Name:

Date:

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Calculating Energy Cost

Evaluation 2
Student's Copy

Use these two equations to solve the following problems:

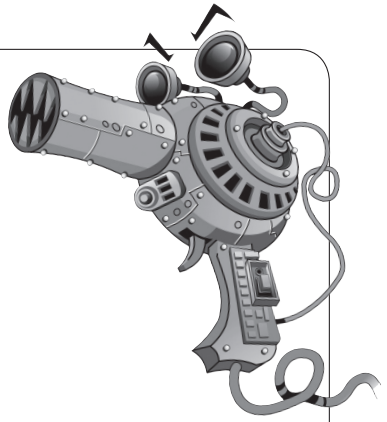
- **Electricity consumption** (in kWh) = **Power** (in kW) x **Number of hours of use (in hours)**
- **Electricity cost** (in $) = **consumption** (in kWh) x $0.08/kWh

Don't forget to convert your units BEFORE solving the problems (watt into kilowatts, minutes into hours, etc.)

1,000 W = 1 kW

60 minutes = 1 h

Q1 Martin has an 1,200-W hair dryer.
If he uses it one hour a week, how much energy (kWh) will he use in one year (52 weeks)?



Calculation:

Answer: _____

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Q2 On a rainy day, Judith uses her computer for 3 hours and 30 minutes.

If the computer has a power of 0.28 kW, how much energy (kWh) did it use that day?

Calculation:

Answer: _____

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Q3 On Christmas, Peter roasted a turkey in a 2,000-W oven for four hours.

If every kilowatthour costs $0.08, how much did it cost to cook the turkey?

Calculation:

Answer: _____

/ 6

Q4 Laura wants to make a cup of tea, which involves boiling water using a kettle that has a power of 1.5 kW. The kettle will be on for three minutes.

How much energy (kWh) will Laura use?

Calculation:

Answer: _____

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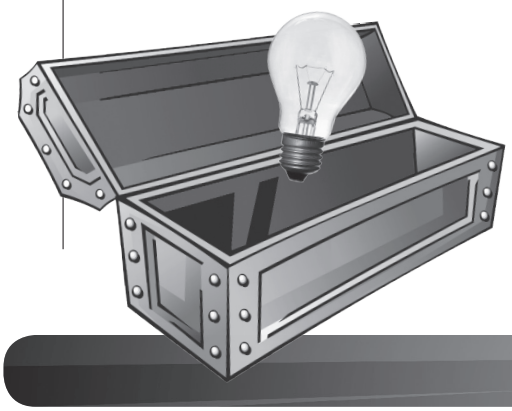
Q5 To save money, Carl has decided to change some of the light bulbs in his house. He will replace five incandescent bulbs, at 100 W each (for a total of 500 W), with LED bulbs, at 12 W each (total of 60 W). He uses all these bulbs 1,000 hours a year.

To help Carl calculate his annual savings ($), answer the following questions.

a) What is the cost of using the five 100-W incandescent bulbs (totaling 500 W) for one year if he pays $0.08/kWh?

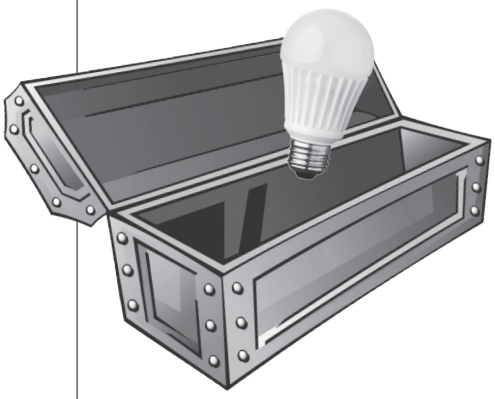
Calculation:



Answer: _____

b) How much will it cost to use the five LED bulbs (12 W each, for a total of 60 W) for one year if he pays $0.08/kWh?

Calculation:



Answer: _____

c) What is the cost difference between using five 100-W bulbs and using five 12-W bulbs for one year? The result is the amount of money saved ($).

Calculation:

Answer: _____

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