Statistical Formula

Ch-2:

Approximate Class Width $\frac{\text{largest data value - smallest data value}}{\text{Number of classes}}$	***Relative Frequency*** $\frac{\text{Frequency of the class}}{n}$

Ch-3:

Mean $\bar{x}=\frac{\sum x_i}{n}$ $\mu=\frac{\sum x_i}{N}$	***Median*** $\frac{(n+1)}{2}$
Midrange $\frac{\text{largest data value - smallest data value}}{2}$	***Percentiles and Quartiles*** $i=\frac{p}{100}*n$ Interquartile Range = $Q_3 - Q_1$
Variance (it may help to use the table format to calculate the variance) $s^2=\frac{\sum(x_i-\bar{x})^2}{n-1}$ $\sigma^2=\frac{\sum(x_i-\mu)^2}{N}$	***Standard Deviation*** $s=\sqrt{s^2}$ $\sigma=\sqrt{\sigma^2}$
Coefficient of Variation $CV=\frac{\text{Standard Deviation}}{\text{Mean}}*100$	***z-score*** $z_i=\frac{x_i-\bar{x}}{s}$
Empirical Rule $\bar{x}\pm 1s \approx 68.26\%$ $\bar{x}\pm 2s \approx 95.44\%$ $\bar{x}\pm 3s \approx 99.72\%$	The Empirical Rule is also concerned with what percentage of the data fall within a certain number of standard deviations from the mean.

Ch-4:

Combinations $C_n^N=\frac{N!}{n!(N-n)!}$	***Permutations*** $P_n^N=\frac{N!}{(N-n)!}$
Multiple Steps $n_1 \times n_2 \times n_3 \times n_4 \times \ldots \times n_k$	***Marginal Probability*** $P(A)=\frac{n}{N}$
Complement of an Event $P(A)^c = 1 - P(A)$	***Either/Or probability*** $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$
And Probability $P(A \text{ and } B) = P(A) * P(B\|A)$ $P(A \text{ and } B) = P(B) * P(A\|B)$	***Conditional Probability*** $P(A\|B)=\frac{P(A \text{ and } B)}{P(B)}$ $P(B\|A)=\frac{P(A \text{ and } B)}{P(A)}$
Test for independence **$P(A\|B) = P(A)$ or $P(B\|A) = P(B)$ or $P(A \text{ and } B) = P(A) * P(B)$**	