

1. Circle the following data display(s) that are frequency distributions. (Hint: Frequency distributions show how many times something occurs.)

- Dot Plot
 Bar Graph
 Stemplot
 Histogram
 Pie Chart
 Boxplot

2. You have data of SAT scores for 2000 high school seniors. What display should you use to look at these scores? Explain.

Histogram / Boxplot 2000 is a large ~~number~~ number for a dotplot, stemplot

3. Which displays can represent categorical data?

Bar Graph and Pie chart

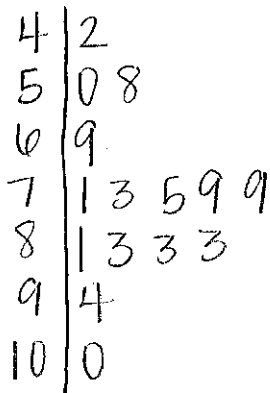
4. What is the main difference between the data a bar graph and pie chart can display?

pie chart has to have 100% of data

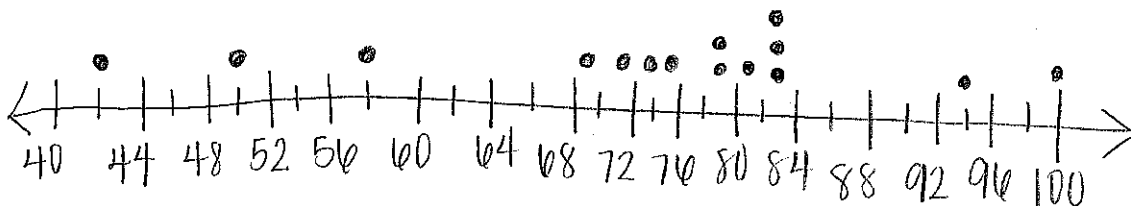
5. The number of points scored on the last quiz are shown below.

1st Block: ~~83~~ ~~50~~ ~~70~~ ~~70~~ ~~83~~ ~~58~~ ~~71~~ ~~42~~ ~~94~~ ~~81~~ ~~75~~ ~~69~~ ~~73~~ ~~83~~ 100

a. Display this data in a stemplot.



b. Display this data in a dotplot.



6. List the measures of center.

mean, median

7. List the measures of spread.

range, IQR, standard deviation

8. Describe data with the following shape:

a. Skewed right

tail on right
most data on left

[mean > median]
is bigger

b. Skewed left

tail on left
most data on right

[mean < median]
is smaller

c. Symmetric

even on both sides [mean = median]

9a. How would you describe the overall shape of this distribution?

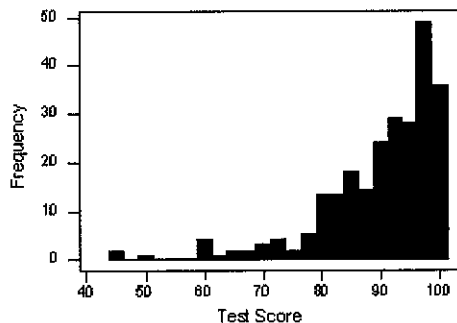
b. Where will the mean fall in respect to the median?

mean will be smaller than median

c. What numerical measures would best describe it? Why?

Mean/Standard deviation OR Median/IQR

median and IQR are not affected by outliers



10. How do you prove that a number is an outlier? List both formulas.

Below: $Q_1 - 1.5(IQR)$

Above: $Q_3 + 1.5(IQR)$

11. The number of points scored on the last quiz are shown below.

1st Block: 83 50 79 79 83 58 71 42 94 81 75 69 73 83 100

2nd Block: 100 88 33 67 100 25 75 38 96 67 83 83 79 88 71 79

a. Find the mean of each data set.

① $\bar{x} = 74.7$ ② $\bar{x} = 73.4$

b. Find the standard deviation of each data set.

① $s_x = 15.4$ ② $s_x = 23$

c. Find the five number summary.

① min = 42 $Q_2 = 79$ max = 100
 $Q_1 = 69$ $Q_3 = 83$

② min = 25
 $Q_1 = 67$ max = 100
 $Q_2 = 79$ IQR = 21
 $Q_3 = 88$

d. Find the range and IQR.

① range: $100 - 42 = 58$
 IQR: $83 - 69 = 14$

e. Explain in context what the standard deviation means.

on avg, each test grade is 15.4 points away from the mean

on avg, each test score is 23 points away from the mean

f. If we added 5 points to every score, what would this do to the mean and standard deviation?

mean would increase by 5
 standard deviation would stay the same

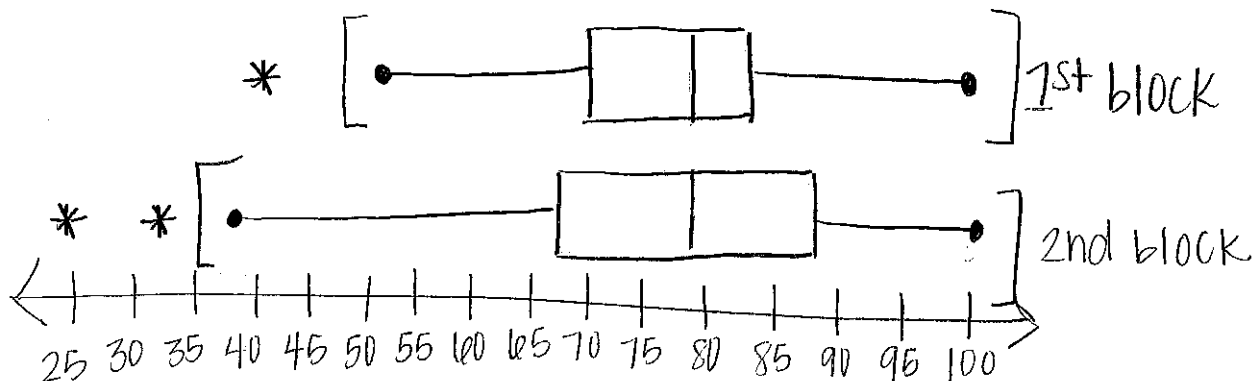
g. Discuss whether 1st or 2nd block had the higher average.

1st block had the higher average. (higher mean)

h. Discuss whether 1st or 2nd block had a more consistent quiz grade.

1st block was more consistent (lower st. deviation)

i. Make a boxplot of the data below.



Outliers

①st above = 104
 below = 48
 outlier is 42

②nd above = 119.5
 below = 35.5
 outlier is 33, 25

12. Look at the box plots to the right:

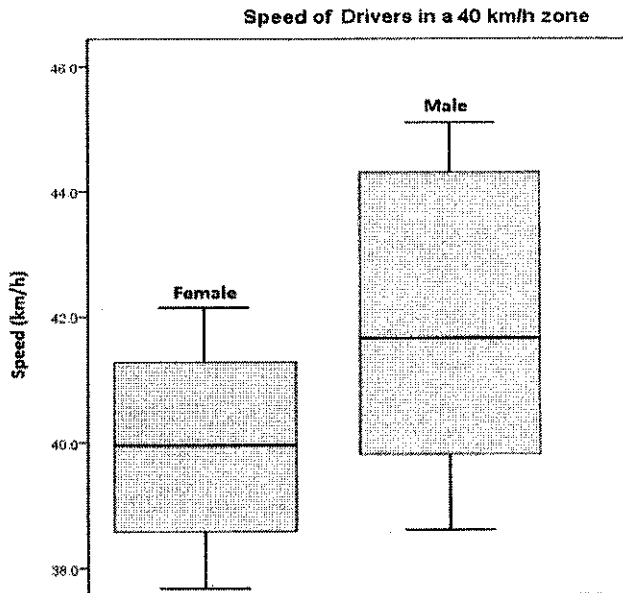
a. Describe the spread of the female drivers.

range $42 - 37 = 5$

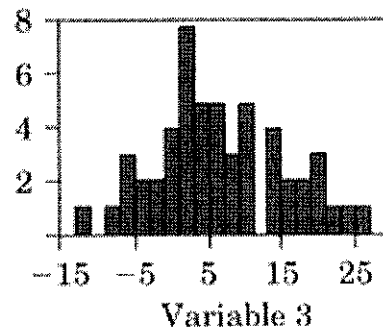
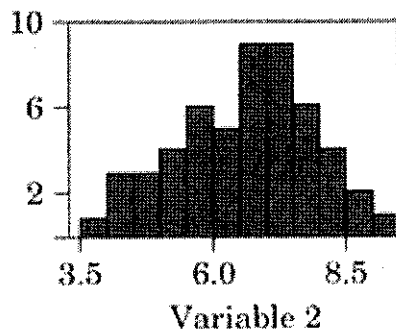
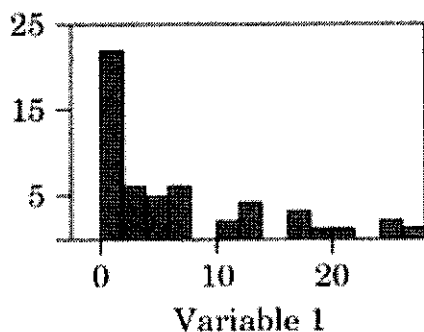
b. Describe the spread of male drivers.

range $45 - 39 = 6$

c. Which one shows more variability? How do you know? *males, larger spread*

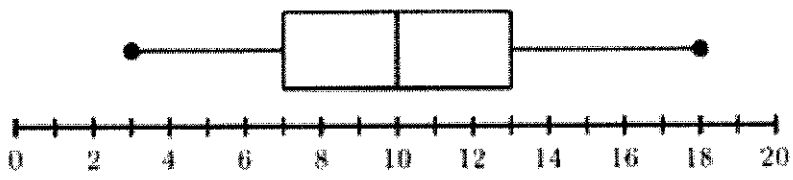


13.



- (a) mean = 6.6, median 6.8, standard deviation = 1.3, variable = 2.
 (b) mean = 6.6, median = 6.0, standard deviation = 8.65, variable = 3.
 (c) mean = 6.6, median 3.75, standard deviation = 7.4, variable = 1.

14.



a. What percentage of the data is below 7?

25%

b. What percentage of the data is below 13?

75%

c. The middle 50% of data is between 7 and 13.