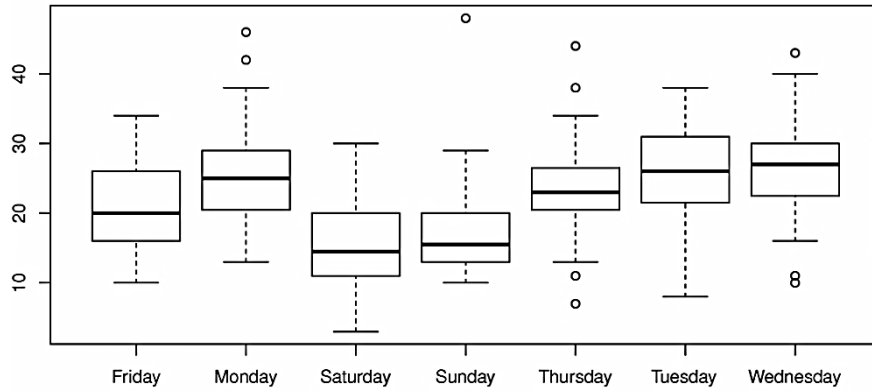


1)



The above side-by-side frequency chart represents the amount of traffic accidents in California each day for a year, grouped by the day of the week.

(a) Which day of the week has the highest median number of accidents; what is the approximate value on that given day?

(b) Which day of the week appears to be the safest to travel? Why do you think that, based on this data?

(c) How many outliers, all together, are represented in this presentation?

(d) True/False/Can't be determined:

- 1) There are always more accidents on Wednesdays than any other day of the week.
- 2) Some days there are less than 10 accidents a day.
- 3) There are days when there are 0 accidents.
- 4) 50% of Saturdays have between 10 and 20 accidents.
- 5) Most Tuesdays have less than 20 accidents.
- 6) Of the 52 Friday's charted, exactly 1 of them had 20 accidents.
- 7) Thursday has the smallest IQR

(e) Tuesday's Q3 is closest to: 1) 10 2) 20 3) 30 4) 40

2) Given the two way frequency chart below concerning the students' favorite subjects in high school and which grade they are in, answer the questions below:

	Math	English	Science	Social Studies	Total
9 th	560	232		20	917
10 th	115	308	200	56	679
11 th		105	68	225	563
12 th	15	420	10	3	448
Total	855	1065	383	304	2607

(a) Fill in the empty cells.

(b) Approximately what percentage of students picked math as their favorite subject?

(c) Given that a student is a freshman, what is the ratio of freshman that prefer English?

(d) Create a **ROW** CONDITIONAL RELATIVE FREQUENCY chart – round to two decimal places.

	Math	English	Science	Social Studies
9 th				
10 th				
11 th				
12 th				

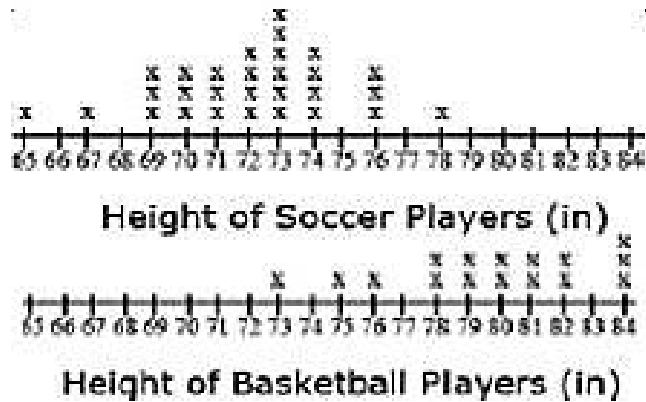
(e) If you ask a random student about their favorite subject and they reply “math,” which grade would you expect them to be in? Why?

(f) If you asked 100 sophomores about their favorite subject, about how many of them would you expect to say “English”? a) 30 b) 45 c) 55 d) 120

(g) What is the conditional relative frequency for the 12th graders who like Science? (Round to 2 decimal places.)

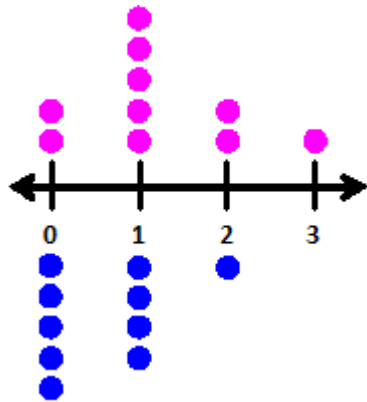
(h) Use the data from the table to state whether or not there is an association between grade and favorite subject. Explain your thinking.

3)



- (a) How many basketball players were surveyed?
- (b) What are the mean and median heights for each sport?
- (c) Calculate the IQR for the Height of the Soccer Players. Would a height of 65 be considered an outlier? Explain your answer.
- (d) Which sport has a larger standard deviation for heights? (You do not need to calculate the SD.)
- (e) If we surveyed two more soccer players and their heights were 66 inches and 82 inches, how would that change the median height of soccer players?
- (f) If every basketball player grows exactly 3 inches over the summer, how will that change the standard deviation?
- (g) If we survey one more basketball player and he's 60 inches, how will that affect the standard deviation?

4) The dot plots below show the number of pets each student had in Ms. Frizzle's class. The top part represents the girls in the class, the bottom represents the boys.



(a) How many girls are in the class? How many boys?

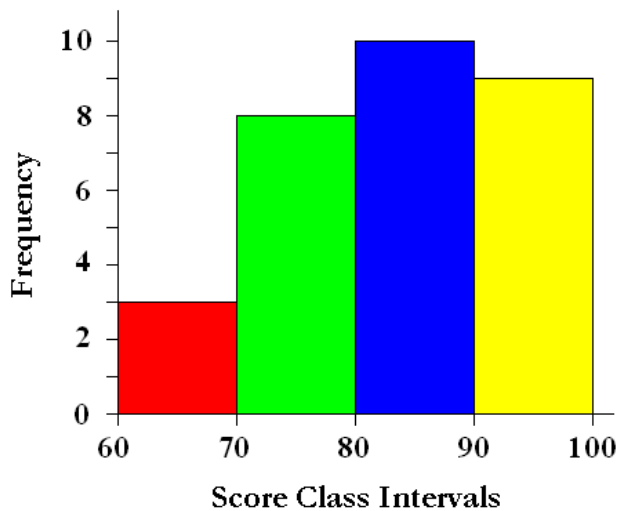
(b) How many boys had 1 pet?

(c) Is the boys' data symmetrical, skewed left, or skewed right?

(d) What is the median for the boys' data?

(e) Is the mean or median higher for the girls' data?

5) The histogram below shows the scores (%) of Ms. Frizzle's class on a quiz. Use it to answer the following questions.



(a) How many students earned between a 70-79% on the quiz?

(b) How many students took the quiz, total?

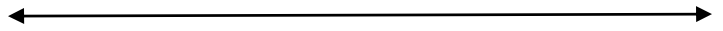
(c) Is this distribution best described as unimodal, bimodal or multi-modal?

(d) How many students earned below an 80% on the quiz?

(e) Can we tell what the highest score on the quiz was? If yes, what is it? If not, explain why not.

Draw a dot plot for each data set.

6) Shoe Size
9 9 6 9 8 9 8 11
10 8 9 10 9 7 9 7
8



Draw a box-and-whisker plot for each data set.

7) Mens Heights (Inches)
64 64 67 67 69 71 71
71 71 71 72 73 73 73
76 76 82

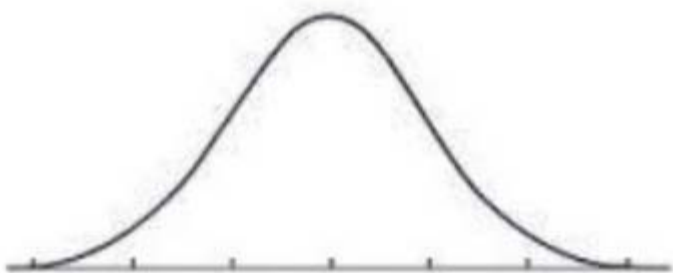


Draw a histogram for each data set.

8) Monthly Revenue
17,700 18,520 22,410 24,980
27,320 28,940 30,130 33,130
33,180 37,160 39,360 41,640
44,950 45,870 51,200 63,970



9) Describe the box plot in #7 using SOCS.



10) Label the x-axis at one, two, and three standard deviations from the mean.

Mean = 72; Standard Deviation = 5

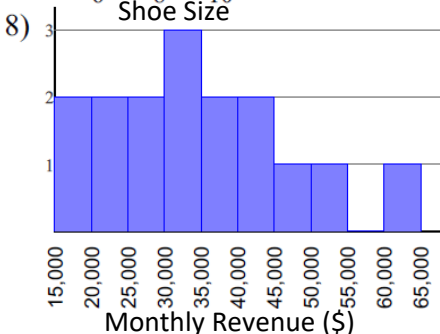
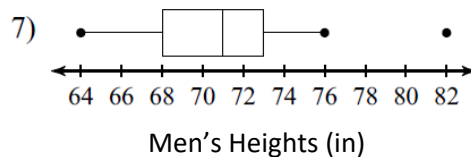
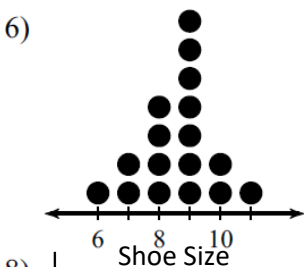
If 200 students took an algebra test, how many students would you expect to be within **one** standard deviation of the mean?

Answer Key

- 1) A) Wednesday – approximately 28 accidents
 B) Variety of answers possible, based on explanation, but one good answer would be: Saturday, because it has the lowest median number of traffic accidents.
 C) 10 outliers
 D) 1 = C, 2 = T, 3 = F, 4 = T, 5 = F, 6 = F, 7 = T
 E) 3
- 2) A) Science = 105; Math = 165
 B) $855/2607$ is approximately 33%
 C) $232/917$
 D)

	Math	English	Science	Social Studies
9 th	0.61	0.25	0.11	0.02
10 th	0.17	0.45	0.29	0.08
11 th	0.29	0.19	0.12	0.40
12 th	0.03	0.94	0.02	0.01

- E) 9th grade, because most 9th graders preferred math, and the other grades did not.
 F) b
 G) 0.02
 H) Yes, there appears to be an association between grade and favorite subject. [Explanations will vary.]
- 3) A) 16 basketball players
 B) Basketball: Median = 80, Mean = 79.75; Soccer: Median = 72, Mean = 72.06
 C) IQR: 4; No, based on this distribution a number must be less than 64 to be considered an outlier.
 D) Basketball
 E) Wouldn't change.
 F) Wouldn't change.
 G) Standard Deviation would be bigger.
- 4) A) 10 girls, 10 boys
 B) 4 boys
 C) Skewed right
 D) 0.5
 E) The mean is higher.
- 5) A) 8 students
 B) 30 students
 C) Unimodal
 D) 11 students
 E) No, since we do not know exact values from a histogram, we are unable to tell the exact maximum. We only know that it is between 90-100%.



- 9) S – roughly symmetric, gap from 76 to 82 10) 136 students
 O – outlier at 82
 C – median at 71
 S – range is 18, IQR is 5