NOTES FOR THE WEEK OF NOV 27 TO DEC 4

NOTES ABOUT OFFICE HOURS AND REVIEW FOR FINAL EXAM:
Many of you have asked what you can do to improve your grades, study more wisely, etc. My best advice is to come to office hours, when I can work with you one-on-one to see where you are having problems. Therefore, I am scheduling lots of extra office hours between now and the final exam. Office hours tend to be busy on Monday afternoon, but not at other times. I am also available by appointment – just ask! Here are upcoming office hours, and review for the final exam:

- Mon, Dec 4 is one of the 3 days announced on the syllabus when I will NOT have my office hours from 3-4:30. I will have them 1-2:30 instead. See below for additional hours that day.
- Office hours this week: Wed, 9:30-11; Thurs, Nov 30, 10-12:00, Mon, Dec 4, 10:30-11:30 and 1-2:30
- Office hours for the final exam: Wed, Dec 6, 9:30-11, Thurs, Dec 7, 11-12; Fri, Dec 8, 1-3:30; Thurs, Dec 14, 2-5pm. (I will be out of town Mon to Wed, Dec 11-13.)
- Clayton Schupp will have office hours Mon, Dec 11, 12-2pm (no Monday review that week).
- Review session for final exam: Thursday, Dec 14, 10:30-12:30, 234 Wellman Hall (our classroom).
- Final exam: Friday, Dec 15, 10:30-12:30, 234 Wellman Hall

This week you will learn about hypothesis testing for 4 of the 5 parameters we have been studying. You had a brief introduction to hypothesis testing in Chapter 6 when we studied chi-square tests. Here is an overview of what we are covering this week, and where to find it:

Hypothesis Testing Topic	**Textbook Section(s)**	**CyberStats**
Background for hypothesis testing	Sections 9.9, 12.1, 12.2, 13.1	Unit C3
p = one population proportion	Section 12.3*	Unit C7 (covers conf. intervals too)
$p_1 - p_2$ = diff. in two proportions	Section 12.4	Unit C8, Uses 4 only
μ = one population mean	Section 13.2*	Units C4 and C6
μ_d = mean diff. in matched pairs	Section 13.3	Unit C9 (covers conf. intervals too)
Cautions about hypothesis testing	Section 12.5	Unit C3, Warnings

*You can skip the following subsections on finding exact p-values for a binomial proportion, and on the "rejection region approach": Pgs 521-524; pgs 559-561

Here is what you should know how to do:

- Calculate standardized *z* and *t* statistics; know when to use which one. (Section 9.9)
- Know how to write null and alternative hypotheses in word and symbols, including whether one-sided or two-sided. Remember that hypotheses are about *population parameters*!
- Understand the two types of errors and their consequences, in context. (Lesson 3 of Section 12.2).
- Know how to carry out the 5 steps of hypothesis testing for each of the 4 parameters above. The summary table on pages 586-587 should be very helpful for this! The following should be helpful for visualizing how to compute *p*-values: Table 12.1 (p. 517), Table 13.1 (p. 556).
- Understand the role sample size plays in statistical significance vs. practical importance (Section 12.5)

Interactivities to play with:
Unit C3: *Basics 3, Uses 2* - both designed to show the meaning of a *p*-value through simulation.
Unit C4: *Self-assess, top of page* – calculates a one and two-sided *p*-value for any *z*-score you enter.
Unit C6: *Basics 2 (all 3 interactivities)* – Illustrates the Student's *t* distribution and compares to *z*.

Exercises to hand in: Ch. 9: #77bc, 86, 94 **Ch. 12**: #2, 13, 19, 48a-e, 58, 83, 100ab, **Ch. 13**: #1, 14, 24