

5th Grade Chapter 5 – Data, Graphs and Probability

Multiple Choice

Identify the letter of the choice that best completes the statement or answers the question.

1. Antonio is collecting data on his classmates' favorite and least favorite sport. Which of the following is the best survey for Antonio to use to collect his data?

A.

FAVORITE AND LEAST FAVORITE SPORT
1. Please list your favorite sport _____
2. Please list your least favorite sport _____

C.

FAVORITE SPORT
Please Check Your Favorite
<input type="checkbox"/> Basketball <input type="checkbox"/> Soccer
<input type="checkbox"/> Football <input type="checkbox"/> Baseball
<input type="checkbox"/> Volleyball

B.

FAVORITE COLLEGE SPORT VS. FAVORITE PRO SPORT
1. Please list your favorite college sport _____
2. Please list your favorite pro sport _____

D.

LEAST FAVORITE SPORT
Please Check Your Least Favorite
<input type="checkbox"/> Basketball <input type="checkbox"/> Soccer
<input type="checkbox"/> Football <input type="checkbox"/> Baseball
<input type="checkbox"/> Volleyball

2. The results of a survey showed that 8 students prefer country music, 5 prefer jazz, and 16 prefer rock. What survey question would bring out this information?

A. Who is your favorite singer?

C. What is your opinion of music?

B. What is your favorite song?

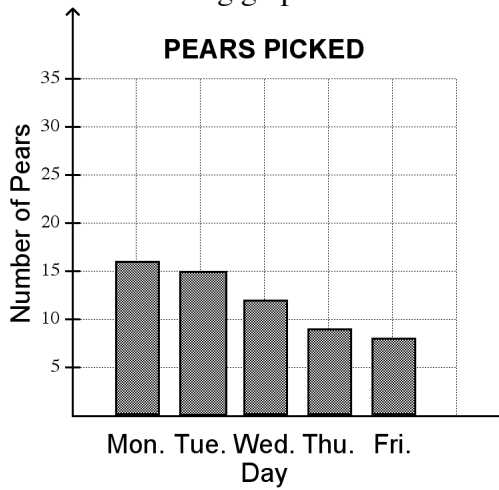
D. What is your favorite type of music?

3. The table shows the number of ripe fruit picked from a pear tree over a 5-day period.

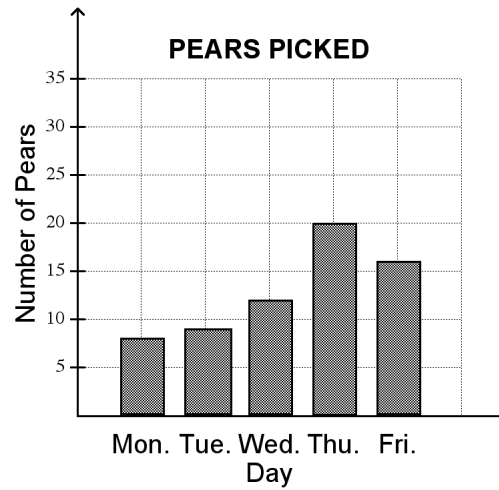
Day	Number of Pears
Monday	8
Tuesday	9
Wednesday	12
Thursday	15
Friday	16

Which of the following graphs shows the data from the table?

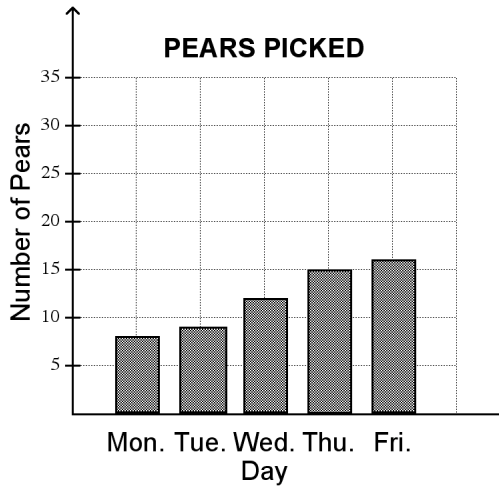
A.



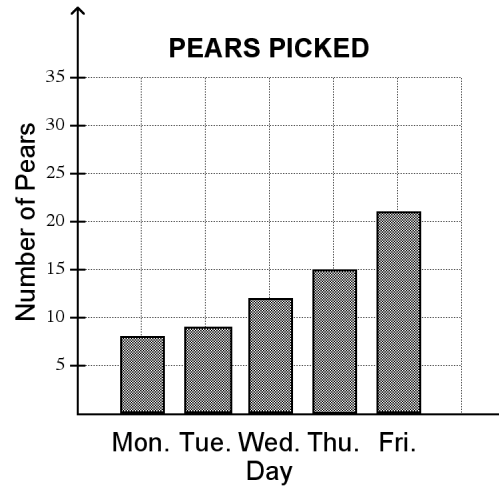
C.



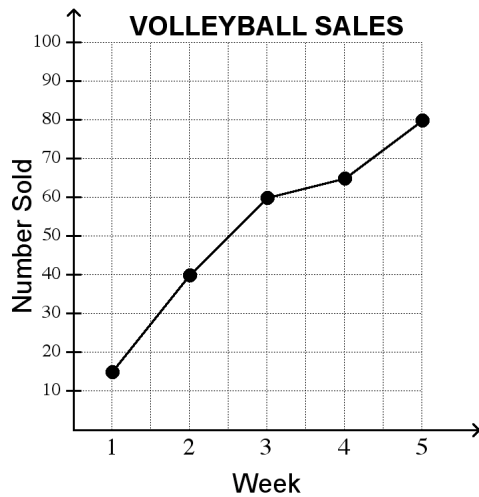
B.



D.



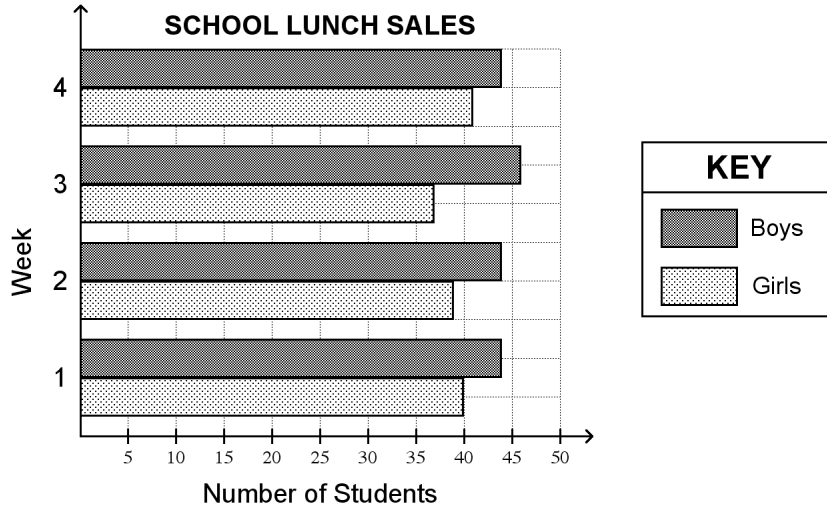
4. The graph below shows the sales of volleyballs over a 5-week period.



Which of the following is a true statement about the graph?

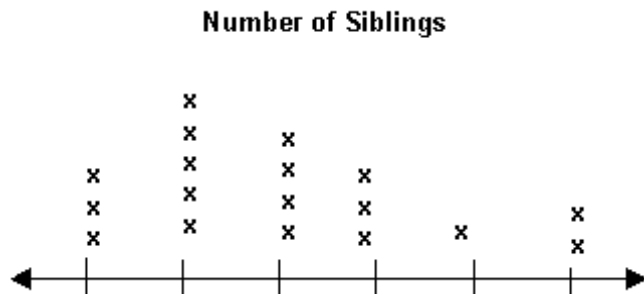
- A. The largest increase was between week 3 and week 4.
- B. The smallest increase was between week 3 and week 4.
- C. There was no increase between week 3 and week 4.
- D. The smallest decrease was between week 3 and week 4.

5. The following graph shows the sales of school lunches over the past 4 weeks at Lakefront Elementary School.



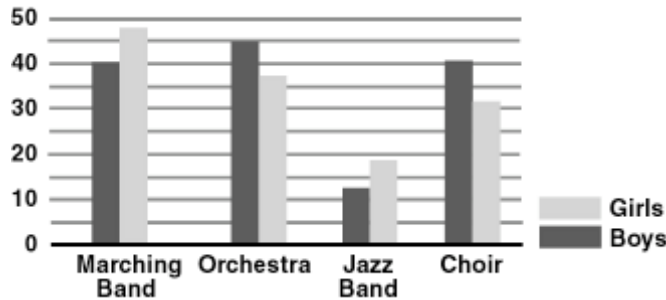
Which statement does NOT describe the data?

- A. Girls ate fewer school lunches than boys.
 - B. Boys ate fewer school lunches than girls.
 - C. During week 2, boys ate more school lunches than girls.
 - D. During week 4, girls ate fewer school lunches than boys.
6. Sam took a survey and recorded the results in the line plot below. He asked the question, “How many siblings do you have?” How many people responded to this survey?



- A. 5 people
- B. 6 people
- C. 15 people
- D. 18 people

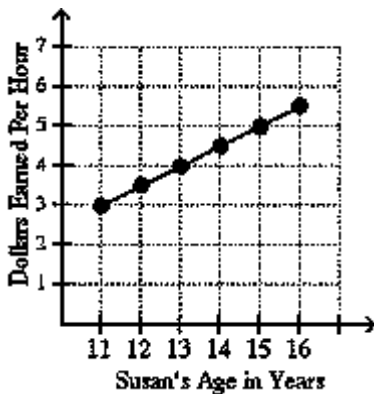
7. The following double bar graph shows the number of students in the fifth-grade musical groups.



Which of the following statements is true?

- A. More students are in choir than in orchestra.
- B. More girls than boys are in choir.
- C. There are as many boys as there are girls in jazz band.
- D. The Marching Band has the most fifth grade students of the musical groups.

8. Susan started babysitting when she was 11 years old. She is now 16. The following line graph shows how much Susan earned per hour babysitting during these years. How much did she earn per hour when she was 15 years old?



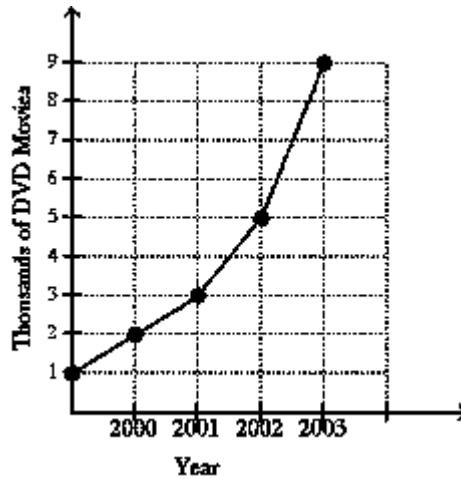
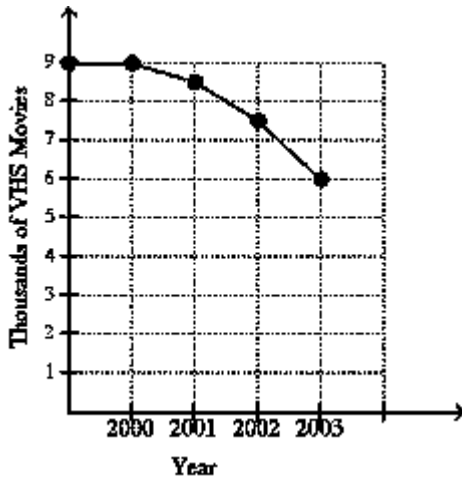
- A. \$3
- B. \$4
- C. \$5
- D. \$6

9. Bozeman's daily high temperatures ($^{\circ}\text{F}$) for one week were 82, 87, 88, 90, 84, 84, and 80. For this data set, which of the following is 85?

- A. mean
- B. median
- C. mode
- D. range

10. Which data set has a mean of 6?
- A. 1, 10, 6, 5, 9
 - B. 2, 2, 8, 4, 9
 - C. 6, 6, 3, 10, 4
 - D. 4, 7, 7, 7, 5

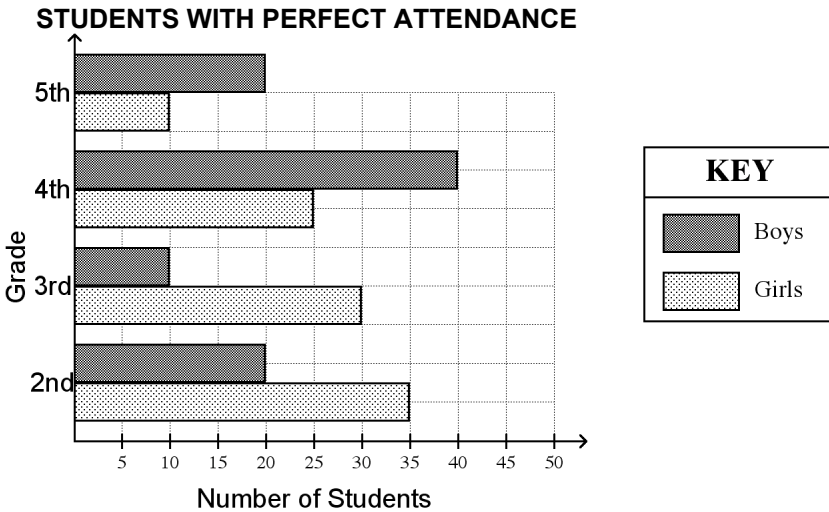
11. The two line graphs show the number of movies available at a rental store. How has the number of VHS movies and DVD movies changed in these four years?



- A. At the beginning of 2002, the store had more DVD movies than VHS movies.
- B. The number of VHS movies has decreased, while the number of DVD movies has increased.
- C. The number of DVD movies has decreased, while the number of VHS movies has increased.
- D. The number of movies overall has stayed about the same.

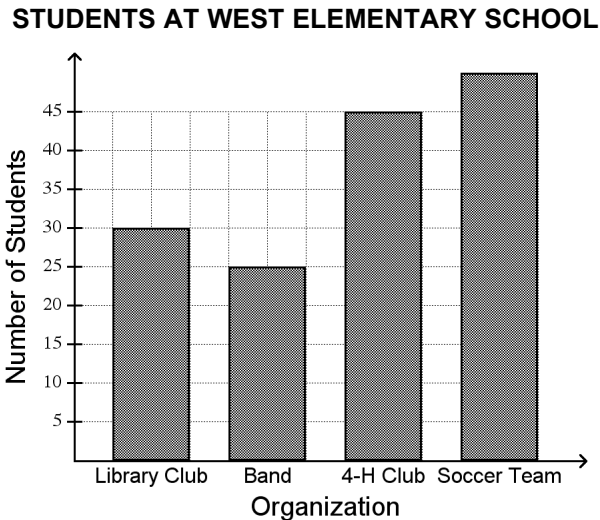
Short Answer

12. The following double-bar graph shows the number of students, in each grade, who had perfect attendance at East Elementary School.



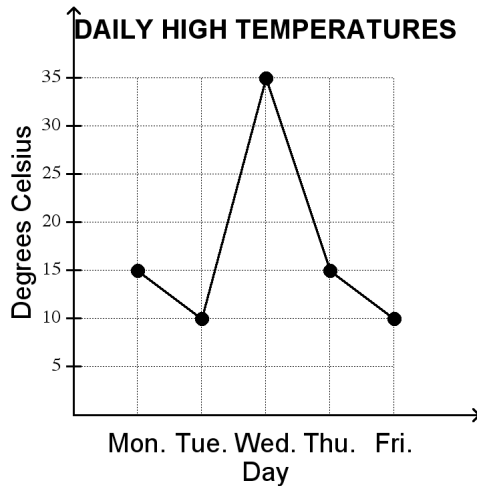
How many 2nd grade boys had perfect attendance?

13. The following bar graph shows the number of students in the library club, the band, the 4-H club, and the soccer team at West Elementary School.



How many more students are in the soccer team than in the 4-H club?

14. How many degrees hotter was it on Wednesday than Thursday?



15. The chart below shows the number of A's that Mrs. Kimura's students received on each of their six tests last year. What is the mean number of A's received?

NUMBER OF A'S RECEIVED

Test Number	Number of A's
1	6
2	9
3	4
4	9
5	9
6	8

16. The table below shows the number of car washes Emily and her friends gave four days last week.

NUMBER OF CAR WASHES

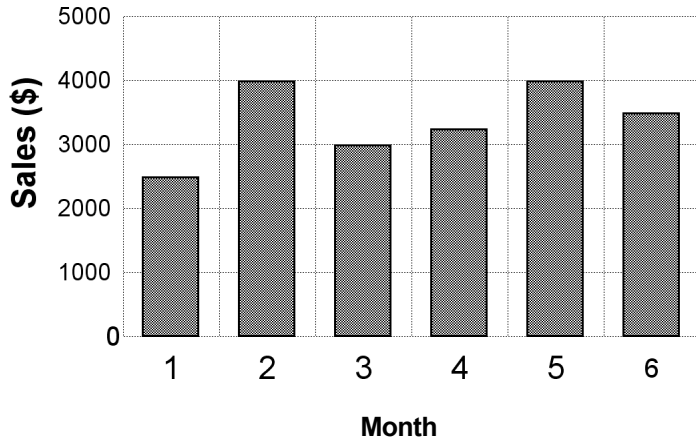
Day	Number of Car Washes
Wednesday	5
Thursday	6
Friday	16
Saturday	15

What is the median number of car washes per day Emily and her friends gave last week?

Other

17. **Sports Sales Statistics** A sporting equipment company recorded the following sales in the first six months.

GROSS SALES



What is the range of their gross sales for the six months?

Show All Work

Answer _____

About how much is the mean of the sales?

Show All Work

Answer _____

What is the mode of the monthly sales, if any? _____ Explain your answer on the lines below.

5th Grade Chapter 5 – Data, Graphs and Probability Answer Section

MULTIPLE CHOICE

1. ANS: A REF: 0501 Lesson 5-1: Collecting Data from a Survey
OBJ: Identify a statement as fact or opinion. Interpret a line plot and a frequency table. Write a survey question.
TOP: Intervention L25: Organizing and Displaying Data, NCTM 3-5: Data.1.1, NCTM 3-5: Data.1.3
KEY: data analysis
2. ANS: D REF: 0501 Lesson 5-1: Collecting Data from a Survey
OBJ: Identify a statement as fact or opinion. Interpret a line plot and a frequency table. Write a survey question.
TOP: Intervention L25: Organizing and Displaying Data, NCTM 3-5: Data.1.1, NCTM 3-5: Data.1.3
KEY: data analysis
3. ANS: B REF: 0503 Lesson 5-3: Line Graphs
OBJ: Make line graphs to represent data, and read and interpret given line graphs.
STO: D.RE.05.01
TOP: Intervention L5: Reading and Making Line Graphs, NCTM 3-5: Alg.4.1, NCTM 3-5: Data.1.1, NCTM 3-5: Data.1.3, NCTM 3-5: Data.3.1
KEY: graphs, data analysis
4. ANS: B REF: 0509 Lesson 5-9: Problem-Solving Skill: Writing to Compare
OBJ: Interpret line and double bar graphs. Describe trends in data represented by line and double bar graphs. STO: D.RE.05.01
TOP: Intervention M20: Problem-Solving Skill: Writing to Compare, NCTM 3-5: Alg.4.2, NCTM 3-5: Data.1.3, NCTM 3-5: Data.3.1
KEY: graphs, data analysis, problem-solving skill
5. ANS: B REF: 0509 Lesson 5-9: Problem-Solving Skill: Writing to Compare
OBJ: Interpret line and double bar graphs. Describe trends in data represented by line and double bar graphs. STO: D.RE.05.01
TOP: Intervention M20: Problem-Solving Skill: Writing to Compare, NCTM 3-5: Alg.4.2, NCTM 3-5: Data.1.3, NCTM 3-5: Data.3.1
KEY: graphs, data analysis, problem-solving skill
6. ANS: D REF: 0501 Lesson 5-1: Collecting Data from a Survey
OBJ: Identify a statement as fact or opinion. Interpret a line plot and a frequency table. Write a survey question.
TOP: Intervention L25: Organizing and Displaying Data, NCTM 3-5: Data.1.1, NCTM 3-5: Data.1.3
KEY: data analysis, graphs, Family
7. ANS: D REF: 0502 Lesson 5-2: Bar Graphs
OBJ: Make double bar graphs to represent data.
TOP: Intervention L3: Reading and Making a Bar Graph, NCTM 3-5: Data.1.3
KEY: graphs, data analysis, School
8. ANS: C REF: 0503 Lesson 5-3: Line Graphs
OBJ: Make line graphs to represent data, and read and interpret given line graphs.
STO: D.RE.05.01
TOP: Intervention L5: Reading and Making Line Graphs, NCTM 3-5: Alg.4.1, NCTM 3-5: Data.1.1, NCTM 3-5: Data.1.3, NCTM 3-5: Data.3.1
KEY: graphs, data analysis

9. ANS: A REF: 0506 Lesson 5-6: Mean, Median, and Mode
 OBJ: Find the mean, median, mode, and range of a set of data, and choose the measure that best represents a given set of data. STO: D.AN.05.03
 TOP: Intervention L26: Mean, Median, and Mode, NCTM 3-5: Data.2.2, NCTM 3-5: Data.3.1
 KEY: data analysis, Weather
10. ANS: D REF: 0506 Lesson 5-6: Mean, Median, and Mode
 OBJ: Find the mean, median, mode, and range of a set of data, and choose the measure that best represents a given set of data. STO: D.AN.05.03
 TOP: Intervention L26: Mean, Median, and Mode, NCTM 3-5: Data.2.2, NCTM 3-5: Data.3.1
 KEY: data analysis
11. ANS: B REF: 0509 Lesson 5-9: Problem-Solving Skill: Writing to Compare
 OBJ: Interpret line and double bar graphs. Describe trends in data represented by line and double bar graphs. STO: D.RE.05.01
 TOP: Intervention M20: Problem-Solving Skill: Writing to Compare, NCTM 3-5: Alg.4.2, NCTM 3-5: Data.1.3, NCTM 3-5: Data.3.1
 KEY: graphs, data analysis, problem-solving skill

SHORT ANSWER

12. ANS:
 20 boys
- REF: 0502 Lesson 5-2: Bar Graphs OBJ: Make double bar graphs to represent data.
 TOP: Intervention L3: Reading and Making a Bar Graph, NCTM 3-5: Data.1.3
 KEY: graphs, data analysis
13. ANS:
 5 students
- REF: 0502 Lesson 5-2: Bar Graphs OBJ: Make double bar graphs to represent data.
 TOP: Intervention L3: Reading and Making a Bar Graph, NCTM 3-5: Data.1.3
 KEY: graphs, data analysis
14. ANS:
 20 degrees
- REF: 0503 Lesson 5-3: Line Graphs OBJ: Make line graphs to represent data, and read and interpret given line graphs.
 STO: D.RE.05.01
 TOP: Intervention L5: Reading and Making Line Graphs, NCTM 3-5: Alg.4.1, NCTM 3-5: Data.1.1, NCTM 3-5: Data.1.3, NCTM 3-5: Data.3.1
 KEY: graphs, Science, data analysis
15. ANS:
 7.5
- REF: 0506 Lesson 5-6: Mean, Median, and Mode
 OBJ: Find the mean, median, mode, and range of a set of data, and choose the measure that best represents a given set of data. STO: D.AN.05.03
 TOP: Intervention L26: Mean, Median, and Mode, NCTM 3-5: Data.2.2, NCTM 3-5: Data.3.1
 KEY: data analysis

16. ANS:
10.5 car washes

REF: 0506 Lesson 5-6: Mean, Median, and Mode

OBJ: Find the mean, median, mode, and range of a set of data, and choose the measure that best represents a given set of data. STO: D.AN.05.03

TOP: Intervention L26: Mean, Median, and Mode, NCTM 3-5: Data.2.2, NCTM 3-5: Data.3.1

KEY: data analysis

OTHER

17. ANS:

Range: \$1,500; *Sample Work:* Highest Sales – Lowest Sales = \$4,000 – \$2,500 = \$1,500.

Mean: \$3,375; *Sample Work:* $(2,500 + 4,000 + 3,000 + 3,250 + 4,000 + 3,500) \div 6 = \$3,375$

Mode: \$4,000; *Sample Explanation:* It is the number that appeared two times. The other numbers are shown only once.

RUBRIC	
4 points	All answers are correct AND the explanation is reasonable.
3 points	All answers are correct, but the explanation is missing or unreasonable.
2 points	One answer is not correct, or explanations are missing.
1 point	Only one answer is correct.

REF: 0506 Lesson 5-6: Mean, Median, and Mode

OBJ: Find the mean, median, mode, and range of a set of data, and choose the measure that best represents a given set of data. STO: D.AN.05.03

TOP: Intervention L26: Mean, Median, and Mode, NCTM 3-5: Data.2.2, NCTM 3-5: Data.3.1

KEY: data analysis, 4-point rubric, writing in math