Name: _Answer Key_   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.

0,0,0,0,0, 1,1,1 , 2,2,2 ,4,4,4,4, 5,5,5

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.

OR

More useful than
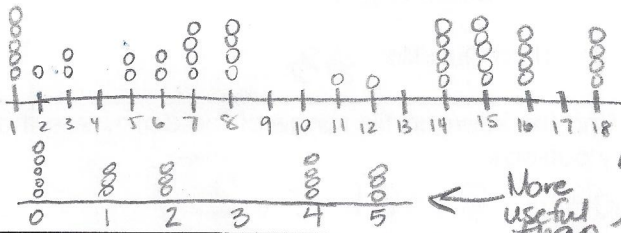
2. Find the minimum, maximum, first quartile, and third quartile of the data set.

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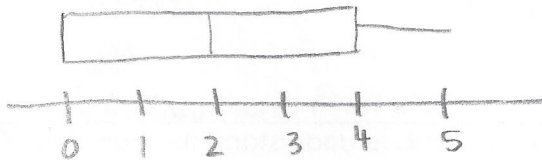
4. Find the interquartile range of the data. Are there any outliers?

$IQR = Q3 - Q1 = 4 - 0 = 4$

$Q1 - 1.5(IQR)$
$0 - 1.5(4)$
-6
None

$Q3 + 1.5(IQR)$
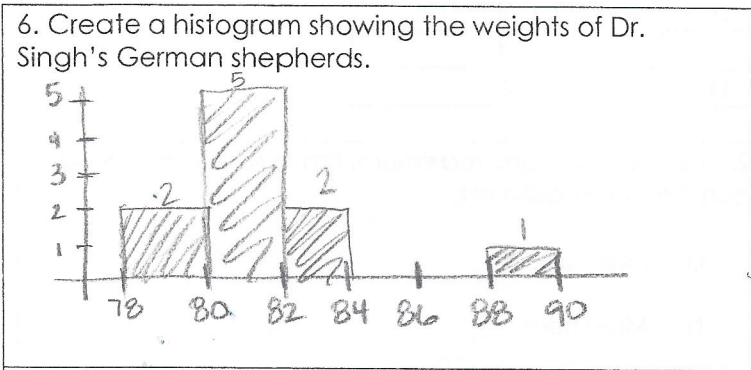$4 + 1.5(4)$
10
None

There are no outliers

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.

Dot plot → This shows the frequency of how many times she reaches 1st. It also shows you the smallest (minimum) + largest (maximum) values.

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.
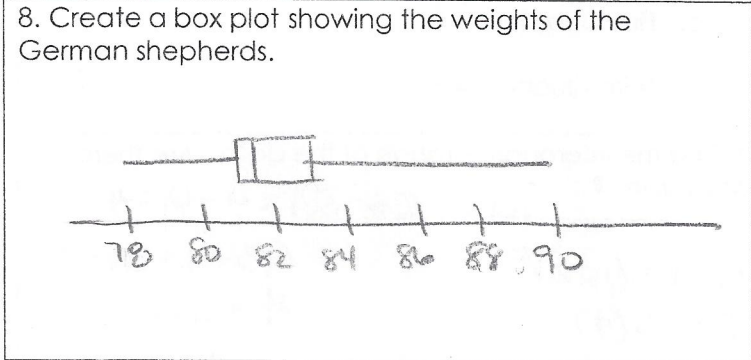
Handwritten work:

Q1, Q2, Q3 labeled over: 78, 80, (81), 81, 81, | 82, 82, (83), 84, 89

81.5
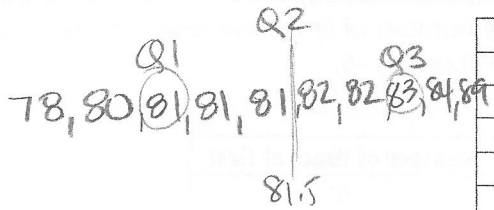
Weight in pounds
80
78
82
84
81
89
80
81
81
82

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

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.

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

$IQR = 83 - 81 = \boxed{2}$

$81 - 1.5(IQR)$ $Q3 + 1.5(IQR)$

$81 - 1.5(2)$ $83 + 1.5(2)$

78   86

YES: 89 is an outlier

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.

Histogram is better for determining the shape + spread of the data + it's easier to see where the data is clustered.