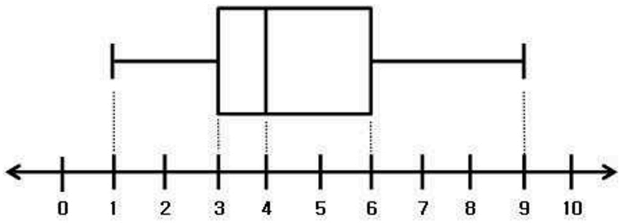
Introduction to Statistics - Homework #1

Problem 1

Based on the box plot below, determine whether each statement is true or false.



1. Between 3 and 4, there are approximately 25% of all data values. (T / F)
2. Q_2 (the second quartile) is 6. (T / F)
3. The IQR is 3. (T / F)
4. The range of the entire data set is 8. (T / F)
5. A box plot is useful for representing the distribution of a categorical variable. (T / F)

Exercise 2.33 - Stats scores

Below are the final exam scores of twenty introductory statistics students.

57, 66, 69, 71, 72, 73, 74, 77, 78, 78, 79, 79, 81, 81, 82, 83, 83, 88, 89, 94

Create a box plot of the distribution of these scores. The five number summary provided below may be useful.

Min	Q1	Q2 (Median)	Q3	Max
57	72.5	78.5	82.5	94

Exercise 3.22 - Voting & College Degree

Edison Research gathered exit poll results from several sources for the Wisconsin recall election of Scott Walker. They found that 53% of the respondents voted in favor of Scott Walker. Additionally, they estimated that of those who did vote in favor for Scott Walker, 37% had a college degree, while 44% of those who voted against Scott Walker had a college degree. Suppose we randomly sampled a person who participated in the exit poll and found that he had a college degree. What is the probability that he voted in favor of Scott Walker?

(a) Define necessary events.

(b) Compute the probability that a voter has a college degree.

(c) Compute the probability that a voter supports Scott Walker given that they have a college degree.

Exercise 3.42 - Twins

About 30% of human twins are identical, and the rest are fraternal. Identical twins are necessarily the same sex - half are males and the other half are females. One-quarter of fraternal twins are both male, one-quarter both female, and one-half are mixes: one male, one female. You have just become a parent of twins and are told they are both girls. Given this information, what is the probability that they are identical?

(a) Define necessary events.

(b) Compute the probability that both twins are girls.

(c) Compute the probability that the twins are identical given that they are both girls.