Concept/Topics Summary for October 4, 2011	GPS/CCSS
Type I error: Reject the assumption of random variation (H_o) when what we observed is indeed due to random variation. (False Positive)	N/A
Type II error: Fail to reject (H_o) when in actuality we should have rejected assumption of random variation. (False Negative)	N/A
Alpha α– Probability of Type I	N/A
Beta β– Probability of Type II	N/A
Type I and Type II probabilities inversely related	N/A
Identify consequences of committing Type I and Type II errors to determine which is most important error to minimize.	N/A
<u>Sensitivity</u>: P(+ | condition present); Complement of false negative (Type II) <u>Specificity</u>: P(- | condition NOT present); Complement of false positive	N/A
Power of Test: Probability that you reject the null hypothesis GIVEN that the null hypothesis is FALSE (Sensitivity)	N/A
Ways to represent/summarize data for two categorical variables: *Contingency Table *Side-by-side bar graph *Segmented bar graph	M7D1 S-ID.5 S-ID.6
How to summarize numerically: *proportions, percentages, and estimated probabilities *<u>Marginal probabilities</u>: for one category of one variable (out of the entire sample size) *<u>Conditional probabilities</u>: "inside of the table"; Conditioning upon one of the categories for a given variable; look for where the category of another variable intersects the subgroup being conditioned upon *<u>Joint Probabilities</u> (intersections); intersection of two categories out of the entire sample	M6D2 MM3D1 S-CP.3
If no association between two categorical variables: conditional = marginal P(A|C) = P(A)	N/A
Relative Risk: The ratio of proportions for two groups. A	N/A

relative risk of 1 indicates the proportions are the same for each group.	
Simpson's Paradox: When you control for a 3rd variable, the association between explanatory and response variables reverse. (Refer to smoking study)	N/A