

6th Grade Common Core Unit #10: Data Analysis

Resources: Big Ideas Chapter 9

Common Core Standards: 6.SP.1; 6.SP.2; 6.SP.3; 6.SP.4; 6.SP.5a-c

Main Focus: Calculate and interpret measures of center

Number	Learning Targets	Common Core Standard	Resources
1	I can recognize a statistical question.	6.SP.1, 6.SP.4; 6.SP.5b	9.1
2	I can find the mean of a data set and compare and interpret the means.	6.SP.2, 6.SP.3, 6.SP.5a, 6.SP.5c	9.2
3	I can find the median and mode of data sets.	6.SP.2, 6.SP.3, 6.SP.5c	9.3
4	I can find the range, interquartile range, and outliers in a data set.	6.SP.2, 6.SP.3, 6.SP.5c	9.4

My Practice:

Number	Pre-test:	Exit slip scores	Day #2 Homework	Extra Targeted Practice	Post-test:
1	_____/6				_____/9
2	_____/7				_____/11
3	_____/6				_____/8
4	_____/4				_____/5

My Final Pretest Score: _____ /23

My Final Pretest Percent _____ %

My Final Posttest Score: _____ /33

My Final Posttest Percent: _____ %

Between the Pre and Post test scores, I increased by _____ % !!

Name: _____ Units: _____ Date: _____

Math 6th: Data Analysis Pre-Test

Total: _____ /23

Directions: Carefully read and follow the directions for each section. Remember to SHOW YOUR WORK and write your answers on the lines provided.

Total:

2 points
LT1

Is the question is a statistical question? Answer yes or no. Then explain your reasoning.

Score:

1.) How many flavors of pop are options at restaurants?

Select One: Yes or No

Explain:

2.) How many rooms are in Hadley Jr. High?

Select One: Yes or No

Explain:

4 points
LT1

3.) Display the data in a dot plot. Identify any clusters, peaks or gaps in the data.

Score:

Points				
3	4	5	3	5
13	3	4	3	8
3	5	5	9	1



Learning Target #1 Score: Add points from 1-3: _____ /6

3 points
LT2
Score:

4.) The table shows the number of students in a gym class of 28 who brought their gym shoes for class each day.

Day	Mon	Tues	Wed	Thurs
Brought	16	12	18	14

4a.) Find the mean of the data.

4a.) _____

4b.) Friday is the 6th grade track meet and all 28 students bring their gym shoes. Fill in the table.

Day	Mon	Tues	Wed	Thurs	Fri
Brought Shoes	16	12	18	14	

4b.) What is the mean for the 5-day week?

4b.) _____

4c.) Will the mean for the 5-day week be greater than or less than the mean for Monday through Thursday? Explain.

4 points
LT2
Score:

5.) The data are salaries (in dollars) of McDonalds employees.

\$190, \$220, \$90, \$180, \$210, \$200

5a.) What number is the outlier?

5a.) _____

5b.) Find the mean with the outlier.

5b.) _____

5c.) Find the mean without the outlier.

5c.) _____

5d.) How does including the outlier affect the data? Explain your reasoning.

Learning Target #2 Score: Add points from 4-5: _____ /7

<p>6 points LT 3</p> <p>Score:</p>	<p>6.) The data shows the scores that 8 students received on their math tests. 93, 84, 43, 98, 100, 82, 86, 100,</p> <p>6a.) Find the mean of the data. 6a.) _____</p> <p>6b.) Find the median of the data. 6b.) _____</p> <p>6c.) Find the mode of the data. 6c.) _____</p> <p>6d.) Find the range of the data 6d.) _____</p> <p>6e.) Identify the outlier in the data. If none, write "none" 6e.) _____</p> <p>6f.) Do you think the mean or the median best represents the data? Explain your reasoning.</p>
--	--

Learning Target #3 Score: Points from 6: _____ /6

<p>4 points LT 4</p> <p>Score:</p>	<p>7.) Use the data to answer the questions below. Data: 40, 28, 36, 13, 31, 22, 10</p> <p>7a.) Find the median. 7a.) _____</p> <p>7b.) Find the first quartile. 7b.) _____</p> <p>7c.) Find the third quartile. 7c.) _____</p> <p>7d.) Find the interquartile range. 7d.) _____</p>
--	--

Learning Target #4 Score: Add points from 7: _____ /4

Section 9.1: Introduction to Statistics Student Notes

Objective: Students will be able to recognize statistical questions and use dot plots to display numerical data.

Vocabulary:

Statistics: The science of collecting, organizing, analyzing, and interpreting data.

Statistical question: A question in which you do not expect to get a single answer. You should expect to receive a variety of answers and are interested in the distribution and tendency of those answers.

Example 1: You conduct a science experiment on mice. Your teacher asks you, "What is weight of a mouse?"

a.) Is this a statistical question? Explain.

b.) You weigh some mice and record the weights in the table. Display the data in a dot plot. Identify any clusters, peaks or gaps in the data.

Weights (grams)			
20	19	21	20
18	20	27	21
28	23	20	19
20	21	18	27
19	22	21	20



c.) Use the distribution of the data to answer the question: What do most mice weigh?

Example 2: Determine whether the question asked is a statistical question. Explain.

a.) What is the eye color of the sixth grade students?

b.) At what temperature does water freeze?

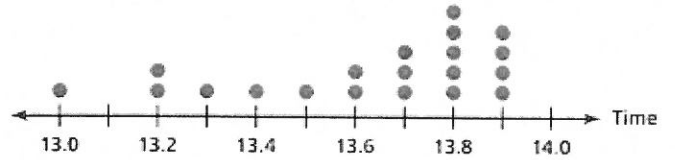
c.) How many letters are in the English alphabet?

d.) How many hours do sixth grade students use the Internet each week?

Example 3:

The dot plot shows the times of sixth grade students in a 100-meter race.

a.) How many students ran in the race?



b.) How could someone have collected this data?

c.) What are the units?

d.) Write a statistical question that you can answer using the dot plot.

9.1

Introduction to Statistics Homework Day 1

One Day Lesson only

Answer the question. Determine if your answer would be the same as your classmates'.

1. How many siblings do you have?	2. How many letters are in the word apple?
--	---

Determine whether the question is a statistical question. Explain.

3. In what year was the Declaration of Independence signed?	4. What night of the week do you watch your favorite show?
--	---

Display the data in a dot plot. Identify any clusters, peaks, or gaps in the data.

5.

Day of the Month			
14	16	15	15
15	14	15	13
14	15	15	15

6.

Age of Soccer Player (years)			
21	23	20	19
20	22	23	20
31	20	21	20



7. The dot plot shows the speeds of pitches of a baseball.

<p>a. How many pitches are represented?</p> <p>b. How can you collect this data? What are the units?</p> <p>c. Write a statistical question that you can answer using the dot plot. Then answer the question.</p>	
--	--

Section 9.2: Mean

Objective: Students will be able to find the mean of a data set and compare and interpret the means.

Vocabulary:

mean - the sum of all data values divided by the number of data values (AVERAGE)

outlier - number that is much greater or much less than the other items in the data set

Vocabulary:

mean - the sum of all data values divided by the number of data values (AVERAGE)

outlier - number that is much higher or lower than the other items in the data set

Example 1: The table shows the number of text messages sent by a group of friends over a week. What is the mean number of messages sent?

Text Messages Sent	
Mark:	120
Laura:	95
Stacy:	101
Josh:	125
Kevin:	82
Maria:	108
Manny:	90

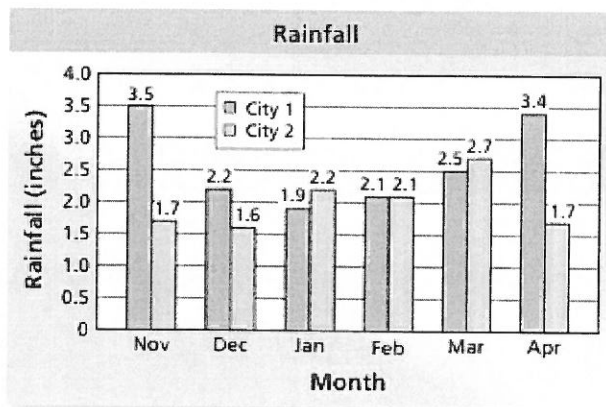
Example 2: The table shows the heights of several Shetland ponies. Display the data in a dot plot.



Shetland Pony Heights (inches)				
40	37	39	40	42
38	38	37	28	40

- Identify the outlier.
- Find the mean with the outlier.
- Find the mean without the outlier.
- Describe how the outlier affects the mean.

Example 3: The double bar graph shows the monthly rainfall amounts for two cities over a six-month period. Compare the mean monthly rainfalls.



9.2

Mean Homework Day 1

Find the mean of the data.

<p>1. 7, 5, 9, 6, 3</p>	<p>2. 8, 10, 15, 7, 18, 14</p>
-------------------------	--------------------------------

Find the mean of the data.

<p>3.</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Movies Watched in Class</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Language Arts</td> <td style="text-align: center; padding: 5px;"> </td> </tr> <tr> <td style="padding: 5px;">Social Studies</td> <td style="text-align: center; padding: 5px;">//// </td> </tr> <tr> <td style="padding: 5px;">Math</td> <td style="text-align: center; padding: 5px;"> </td> </tr> <tr> <td style="padding: 5px;">Science</td> <td style="text-align: center; padding: 5px;"> </td> </tr> <tr> <td style="padding: 5px;">Art</td> <td style="text-align: center; padding: 5px;"> </td> </tr> </tbody> </table>	Movies Watched in Class		Language Arts		Social Studies	////	Math		Science		Art		<p>4.</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Problems Completed</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Kara</td> <td style="text-align: center; padding: 5px;">18</td> </tr> <tr> <td style="padding: 5px;">Josh</td> <td style="text-align: center; padding: 5px;">12</td> </tr> <tr> <td style="padding: 5px;">Dana</td> <td style="text-align: center; padding: 5px;">13</td> </tr> <tr> <td style="padding: 5px;">Robert</td> <td style="text-align: center; padding: 5px;">8</td> </tr> <tr> <td style="padding: 5px;">Katie</td> <td style="text-align: center; padding: 5px;">19</td> </tr> </tbody> </table>	Problems Completed		Kara	18	Josh	12	Dana	13	Robert	8	Katie	19
Movies Watched in Class																									
Language Arts																									
Social Studies	////																								
Math																									
Science																									
Art																									
Problems Completed																									
Kara	18																								
Josh	12																								
Dana	13																								
Robert	8																								
Katie	19																								

<p>5.</p> <div style="text-align: center;"> <table border="1" style="margin: 0 auto; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">School Can Recycling</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Pounds</td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;">Week</td> <td style="text-align: center;"> </td> </tr> </tbody> </table> </div>	School Can Recycling		Pounds		Week		<p>6.</p> <div style="text-align: center;"> <table border="1" style="margin: 0 auto; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Text Messages</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Number sent</td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;">Month</td> <td style="text-align: center;"> </td> </tr> </tbody> </table> </div>	Text Messages		Number sent		Month	
School Can Recycling													
Pounds													
Week													
Text Messages													
Number sent													
Month													

7. For ten school days, the numbers of bikes parked at a school bike rack are 10, 12, 8, 11, 13, 9, 2, 1, 9, and 12.

a. What is the mean number of bikes per day?

b. Identify two outliers for the data. Describe how the outliers affect the mean.

9.2

Mean Homework Day 2

Find the mean of the data.

1. 84, 89, 99, 78, 67, 98, 100, 71, 88	2. 234, 201, 311, 189, 404, 255, 276, 333
--	---

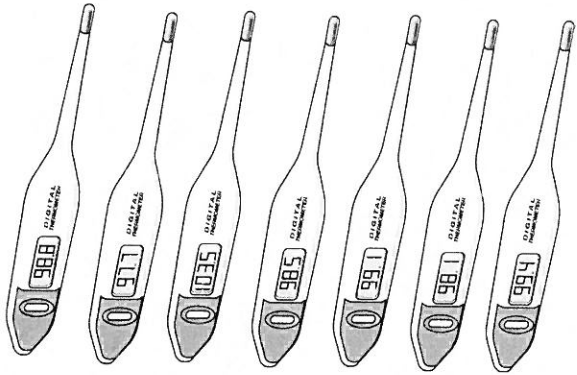
3. Compare your mean test scores for your science and math classes.
 Science: 88, 96, 93, 99 Math: 91, 92, 96

4. The body temperatures (in degrees Fahrenheit) of some students are shown.

a. Which data value is an outlier? Explain.

b. Find the mean with and without the outlier. Then describe how the outlier affects the mean.

c. Describe a situation that could have caused the outlier in the problem.



5. You spend 100 minutes on homework each night from Monday through Friday. You spend 190 minutes on homework on Saturday. What is your mean daily number of minutes on homework?

6. The table shows the radii of the four planets closest to the Sun. Estimate the mean radius. Explain your method. Then find the actual mean.

Planet	Radius (km)
Mercury	2439
Venus	6052
Earth	6378
Mars	3398

Section 9.3: Measures of Center Student Notes

Objective: Students will be able to understand the concept of measures of center and find the median and mode of data sets.

Vocabulary:

mean - the sum of all data values divided by the number of data values (AVERAGE)

median - middle number of data values when they are in order from least to greatest

mode - the data value that occurs most often

outlier - number that is much higher or lower than the other items in the data set

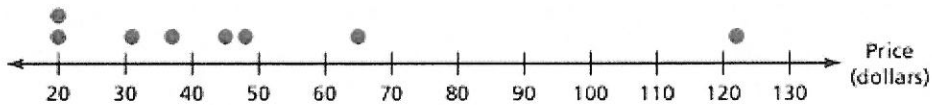
Example #1A: Find the mean, median, and mode of the sneaker prices. Which measure best represents the data?



Mean:
Median:
Mode:

Example #1B

Which measure best represents the data? Use the dot plot of the data to help you answer.



Example #1C

Identify the outlier in Example #1. Find the mean, median, and mode without the outlier.

*Which measure does the outlier affect the most?

Mean:
Median:
Mode:

Example #2A

The prices of six video games at an online store are shown in the table. The price of each game increases by \$4.98 when a shipping charge is included. Find the mean, median and mode with and without shipping.

Video Game Prices	
\$53.42	\$35.69
\$18.99	\$25.13
\$27.97	\$53.42

Video Game Prices with Shipping Charge	
\$58.40	\$40.67
\$23.97	\$30.11
\$32.95	\$58.40

Video Game Prices:	Video Game with Shipping:
Mean:	Mean:
Median:	Median:
Mode:	Mode:

Example #2B

How does this increase affect the mean, median, and mode?

9.3**Measures of Center Homework Day 1**

Find the median and mode(s) of the data.

1. 1, 3, 5, 6, 7, 9, 11

2. 2, 2, 6, 8, 10, 14

3. Describe and correct the error in finding the median and mode of the data.

✗

data: 25, 28, 24, 22, 27, 24, 29, 26**ordered data:** 22, 24, 25, 26, 27, 28, 29The median is 26.
There is no mode.

Find the mean, median, and mode(s) of the data. Choose the measure that best represents the data. Explain your reasoning.

4. 6, 35, 8, 20, 6, 16, 7

5. 66, 57, 66, 16, 2, 35, 66, 114

6. You sent the same email message to 10 of your friends. The numbers of hours it took them to reply were 1, 1, 1, 2, 2, 3, 4, 5, 5, and 25.

- Find the mean, median, and mode of the data.
- Which measure best represents the data? Explain your reasoning.
- Which data value is an outlier? Explain your answer.
- Predict how the mean, median, and mode would change if you omit the outlier in the data list.

9.3

Measures of Center Homework Day 2

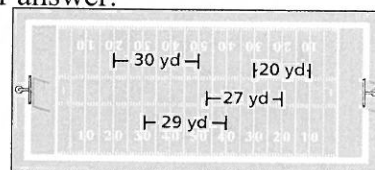
Find the mean, median, and mode(s) of the data. Choose the measure that best represents the data. Explain your reasoning.

1. 83, 68, 56, 100, 78, 94, 74	2. 20.1, 13.4, 9.8, 21.3, 20.8, 19.1, 68.1, 22.6
--------------------------------	--

Find the mean, median, and mode(s) of the data with and without the outlier. Describe the effect of the outlier on the measures of central tendency.

3. 72, 75, 26, 65, 72, 67, 71	4. 70, 85, 150, 70, 85, 65, 65, 85
-------------------------------	------------------------------------

5. A punter's first four punts in a football game are shown. After a fifth punt, the punter's mean was 30 yards. How long was the fifth punt? Explain how you found your answer.



6. Each of five children picks out a birthday present for their mother. They share the total cost of the gifts equally.

- a. Find the mean, median, and mode.
- b. Which measure best represents the typical price of a gift? Explain.
- c. Which measure best represents each child's share of the cost? Explain.

Gift prices
\$9.95
\$10.25
\$9.80
\$9.95
\$24.95

7. Why do you think the mode is the least frequently used measure to describe a data set? Explain.

8. Give an example of a data set that has no mode.

Section 9.4: Measures of Variation Student Notes

Objective: Students will be able to find the range, and interquartile range in a data set.

Vocabulary:

measures of variation - a measure that describes the distribution of a data set

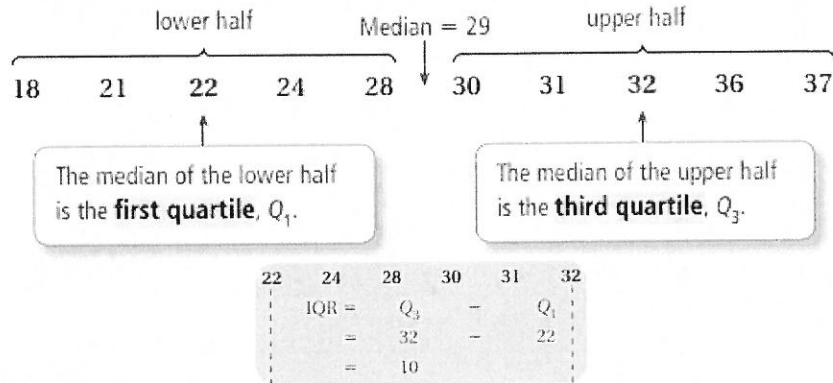
range - the difference between the greatest value and the least value

quartiles - divide the data into four equal parts

first quartile - the median of the lower half of the data

third quartile - the median of the upper half of the data

interquartile range - the difference between the third quartile and the first quartile



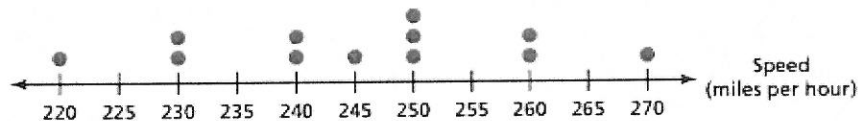
Example #1A: The table shows the lengths of several Burmese pythons captured for a study. Find and interpret the range of their lengths.

Lengths (feet)	
18.5	8
11	10
14	15.5
12.5	6.25
16.25	5

Example #1B: The ages of people in line for a roller coaster are 15, 17, 21, 32, 41, 39, 25, 52, 16, 39, 11, and 24. Find and interpret the range of their ages.

Example #2:

Find the median, first quartile, third quartile, and interquartile range.



Write the numbers in order:

Median:

1st Quartile:

3rd Quartile:

Interquartile Range:

Example #3: Find the median, first quartile, third quartile, and interquartile range.

5	8	10	1	7	6	15	8	6
---	---	----	---	---	---	----	---	---

Write the numbers in order:

Median:

1st Quartile:

3rd Quartile:

Interquartile Range:

9.4**Measures of Variation Homework Day 1****Find the range of the data.**

1. 34, 31, 35, 36, 27, 33

2. 76, 78, 76, 79, 81, 85, 92

Find the median, first quartile, third quartile, and interquartile range of the data.

3. 23, 33, 25, 16, 27, 43, 29, 40, 35

4. 73, 83, 72, 81, 77, 74, 89, 50, 75, 84

5. 106, 117, 127, 125, 118, 107, 123, 105, 136

6. The table shows the swim times for swimmers in the final heat.**a.** Find and interpret the range of the swim times.

Swim Times (seconds)			
24.7	23	27.9	25.1
24	23.8	24.5	25
23.9	24.1	23.5	23.2

b. Find and interpret the interquartile range of the swim times.

9.4

Measures of Variation Homework Day 2

Find the range of the data.

1. 63, 71, 65, 66, 87, 53	2. 16, 28, 6, 19, 21, 15, 22, 33, 17
---------------------------	--------------------------------------

Find the median, first quartile, third quartile, and interquartile range of the data.

3. 32, 53, 72, 66, 47, 54, 49, 67, 71
4. 142, 126, 145, 156, 132, 154, 149, 160, 153
5. 203, 183, 212, 181, 157, 204, 189, 190

6. The table shows the points earned by the contestants in a competition.

a. Find and interpret the range of the points earned.

Points Earned			
15	12	17	8
21	20	6	9

b. Find and interpret the interquartile range of the points earned.

7. The table shows the ages of automobiles in the parking lot.

a. The range of the ages is 12 years. Find the missing age.

Age of Automobile (years)			
5	3	1	8
10	6	9	?

b. Find and interpret the interquartile range.

Name: _____ Units: _____ Date: _____

Math 6th: Data Analysis Study Guide

Directions: Carefully read and follow the directions for each section. Remember to **SHOW YOUR WORK** and write your answers on the lines provided.

Is the question is a statistical question? Answer yes or no.

- 1.) How many dogs do the teachers in our building have? 1.) _____
- 2.) What is the favorite movie of sixth-grade students? 2.) _____
- 3.) What is the length of the Smartboard in our room? 3.) _____

4.) The data in the chart shows the number of days students exercised in a week.

4a.) Display the data in a dot plot below

Days			
0	5	6	4
3	6	5	0
0	0	5	5



- 4b.) Identify any clusters. (if none, write "none") 4b.) _____
- 4c.) Identify any gaps. (if none, write "none") 4c.) _____
- 4d.) Identify the peak. 4d.) _____

5.) The data in the chart shows the speed of cars driving on County Farm Road.

5a.) Display the data in a dot plot below

Speed (miles per hour)			
48	44	49	46
45	50	45	50
51	47	50	47



- 5b.) Identify any clusters. (if none, write "none") 5b.) _____
- 5c.) Identify any gaps. (if none, write "none") 5c.) _____
- 5d.) Identify the peak. 5d.) _____

6.) Find the mean of the data.

6, 5, 5, 8, 13, 4, 6, 12, 1, 0

6.) _____

7.) The table below shows the amount of time you spend exercising a day.

Time (hours)					
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
1	1.5	0.5	2	1	1.5

7a.) Find the mean of the data.

7a.) _____

7b.) On Saturday you exercised for 4 hours. Fill this data into the table.

Time (hours)						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	1.5	0.5	2	1	1.5	

7c) What is the mean for the 7 day week? Round your answer to the nearest tenth.

7b.) _____

8.) The data shows the prices (in dollars) of gym shoes.

29, 50, 55, 31, 59, 188, 62, 31

8a.) Find the mean of the data. (round to the nearest cent)

8a.) _____

8b.) Find the median of the data.

8b.) _____

8c.) Find the mode of the data.

8c.) _____

8d) Find the range of the data

8d.) _____

8e.) Identify the outlier in the data. If none, write "none"

8e.) _____

9.) The data shows the number of music downloads in one week for students in class.

8, 10, 10, 11, 16, 17, 19, 21, 41

9a.) Find the mean of the data.

9a.) _____

9b.) Find the median of the data.

9b.) _____

9c.) Find the mode of the data.

9c.) _____

9d.) Find the range of the data

9d.) _____

9e.) Identify the outlier in the data. If none, write "none"

9e.) _____

10.) The table shows the minutes played by 12 hockey players in one game.

Minutes Played			
15	24	8	21
17	6	18	9
3	18	13	22

Order the data from least to greatest.

10a.) Find the median.

10a.) _____

10b.) Find the first quartile.

10b.) _____

10c.) Find the third quartile.

10c.) _____

10d.) Find the interquartile range of the data.

10d.) _____

11.) The table shows the number of books read over the summer by a book club.

Books Read			
8	14	15	9
6	12	9	13
11	11	7	5
12	6	10	8

11a.) Find the median.

11a.) _____

11b.) Find the first quartile.

11b.) _____

11c.) Find the third quartile.

11c.) _____

11d.) Find the interquartile range of the data.

11d.) _____

Use the answers to check your work when you are finished.

You must show your work for each question.

1.) Yes

2.) yes

3.) no

4b.) 5-6

4c.) 0-3

4d.) 5

5b.) none-the data is evenly spread

5c.) none

5d.) 50

6.) 6

7a.) 1.25

7b.) 1.6

8a.) \$63.13

8b.) 52.5

8d.) 159

8e.) 188

9a.) 17

9b.) 16

9c.) 10

9d.) 33

9e.) 41

10a.) 16

10b.) 8.5

10c.) 19.5

10d.) 11

11a.) 9.5

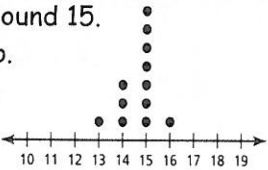
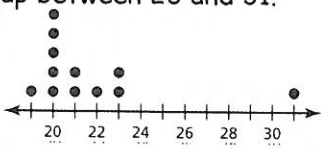
11b.) 7.5

11c.) 12

11d.) 4.5

Chapter 9 Homework Answers:

9.1 Homework Day 1 Answer Key:

1.) Not same	2.) Same	3.) Not statistical, Only one answer.	4.) Statistical, Multiple different answers
5.) Most of the data cluster around 15. There is a peak at 15 and no gap.		6.) Most of the data cluster around 20. There is a peak at 20 and a gap between 23 and 31.	
			
7a.) 16	b. <i>Sample answer:</i> The data could be collected from the Internet; miles per hour		c. What is the speed of your fastest pitch in baseball? Most pitches are between 75 and 95 miles per hour.

NO DAY 2 HOMEWORK for 9.1

9.2 Homework Day 1 Answer Key:

1.) 6	2.) 12	3.) 3 movies	4.) 14 problems	5.) 64 lbs	6.) 203 text messages	11a.) 8.7 bikes
11b.) 1 and 2 are outliers: The outliers cause the mean to decrease. The daily mean without the two outliers is 10.5 bikes which is more representative of the data.						

9.2 Homework Day 2 Answer Key:

1.) 86	2.) 275.375	3.) Because the mean science test score is 94 and the mean math test score is 93, the mean for your science class is greater by 1 point.				
4a.) The temperature of 103.5° is an outlier because it is more than 4° greater than any of the other temps.						
4b.) With outlier: 99.3°; without outlier: 98.6°. The outlier increases the mean, so eliminating the outlier makes the mean more representative of the temperatures.					4c.) The student had a fever	
5.) 115 minutes		6.) <i>Sample answer:</i> 4000 km; Round each radius to the nearest thousand, find the sum, then estimate the quotient of the result and 4; actual mean: 4566.75 km				

9.3 Homework Day 1 Answer Key:

1.) med: 6; mode: none	2.) med: 7; mode: 2	3.) The ordered data set should include two values of 24. The correct ordered data set has a median of 25.5 and a mode of 24.				
4.) 14; 8; 6; <i>Sample answer:</i> Because the data is spread out, the mean best represents the data.						
5.) 52.75; 61.5; 66; <i>Sample answer:</i> Because the mode is the same as three of the data values, the mode best represents the data.						
6a.) mean: 4.9 h; median: 2.5 h; mode: 1 h		6b.) <i>Sample answer:</i> The median is best. The mean is greater than many of the data and the mode is less than many of the data.				
6c.) 25; It is much greater than the other values.		6d.) <i>Sample answer:</i> The mean will probably decrease quite a bit, the median may decrease slightly, and the mode will not change.				

9.3 Homework Day 2 Answer Key:

1.) mean: 79; median: 78; mode: none; <i>Sample answer:</i> The mean and median are close in value and both represent the data well.	2.) mean: 24.4; median: 20.45; mode: none; <i>Sample answer:</i> The median is probably best, because the mean is greater than all but one of the data values.
3.) <i>with outlier:</i> mean: 64, median: 71, mode: 72; <i>without outlier:</i> mean: $70\frac{1}{3}$, median: 71.5, mode: 72; The mean is most affected. It is much lower with the outlier. The median is slightly lower with the outlier. The mode is unchanged by the outlier.	
4.) <i>with outlier:</i> mean: 84.375, median: 77.5, mode: 85; <i>without outlier:</i> mean: 75, median: 70, mode: 85; The mean and median are both greater with the outlier. The mode is unchanged by the outlier.	5.) 44 yd; <i>Sample answer:</i> Because the mean is 30, the quotient of the sum of the data values and 5 must be 30, so the sum of the data values must be 150. The fifth punt has to be 44 yards for the sum to be 150.
6a.) mean: \$12.98; median: \$9.95; mode: \$9.95	6b.) <i>Sample answer:</i> Either the median or the mode represent the typical price well, because four of the five gifts cost around \$10 and the median and mode are both \$9.95.
6c.) The mean represents each child's share of the cost exactly, because they are sharing the total cost equally.	7.) <i>Sample answer:</i> Even though a number is repeated more than once, does not necessarily mean that it represents the rest of the data.
	8. <i>Sample answer:</i> 1, 2, 3, 4, 5

9.4 Homework Day 1 Answer Key:

1.) 9	2.) 16	3.) med: 29; Q ₁ : 24; Q ₃ : 37.5; IQR: 13.5	4.) med: 76; Q ₁ : 73; Q ₃ : 83; IQR: 10
5.) med: 118; Q ₁ : 106.5; Q ₃ : 126; IQR: 19.5		6a.) The swim times vary by no more than 4.9 seconds.	
6b.) The middle half of the swim times vary by no more than 1.2 seconds.			

9.4 Homework Day 2 Answer Key:

1.) 34	2.) 27	3.) med: 54; Q ₁ : 48; Q ₃ : 69; IQR: 21	4.) med: 149; Q ₁ : 137; Q ₃ : 155; IQR: 18
5.) med: 189.5; Q ₁ : 182; Q ₃ : 203.5; IQR: 21.5		6a.) The points earned by the contestants vary by no more than 15 points.	
6b.) The middle half of the points earned by the contestants vary by no more than 10 points.		7a.) 13 years	7b.) Middle half of the ages of the automobiles vary by no more than 5.5 years.