Comparing Data Practice

1. Josh and Richard each earn tips at their part-time job. This table shows their earnings from five days of tips.

Total Tips by Day

Day	Josh's Tips	Richard's Tips
Monday	$40	$40
Tuesday	$20	$45
Wednesday	$36	$53
Thursday	$28	$41
Friday	$31	$28

A. Who had the greatest median earnings from tips?

Josh: $31   Richard: $41   *Richard had a greater median*

B. What is the difference in the mean of Josh's earnings from tips and the mean of Richard's earnings from tips?

Josh: $31   Richard: $41.40   *41.4 − 31 = 10.4   Richard's mean was $10.40 more than Josh's.*

C. Based on their interquartile range, who had more consistent tips each day?

Josh: 38 − 24 = $14   Richard: 49 − 34 = $15   *Josh's tips were slightly more consistent*

For #2-3, use the graph to the right.

2. Fill in the blanks:
   A. The median for 1st period is __80__
   B. The median for 2nd period is __85__
   C. The lowest score for 1st period is __52__ (or 51, 53)
   D. The lower quartile for 2nd period is __70__
   E. The spread of the middle 50% for 2nd period is __94 − 70 = 24__

Test Scores

3. Which statement below is NOT true?
   A. 1st period had the highest score on the test ✓
   B. The median for 1st period is 5 less than the median for 2nd ✓
   C. The LQ for 1st period is 5 less than LQ for 2nd period ✗
   D. The UQ for 2nd period is 94 ✓
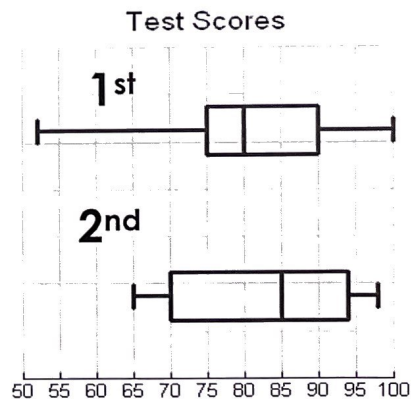
Sample A: 2, 4, 4, 4, 8, 8, 10, 12, 12, 14   Sample B: 0, 1, 4, 7, 9, 9, 10, 12, 12, 15

$\bar{x} = 7.8$ $\bar{x} = 7.9$

4. Which statement accurately compares the two samples?
   A. The mean for Sample A is 1 greater than the mean of Sample B.
   B. The mean for Sample B is 1 greater than the mean of Sample A.
   C. The mean for Sample A is 0.1 greater than the mean of Sample B.
   D. The mean for Sample B is 0.1 greater than the mean of Sample A.

5. Which measure of central tendency is MOST EASILY affected by outliers?

Mean

6. 45 people, 22 girls and 23 boys, were asked about how many miles they walked in one week. The results are shown in the graph.

   Find the median for each gender. How does the median number of miles walked for boys compare with the median number of miles walked for girls?

Average Distance Walked

Number of People / Miles Walked

☐ Girls
☐ Boys
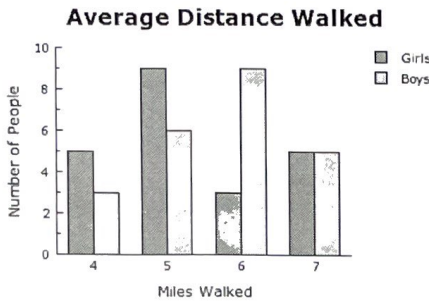
Handwritten:
- 22 G, median between 11th and 12th ∴ 5 miles
- 23 B, median is 12th boy ∴ 6 miles

7. Noah conducted a survey on sports participation. He created the following two dot plots to represent the number of students participating, by age, in soccer and basketball. Which statement about the given data sets is correct?
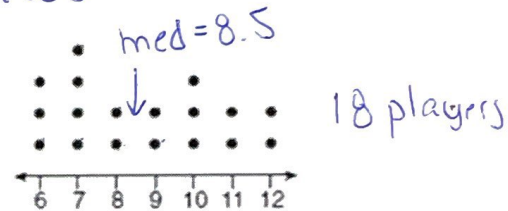
   ✗ A. The data for the soccer players is skewed right. ✗
   ✗ B. The data for the soccer players have less spread than the data for the basketball players. ✗
   ⊗ C. The data for basketball players have the same median as the data for soccer players. soccer = 8.5, basketball = 10
   Ⓓ D. The data for basketball players have a greater mean than the data for soccer players.

Handwritten near plots:
med = 8.5 ↓ 18 players
Soccer Players' Ages
med = 10 18 players
Basketball Players' Ages
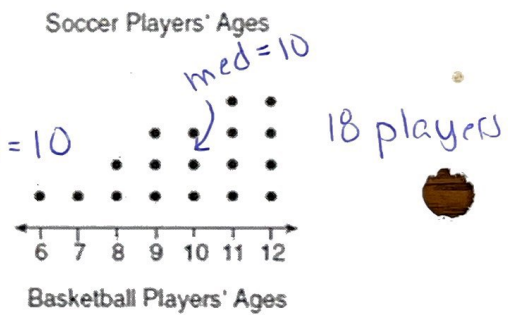
8. Corinne is planning a beach vacation in July and is analyzing the daily high temperature for her potential destination. She would like to choose a destination with a high median temperature and where the temperature does not fluctuate very much. Which destination should she pick and why?
   A. Ocean Beach
   B. Whispering Palms
   C. Serene Shores
   D. Pelican Beach

Ocean Beach

Serene Shores

Whispering Palms

Pelican Beach

70 75 80 85 90 95 100   70 75 80 85 90 95 100
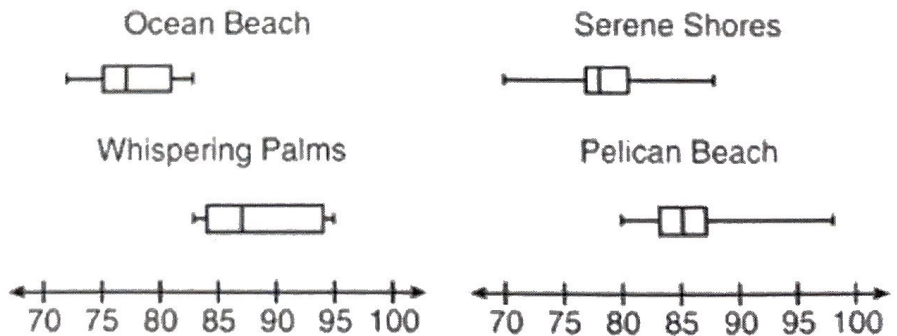
Handwritten:
<u>Opinion</u>
question

B or D
both high medians
WP has higher IQR but lower range

PB has lower IQR but higher range

Name: _____ Date: _____

Graphical Displays for Data Homework

Kirsten plays softball in the spring. Each game, she records the number of times she reaches first base without being called out. Use the data in the table to solve problems 1 -5.

| Game	Number of times at first	Game	Number of times at first
1	5	10	0
2	1	11	1
3	2	12	1
4	0	13	0
5	2	14	5
6	2	15	5
7	4	16	4
8	4	17	0
9	0	18	4

1. Create a dot plot showing the number of times Kirsten reached first base in each game.
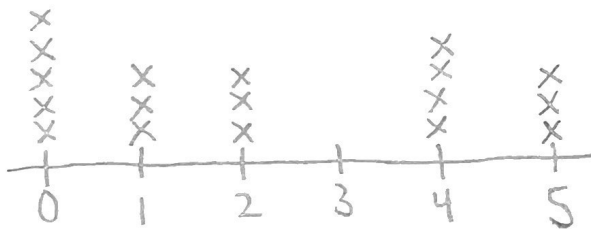
2. Find the minimum, maximum, first quartile, and third quartile of the data set.

    a. Minimum: 0

    b. Maximum: 5

    c. First Quartile: 0

    d. Third Quartile: 4

3. Create a box plot showing the number of times Kirsten reached first base.
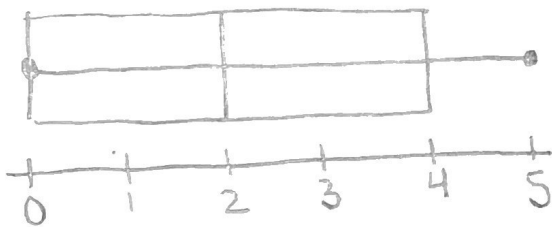
4. Find the interquartile range of the data. Are there any outliers?

IQR: 4-0= 4

1.5(4)=6 no, there is no data more than 6 from Q1 or Q3.

5. Kirsten wants to analyze her performance using this data. She wants to understand the range of her data and the frequency of different results. Which graph, the dot plot or the box plot, will be most useful to Kirsten? Explain.

The dot plot. It shows each individual performance as well as the full spread.

Dr. Singh is a veterinarian. He records the weights of each pet. The weights of 10 German shepherds, all 4-year-old males, are in the table below, rounded to the nearest pound. Use this information to solve problems 6-10.

Weight in pounds
80
78
82
84
81
89
83
81
81
82

78, 80, 81, 81, 81, 82, 82, 83, 84, 89

6. Create a histogram showing the weights of Dr. Singh's German shepherds.

Axis labels: 78-79, 80-81, 82-83, 84-85, 86-87, 88-89

7. Find the minimum, maximum, first quartile, and third quartile of the data set.

   a. Minimum: 78

   b. Maximum: 89

   c. First Quartile: 81

   d. Third Quartile: 83

8. Create a box plot showing the weights of the German shepherds.

Axis labels: 78, 80, 82, 84, 86, 88, 90

9. Find the interquartile range of the data. Are there any outliers?

IQR: 83 − 81 = 2

1.5(2) = 3   Yes, 89 is more than 3 beyond Q3(83).

10. Dr. Singh wants to analyze the weights of the German shepherds. He wants to understand the center and spread of his data, so that he has a better idea of an expected weight for a 4-year-old male German shepherd. Which graph would be most useful to Dr. Singh? Explain.

The box plot. It generalizes the data into its center and spread instead of focusing on individuals.

Adapted from: Walch Education Resources: CCGPS Coordinate Algebra Teacher Resource Binder