

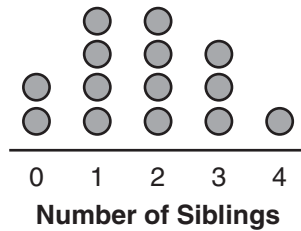
Homework

The tables show 14 students and the number of siblings each student has. A sibling is a brother or sister.

Student	Number of Siblings
Maria	2
Gabe	0
Kwan	1
Tyrese	1
Jose	2
Sierra	3
Colton	1

Student	Number of Siblings
Daisha	3
Juan	2
Yuriko	0
Ariana	4
Jiao	2
Hannah	1
Santiago	3

The dot plot below displays the sibling data from the tables above. Use the dot plot for Exercises 1–3.



1. What does each dot in the plot represent?

2. Does the dot plot correctly display the data in the table? Explain why or why not.

3. Which dot in the plot represents Ariana? Explain.

Remembering

1. A cereal box is 2 in. by 7 in. by 12 in. The box is 75% filled with cereal. What is the volume of the cereal in the box?

Solve the equation.

2. $12 \cdot v = 10$

$v =$ _____

3. $15 + h = 16$

$h =$ _____

4. $12 = \frac{a}{8}$

$a =$ _____

5. $112 = b - 23$

$b =$ _____

Solve.

6. Jay rode his bicycle 10 blocks. This is 40% of the way from his home to school. How many blocks is it from Jay's home to school?

7. Mrs. Martin is buying a new dishwasher. The dishwasher costs \$350. Mrs. Martin pays 35% of the cost in cash and finances the rest. How much does she pay in cash?

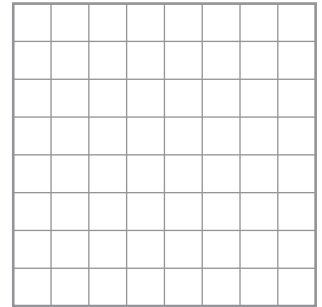
8. Cathy is using ribbon to make a border for a rectangular picture frame. The frame is 8 in. by 14 in. Cathy wraps the ribbon around the frame 5 times. Is 6 yards enough ribbon for Cathy to complete the border? Why or why not?

9. **Stretch Your Thinking** Monique drew a dot plot that showed the number of hours of homework 12 of her friends do a day. She says her dot plot shows that all of her friends do the same number of hours of homework. What does her dot plot look like? Explain.

Homework

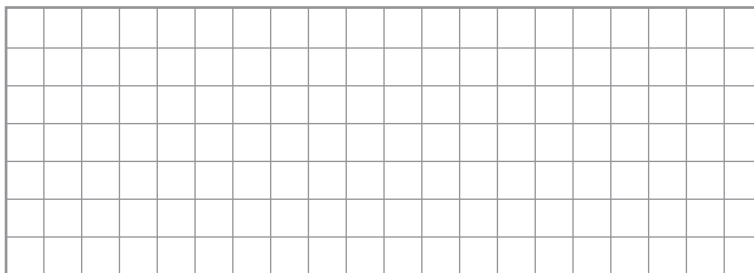
1. On the grid at the right, draw a dot plot to represent the set of numbers shown below.

{4, 1, 5, 2, 3, 2, 5, 1, 4, 5, 4, 2, 5, 2, 1}



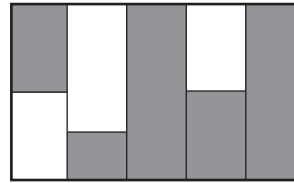
2. The table below shows the daily sales for a pretzel stand during its first 2 weeks. Group the data and then draw and label a histogram of the groups on the grid below the table.

Sales at a Pretzel Stand	
Day	Sales (dollars)
1	971
2	1,227
3	1,018
4	1,050
5	1,148
6	961
7	1,483
8	1,000
9	1,250
10	1,140
11	1,380
12	1,165
13	984
14	1,483



Remembering

1. What percent of the figure at the right is shaded?
Write the percent as a fraction with denominator 100 and as a decimal.



Use the Distributive Property to write an equivalent expression.

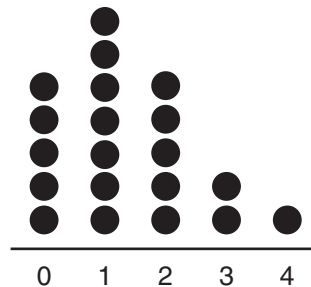
2. $6(9t + 5) + s$

3. $4 + 45t + 36t^2 - 2s$

4. $st + 2s^2 + 16s + t^2$

5. $5 + 4s(3t + 2s - 5)$

The dot plot shows the number of pets that students in Mrs. Alston's class have. Use the dot plot for Exercises 6–9.



Number of Pets of Students in Mrs. Alston's Class

6. How many students have 2 pets? How do you know?

7. How many more students have 1 pet than have 3 pets?

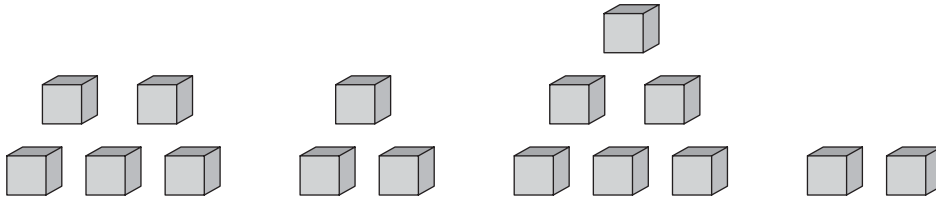
8. How many students are in Mrs. Alston's class? How do you know?

9. **Stretch Your Thinking** In Mrs. Smith's class, there are twice as many students who have 3 pets as in Mrs. Alston's class. In her class the number of students who have 0 pets is the same as the number of students who have 4 pets. The other data for Mrs. Smith's class are the same as the data for Mrs. Alston's class. If both classes have the same number of students, fill in the chart to show the data for Mrs. Smith's class.

Data for Mrs. Smith's Class	
Number of Pets	Number of Students
0	
1	
2	
3	
4	

Homework

Use the four groups of cubes below for Exercises 1 and 2.



1. Explain what the phrase *leveling out to form fair shares* means.

2. Explain how to level out the groups shown above so that each group represents a fair share. Use the words *add* and *subtract* in your answer. Then sketch the fair shares in the space at the right.

The data table at the right shows the number of goals the members of a soccer team scored last season. Use the data for Exercises 3 and 4.

3. Explain how to find the mean number of goals scored by the players.

4. Find the mean number of goals scored by completing the number sentence below.

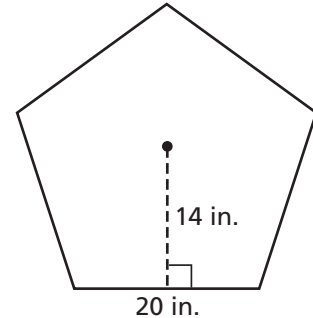
$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$

Player	Number of Goals Scored
Owen	3
Jermichael	10
Ryder	0
Aziz	6
Liam	14
Stephon	1
Ollie	4
Tyson	1
Hudson	11
Ray	0

Remembering

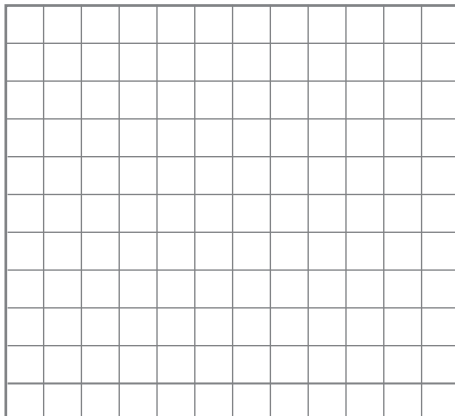
1. There are 53 milligrams of Vitamin C in 100 grams of orange. How many grams of orange do you need to eat to get 550 milligrams of Vitamin C? Round the answer to the nearest gram.

2. Cindy is painting on a canvas shaped like a regular pentagon as shown. She covers $\frac{4}{5}$ of the canvas with paint. How much of the canvas is covered in paint?



The table shows the ages of the actors in a school play. Use the data for Exercises 3–4.

3. Group the data. Then, on the grid below, draw and label a histogram of the data.



4. **Stretch Your Thinking** What percent of the actors in the play are younger than 17 years old? Round the answer to the nearest percent. Explain.

Actors in the Play	
Actor	Age (Years)
Kayla	12
Kyle	9
Karowyn	11
Jawan	14
Rachel	17
Bobby	16
Ziara	15
Hamish	12
Stephen	14
Juan	17
Kiesha	13
Jenn	11
Samantha	10
Marybeth	13
George	13
Harry	12
Bill	15
Sarah	18
Audrey	17
Kenneth	16
Mike	18
Kevin	20

Homework**Solve.**

1. In Mr. Jackson's language arts class, the mean of nine weekly test scores determines the quarterly grade.

Eight of Latoya's Nine Weekly Scores

100 96 90 95 95 100 88 98

- a. What is the sum of Latoya's eight scores?

- b. What must the sum of Latoya's *nine* scores be for her to earn an average test score of 95? Explain your answer.

- c. What is the minimum score Latoya must earn on the final test to have an average test score of 95 for the quarter? Explain your answer.

_____**Use the table for Exercises 2 and 3.**

The number of students enrolled at two middle schools is shown in the table at the right. Ford School has one class at each grade level. Carter School has two classes at each grade level.

Middle School Enrollment		
Grade	Ford School	Carter School
6	21	41
7	19	36
8	20	37

2. Using words, explain how to find the average number of students per class at each school.

3. Calculate the mean number of students per class at each school. Write your answers in sentences that explain what the means represent.

Remembering

Solve.

1. Valerie mixes 5 parts liquid fertilizer for every 9 parts water to make fertilizer for her garden. How many quarts of water and fertilizer does she need to make 20 quarts of solution?

2. What percent is 45 of 125?

Write equivalent fractions. Complete.

3.	$3\frac{5}{6}$	$3\frac{3}{8}$	→
4.	>, <		
5.	+		
6.	•		
7.	÷		
8.	-		

Complete the number sentence to find the mean of each data set.

9. 3, 4, 7, 4, 2, 4, 6, 2

$$\underline{\hspace{2cm}} \div \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

10. 10, 11, 12, 11, 11

$$\underline{\hspace{2cm}} \div \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

11. 9, 14, 10, 0, 0, 4, 10, 7, 9

$$\underline{\hspace{2cm}} \div \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

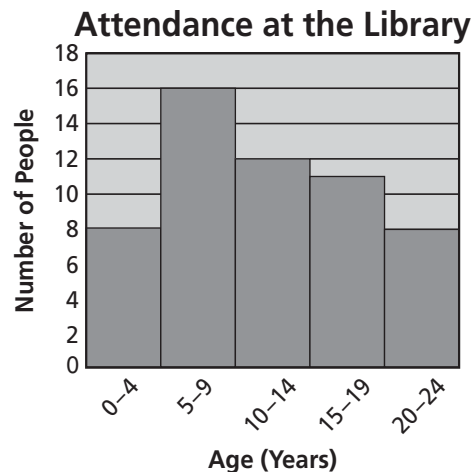
12. 20, 23, 35, 14

$$\underline{\hspace{2cm}} \div \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

Use the histogram for Exercises 13–14.

13. The 0 to 4 age group has $\frac{2}{3}$ as many people as which other group?

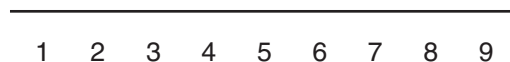
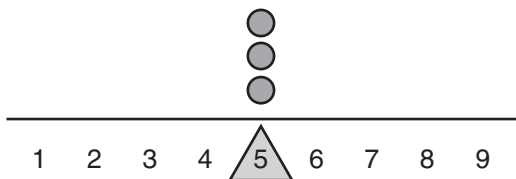
14. **Stretch Your Thinking** What is the mean number of people in each age range? Explain.



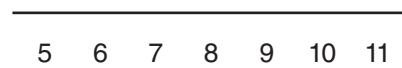
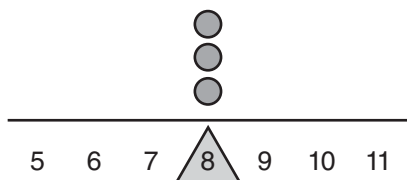
Homework

Draw a dot plot to show the new arrangement of dots.

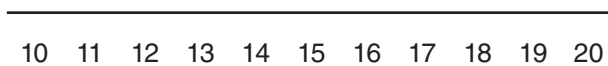
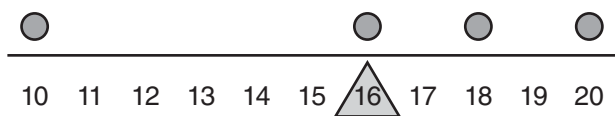
1. Move one dot to the left and move one dot to the right so the balance point remains the same.



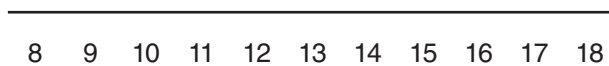
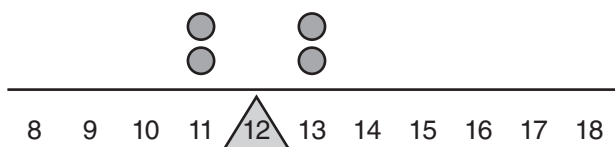
2. Move all of the dots so the balance point remains the same.



3. Move all of the dots so the balance point changes to a lesser whole number. Draw the new balance point.



4. Move all of the dots so the balance point changes to a greater whole number. Draw the new balance point.



Remembering

1. The ratio of width to length of a TV screen is 4 to 5.
What is the area of a TV screen with width 30 inches?

Evaluate for $a = 1.2$ and $b = 4$.

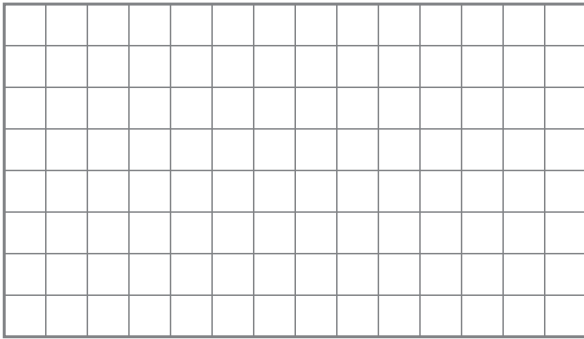
2. $b^2 + a(4 + b)$

3. $45 - ab + 5b$

4. $5 + a + b + 4ab$

5. $16(b - a) - 5a$

6. Draw a dot plot to represent the data in the table.
Title your display.



Blocks Students Walk to School	
Student	Blocks
Jerry	2
Luciano	4
Jaime	3
Austin	4
Zubia	5
Tasmina	2
Julian	4
Monique	7
Cheryl	5

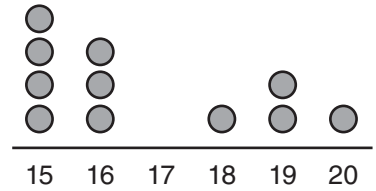
7. Nancy got an 88, 95, 87, 100, and 90 on her tests.
What does she need to get on her next test to have an average of 93?

8. **Stretch Your Thinking** The average number of people at a concert over 3 nights is 125. On the first night, there were 151 people at the concert. The same number of people attended on the second and third nights. How many people attended on each of the second and third nights? Explain.

Homework

Solve.

1. The dot plot at the right displays 11 data values.
Find the median of the data.



The table at the right shows the number of students in each grade who volunteered to be in the talent show. Use the table for Exercises 2 and 3.

2. What is the median number of volunteers for each grade?
- _____
3. Did Grade 6 have more volunteers than the median number of volunteers? Explain.
- _____
- _____

Grade	Number of Volunteers
1	30
2	9
3	40
4	32
5	41
6	29
7	30
8	35

The number of minutes William studied at home each school night for two weeks is shown in the table at the right. Use the table for Exercises 4–6.

4. Calculate the mean number of minutes for each week.
- Week 1 mean: _____ Week 2 mean: _____
5. Calculate the median number of minutes for each week.
- Week 1 median: _____ Week 2 median: _____
6. Suppose William wants to summarize the data for both weeks using only one number. What number should he choose? Give a reason to support your answer.
- _____
- _____

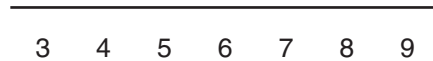
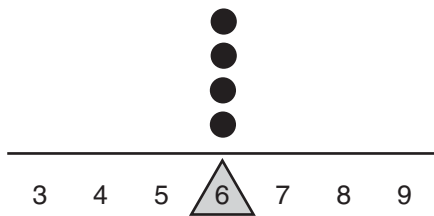
Minutes	
Week 1	Week 2
10	0
30	10
10	15
10	10
0	0

Remembering

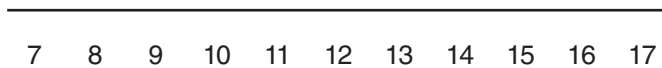
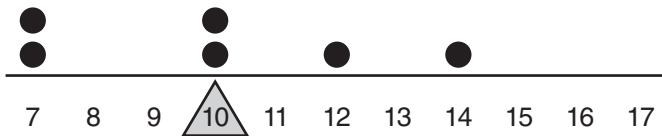
1. When Michelle practices her instrument, she spends 8 minutes practicing songs and 5 minutes practicing scales. How long does Michelle need to practice to spend 16 minutes practicing songs?
- _____

Draw a dot plot to show the new arrangement of dots.

2. Move all of the dots so the balance point remains the same.



3. Move all of the dots so the balance point changes to a greater whole number. Draw the new balance point.



4. **Stretch Your Thinking** The balance point of a set of 4 numbers is 14. How can you move one point to make the balance point 16? Explain.
- _____
- _____
- _____

Homework

1. The youngest child in a family is 6 years old. The oldest parent is 35 years old. What is the range of ages in the family?

2. Will every family have the same range of ages as the family in Exercise 1? Explain why or why not.

3. Quartiles divide a set of data into how many equal parts?

Use the set of data at the right for Exercises 4–6.

4. Label the median.

73

102

319

5. Label the first quartile.

565

570

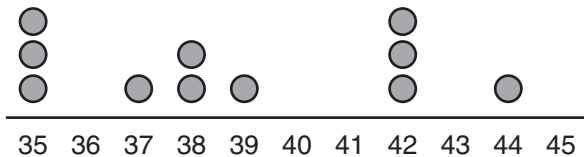
6. Label the third quartile.

844

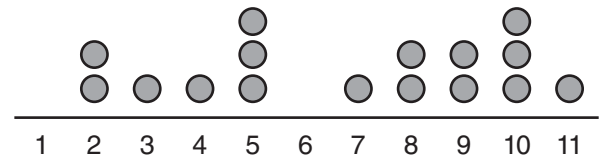
1,096

Use the dot plots below for Exercises 7 and 8.

Plot A



Plot B



7. Plot A: range: _____

median: _____

first quartile: _____

third quartile: _____

8. Plot B: range: _____

median: _____

first quartile: _____

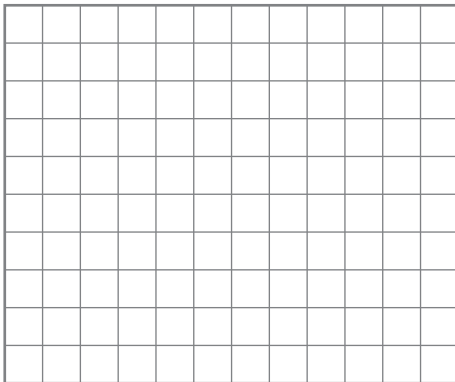
third quartile: _____

Remembering

1. Tayshawn is going to spend 35% of his money on a gift for his mother. If the gift costs \$42, how much money does Tayshawn have?
- _____

The table shows the average heart rate for different animals, including humans. Use the data for Exercises 2–4.

2. Group the data. Then draw and label a histogram of the data on the grid below.



Animal	Average Heart Rate (beats per minute)
Human	60
Medium dog	90
Horse	44
Cow	65
Pig	70
Elephant	30
Giraffe	65
Large whale	20
Small dog	100
Large dog	75

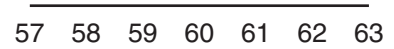
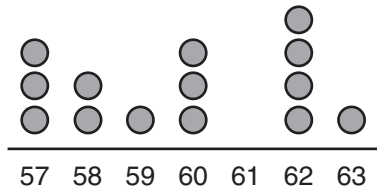
3. What is the mean heart rate?
- _____

4. What is the median heart rate?
- _____

5. **Stretch Your Thinking** The median of a set of data is $\frac{2}{3}$ of the greatest value and $1\frac{2}{5}$ of the least value. The data set has 7 numbers that are all whole numbers. The mean of the data set is equal to the median. What could be the values in the data set?
- _____

Homework

1. Make a box plot to represent the dot plot data.

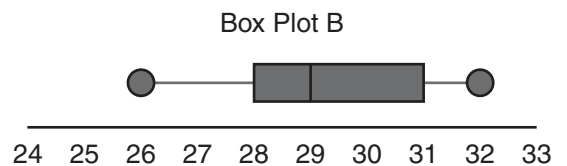
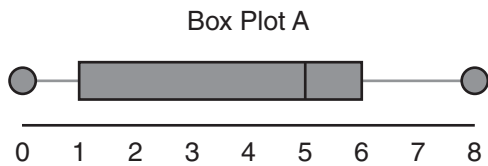


Three summaries of data displayed by a box plot are shown at the right. Use the summaries for Exercise 2.

Q1 = 0.75
 median = 5.5
 Q3 = 6.25

2. How does the range from the median to Q1 compare to the range from the median to Q3, and what does this suggest about the spread of the data?

Use the box plots below for Exercises 3-5.



3. Calculate the IQR of Box Plot A.

4. Calculate the IQR of Box Plot B.

5. Which IQR is a better description of the spread or dispersion of the data? Give a reason to support your answer.

Remembering

1. Jadzia finished 8 of the 10 problems she had for homework. What percent of her homework did Jadzia finish?
- _____

Solve for k .

$$2. \frac{k}{24} = \frac{12}{80}$$

$$k = \underline{\hspace{2cm}}$$

$$3. \frac{23}{13} = \frac{k}{34}$$

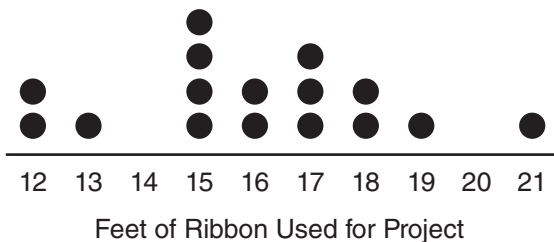
$$k = \underline{\hspace{2cm}}$$

$$4. \frac{15}{k} = \frac{3}{20}$$

$$k = \underline{\hspace{2cm}}$$

The dot plot shows the number of feet of ribbon used for a project by students in Mr. Del Rio's class. Use the dot plot for Exercises 5–11.

5. How many students used more than 15 feet of ribbon?
- _____



6. What is the mean of the data?
- _____

7. What is the median of the data?
- _____

8. What is the range of the data?
- _____

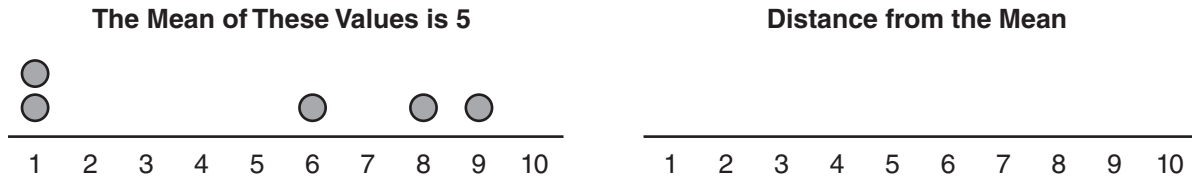
9. What is the first quartile of the data?
- _____

10. What is the third quartile of the data?
- _____

11. **Stretch Your Thinking** Suppose data values for 3 more students are added to the dot plot above. The students used 19, 20, and 21 feet of ribbon. How would the new data affect the median, first quartile, and third quartile values?
- _____
- _____
- _____

Homework

Use the dot plot below for Exercises 1–4.



1. Complete the *Distance from the Mean* display by writing a number to represent each dot's distance from the mean.
2. Find the sum of the distances from the mean.

3. Divide the sum of the distances by the number of values.

4. What does the answer to Exercise 3 represent?

Follow the steps below to calculate the mean absolute deviation of the data in Set A, shown at the right.

Set A							
5	8	4	5	3	4	5	6

5. Find the mean of the data. _____
6. Find the distance each value is from the mean.

7. Write the sum of the distances. _____
8. Calculate the mean absolute deviation by dividing the sum of the distances by the number of values.

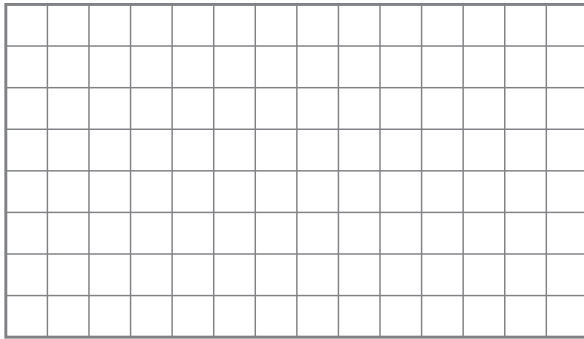
9. In Exercise 8, you calculated the mean absolute deviation of the data in Set A. Suppose the mean absolute deviation of a different set of data called Set B was double your answer for Exercise 8. How would the spread of data in the two sets compare?

Remembering

1. A honey mustard sauce recipe calls for 1 part mustard and 2 parts honey. How much of each ingredient is needed to make 12 cups of sauce?
- _____

Use the data in the table for Exercises 2–8.

2. Draw a dot plot to represent the data in the table. Title your display.



Food Donations				
Grade	Number of Cans		Grade	Number of Cans
1	28		7	28
2	30		8	25
3	23		9	29
4	23		10	20
5	20		11	29
6	30		12	29

3. What is the range of the data?

4. What is the median of the data?

5. What is the first quartile of the data?

6. What is the third quartile of the data?

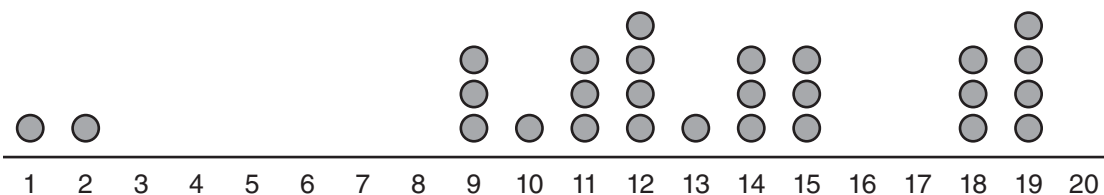
7. Make a box plot to represent the data.

20 21 22 23 24 25 26 27 28 29 30

8. **Stretch Your Thinking** Calculate the IQR of the box plot above. Is the IQR a good description of the data? Why or why not?
- _____
- _____
- _____
- _____

Homework

Use the dot plot below for Exercises 1–4.



1. Describe the shape of the data. Use the words *clusters*, *peaks*, *gaps*, and *outliers* in your answer.

2. The dot at 13 is the median of the data. Would the median change if it was calculated a second time without including the values at 1 and 2? Explain why or why not.

3. The mean of the data is 13. Would the mean change if it was calculated a second time without including the values at 1 and 2? Explain why or why not.

4. Which measure, mean or median, best describes the set of data? Give a reason to support your answer.

Remembering

1. Gerrard mowed 25% of his field. If he mowed 2 acres, how large is Gerrard's field?

Find the range, mean, median, first quartile, third quartile, and mean absolute deviation for each data set. Write the answer as a decimal to the nearest tenth when necessary.

2. 5, 4, 2, 3, 7, 9

range: _____

mean: _____

median: _____

first quartile: _____

third quartile: _____

mean absolute deviation: _____

3. 66, 65, 67, 50, 54, 56, 69

range: _____

mean: _____

median: _____

first quartile: _____

third quartile: _____

mean absolute deviation: _____

4. 8, 11, 14, 7, 12, 12, 12, 20

range: _____

mean: _____

median: _____

first quartile: _____

third quartile: _____

mean absolute deviation: _____

5. 4, 3, 5, 2, 4, 4, 6

range: _____

mean: _____

median: _____

first quartile: _____

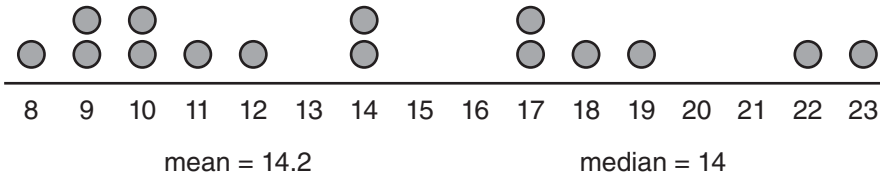
third quartile: _____

mean absolute deviation: _____

6. **Stretch Your Thinking** Look at your answers for Exercises 2–5. Which data set is most spread out? Explain.

Homework

A sixth grade class built and flew paper airplanes. The data collected by the class are shown in the dot plot below.



Build and fly a paper airplane at home. A family member may have an interesting design idea for you to try. Fly the plane several times and record the greatest distance it flies in feet.

Remember! Paper airplanes can cause injuries, so fly your plane in a safe manner.

1. How does the greatest distance your plane flew compare to the mean and median of the dot plot above?

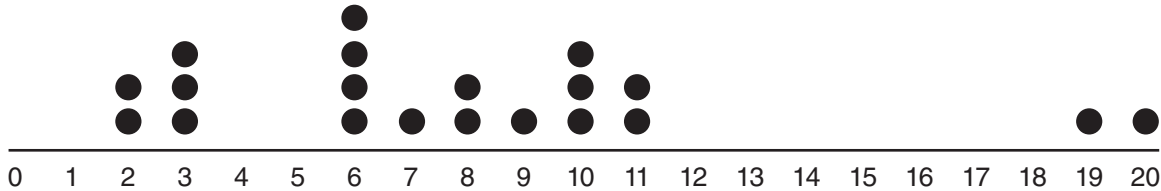
Suppose you drew a new dot on the plot to represent the distance your plane flew. Will the new dot:

2. become part of a cluster? _____
3. become part of a peak? _____
4. create a different gap in the data? _____
5. be an outlier? _____
6. Predict how the new dot will affect the mean and the median of the data. Explain your predictions.

Remembering

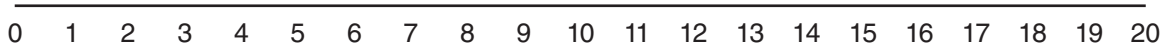
1. It takes Stephen 15 minutes to travel 45 blocks on his bicycle. At this rate, how far can he travel in 45 minutes?

Use the dot plot for Exercises 2–10. Round answers to the nearest tenth if necessary.



2. range: _____
3. mean: _____
4. median: _____
5. mean absolute deviation: _____
6. first quartile: _____
7. third quartile: _____
8. Describe the shape of the data. Use the words *clusters*, *peaks*, *gaps*, and *outliers* in your answer.

9. Make a box plot to represent the dot plot data.



10. **Stretch Your Thinking** How would your answers in Exercises 2–9 be affected if they were calculated without the values at 19 and 20? Explain.

Homework

In a previous activity, you estimated the area of one of your hands. How might the area of one of your feet compare to the area of your hand?

1. **Predict** Complete the sentence below by writing the phrase *greater than*, *less than*, or *the same as*.

I predict that the area of my foot is _____ the area of my hand.

2. Look back at Activity 1 and find your estimate of the area of your hand.

The area of my hand is about _____ square centimeters.

3. **Predict** What do you think the area of your foot might be? Record your prediction in square centimeters.

4. Trace one of your feet on centimeter grid paper.

5. Estimate the area of your foot by counting whole and partial square centimeters. What is your estimate of the area?

6. **Compare** How does the area of your foot compare to the area of your hand?

7. What percent, rounded to the nearest whole, is the area of your foot when compared to the area of your hand?



Remembering

1. Nathaniel has a number cube with a side length of 1 cm. Bonnie has a different number cube with a side length of 2 cm. What percent of the surface area of Bonnie's cube is the surface area of Nathaniel's cube?
- _____

Solve.

2. $234.6 \div 3.4$

3. $0.021 \cdot 0.45$

4. $12,098 - 9,993$

Use the data set at the right for Exercises 5–7.

12	12	13	11	10	19	19	21	22
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5. Draw a dot plot to represent the data.

10 11 12 13 14 15 16 17 18 19 20 21 22

6. Make a box plot to represent the data.

10 11 12 13 14 15 16 17 18 19 20 21 22

7. **Stretch Your Thinking** Add a new data value to the data set that would change the box plot. Explain how the box plot would change.
- _____
- _____
- _____