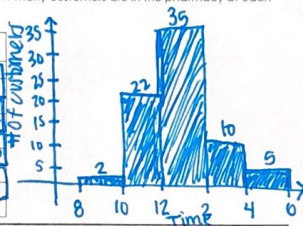


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Graphical Displays for Data

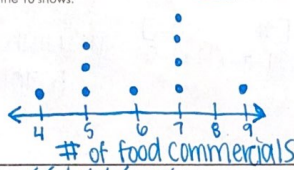
Example 1: A pharmacy records the number of customers each hour that the pharmacy is open. The staff is using the information to determine how many people need to be working at the pharmacy at each time of the day. The number of customers is in the table below. Use the table to create a histogram to help the pharmacy staff understand how many customers are in the pharmacy at each time of day.

Time Frame	Number of customers
8:00 A.M. - 9:00 A.M.	2
9:00 A.M. - 10:00 A.M.	0
10:00 A.M. - 11:00 A.M.	8
11:00 A.M. - 12:00 P.M.	14
12:00 P.M. - 1:00 P.M.	23
1:00 P.M. - 2:00 P.M.	12
2:00 P.M. - 3:00 P.M.	7
3:00 P.M. - 4:00 P.M.	3
4:00 P.M. - 5:00 P.M.	5



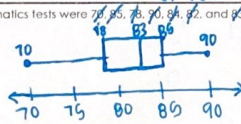
Example 2: Anna and Elhan watch 10 thirty-minute shows during the month of June. They record the number of food commercials that air during each show in the table below. Create a dot plot to display the number of food commercials that aired during the 10 shows.

Shows	# of Commercials
A	4
B	5
C	6
D	7
E	8
F	9
G	4
H	5
I	6
J	7



Example 3: Ray's scores on his mathematics tests were 70, 85, 78, 70, 84, 82, and 90. Draw a box plot to represent Ray's Data.

Min: 70 Max: 90
 Median: 83
 Q1: 78 Q3: 89



Find the IQR. $89 - 78 = 11$
 Are there any outliers?

$Q1 - 1.5(IQR) = 78 - 1.5(11) = 82.5$ NO!
 $Q3 + 1.5(IQR) = 89 + 1.5(11) = 95.5$ NO!

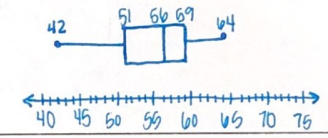
Adapted from: Walch Education Resources: CCGPS Coordinate Algebra Teacher Resource Binder

70 78 82 83 84 89 90

Example 4: A company keeps track of the age at which employees retire. It is considered an early retirement if the employee retires before turning 65. The age of the 11 employees who took early retirement this year are listed in the table below. Draw a box plot for the data. Are there any striking deviations in the data?

Employee	Age at early retirement
1	56
2	55
3	64
4	54
5	55
6	58
7	56
8	61
9	59
10	62
11	68

42 48 51 53 55 56 58 59 60 64

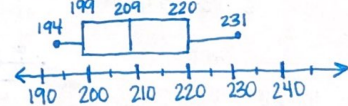


Example 5: Elizabeth records her scores each time she goes bowling. The scores from her last 13 games are in the table below.

194, 196, 198, 200, 206, 207, 209, 210, 212, 216, 224, 228, 231

Game	Score
1	196
2	210
3	198
4	209
5	194
6	200
7	216
8	212
9	196
10	224
11	228
12	231
13	207

Construct a box plot of her data.



Find the IQR.
 $220 - 199 = 21$

Are there any outliers?
 $Q1 - 1.5(IQR) = 199 - 1.5(21) = 167.5$ NO!
 $Q3 + 1.5(IQR) = 220 + 1.5(21) = 251.5$ NO!

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

Name: _____ Date: _____

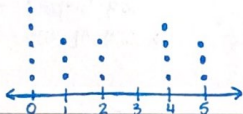
Graphical Displays for Data Homework

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.

0000011112224445566

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

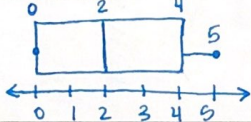
1. Create a dot plot showing the number of times Kirsten reached first base in each game.



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
- Median: 2

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
 outliers: no $0 - 1.5(4)$ $4 + 1.5(4)$
 $[-6, 10]$

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.

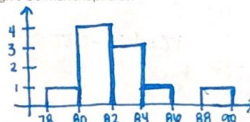
Dot plot, because it gives exact frequency of data.

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
78
80
81
81
82
82
83
84
89

78, 80, 81, 81, 82, 82, 83, 84, 89
 81.5

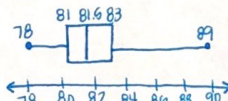
6. Create a histogram showing the weights of Dr. Singh's German shepherds.



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
- Median: 81.5

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: $83 - 81 = 2$
 outliers: $81 - 1.5(2)$ $83 + 1.5(2)$
 $[78, 86]$
 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 because he can see where most dogs' expected weight should be centered.