

Chapter 11: Inferential Statistics (11.1-11.3)

Topics: Organize data using the graphing calculator.

- Entering 1 variable statistics and finding the measures of central tendency and 5 number summary.
- Be able to describe the shape of a histogram and determine which data to use to describe it.
- Classify variables as discrete or continuous.
- Construct a probability distribution and find the probability mean of a data set.
- Find the variance and standard deviation of a probability distribution.
- Find the expected value of a probability distribution
- Find the area under a normal distribution curve.
- Know the Empirical rule and how to use it.
- Find the z -values for a specific data set and the area under a curve.
- Find the probability for a specific range of values.
- Use probabilities to find data points (inverse norm)

Use the following table for questions 1-4

People went to the movies and they were asked to rate the movie they saw on a scale of 1-6. Of 100 people surveyed here is what they said.

X	1	2	3	4	5	6
#of responses	15	13	26	6	24	16

1. Create a probability chart for the responses.
2. Find and interpret the mean.
3. Find the variance
4. Find the standard deviation.
5. In a certain retirement community the average age of people living there is 77 years old with a standard deviation of 6 years normally distributed.
 - a. Find the percent of people living there between the age of 71 & 89 years old.
 - b. If 240 people live in the community, how many people are older than 95 years old?
6. Find z if $X = 10.42$, $\mu = 24.5$ and $\sigma = 13.4$
7. The average weight of a student's back pack is normally distributed with a mean of 17 pounds and a standard deviation of 2.3 pounds.
 - a. Find the probability that a randomly selected student's backpack weighs more than 20 pounds.
 - b. Find the probability that a randomly selected student's backpack weighs between 16-19 pounds.
 - c. Find the weights of the outer 30% of the data
8. Label the following examples as discrete or continuous random variables:
 - a. The weights of new puppies
 - b. The number of letters in someone's name
 - c. The time it takes to hike Mt. Si

9. Draw an example of the following histograms and tell whether you would use the standard deviation or five number summary to describe the graph:
- Symmetric
 - Postively skewed
 - Bimodel
 - Negatively skewed
10. Find the mean, median, mode, range, Q_1 and Q_3 for the following data using your graphing calculator
{5,9,10,12,14,12}