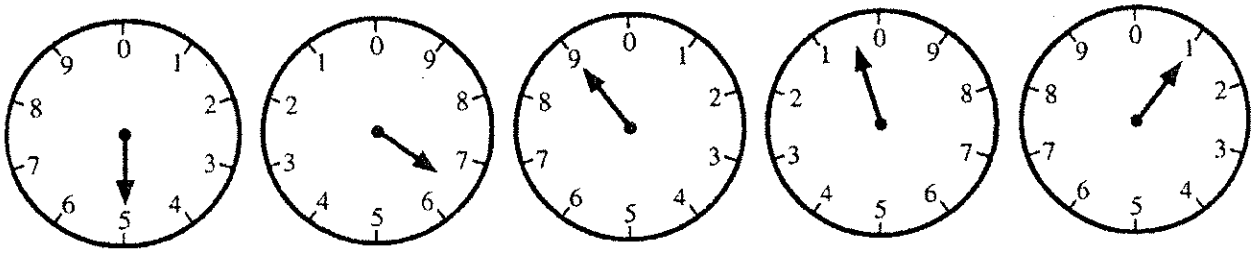
Name _____ Date _____

U ities

The cost of **utilities** such as electricity, water, natural gas, or heating oil are part of your living costs. **Meters** keep track of how much electricity, water, and natural gas are used. An electric meter shows the number of **kilowatt-hours** (kWh).

1 kWh is 1,000 watts of electricity used for 1 hour.

Example 1: Read the electric meter. When the pointer is between 2 numbers, read the lower number.



The meter reads 56,901 kWh.

You pay for electricity by the kWh.

Example 2: On April 1, your electric meter read 54,095 kWh. On May 1, the meter read 56,901 kWh. A kWh costs \$0.0528. How much did it cost you for the electricity used from April 1 to May 1?

Cost of Electricity = Cost Per kWh × kWh

Step 1 Subtract to find the number of kWh used.
56,901 − 54,095 = 2,806

Step 2 First estimate the cost.
3,000 × \$0.05 = \$150

Step 3 Then multiply to find the exact cost.
2,806 × \$0.0528 = \$148.1568

The electricity cost \$148.16. The answer is reasonable since it is close to the estimate, which is \$150.

Name _____ Date _____

You usually pay for the natural gas you use in units of 100 cubic feet.

Example 3: During April, you used 184 hundred cubic feet of gas. Gas costs $0.6133 per 100 cubic feet. How much did it cost you for gas during April?

Step 1 First estimate the cost.
$200 \times \$0.60 = \$120$

Step 2 Then multiply to find the exact cost.
$184 \times \$0.06133 = \$112.8472$

The gas cost $112.85. The answer is reasonable since it is close to the estimate, $120.

You usually pay for the water you use in units of 1,000 cubic feet.

Example 4: From July through August, you used 2,890 cubic feet of water. Water costs $14.38 per 1,000 cubic feet. How much did it cost you for water?

Step 1 Divide to find the number of 1,000 cubic ft.
$2{,}890 \div 1{,}000 = 2.89.$

Step 2 First estimate the cost.
$3 \times \$14 = \$42$

Step 3 Then multiply to find the exact cost.
$2.89 \times \$14.38 = \$41.5582$

The water cost $41.56. The answer is reasonable since it is close to the estimate, $42.

Think About It

1. How could you estimate the savings that would result from using less electricity?

_____

_____

2. Is more electricity used in summer or in winter? Why?

_____

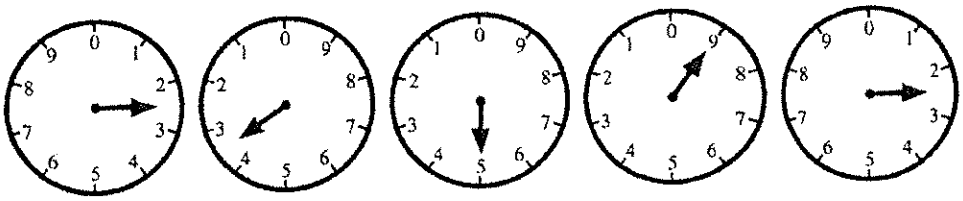
_____

Name _____ Date _____

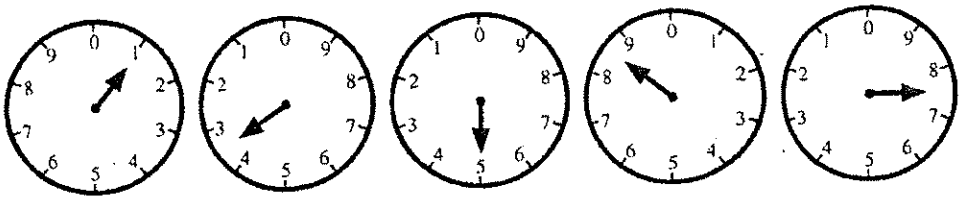
Practice

Remember to estimate whenever you use your calculator.

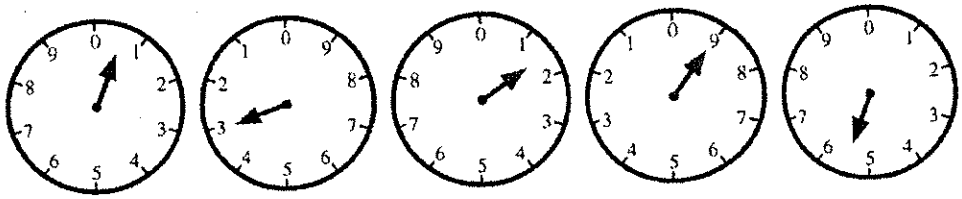
Read the electric meter.



1. _____



2. _____



3. _____

Complete the table to find the kWh used and the cost of the electricity.

Second reading	First reading	kWh used	Cost per kWh	Total cost
52,038 kWh	49,165 kWh	4. _____	$0.0493	5. _____
9,607 kWh	8,406 kWh	6. _____	$0.0603	7. _____
60,831 kWh	43,194 kWh	8. _____	$0.0238	9. _____
19,743 kWh	12,162 kWh	10. _____	$0.0537	11. _____

Find the cost of gas.

100 cubic ft used	141	159	933	222
Cost per 100 cubic ft	$0.5879	$0.9482	$0.0328	$0.6934
Cost of gas	12. _____	13. _____	14. _____	15. _____

Name _____ Date _____

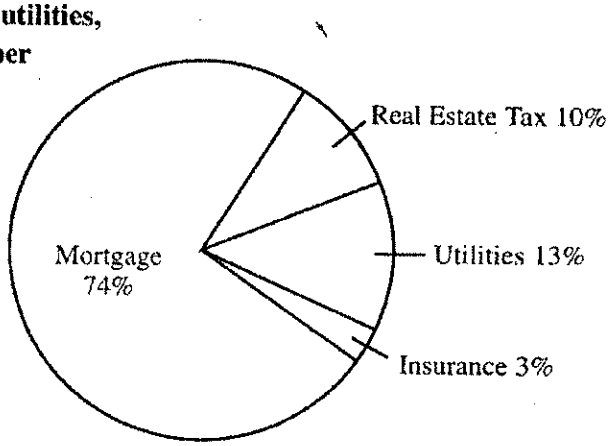
Complete the table to find the number of 1,000 cubic ft and the cost of water.

Cubic ft used	1,000 cubic ft used	Cost per 1,000 cubic ft	Total cost
3,051	**16.** _____	$14.38	**17.** _____
2,134	**18.** _____	$13.50	**19.** _____
4,892	**20.** _____	$11.23	**21.** _____
4,809	**22.** _____	$15.85	**23.** _____

Extension **Monthly Costs of Owning a Home**

This circle graph shows the percents of monthly payments the average homeowner spends on mortgage, taxes, utilities, and insurance. A homeowner spends about $1,450 per month on expenses. About how much is spent on:

1. Mortgage? _____
2. Utilities? _____
3. Taxes? _____
4. Insurance? _____



Extension

The new assessed valuation for a $100,000 house is $100,000. The annual tax on this house is $3,200. $3,200 ÷ $100,000 = 0.032, or $3.20 per $100.

Pages 104-106
Think About It

1. Renters don't have a mortgage and aren't required to carry insurance, so they may assume that the apartment complex has insurance covering the building.
2. Losses due to theft or fire can be costly to replace.

Practice

1. $7,800
2. $39,000
3. $15,600
4. $3,900
5. $10,950
6. $54,750
7. $21,900
8. $5,475
9. $8,764.50
10. $43,822
11. $17,529
12. $4,382.25
13. $2,500
14. $5,000
15. $5,000
16. $10,000
17. $7,500
18. $15,000

Extension

1. 234,360
2. 138,880
3. 34,720
4. 60,760
5. Answers may vary.
6. $12,200
7. $61,000
8. $24,400
9. $6,100
10. $19,280
11. $96,400
12. $38,560
13. $9,640
14. $10,720
15. $53,600
16. $21,440
17. $5,360
18. $8,285
19. $41,425
20. $16,570
21. $4,142.50
22. $26,124
23. $130,620
24. $52,248
25. $13,062

Pages 108-110 (Utilities)
Think About It

1. Answers may vary.
2. Answers may vary.

Practice

1. 23,592 kWh
2. 13,587 kWh
3. 3,195 kWh
4. 2,873
5. $141.64
6. 1,201
7. $72.42
8. 17,637
9. $419.76
10. 7,581
11. $407.10
12. $82.89
13. $150.76
14. $30.60
15. $153.93
16. 3.051
17. $43.87
18. 2.134
19. $28.81
20. 4.892
21. $54.94
22. 4.809
23. $76.22

Extension

1. $1,073
2. $188.50
3. $145
4. $43.50

Page 112
Problem Solving Application

1. $84
2. $8.01
3. $306.60
4. $38.33
5. $124.80
6. $108
7. $1.24
8. Clothes dryer

Page 114
Problem Solving Application
Think About It

1. Answers may vary.
2. Winter

Practice

1. 486 gallons
2. 30 months
3. 48 months
4. 729 gallons
5. $178.20
6. $623.70

Pages 117-118
Think About It

1. For every 50 feet of perimeter, there is 400 square feet of wall. One gallon covers 400 square feet.
2. Answers may vary.

Practice

1. 58 ft
2. 42 ft
3. 56 ft
4. 60 ft
5. 2 gal; $27.90
6. 2 gal; $34.10
7. 3 gal; $31.95
8. $1,512
9. $2,016
10. $3,024
11. l = 10 in.; w = 8 in.
12. l = 8 in.; w = 6 in.
13. l = 37.5 cm; w = 30 cm
14. 2 gal; $35.70
15. 6 gal; $98.10
16. $1,656
17. $9,936
18. l = 16 in.; w = 13.3 in.
19. l = 112.5 cm; w = 60 cm