MAT 121
Summer 2019
Homework 2

"I understand now that boundaries between noise & sound are conventions. All boundaries are conventions, waiting to be transcended. One may transcend any convention, if only one can first conceive of doing so."

—Robert Frobisher, Cloud Atlas

Problem 1: Construct a frequency distribution, relative frequency distribution, and cumulative frequency distribution table for the following data using 6 classes. Be sure to list your lower class limits, upper class limits, class boundaries, and class widths. Also, sketch a histogram for the frequency distribution of the data and describe the distribution (symmetric, left/right skewed, neither, etc.).

8.0	36.1	40.3	25.7	21.9
16.8	40.4	39.0	8.1	27.8
36.1	31.4	33.7	29.3	34.5

Problem 2: Construct a leaf-and-stem plot of the following data. Also, say whether the distribution is left/right skewed, symmetric, or neither.

100, 125, 114, 130, 155, 166, 125, 108, 129, 136, 110, 115, 119

Problem 3: The following table is a count of 'Mexican' food preferences in a bridge club, broken down by age.

Location/Age	18 – 25	26 – 50	51 – 100
Taco Bell	5	6	6
Chipotle	61	44	30
Moes	3	3	8
Del Taco	27	31	19

(a) How many people between the ages of 26 and 50 were surveyed?
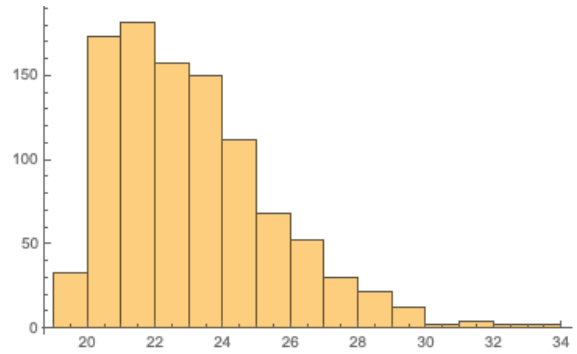
(b) How many people preferred Moes?

(c) How many people preferred Taco Bell or were aged 18 to 25?

(d) How many people surveyed were aged 51 to 100 and prefered Del Taco?
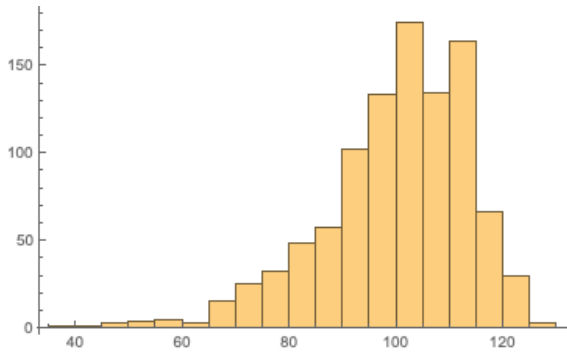
Problem 4: Determine if the following distributions are symmetric or skewed. If it is skewed, indicate whether the distribution is right skewed or left skewed.
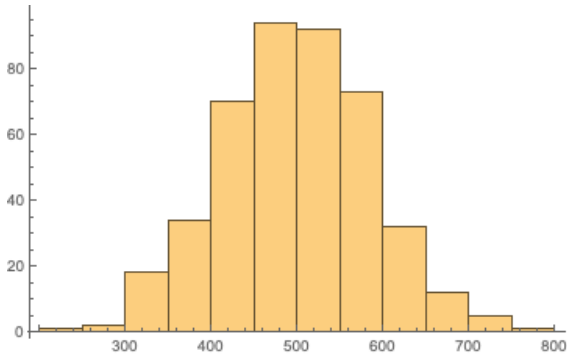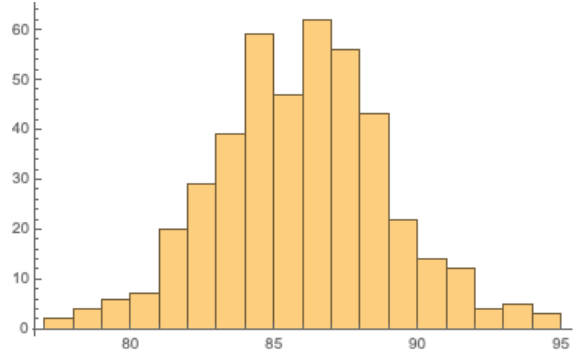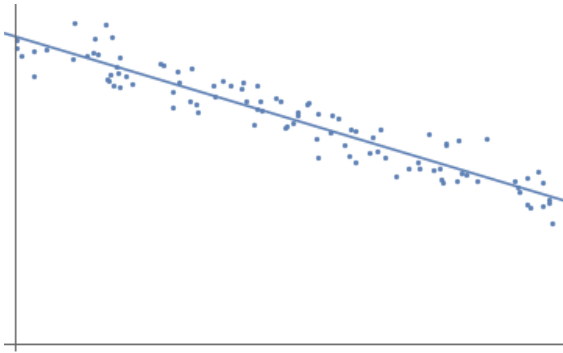

(a)
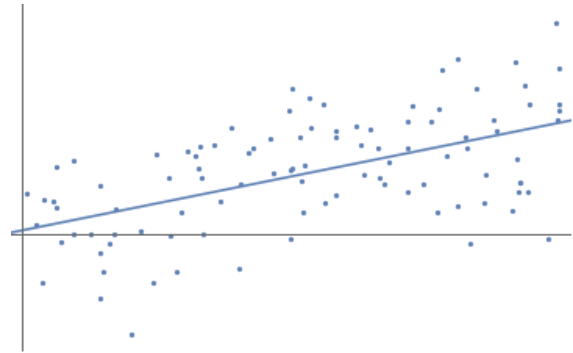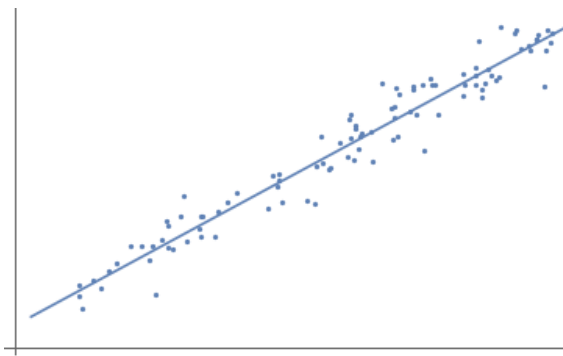

(b)

(c)

(d)

(a) _____

(b) _____

(c) _____

(d) _____

Problem 5: Match each of the following scatterplots with its regression equation and correlation coefficients. Note that the scale on each axes is the same.
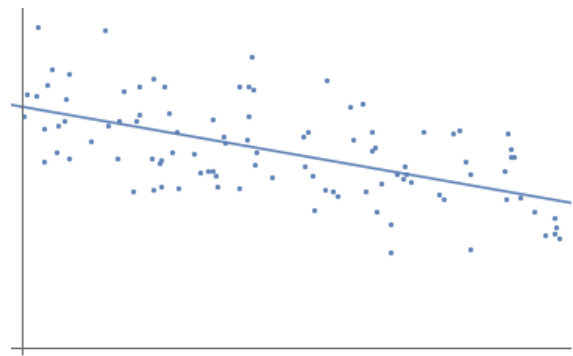

(a)

(b)

(c)

(d)

_____ : $r = 0.556$, $\hat{y} = 1.7\hat{x} + 2.1$
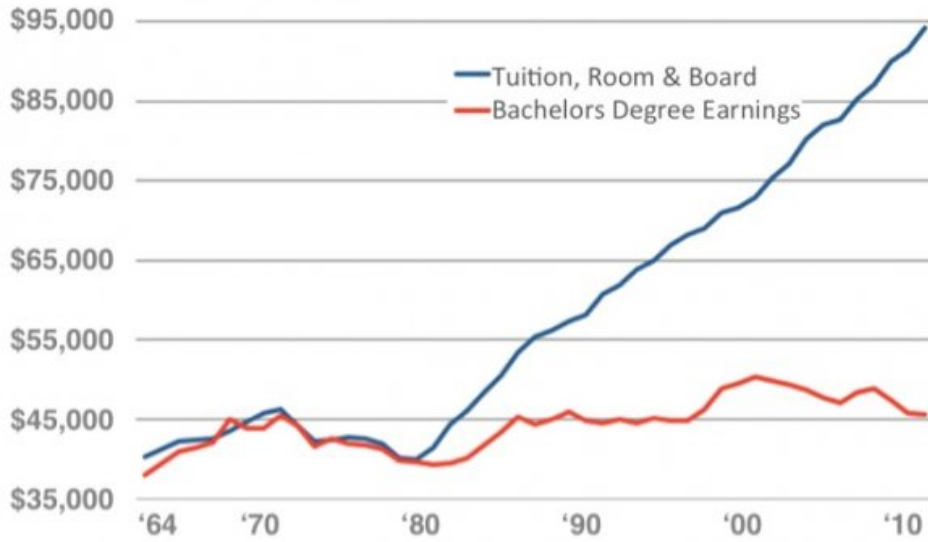
_____ : $r = 0.972$, $\hat{y} = 4.27\hat{x} + 26.2$

_____ : $r = -0.641$, $\hat{y} = -113.2\hat{x} + 2478.0$

_____ : $r = -0.946$, $\hat{y} = -97.8\hat{x} + 1877.6$

Problem 6: Identify problems (if any) in the presentation of data in the following chart. Identify how you might correct the figure.

The diminishing financial return of higher education

Costs of 4-yr degree vs. earnings of 4-yr degree

Source: Source: U.S. Census Data & NCES Table 345.
Notes: All figures have been adjusted to 2010 dollars using the Consumer Price Index from the BLS.

Problem 7: Identify problems (if any) in the presentation of data in the following chart. Identify how you might correct the figure.
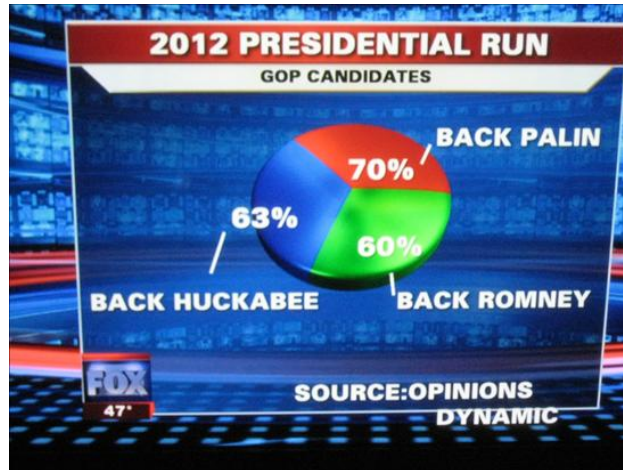
Problem 8: Identify problems (if any) in the presentation of data in the following chart. Identify how you might correct the figure.