Test #1 Concepts

Chapter 1 & 2 Definition

Census
Center
Interval
Nominal
Ordinal
Outliers
Parameter
Population
Qualitative
Quantitative
Random Sample
Ratio
Sample
Sampling
Sampling Frame
Shape
Statistics (upper case "s") & Statistic (lower case "s")
Variable
Variation

Chapter 1

- Identify Types of Sampling: Random, Systematic, Cluster, Convenience, Stratified
- Identify Levels of Measure: ratio, interval, nominal or ordinal
- Distinguish a statistic from a parameter
- Identify sampling error vs. non-sampling error
- Identify qualitative vs quantitative data

Chapter 2

- Create a Frequency Table (Distribution)
  - ✓ Know How to Find & Define: Class Width ,Classes, Lower Class Limits, Upper Class Limits, Class Midpoints/Marks, Class Boundaries
- Know what a Relative Frequency Table is and how to get one from Frequency Table
- Know the difference between a frequency/relative frequency table and a cumulative frequency table
- Create & Label a Histogram correctly
- Know what a Pie Chart or Circle Chart is
  - ✓ What must you know to create a circle chart?
- Create, Label & Read a Stem-and-Leaf Diagram (Display)
  - ✓ Understand an expanded stem and leaf
  - ✓ Understand a Back-to-Back Stem-and-Leaf Diangram(Display)
- Create & Read a Dot Plot
- Compare and Contrast Stem-and-Leaf & Histogram & Dot Plot

Chapter 3

- Measures of Center
  - ✓ Find mode, mean & median
  - ✓ Distinguish type of data appropriate with each
- Correct notation for Mean & Median
- Show Calculation for Mean without letting the calculator do all the work for you
  - ✓ Know sum of x's and n meaning and give within calculation
- Know what the Indicator Function is and Use it to find Median
  - ✓ Know the difference between median for even & odd n's
- Skew of Data

- ✓ Define by mean and median and mode, but especially mean and median
- ✓ Types of Skew: Symmetric, Right Skewed & Left Skewed
- ✓ Relation to Shape

- Measures of Variation
  - ✓ Find range, variance, standard deviation & coefficient of variation
  - ✓ Use computational formula for variance & know sum of x's squared vs sum of x-squared
  - ✓ Know the difference between population & sample variance
- Know Defining vs. Computational Formulas for Mean & Variance
  - ✓ Don't use the defining formula to compute the variance
- Know the Notational and Computational Difference between Statistics and Parameters
- Know the Reason for Finding Coefficient of Variation
- Empirical Rule
  - ✓ When to use.
  - ✓ What percentage of data is within 2 standard deviation of the mean
  - ✓ Give an interval where 95% of the data could be expected to be found
- Chebyshev's Theorem
  - ✓ % of data within k standard deviations of the mena
  - ✓ When do we use this theorem?
  - ✓ Give an interval where 75% or 89% of the data could be expected to be found