

AP Statistics:  
Key Concepts Quiz.

Define the following terms to the best of your ability.

- ①  $\bar{x}$  → Mean of a sample
- ②  $R^2$  → the variability in  $y$  that is accounted for by the variability in  $x$ .
- ③ Standard Deviation → the average distance to the mean.
- ④ positively skewed → a distribution w/ the tail to the right & most values to the left.
- ⑤ The Outlier Rule →  $(Q_1 - 1.5IQR, Q_3 + 1.5IQR)$  creates fences. Anything outside these fences is an outlier.
- ⑥ parameter → a numerical characteristic of a population
- ⑦ Extrapolation → predicting beyond the scope of data in a linear model
- ⑧ Simulation → modeling real-life events w/ random number generation.
- ⑨ z-score → the number of std dev. a data value is from the mean.
- ⑩ Residual → The difference between an actual value & a value predicted by the linear model  $(y - \hat{y})$
- ⑪ The 5 things you should always mention when describing association in a scatterplot → direction, strength, form, context, outliers.

- ⑫ Interquartile Range  $\rightarrow$  middle 50% of our data ( $Q_3 - Q_1$ )
- ⑬ Percentile  $\rightarrow$  a point in which a certain percent of data falls below that value.
- ⑭ The 5-number summary  $\rightarrow$  min,  $Q_1$ , med,  $Q_3$ , max
- ⑮ Shifting/scaling  $\rightarrow$  adding/subtracting or mult/div an entire data set by the same value.
- ⑯ statistic  $\rightarrow$  numerical characteristic of a sample.
- ⑰ census  $\rightarrow$  sampling of the entire population.
- ⑱ The Empirical Rule  $\rightarrow$  68-95-99.7% within 1-2-3 standard deviations respectively.
- ⑲ correlation ( $r$ )  $\rightarrow$  the value that measures strength & direction of association in a scatterplot.
- ⑳ Draw & clearly label the FLOW CHART:

