

Use with textbook pages 320–325.

Paying for electricity

Show all your work below.

1. Assume that the electric utility company charges \$0.09 for every kW·h of energy. How much does it cost to:

(a) operate a dryer that uses 15 A of current at 240 V for 1.5 hours?

(b) operate six 100 W light bulbs for an average of 5 hours per day?

(c) operate a refrigerator for a week if it draws 2.0 A of current from a 120 V source that turns on for 15 minutes every hour?

2. If your computer uses 2.5 A at 120 V, how much will it cost to use the computer for 4 hours a day, seven days a week for two weeks? Assume that the cost of electricity is \$0.09 for every kW·h of energy.

3. A clothes dryer has a power rating of 4000 W. How long did it take to dry a load of laundry if electric power costs \$0.09/ kW·h and the cost of using the dryer was \$0.54?

Name _____

Date _____

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The power of electricity

Use the following table showing power ratings of some appliances to answer questions 1 to 3.

Appliance	Power (W)
stereo	250
toaster	1100
computer	350
colour TV	200
microwave	900

Match each Description on the left with the correct Appliance on the right. Each Appliance may be used more than once.

Description	Appliance
1. _____ consumes 1 kW·h of energy if it is left on for 4 h	A. stereo B. toaster C. computer D. colour TV E. microwave
2. _____ uses the most energy if it operates for 20 min	
3. _____ has 7.5 A of current flowing through it when it is plugged into a 120 V outlet	

Circle the letter of the best answer.

4. Which of the following are units for energy?

I.	watts (W)
II.	joules (J)
III.	kilowatt-hours (kW·h)

- A. I and II only
- B. I and III only
- C. II and III only
- D. I, II, and III

5. A calculator uses a 9 V battery and draws 0.2 A of current. What is its power rating?

- A. 0.02 W
- B. 1.8 W
- C. 18 W
- D. 45 W

6. The current flowing in an appliance connected to a 120 V source is 2 A. How much electrical energy does the appliance use in 6 h?

- A. 1.44 kW·h
- B. 40 kW·h
- C. 240 kW·h
- D. 1440 kW·h

7. An electric space heater draws 15 A from a 120 V source. If it is used for 6 hours, how much electrical energy does it use?

I.	10.8 kW·h
II.	648 000 kW·h
III.	38 880 000 J

- A. I and II only
- B. I and III only
- C. II and III only
- D. I, II, and III

8. A self-cleaning oven operates on 5400 W of power when cleaning itself. It takes 2 h to clean. At a cost of \$0.09 per kW·h, how much does it cost to clean the oven?

- A. \$0.49
- B. \$0.97
- C. \$10.80
- D. \$970.00