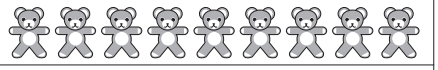
NAME _____ DATE _____ PERIOD _____

Lesson 1 Homework Practice

Mean

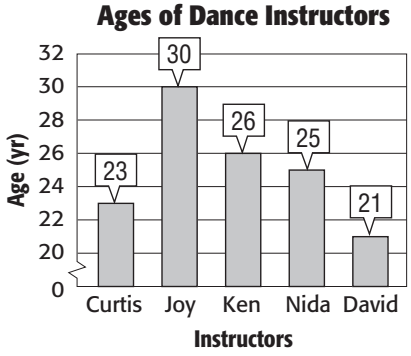
Find the mean for each set of data.

1.

Number of Toys Collected	
Brian	
Kathy	
Lucita	
Terrell	

Key:  = 1 toy

2.



3.

Falls	Height (ft)
Bridal Veil	153
Horsetail	176
Latourell	249
Metlako	150
Multnomah	620
Wahkeena	242

4. GARDENING Alan earned \$23, \$26, \$25, \$24, \$23, \$24, \$6, \$24, and \$23 gardening. What is the mean of the amounts he earned?

Find the mean for number of cans collected. Explain the method you used.

5. 57, 59, 60, 58, 58, 56

NAME _____ DATE _____ PERIOD _____

Lesson 1 Skills Practice

Mean

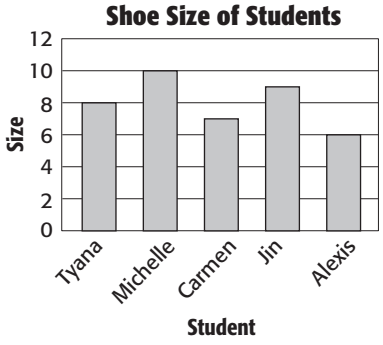
Find the mean for each set of data.

1.

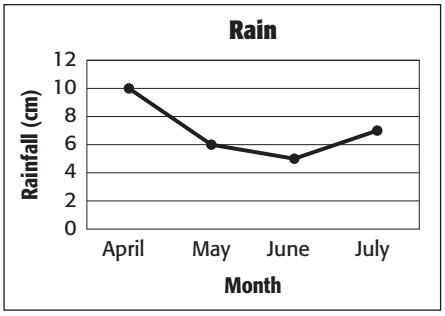
Number of Candy Bars Sold	
Amber	CANDY CANDY CANDY CANDY CANDY CANDY CANDY CANDY CANDY CANDY CANDY
Dalton	CANDY CANDY CANDY CANDY CANDY CANDY CANDY CANDY
Juan	CANDY CANDY CANDY CANDY CANDY CANDY CANDY CANDY CANDY
Shamika	CANDY CANDY CANDY CANDY CANDY CANDY CANDY CANDY CANDY CANDY CANDY CANDY

Key: CANDY = 1 candy bar

2.



3.



4.

Students	
A	
B	
C	
D	
E	

Key: = 1 student

5.

Temperatures	
Day	**Temp. (°F)**
Monday	69
Tuesday	70
Wednesday	73
Thursday	35
Friday	68

6.

Heights	
Student	**Height (in.)**
Maria	62
Peter	67
Shann	64
Iyoka	65
Evangelina	59
Carles	67

NAME _____ DATE _____ PERIOD _____

Lesson 1 Extra Practice

Mean

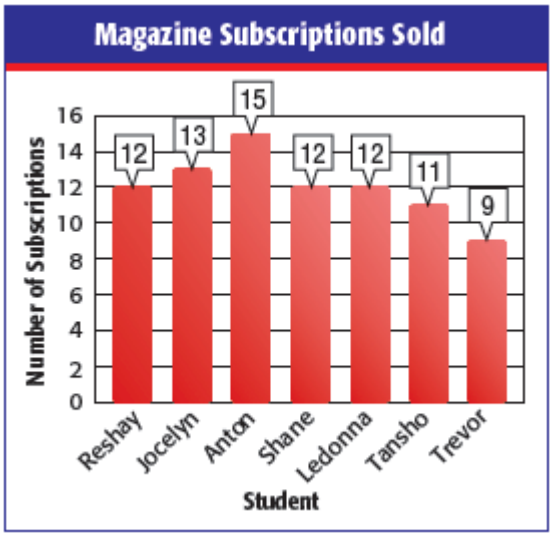
Find the mean for each data set.

1.

Number of Books Read	
Ron	4
Rina	6
Oscar	5
Tessa	3
Kin	6
Amir	5
Vera	6

Key: = 1 book

2.



3. number of birds identified by each student: 1, 5, 9, 1, 2, 4, 8, 2

4. money raised by each class: $957, $562, $462, $848, $721

5. fliers handed out by each club member: 46, 54, 66, 54, 50, 66

NAME _____ DATE _____ PERIOD _____

Lesson 1 Problem-Solving Practice

Mean

ANIMALS For Exercises 1 and 2, use the table about bears.

Bear	Average Height (ft)	Average Weight (lb)
Alaskan Brown	8	1,500
Black	6	338
Grizzly	7	588
Polar	7	850

1. Find the mean of the bear height data.

2. Find the mean of the bear weight data.

3. SALES Andre sold 43 magazines at his mom's work, 32 at his dad's work, 18 around his neighborhood, and 3 at home. What is the mean of the magazines he sold?

4. WORK Carlos earned \$23, \$29, \$25, \$16, and \$17 working at an ice cream shop after school. What is the mean amount he earned?

5. CARS The cost of the same quantity of gasoline at nine different gas stations is shown below. What is the mean cost of this amount of gas?

Cost of Gas: \$17, \$18, \$22, \$15, \$17, \$16, \$25, \$21, and \$20

6. SCHOOL Sally received scores on math quizzes as shown below. Find her mean score.

Quiz Scores: 84, 85, 91, 81, 52, 92, 99, 91, and 45

Mean

Use the numbers in the box to complete Exercises 1–7. Once you have used a number, cross it out. You may not use it again.

1	2	6	5	1	6	4	7	9	5
10	98	96	79	96	25	75	32	53	50
71	22	81	76	97	44	36	20	72	36
31	40	50	49	18	29	74	96	42	34
198	173	367	379	988	637	724	706	251	600
546	468	809	343	702	706	867	331	828	615

When you have completed Exercises 1–7, compare your answers with a classmate. For each of Exercises 1–6, give one point to the person who comes closer to the goal. For Exercise 7, give one point for each person who finds the mean of the data.

1-7. See students' work.

1. Choose seven numbers. Goal: greatest mean Numbers: _____ Mean: _____	**2.** Choose six numbers. Goal: least mean Numbers: _____ Mean: _____
3. Choose eight numbers. Goal: least mean Numbers: _____ Mean: _____	**4.** Choose five numbers. Goal: greatest mean Numbers: _____ Mean: _____
5. Choose seven numbers. Goal: least mean Numbers: _____ Mean: _____	**6.** Choose nine numbers. Goal: greatest mean Numbers: _____ Mean: _____

7. Find the mean of the remaining numbers. _____

8. Describe one strategy you used in this game.

Sample answer: Choose small numbers to get a mean that is low and big numbers to get a mean that is high.

NAME _____ DATE _____ PERIOD _____

Lesson 2 Homework Practice

Median and Mode

Find the median and mode for each set of data.

1. minutes spent practicing the violin:
25, 15, 30, 25, 20, 15, 24

2. snow in inches:
40, 28, 24, 37, 43, 26, 30, 36

Find the mean, median, and mode of the data represented in each set of data.

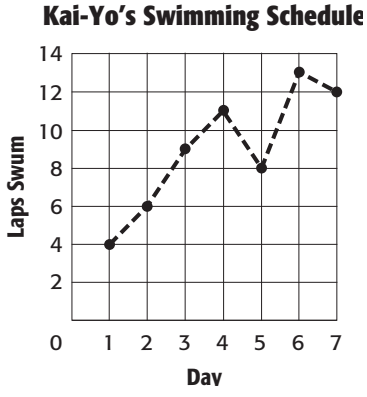
3.

Quiz Scores (out of 50)				
30	30	34	34	34
37	39	45	45	45
45	45	45	45	

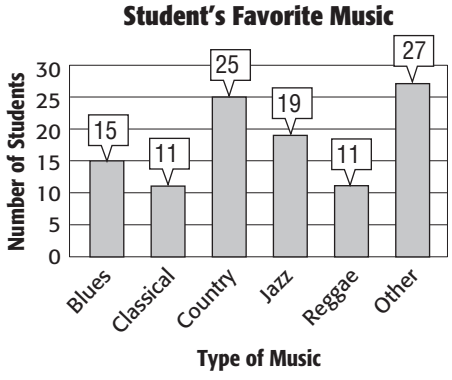
4.

Basketball Points					
41	42	44	44	52	54
61	63	64	67	67	67
67	68	68	72	72	73
80	81	82	84	85	86

5.



6.



7. WEATHER Refer to the table at the right.

Daily Low Temperatures (°F)	
Charleston	**Atlanta**
33 34 33 35	48 41 43 40
36 35 34	45 35 37

a. Compare the median low temperatures.

b. Write a statement that compares the daily low temperatures for the two cities.

NAME _____ DATE _____ PERIOD _____

Lesson 2 Skills Practice

Median and Mode

Find the median and mode for each set of data.

1. age of children Danielle babysits:
6, 9, 2, 4, 3, 6, 5

2. hours spent studying:
13, 6, 7, 13, 6

3. age of grandchildren:
1, 15, 9, 12, 18, 9, 5, 14, 7

4. points scored in video game:
13, 7, 17, 19, 7, 15, 11, 7

5. amount of weekly allowances:
3, 9, 4, 3, 9, 4, 2, 3, 8

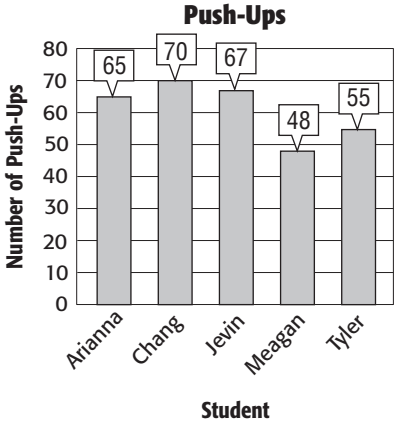
6. height of trees in feet:
25, 18, 14, 27, 25, 14, 18, 25, 23

Find the mean, median, and mode of the data represented.

7.

Annual Rainfall (in.)			
21	23	27	28
32	32	34	43

8.



9. MUSEUMS Use the table showing the number of visitors to the art museum each month.

Vistors to the Art Museum (thousands)			
3	11	5	4
5	3	6	3
12	2	2	4

a. What is the mean of the data?

b. What is the median of the data?

c. What is the mode of the data?

NAME _____ DATE _____ PERIOD _____

Lesson 2 Extra Practice

Median and Mode

Find the median and mode for each data set.

1. 16, 12, 20, 15, 12

2. 42, 38, 56, 48, 43, 43

3. 8, 3, 12, 5, 2, 9, 3

4. 85, 75, 93, 82, 73, 78

5. 25, 32, 38, 27, 35, 25, 28

6. 112, 103, 121, 104

7. 57, 63, 53, 67, 71, 67

8. 21, 25, 20, 28, 26

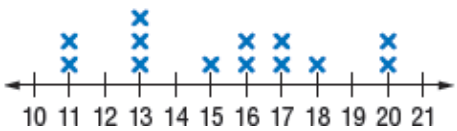
9. 57, 42, 86, 76, 42, 57

10. 215, 176, 194, 223, 202

11.

Students per Class				
18	21	22	19	22
26	24	18	24	26

12.



NAME _____ DATE _____ PERIOD _____

Lesson 2 Problem-Solving Practice

Median and Mode

SCIENCE For Exercises 1–3, use Table A. For Exercises 4–6, use Table B. Table A shows the number of days it took for some seeds to germinate after planting. Table B shows how tall the plants were after 60 days.

Table A

Number of Days for Seeds to Germinate				
15	20	30	15	16
9	21	21	15	

Table B

Height (in.) of Plants After 60 Days				
17	19	13	17	20
15	17	21	14	

1. Refer to Table A. You are doing some experiments with germinating seeds. You are preparing a report on your findings to a seed company. What are the median and mode of the data?

2. What is the mean number of days for the seeds to germinate?

3. Compare the median and mode for the number of days for seeds to germinate.

4. What are the median and mode of the plant height data?

5. What is the mean plant height after 60 days?

6. Is the value 17 a good value to describe the measures of center of the heights of plants after 60 days? Explain.

NAME _____ DATE _____ PERIOD _____

Enrich

Puzzling Over Data

Each puzzle on this page contains an incomplete set of data. The clues give you information about the mean, median, mode, or range of the data. Working from these clues, you can decide what the missing data items must be. For example, this is how you might solve the data puzzle at the right.

Clue: mean = 18

Data: 12, 17, 18, 19, 19, ☐

There are 6 items of data.
The mean is 18, so the sum of the data must be $6 \times 18 = 108$.
Add the given data: $12 + 17 + 18 + 19 + 19 = 85$.
Subtract from 108: $108 - 85 = 23$.

So the complete set of data is: 12, 17, 18, 19, 19, 23 .

Find the missing data. Assume that the data items are listed in order from least to greatest.

1. *Clue*: mode = 8

Data: 7, 7, 8, ☐, ☐, 14

2. *Clue*: median = 54.5

Data: 36, 40, 49, ☐, 65, 84

3. *Clues*: mean = 27
mode = 30

Data: 10, 25, 27, ☐, 30, ☐

4. *Clues*: median = 120
range = 46

Data: 110, 112, ☐, 124, 136, ☐

5. *Clues*: mean = 13
median = 13
range = 13

Data: ☐, 9, 12, ☐, 18, ☐

6. *Clues*: mean = 7
median = 8.5
mode = 10

Data: ☐, 4, 8, ☐, ☐, ☐

7. *Clues*: mean = 60
mode = 52
range = 28

Data: ☐, 52, ☐, ☐, 72, 78

8. *Clues*: median = 24
mode = 28
range = 24

Data: 6, 15, ☐, ☐, ☐, ☐

NAME _____ DATE _____ PERIOD _____

Homework Practice

Problem-Solving Investigation: Use Logical Reasoning

Mixed Problem Solving

Use a Venn diagram to solve Exercises 1 and 2.

1. **SPORTS** Of the 25 baseball players on the Baltimore Orioles 2005 roster, 17 threw right handed, 12 were over 30 years old, and 9 both threw right handed and were over 30 years old. How many players on the team neither threw right handed nor were over 30 years old?

2. **GRADES** The principal noticed that 45 students earned As in English, 49 students earned As in math, and 53 students earned As in science. Of those who earned As in exactly two of the subjects, 8 earned As in English and math, 12 earned As in English and science, and 18 earned As in math and science. Seventeen earned As in all three subjects. How many earned As in English only?

Use any strategy to solve Exercises 3–6.

3. **NUMBERS** What are the next two numbers in the pattern?

   486, 162, 54, 18, ____, ____

4. **GEOGRAPHY** Of the 50 U.S. states, 30 states border a major body of water and 14 states border a foreign country. Seven states border both a major body of water and a foreign country. How many states border on just a major body of water and how many border on just a foreign country?

5. **LANDSCAPING** Three different landscaping companies treat lawns for weeds. Company A charges $35 per treatment and requires 3 treatments to get rid of weeds. Company B charges $30 per treatment and requires 4 treatments. Company C charges $50 per treatment and requires only two treatments to eliminate weeds. If you want to use the company that charges the least, which company should you choose?

6. **RECEIVING** Marc unloaded 7,200 bottles of water from delivery trucks today. If each truck contained 50 cases and each case contained 24 bottles of water, how many trucks did he unload?

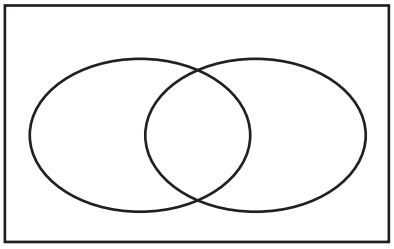
NAME _____ DATE _____ PERIOD _____

Skills Practice

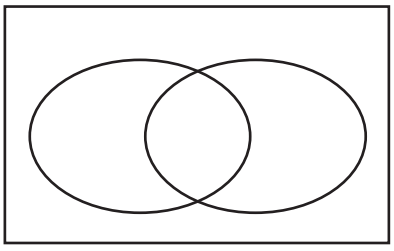
Problem-Solving Investigation: Use Logical Reasoning

Use a Venn diagram to solve each problem.

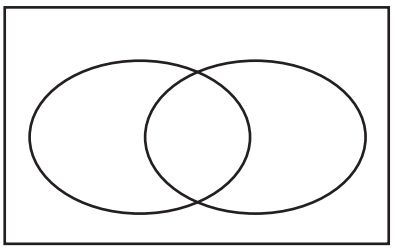
1. **PHONE SERVICE** Of the 5,750 residents of Homer, Alaska, 2,330 pay for landline phone service and 4,180 pay for cell phone service. One thousand seven hundred fifty pay for both landline and cell phone service. How many residents of Homer do not pay for any type of phone service?



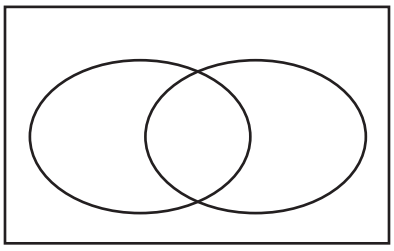
2. **BIOLOGY** Of the 2,890 ducks living in a particular wetland area, scientists find that 1,260 have deformed beaks, while 1,320 have deformed feet. Six hundred ninety of the birds have both deformed feet and beaks. How many of the ducks living in the wetland area have no deformities?



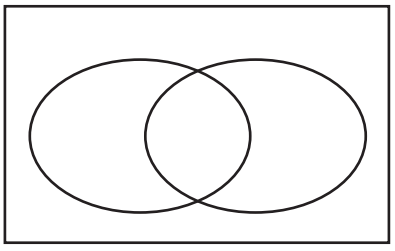
3. **FLU SYMPTOMS** The local health agency treated 890 people during the flu season. Three hundred fifty of the patients had flu symptoms, 530 had cold symptoms, and 140 had both cold and flu symptoms. How many of the patients treated by the health agency had no cold or flu symptoms?



4. **HOLIDAY DECORATIONS** During the holiday season, 13 homes on a certain street displayed lights and 8 displayed lawn ornaments. Five of the homes displayed both lights and lawn ornaments. If there are 32 homes on the street, how many had no decorations at all?



5. **LUNCHTIME** At the local high school, 240 students reported they have eaten the cafeteria's hot lunch, 135 said they have eaten the cold lunch, and 82 said they have eaten both the hot and cold lunch. If there are 418 students in the school, how many bring lunch from home?



NAME _____ DATE _____ PERIOD _____

Problem-Solving Practice

Problem-Solving Investigation: Use Logical Reasoning

Use a Venn diagram to solve each problem.

NATIONAL PARKS For Exercises 1 and 2, use the information in the box. It shows the number of people who visited two National Parks in one year.

Number of Yearly National Park Passes Sold	Pass Holders Who Visited Yellowstone National Park	Pass Holders Who Visited Yosemite National Park	Pass Holders Who Visited Both Parks
4,250,000	1,420,000	2,560,000	770,000

1. How many yearly pass holders visited ONLY Yellowstone Park?

2. How many yearly pass holders did not visit either Yosemite Park or Yellowstone Park?

3. PIZZA At a skating party, 10 skaters said they like pepperoni on their pizza, 12 said they like sausage. Seven skaters said they like both, and the rest like plain cheese. If there were 20 skaters having pizza, how many like plain cheese?

4. FIELD TRIP Of the 24 students on a fieldtrip to the local ski hill, 13 ski and 11 snowboard. Four of the students ski and snowboard. How many students do not ski or snowboard?

5. BOOKS Of the 420 people who visited the library, 140 people checked out a nonfiction book, 270 checked out a fiction book. Ninety-five of the visitors checked out both fiction and nonfiction. How many visitors did not check out a book?

6. SIBLINGS Of the 18 girls on a soccer team, 10 have a sister, 14 have a brother, and 8 have both a brother and a sister. How many of the girls do not have a brother or a sister?

NAME _____ DATE _____ PERIOD _____

Lesson 3 Homework Practice

Measures of Variation

1. Use the data in the table.

Weights of Black Bears (lb)									
277	448	279	334	132	599	237	251	183	191

a. Find the range of the data.

b. Find the median and the first and third quartiles.

c. Find the interquartile range.

d. Name any outliers in the data.

2. Use the data of average monthly precipitation in Johnstown shown in the table.

Monthly Precipitation

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Inches	1.71	1.49	1.92	1.93	3.56	9.89	7.34	8.62	8.23	3.80	1.89	1.72

a. Find the range of the data.

b. Find the median and the first and third quartiles.

c. Find the interquartile range.

d. Find any outliers in the data and name them.

3. TRAIN The table shows the number of riders on the train each day for two weeks. Compare and contrast the measures of variation for both weeks.

Number of Riders on the Train		
Day	**Week 1**	**Week 2**
Monday	72	79
Tuesday	84	86
Wednesday	78	75
Thursday	67	49
Friday	86	137

NAME _____ DATE _____ PERIOD _____

Lesson 3 Skills Practice

Measures of Variation

Find the range, median, first and third quartiles, and interquartile range for each data set. Name any outliers.

1.

Number of Boxes of Popcorn Sold						
52	72	96	21	58	40	75

2.

Number of Text Messages Sent							
20	23	18	4	17	21	15	56

3.

Test Grades								
83	83	85	87	89	88	67	79	81

4.

Ages of Grandmothers (yr)								
59	72	65	51	62	77	82	64	54

5.

Time to Sprint 40 Meters (s)									
6.3	6.7	6.2	4.9	6.7	6.6	6.1	6.3	6.4	5.8

6.

Number of DVDs									
15	16	18	9	18	17	19	19	4	36

NAME _____ DATE _____ PERIOD _____

Lesson 3 Extra Practice

Measures of Variation

Find the range, median, first and third quartiles, interquartile range, and any outliers for each set of data.

1. ages of players on a team: 15, 12, 21, 18, 25, 11, 17, 19, 20

2. ages of cousins: 2, 24, 6, 13, 8, 6, 11, 4

3. dollars in an account: 189, 149, 155, 290, 141, 152

4. daily attendance at a fair: 451, 501, 388, 428, 510, 480, 390

5 number of calls made: 22, 18, 9, 26, 14, 15, 6, 19, 28

6. text messages recieved: 245, 218, 251, 255, 248, 241, 250

7. ages of people in a restaurant: 46, 45, 50, 40, 49, 42, 64

8. points earned in a game: 128, 148, 130, 142, 164, 120, 152, 202

NAME _____ DATE _____ PERIOD _____

Lesson 3 Problem-Solving Practice

Measures of Variation

Use the table below that shows the winning scores in the Super Bowl.

Winning Super Bowl Scores, 1997–2008											
1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
35	31	34	23	34	20	48	32	24	21	29	17

1. Explain how to find the range of the data. Then find the range.	**2.** Find the median, the first and third quartiles, and the interquartile range of the winning scores.
3. Describe how to find the limits for outliers. Then find the limits.	**4.** Are there any outliers among the winning Super Bowl scores? If so, what are they? Explain your reasoning.

Use the table showing the scores on a U.S. History test.

Scores on a U.S. History Test					
84	86	79	97	88	89
94	89	81	90	82	61
91	83	95	80	97	78

5. Find the range, median, first and third quartiles, and the interquartile range of the test scores.	**6.** Are there any outliers in this data? Explain your reasoning.

NAME _____ DATE _____ PERIOD _____

Enrich

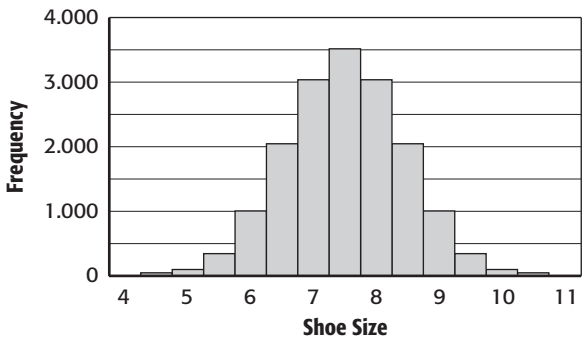
The Bell Curve

Shoe Size	4	4.5	5	5.5	6	6.5	7
Frequency	1	14	91	364	1.001	2.002	3.003

Shoe Size	7.5	8	8.5	9	9.5	10	10.5	11
Frequency	3.432	3.003	2.002	1.001	364	91	14	1

Graphing the shoe size data in the tables above results in a histogram with a bell-shaped outline.

This type of frequency distribution is called the **bell curve** or the **normal distribution curve**. The curve is symmetrical about the mean. Many data sets have normal distributions.



Exercises

On a separate sheet of paper, make a histogram for each data set. Each set has a normal distribution.

1.

Shoe Size	5	5.5	6	6.5	7	7.5	8
Frequency	1	4	12	18	12	4	1

2.

Shoe Size	3	3.5	4	4.5	5	5.5	6	6.5	7
Frequency	1	7	21	35	70	35	21	7	1

NAME _____ DATE _____ PERIOD _____

Lesson 4 Homework Practice

Mean Absolute Deviation

Find the mean absolute deviation for each set of data. Round to the nearest hundredth if necessary. Then describe what the mean absolute deviation represents.

1.

Cost of Video Games ($)				
40	55	60	48	57
33	57	20	80	47

2.

Number of Sunny Days in Various Cities Last Month			
27	15	10	19
24	21	28	16

3. The table shows the number of wins of each school baseball team over the last six years. Find the mean absolute deviation for each set of data. Round to the nearest hundredth if necessary. Then write a few sentences comparing their variation.

Number of Wins Per Season					
Bears	7	10	13	12	9
Saints	12	15	10	14	13

For Exercise 4–7, refer to the table that shows the highway fuel economy of various popular vehicles.

Fuel Economy (Miles per Gallon)				
34	48	25	35	33
37	32	34	23	30

4. Find the mean absolute deviation. Round to the nearest hundredth.

5. How many data values are closer than one mean absolute deviation away from the mean?

6. Which data value is farthest from the mean? How far is this value from the mean? Round to the nearest hundredth.

7. Are there any data values that are more than twice the mean absolute deviation from the mean? Explain.

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Lesson 4 Skills Practice

Mean Absolute Deviation

Find the mean absolute deviation for each set of data. Round to the nearest hundredth if necessary. Then describe what the mean absolute deviation represents.

1.

Number of Computer Games Sold				
75	89	80	145	85
60	92	104	90	100

2.

Calories per Serving			
47	35	46	56
40	42	52	30

3. The table shows the number of minutes Sherry exercised each day for two weeks. Find the mean absolute deviation for each set of data. Round to the nearest hundredth if necessary. Then write a few sentences comparing their variation.

Number of Minutes							
Week 1	25	20	15	30	45	10	30
Week 2	35	45	60	25	20	15	10

4. The table shows the number of canned goods each homeroom collected in a one-week period. Find the mean absolute deviation for each set of data. Round to the nearest hundredth if necessary. Then write a few sentences comparing their variation.

Number of Canned Goods Collected							
Room 101	57	52	40	42	37	54	47
Room 102	51	17	42	40	46	74	31

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Lesson 4 Extra Practice

Mean Absolute Deviation

Find the mean absolute deviation for each set of data. Round to the nearest hundredth if necessary. Then describe what the mean absolute deviation represents.

1.

Number of Siblings				
2	5	8	9	7
6	3	5	1	4

2.

Ages of People in a Play (years)			
21	25	29	21
22	26	28	22

3.

Points Scored Each Game			
82	79	93	91
95	95	91	89

4.

Number of Coins Saved		
117	108	110
103	120	105

5.

E-mails Sent This Week			
256	265	247	256
275	260	275	285

6.

Typing Speed (words per minute)		
47	54	66
54	46	66

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Lesson 4 Problem-Solving Practice

Mean Absolute Deviation

1. CLUB MEMBERSHIP The table shows the number of members in Spanish club for the last six years. Find the mean absolute deviation. Round to the nearest hundredth if necessary. Then describe what the mean absolute deviation represents.

Spanish Club Members		
61	42	52
27	35	21

2. AMUSEMENT PARKS The table shows the one-day ticket price for admission to eight popular theme parks. Find the mean absolute deviation. Round to the nearest hundredth if necessary. Then describe what the mean absolute deviation represents.

Admission Price ($)			
80	60	76	53
42	36	38	85

AGES For Exercises 3–6, refer to the table that shows the ages of students in evening art classes at the community center.

Ages of Students							
Pottery	18	24	37	42	51	22	30
Painting	46	25	19	26	34	29	20

3. Find the mean absolute deviation for each set of data. Round to the nearest hundredth if necessary. Then write a few sentences comparing their variation.

4. How many data values from the painting class are closer than one mean absolute deviation away from the mean?

5. Which age is the farthest from the mean of the data values in the painting class?

6. How far away is the value in Exercise 5 from the mean?

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Enrich

Median and Mean of Grouped Data

To find the median of grouped data, add a column for the *cumulative frequency*. This is the total of the frequencies up to and including the frequency in a given row.

Ages	Frequency	Cumulative Frequency
20–29	16	16
30–39	22	38
40–49	20	58
50–59	17	75

The last number in the cumulative frequency column will equal the number of data items. In this example, there are 75 data items. So, the median will be the 38th item. The median age is in the interval 30–39. To find the mean, multiply the frequency of each interval by the midpoint of the interval. Then divide by the total number of data items.

$$\frac{(16 \times 24.5) + (22 \times 34.5) + (20 \times 44.5) + (17 \times 54.5)}{75} \approx 39.6$$

Exercises

Find the interval for the median and the mean to the nearest tenth.

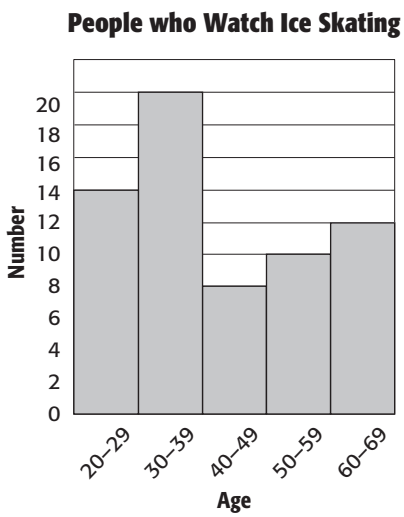
1. Add this data to the table in the example: 18 people ages 60–69, 12 people ages 70–79, and 5 people ages 80–89.

2. The table shows people who prefer rock music.

People who Prefer Rock Music

Age	9–12	13–16	17–20	21–24	25–28	29–32
Frequency	4	12	25	27	16	36

3. The histogram shows people who watch ice skating on television.



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Lesson 5 Homework Practice

Appropriate Measures

Find the measure of center that best represents each set of data. Round to the nearest tenth if necessary.

1. number of parking spaces used: 46, 39, 40, 45, 44, 68, 51

2. prices of plants: $10, $8, $20, $25, $14, $48, $10, $10, $8, $16

3. points scored during football season: 14, 20, 3, 9, 18, 35, 21, 24, 31, 12, 7

4. golf scores over par: 3, 2, 0, 1, 3, 6, 4, 5

5. percent increase: 3.3, 4.1, 3.9, 5.0, 3.5, 2.9, 3.9

6.

Dollars Spent Shopping				
36	36	37	38	38
38	39	42	42	43
43	44	44		

7. **CHILDREN** The table shows the number of children living at home in a neighborhood of 24 homes. Which measure best describes the data: mean, median, or mode? Explain.

Children at Home							
2	1	3	0	4	4	1	2
0	6	2	2	5	0	2	3
3	1	1	4	2	0	1	4

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Lesson 5 Skills Practice

Appropriate Measures

Find the measure of center that best represents the data. Justify your selection and then find the measure of center.

1. prices, in dollars, of backpacks:
37, 43, 41, 36, 43

2. points on quizzes:
12, 6, 9, 0, 14, 5, 11, 7

3. touchdowns scored by football teams:
8, 1, 7, 13, 3, 5, 11, 10, 3, 8, 6

4. minutes spent practicing piano:
40, 25, 60, 30, 35, 40

For Exercises 5 and 6, find the measure of center that best represents the data in each table. Justify your reasoning, and then find the measure of center.

5.

Known Mountains on Mars	
Mountain	**Height (km)**
Alba Patera	3
Arsia Mons	9
Ascraeus Mons	11
Olympus Mons	27
Pavonis Mons	7

6.

Average Lengths of Wild Cats			
Cat	**Length (in.)**	**Cat**	**Length (in.)**
Cheetah	50.5	Lion	102
Eurasian Wildcat	24.3	Puma	60
Jaguar	57.5	Serval	33.5
Leopard	57	Tiger	128

7. **MARS** Refer to the table of mountains on Mars in Exercise 5. Describe how the mean, median, and mode are each affected if the height of Olympus Mons is not included.

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Lesson 5 Extra Practice

Appropriate Measures

Find the measure of center that best represents the data. Justify your selection then find the measure of center.

1. The scores of 10 finishers in the first round of the golf tournament were 72, 85, 78, 70, 82, 75, 80, 88, 94, and 78.

2. The costs to mail 7 travel information packets were 45 cents, 58 cents, 58 cents, 45 cents, 58 cents, 63 cents, and 58 cents.

3. The scores for yesterday's 10-question quiz were 8, 10, 10, 6, 7, 6, 8, 8, 10, 9, 7, 6, 8, and 9 points.

4. As part of a science project, the heights of the students in the class were measured and recorded. The heights, in inches, were 51, 52, 53, 62, 57, 54, 48, 51, 57, 57, 54, 51, 52, and 57.

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Lesson 5 Problem-Solving Practice

Appropriate Measures

ANIMALS For Exercises 1–4, use the information in the table below that shows the lifespan of selected mammals. Round to the nearest tenth if necessary.

Average Lifespan for Mammals	
Mammal	**Average Lifespan**
Baboon	20 yr
Camel	12 yr
Chimpanzee	20 yr
Cow	15 yr
Goat	8 yr
Gorilla	20 yr
Moose	12 yr
Pig	10 yr

FOOTBALL For Exercises 5 and 6, use the information in the table below. Round to the nearest tenth if necessary.

2007 NFL Season, Games Won	
Team	**Games Won**
Atlanta	4
Carolina	7
Denver	7
Kansas City	4
New Orleans	7
Pittsburgh	10
St. Louis	3
San Diego	11
San Francisco	5
Seattle	10

1. Explain how to find the mean of the lifespans listed in the table. Then find the mean.	**2.** Explain how to find the median of the set of data. Then find the median.
3. Explain how to find the mode of the set of data. Then find the mode.	**4.** Which measure of center is most representative of the data? Explain.
5. What are the mean, median, and mode of the number of games won by the teams in the table?	**6.** Which measure of center is most representative of the data? Explain.

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Enrich

Median and Mean of Grouped Data

To find the median, add a column for the cumulative frequency. This is the total of the frequencies up to and including the frequency in a given row.

The last number in the cumulative frequency column will equal the total number of data items. In this example, there are 75 data items. So the median will be the 38th item. The median age is in the interval 30–39.

To find the mean, multiply the frequency of each interval by the midpoint of the interval. Then divide by the total number of data items.

People Responding to Radio Station Survey		
Ages	**Frequency**	**Cumulative Frequency**
10–19	20	20
20–29	17	37
30–39	23	60
40–49	15	75

$$\frac{(20 \times 14.5) + (17 \times 24.5) + (23 \times 34.5) + (15 \times 44.5)}{75} = 28.9$$

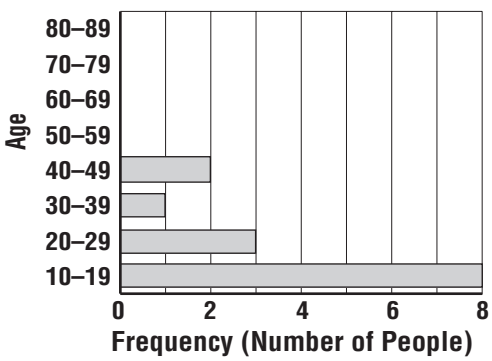
Find the interval for the median and the mean to the nearest tenth.

1. Add these data to the chart in the example: ages 50–59, 11 people; ages 60–69, 16 people; ages 70–79, 19 people; ages 80–89, 4 people.

2. People Who Prefer Talk Radio

Age	10–19	20–29	30–39	40–49	50–59	60–69	70–79	80–89
Frequency	4	10	14	5	6	5	4	2

3. People who listen to Radio While Doing Homework



4. People who listen to Radio While Driving to Work