



Supplemental Instruction Handouts

Statistics

Chapters 3 & 4

Graphical and Numerical Descriptive Techniques

1. We asked 15 random bank customers how long (in minutes) they waited in line during the lunch hour. The results are as follows:

4 15 3 8 4 9 3 2 11 1 5 6
6 13 3

- A. How many classes would you recommend?
- B. Calculate the class width.
- C. Set up a frequency distribution with 0 being the start of the first class and each class going up by 4s.
- D. Calculate the relative frequency for each class (round to 2 decimals).
- E. Calculate the cumulative relative frequency for each class.
- F. Calculate the median.
- G. What is the mode?
- H. Calculate the range.
- I. Calculate the mean.
- J. Calculate the standard deviation.
- K. Calculate the variance.
- L. How is this data skewed?

2. The following data represents the goals scored by a defenceman in his ten year NHL career:

7 5 11 8 3 6 2 1 9 8

- A. Calculate the mean.
- B. Calculate the standard deviation.
- C. Calculate the variance.
- D. Calculate the median.
- E. What is the mode?
- F. How is this data skewed?

3. The mean income of a group of sample observations is \$500. The standard deviation is \$50. Answer the following questions using the Empirical Rule.

- A. What percent of the incomes will lie between \$400 and \$600?
- B. What percent of the incomes will be less than \$550?
- C. What percent of the incomes will be less than \$450?
- D. What percent of the incomes will be less than \$400 or greater than \$450?
- E. According to Chebyshev, what percent of the incomes will lie between \$425 and \$575?

4. MTS surveyed 20 customers to find out how much time they spent using their cell phone in the last month:

Stem	Leaves (Hours)
6	0 8 9
7	1 2 3 5 5 6 9
8	2 4 5 6 7 9
9	2 4 8
10	2

- A. Determine the median.
- B. Determine the first quartile.
- C. Determine the third quartile.
- D. What is the interquartile range?
- E. Beyond what point is a value considered an outlier?
- F. Identify any outliers.
- G. Develop the box plot.
- H. Determine the skewness of the box plot.
- I. Determine the 4th decile.
- J. Determine the 1st quintile.
- K. Determine the 33rd percentile.

5. Compute the mean based on the following percent returns over a period of five years:

8 -5 12 7 -4