## Chapter 13: Comparing Two Population Parameters

## **Key Vocabulary:**

- two-sample z statistic
- two-sample t statistic
- Robust
- pooled

- Difference between two means
  - Standard Error



 Calculator Skills:
 • 2-SampZTest

 • 2-SampTTest
 • 2-PropZTest

 • 2-SampZInt
 • 2-PropZInt

## 13.1 Comparing Two Means (pp.780-805)

- 1. Summarize the three key points of "two sample problems":
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  - •
  - •
- 2. How does 'mean difference' differ to 'difference between two means'?
- 3. In a two-sample problem, what conditions must be met for comparing two means?
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- •
- 4. In a two-sample problem, must/should the two sample sizes be equal?

5. Give the formula for the *two-sample z-statistic*, and define each variable in the equation.

- 6. Why are *two-sample z- procedures* hardly ever used?
- 7. Give the formula for the *two-sample t-statistic*, and define each variable in the equation.

- 8. Without using technology, how do you estimate the degrees of freedom when using twosample t-procedures?
- 9. How do you calculate the confidence interval for  $\mu_1 \mu_2$ ?

- 10. What assumption must you check if the sample sizes are small? How would you check?
- 11. If the two sample distributions for a two-sample problem are clearly skewed, how large should the samples be in order to use t procedures?

## 13.2 Comparing Two Proportions (pp.806-831)

- 1. Give the mean and standard deviation for the sampling distribution of  $\hat{p}_1 \hat{p}_2$ .
- 2. How do you calculate the standard error of  $\hat{p}_1 \hat{p}_2$ ?
- 3. Give the formula for the *standard error* when calculating a confidence interval for  $\hat{p}_1 \hat{p}_2$ , and define each variable in the equation.

4. Describe how to construct a level C confidence interval for the difference between two proportions,  $p_1 - p_2$ .

5. What conditions must be met in order to use *z procedures* for inference about two proportions?

- 6. State the null hypothesis for a *two proportion z-test*.
- 7. State and use diagrams to illustrate the three possible alternative hypotheses for a *two proportion z-test*.

- 8. What does  $\hat{p}_c$  represent, and how is it calculated?
- 9. Give the formula for the *two-proportion z-statistic*, and define each variable in the equation.

10. What conditions must be met in order to use *z procedures* for inference when comparing two proportions?