KEY STATISTICAL WORDS AND PHRASES

This is just an attempt to provide some basic statistical vocabulary review. An Advanced Placement Statistics test taker should be familiar with the words and phrases listed below. A number following the word or phrase refers to a page in the Yates, Moore, McCabe text where the word or phrase is referenced.

categorical variable (7)

quantitative variable (7)

bar chart ... as contrasted to **histogram** (7)

outlier (12)

symmetric, **skewed right**, **skewed left** (15)

stemplot (18), **back-to-back stemplot** (20)

mean, **median**, **mode**, **quartiles, five-number summary** (Section 1.2)

standard deviation (43)...remember we have both σ and s. (Page 43 shows s).

variance (43)

density curve (68)

68-95-99.7 rule (75)

percentile (75)

standardized value, or **z-value** (83)

response variable, **explanatory variable** (109)

scatterplot, **positive association**, **negative association** (Section 3.1)

association does not imply causation.

correlation, **coefficient of correlation r** (129)

least-squares regression line (139... understand figures on pages 139, 140)

- replication

statistically significant (276)

double-blind experiment (278)

blocking, **block design** (281)

- <u>blocking</u> is done to reduce variation
- <u>stratification</u> is done to achieve representation

independence, **independent trials** (315, 332, 399)

disjoint events (342)

random variable (368)

discrete random variable, **continuous** random variable (376)

law of large numbers (390)

binomial setting, **binomial distribution** (416)

geometric setting, **geometric distribution** (435)

parameter, **statistic** (456)

unbiased statistic (464)

normal for binomial OK if np and n(1-p) are at least 10. (475)

Central Limit Theorem (488)

confidence interval, margin of error (511)

null hypothesis, alternate hypothesis (532)

P-value (534)

one-tail vs. **two tail** (538)

Type I Error (569)

Reject Ho when it is true. (A Type I error can only occur if the null hypothesis is true.)

Type II Error (569)

Accept Ho when it is false (A Type II error can only occur when null hypothesis is false.)

Power of a test (574)

1 - probability (Type II error). It is the probability that a false null is correctly rejected.

standard error (587)

t-distribution (588) .... approaches normal as sample size increases

Used for relatively small samples when population standard deviation not known.

degrees of freedom (588)

t used in matched pair design (599)

comparing two sample means (t-distribution) (619)

check distribution of samples to see if use of t OK.

inference for proportions (section 12.1)

normal approximation OK if certain conditions are satisfied. (662)

inference for difference of proportions (679)

normal approximation OK if certain conditions are satisfied. (681)

Chi-Square... goodness of fit (Section 13.1)

inference for two-way tables (717)

conditions for use of Chi-Square (734)

confidence interval for regression slope (762)