

BLM Answers

BLM 8-1 Understanding Electric Energy

1. a) **STEP 1:** *EnerGuide* rating = 735 kWh/year
 Price of energy = 8.5¢/kWh
 Formula = Energy consumed in one year \times Price of energy
STEP 2: How much it would cost to use the self-cleaning oven for a year.
STEP 3: *Total cost for one year* =
 $735 \text{ kWh/year} \times 8.5\text{¢/kWh} = 6247.5\text{¢}$
 Change ¢ to \$ = $6247.5\text{¢} \div 100 = \62.48
 b) **STEP 4:** *Cost over lifespan* =
 $\$62.48/\text{year} \times 18 \text{ years} = \1124.64
2. a) Total cost for one year =
 $813 \text{ kWh/year} \times 11.0\text{¢/kWh} = 8943\text{¢}$
 Change ¢ to \$ = $8943\text{¢} \div 100 = \89.43
 b) Total cost over lifespan =
 $\$89.43 \times 21 \text{ years} = \1878.03
 c) Total cost for one year =
 $368 \text{ kWh/year} \times 11.0\text{¢/kWh} = 4048\text{¢}$
 Change ¢ to \$ = $4048\text{¢} \div 100 = \40.48
 d) Total cost over lifespan =
 $\$40.48 \times 21 \text{ years} = \850.08
3. a) Total cost for one year =
 $1026 \text{ kWh/year} \times 9.0\text{¢/kWh} = 9234\text{¢}$
 Change ¢ to \$ = $9234\text{¢} \div 100 = \92.34
 b) Total cost over lifespan =
 $\$92.34 \times 13 \text{ years} = \1200.42
 c) Total cost for one year =
 $649 \text{ kWh/year} \times 9.0\text{¢/kWh} = 5841\text{¢}$
 Change ¢ to \$ = $5841\text{¢} \div 100 = \58.41
 d) Total cost over lifespan =
 $\$58.41 \times 13 \text{ years} = \759.33

BLM 8-3 Read the Meters

Day 1: 5123 kWh
 Day 2: 5139 kWh
 Day 3: 5158 kWh
 Day 4: 5178 kWh
 Day 5: 5192 kWh
 Day 6: 5206 kWh
 Day 7: 5218 kWh

BLM 8-4 Smart Meter Readings

July 6: 11
 July 7: 16
 July 8: 19
 July 9: 20
 July 10: 14
 July 11: 14
 July 12: 12

BLM 8-5 Chapter 8 Practice Test

1. f) off-peak periods
2. c) energy consumption
3. e) on-peak periods
4. a) energy conservation
5. b) energy efficiency
6. g) *EnerGuide* rating
7. a) F. The type of home you live in does affect your household's energy consumption.
 b) F. An example of energy efficiency is replacing a 100 watt regular bulb with a 15 watt compact fluorescent bulb.
 c) F. The units for *EnerGuide* ratings are kWh/year.
 d) F. Smart meter readings are sent directly to the power company *or* someone must come by regularly to read a dial electric meter.
8. a) 222 kWh/year
 b) Yes. It uses less energy than most other models.
 c) 194 kWh/year
9. a) Cost of running a Toasties toaster oven for a year = $120 \text{ kWh/year} \times 8.5\text{¢/kWh} = 1020\text{¢}$;
 $1020\text{¢} \div 100 = \10.20
 b) Cost of running a Toasterizer 2000 toaster oven for a year = $200 \text{ kWh/year} \times 8.5\text{¢/kWh} = 1700\text{¢}$;
 $1700\text{¢} \div 100 = \17.00
 c) Total cost over lifespan =
 $\$10.20 \times 10 \text{ years} = \102.00
10. Accept one reasonable suggestion for each such as:
 - a) • Give up using the old freezer.
 - b) • Consider using a toaster oven instead of the large stove whenever possible.
 - Replace the old freezer and stove with more efficient models.

BLM 8-6 Chapter 8 Test

1. e) energy efficiency
2. d) energy conservation
3. g) on-peak periods
4. b) *EnerGuide* rating
5. f) off-peak periods
6. c) energy consumption
7. a) F. Canadians use more energy than most people in the world.
 b) F. Both a family's size and their lifestyle affect the household's electric energy consumption.
 c) T

- d) F. Hanging laundry to dry instead of putting it in the clothes dryer is an example of energy conservation.
8. a) EnerGuide rating = 400 kWh/year; Total cost for one year = $400 \text{ kWh/year} \times 10.0\text{¢/kWh} = 4000\text{¢}$; $4000\text{¢} \div 100 = \40.00
- b) EnerGuide rating = 687 kWh/year; Total cost for one year = $687 \text{ kWh/year} \times 10.0\text{¢/kWh} = 6870\text{¢}$; $6870\text{¢} \div 100 = \68.70
- c) EnerGuide rating = 360 kWh/year; Total cost for one year = $360 \text{ kWh/year} \times 10.0\text{¢/kWh} = 3600\text{¢}$; $3600\text{¢} \div 100 = \36.00
- d) Total cost over lifespan = $\$40.00 \times 21 \text{ years} = \840.00
9. Look for two reasons for reducing energy consumption such as:
- prevent power outages
 - reduce pollution and harmful environmental effects
 - reduce household electric bills
10. Look for two reasonable recommendations such as:
- wash clothes in cold water instead of hot water
 - buy a more efficient hot water heater
 - take shorter showers
 - shower instead of bathing
 - reduce the heat if the home is heated by radiators