in parallel, how much power would they dissipate?

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



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8. How many joules of energy are needed to keep a 45 W ceiling fan working for 6 hours?

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