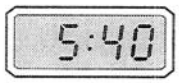
Name _____

Telling Time

R 4-1

You can read the time shown on the analog and digital clocks as either five forty or twenty minutes to six.



A.M. includes times from midnight until noon, and P.M. includes times from noon until midnight.

Write the time shown on each clock in two ways.

1. 

2. 

_____ _____

_____ _____

_____ _____

3. Write a reasonable time for leaving school. Include A.M. or P.M.

_____

4. **Reasoning** Would you most likely be asleep at 11:00 A.M. or 11:00 P.M.?

_____

Name _____

Units of Time

R 4-2

You can use the information in the table to compare different amounts of time. For example:

Which is longer, 3 years or 40 months?
According to the table, 1 year = 12 months.

1 year = 12 months
3 years = 36 months

$$\begin{array}{r} 12 \\ \times\ 3 \\ \hline 36 \end{array}$$

40 months > 36 months
40 months > 3 years

So 40 months is longer than 3 years.

Units of Time
1 minute = 60 seconds
1 hour = 60 minutes
1 day = 24 hours
1 week = 7 days
1 month = about 4 weeks
1 year = 52 weeks
1 year = 12 months
1 year = 365 days
1 leap year = 366 days
1 decade = 10 years
1 century = 100 years
1 millennium = 1,000 years

Write <, >, or = for each ◯.

1. 1 year ◯ 350 days

2. 25 months ◯ 2 years

3. 20 decades ◯ 2 centuries

4. 720 days ◯ 2 years

5. 8 decades ◯ 1 century

6. 72 hours ◯ 3 days

7. 240 minutes ◯ 3 hours

8. 3 years ◯ 120 months

9. **Number Sense** How many hours are in 2 days? _____

10. A score is 20 years. How many years is 5 score? _____

11. Dave's goldfish lived for 2 years, 8 months. Chris's goldfish lived for 35 months. Whose goldfish lived longer? _____

12. Tree A lived for 6 decades and 5 years. Tree B lived for 58 years. Which tree lived longer? _____

Name _____

Elapsed Time

R 4-3

Elapsed time problems can be solved in more than one way.

Find the elapsed time between 8:50 A.M. and 11:00 A.M.

One Way	**Another Way**
8:50 to 9:00 is 10 min	8:50 to 10:50 is 2 hr
9:00 to 11:00 is 2 hr	10:50 to 11:00 is 10 min
That's 2 hr and 10 min.	That's 2 hr and 10 min.

Find each elapsed time.

1. Start: 9:00 A.M.
   Finish: 1:30 P.M. _____

2. Start: 5:15 P.M.
   Finish: 8:20 P.M. _____

3. Start: 7:35 A.M.
   Finish: 8:57 A.M. _____

Write the time each clock will show in 35 min.

4.  _____

5.  _____

6. **Number Sense** Is the elapsed time from 3:35 A.M. to 11:00 A.M. more than or less than 7 hr? Explain.

_____

_____

_____

Name _____

PROBLEM-SOLVING SKILL **R 4-4**

Writing to Compare

Football Practice

	Start Time	Water Break	Drills	End Time
Team A	3:00	3:45	4:00	5:00
Team B	3:30	4:00	4:05	5:15

Comparison Statements	Tips for Writing Good Comparisons
Team B starts practice 30 min later than Team A, but ends 15 min later. Team A gets a water break sooner than Team B, and the break is longer.	Use comparison words such as "later," "fewer," and "same."
Team A begins practice at 3:00 and ends at 5:00. That's 2 hr. Team B begins practice at 3:30 and ends at 5:15. That's 1 hr and 45 min. Team A has a longer practice.	Sometimes you can do calculations and compare the results.

1. In which corral does the cow roping last the longest?

_____

2. How long does the hog calling last in Corral No. 1?

_____

_____

County Fair

Event		Corral No. 1	Corral No. 2
Bronco riding	Start	9:05	8:45
	End	10:15	10:05
Cow roping	Start	10:20	10:10
	End	11:35	11:15
Hog calling	Start	11:45	11:25
	End	1:10	1:05

3. In Corral No. 1, how much time is there from the start of the bronco riding to the end of the cow roping?

_____

Name _____

Calendars

R 4-5

Roberto is going on a business trip to Oregon on March 12. He will be gone two weeks and one day. What date will he return home?

March						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Move down two rows for two weeks and one column to the right for one day. Roberto will return home on March 27.

Numbers such as twenty-seventh are called ordinal numbers. They are used to tell order. Some other examples of ordinal numbers are first, fourth, thirteenth, and seventy-first.

November						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

December						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24/31	25	26	27	28	29	30

Find the date

1. two weeks after November 7. _____

2. one week before November 13. _____

3. two weeks after December 7. _____

4. three weeks before December 26. _____

5. **Number Sense** How could you find the date two weeks after November 3, without a calendar? _____

6. Bill's birthday was three weeks before December 6. What date is Bill's birthday? _____

Name _____

Pictographs

R 4-6

A pictograph uses pictures or symbols to show data.

Endangered Species in the United States

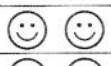
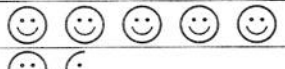
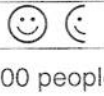
Group	Number
Amphibians	
Arachnids	
Crustaceans	
Reptiles	

Each  = 2 animals

Example

	How many types of arachnids are endangered?
What you think	Look next to Arachnids. There are 6 paws. Each  = 2 animals. 2, 4, 6, 8, 10, 12
What you write	There are 12 types of arachnids in the United States that are endangered.

Favorite Ways of Communicating with a Long-Distance Friend

E-mail	
Telephone	
Letters	

Each  = 100 people

About how many people prefer to communicate by

1. e-mail? _____
2. telephone? _____
3. letter? _____
4. About how many more people prefer to use e-mail than letters?

   _____

5. **Number Sense** If each symbol on a pictograph equals 100 people, how many symbols would you need to show 750 people?

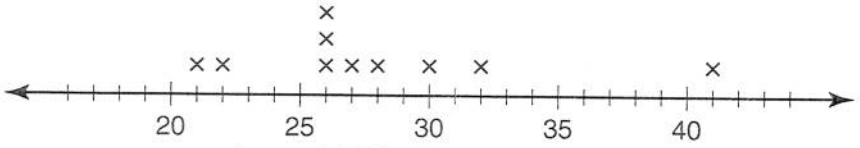
   _____

Name _____

Line Plots

R 4-7

Line plots show data along a number line. Each X represents one number in the data.



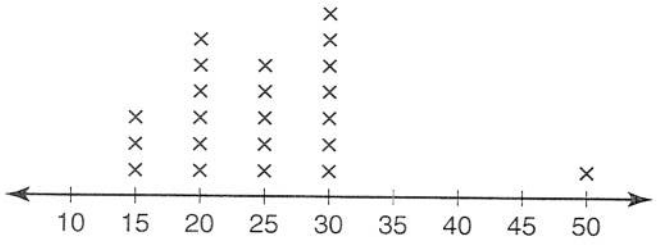
Ages of 10 Pro Football Players

Since there is one X above the 22, one of the pro football players is 22 years old.

Since there are three Xs above the 26, three of the pro football players are 26 years old.

The oldest player is 41 years old and the youngest player is 21.

The 41-year-old player is older than all of the other players. This number is called an outlier, since it is very different than the rest of the numbers.



Raffle Tickets Sold by Fourth Graders

How many fourth graders sold

1. 15 raffle tickets? _____

2. 20 raffle tickets? _____

3. How many raffle tickets did most fourth graders sell? _____

4. **Number Sense** Is there an outlier in the data set? Explain.

_____

_____

Name_____

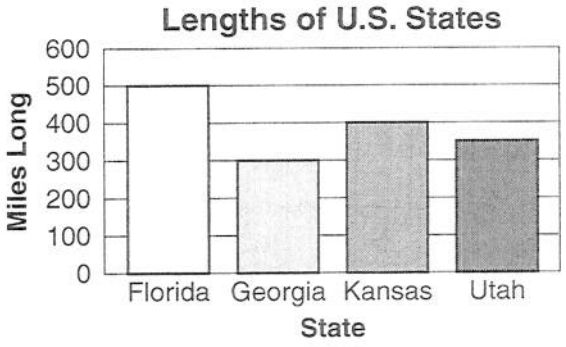
Bar Graphs

R 4-8

How to make a bar graph to display data

Data File

Lengths of U.S. States	
State	**Length**
Florida	500 mi
Georgia	300 mi
Kansas	400 mi
Utah	350 mi



Step 1: Choose a scale.

Step 2: Draw and label the side and bottom of the graph.

Step 3: Draw a bar on the graph for each number in the data file.

Step 4: Give the graph a title. The title should be the subject of the graph.

1. Use the data at the right. Draw a bar graph with the number of points scored on the vertical axis and the players' names on the horizontal axis. Give the graph a title.

Player	Points Scored
Vito	30
Ray	25
Pat	35

Name _____

Graphing Ordered Pairs

R 4-9

To name the location of the star on the grid:

Step 1:

Start at (0, 0).

Step 2:

Move right 3 spaces.

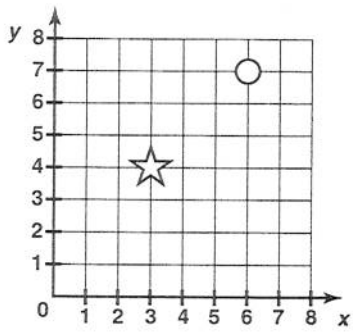
Step 3:

Move up 4 spaces.

The star is located at (3, 4).

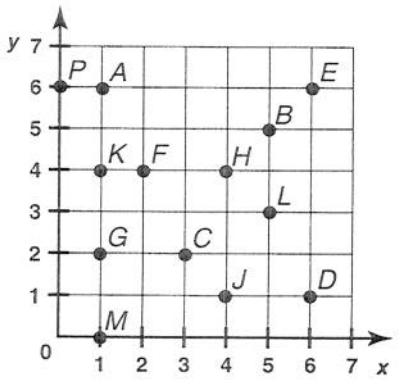
The first number in an ordered pair tells how many spaces to move to the right. The second number tells how many spaces to move up. Name the ordered pair for the circle. (6, 7)

An ordered pair names a point on a grid.



Name the ordered pair for each point.

1. *C* _____
2. *D* _____
3. *K* _____
4. *H* _____

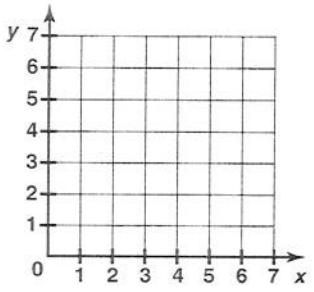


Give the letter of the point named by each ordered pair.

5. (5, 5) _____
6. (6, 6) _____
7. (2, 4) _____

Plot the following points on the coordinate grid below.

8. *W*(2, 4)
9. *X*(5, 6)
10. *Y*(3, 0)
11. *Z*(6, 1)



Name _____

Line Graphs

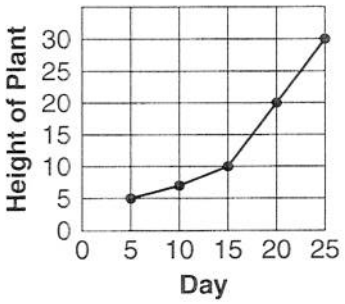
R 4-10

Here is how to make a line graph.

Tomato Plant Growth

Day	Height (in cm)
5	5
10	7
15	10
20	20
25	30

Tomato Plant Growth



Step 1

Choose an interval for each scale. Draw and label the side and bottom of the graph. Put time on the bottom.

Step 2

Plot a point for each row in the data file. Plot (5, 5), (10, 7), and so on.

Step 3

Draw a line from each point to the next one, in order.

Step 4

Give the graph a title. The title should describe the subject of the graph.

Jones School Recycling

Month	Bins of Paper Recycled
1	5
2	15
3	35
4	40

1. The Jones School began a recycling program. After each month, students record how many bins of paper the school recycled. Draw a line graph that shows this data. Put the months of the school year at the bottom.

Name_____

PROBLEM-SOLVING STRATEGY **R 4-11**

Make a Graph

Pitcher Chris recorded 3 strikeouts in his first game, 5 in his second game, 7 in his third game, 10 in his fourth game, and 11 in his fifth game. How did his number of strikeouts change over the course of the five games he pitched?

Read and Understand

Step 1: What do you know?

I know the number of strikeouts Chris made each game.

Step 2: What are you trying to find?

How the number of strikeouts changed

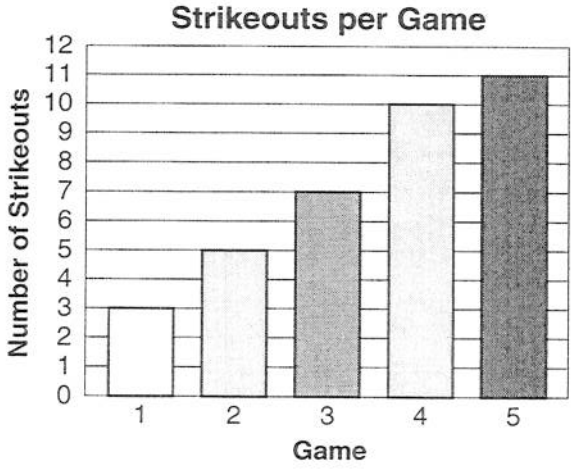
Plan and Solve

Step 3: What strategy will you use?

A: Set up the bar graph.
B: Enter the known data.
C: Read the graph. Look for a pattern.

Answer: The number of strikeouts increased each game.

Strategy: Make a bar graph

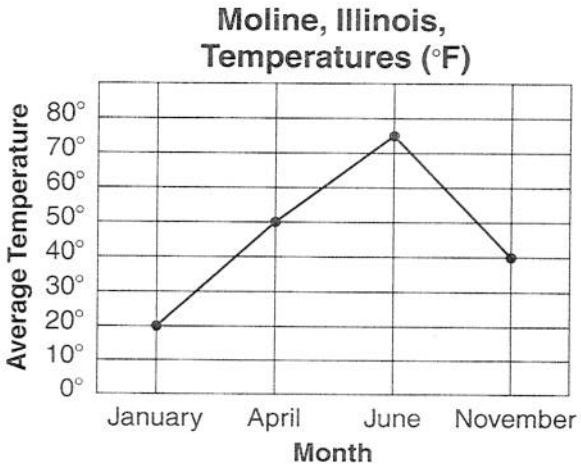


Solve. Write your answer in a complete sentence.

1. How much warmer is it, on average, in April than in January?

_____

_____



Name_____

Median, Mode, and Range

R 4-12

You can summarize data by using median, mode, and range.

Data	Median	Mode	Range
	List the data in order from smallest to largest. Then find the number in the middle.	Find the number or numbers that occur most often. A set may have more than one mode.	Subtract the least number from the greatest number.
31, 32, 35, 40, 61, 61, 62	40 is the number in the middle. The median is 40.	61 is the number that occurs most often. 61 is the mode.	$62 - 31 = 31$ The range is 31.
25, 25, 26, 30, 47, 47, 48	The median is 30.	The modes are 25 and 47.	$48 - 25 = 23$ The range is 23.

Find the median, mode, and range of each set of data.

1. 8, 9, 3, 4, 6, 8, 7

_____

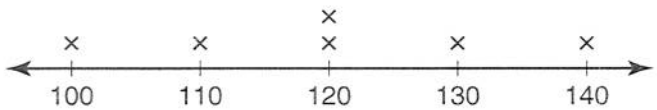
2. 8, 11, 10, 12, 15, 13, 10

_____

3. **Reasoning** Jill said the mode of the following set is 4. Is she correct? Explain. 1, 8, 7, 4, 2, 2

_____

_____



Weight of Players on Nelly's Basketball Team (pounds)

4. Find the mode, median, and range of the weights of the players on Nelly's basketball team.

_____

Name _____

Data from Surveys

R 4-13

To take a survey, you ask different people the same question and record their answers. Heather asked her class, "What is your favorite flavor of frozen yogurt?" Here are her results:

Favorite Flavor of Frozen Yogurt

Vanilla	𝍸	4
Chocolate	𝍸 𝍸	9
Strawberry	𝍸	3
Orange	𝍸	1

We can see that Heather's classmates liked chocolate frozen yogurt the best.

Favorite Winter Olympic Sports

Bobsledding	𝍸	
Curling	𝍸	
Ice hockey	𝍸 𝍸	
Speed skating	𝍸	

1. How many people in the survey liked bobsledding the best? _____

2. How many people were surveyed? _____

3. According to the data, which sport is the favorite of most people? _____

4. **Number Sense** If five times as many people were surveyed, how many do you think would say they liked curling best? Explain.

_____

_____

_____

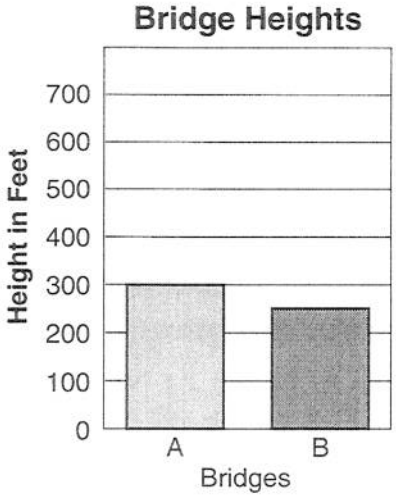
_____

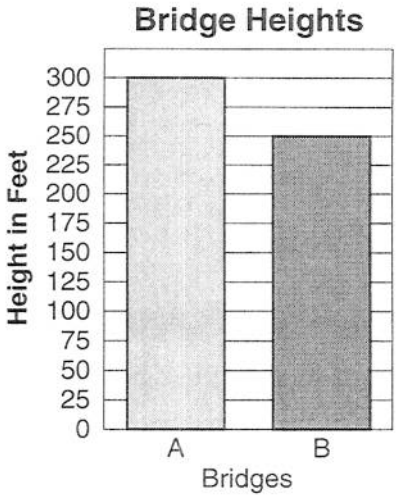
Name _____

Misleading Graphs

R 4-14

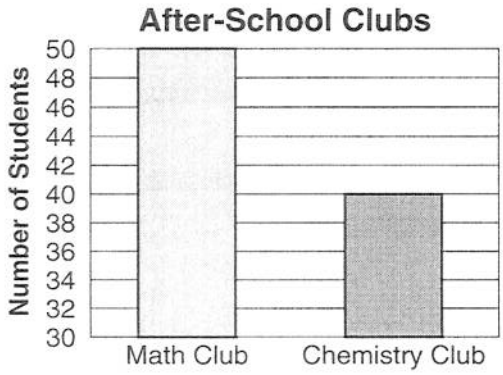
Sometimes graphs can be misleading. Make sure you always look at a graph closely.





These graphs show the heights of two bridges. Look at the graph on the left. It looks as if the bridges are about the same height. However, when you look at the graph on the right, you see that Bridge A is 50 ft taller than Bridge B. The scale of the left graph is by 100s, while the scale of the right graph is by 25s.

1. Are there more students in the Math Club or in the Chemistry Club? Explain. How many students are in the Math Club? The Chemistry Club?



_____

_____

_____

_____

_____

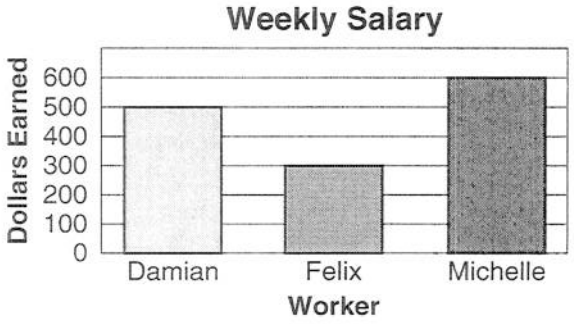
2. **Reasoning** Is this graph misleading? Explain.

_____

Name _____

PROBLEM-SOLVING APPLICATIONS **R 4-15**

Time and Money

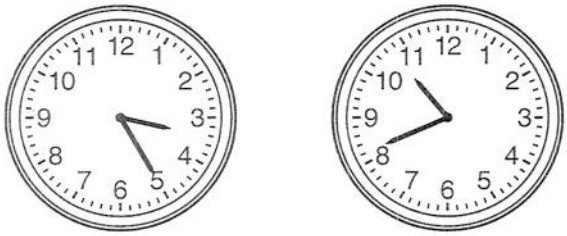


How much money does Michelle earn per week? $600

How much more money does Damian earn than Felix? $200

How can you tell by looking at the bar graph which person earned the most money? Look at the longest bar.

Clock A **Clock B**



1. What time is shown on Clock A? _____

2. What time is shown on Clock B? _____

3. How much time has elapsed from Clock A to Clock B?

_____

Find the median, mode, and range of each set of data.

4. 17, 20, 22, 18, 19, 22, 24

_____

5. 105, 104, 104, 103, 106

_____