**AP Statistics Semester One Review Guide**

Unit 1: Exploring Data

* Chapters 1 & 3: To summarize & interpret data, you should always draw a graph, interpret & summarize numerically
  + Categorical data
    - Graph:
    - Interpret:
    - Numerical summary:
  + Quantitative data (in general)
    - Graph:
    - Interpret:
    - Numerical summary:
  + Paired quantitative data (chapter 3)
    - Graph:
    - Interpret:
    - Numerical summary:
    - Mathematical model:
    - Assess model:
* Chapter 2: When we have a distribution of data, we want to describe an individual’s or group’s location within that distribution.
  + All distributions
    - Percentile/cumulative relative frequency (where does an individual stand in the sample population?)
    - z-score (how can I compare locations on a standardized scale?)
    - transformations (how does location change when data is systematically changed?)
    - density curve (compare mean & median of distribution)
  + Normal distributions
    - Special features
      * Shape:
      * Center:
      * Spread:
    - Cumulative density function (akin to percentile/cumulative relative frequency)
    - Assessing normality

Unit 2: Designing Studies

* Chapter 4: When analyzing studies, we want to consider sampling/assignment method and look for potential errors.
  + Surveys
* Sampling methods
* Errors
  + Experiments
* Assignment methods
* Errors

Unit 3: Anticipating Patterns

* Chapters 5: When we want to determine the likelihood of an event, we use probability theory.
  + Features of a chance process
  + Simulation
  + Probability rules
  + Conditional probability
* Chapter 6: When we have a probability distribution of random variables, we want to describe location within that distribution.
  + Shape
  + Center
  + Spread
  + Transformations