MATH 119 HW #5: CHAPTERS 8-11
SPRING 2013 – 4TH EDITION OF TRIOLA'S <u>ESSENTIALS</u>

<u>Write your name and class time and clearly separate sections! See syllabus.</u>
Show work where appropriate, and use "good form and procedure," as in class!
This is due when you take the Final.
You should photocopy your homework if you're not going to pick it up later.
Graded out of 10 points.
"*" denotes "See Hint/Comment below."

<u>Suggestions on rounding for Chapters 8-11:</u>

Round off to at least four decimal places or four significant digits, whichever is more detailed. Round off final z values to two decimal places. Round off final t and χ^2 values to three decimal places.

<u>For the *P*-value method, do the following. (List given on Final.)</u>

- State the null and alternative hypotheses, and identify which is the claim. You must use the kind of notation that we have used in class.
- Compute the value of the appropriate test statistic.
- **Give the corresponding *P*-value.**
- State whether or not the null hypothesis is rejected; this is your "decision."
- Write your final conclusion relative to the claim using the kind of wording we used in class.

<u>For the traditional method, do the following. (List given on Final.)</u>

- State the null and alternative hypotheses, and identify which is the claim. You must use the kind of notation that we have used in class.
- Compute the value of the appropriate test statistic.
  For a given homework problem, you only need to compute it once; the value will be the same as for the *P*-value method.
- **Find the critical value(s), and indicate the critical region.**
- State whether or not the null hypothesis is rejected; this is your "decision."
- Write your final conclusion relative to the claim using the kind of wording we used in class.

Notice that many of the steps are the same for the two methods (differences are in boldface), although it's good practice to work out all the steps for both and follow the logic.

CHAPTER 8 (HYPOTHESIS TESTING)

Section 8-2: #1, 3, 4, 9-15 odd

SKIP SECTION 8-3 FOR NOW; GO AHEAD TO …
Section 8-4: (Do **both** the *P*-value method and the traditional method for each.)
 #5 $\left(\text{Use } \alpha = 0.05\right)$, 7, 9*, 10, 11, 13, 15, 17

 On #9: Assume normality.

 Look at: #6.

Section 8-5: #4, 5, 7, and …

 (Do **both** the *P*-value method and the traditional method for each.)
 #15, 17, 19, 20, 22, 23

 Look at: #35.

NOW, GO BACK TO …
Section 8-3: #1, 2, 5, and …

 (Do **both** the *P*-value method and the traditional method for each.)
 #9, 10, 13, 15*, 17, 19, 23 $\left(\text{Use } \alpha = 0.05\right)$, 31

 On #15: Round off to at least five significant digits before
 rounding off your final *z* test statistic.

 Look at: #7.

NOW, JUMP TO …
Section 8-6: #3, and …

 (Do the traditional method for each. If the appropriate #df does not
 appear in Table A-4, use the closest #df that appears in the table.)

 #9*, 11, 13, 15

 On #9: $n = 35$, so we want 34 df; use 30 df in Table A-4.
 The solutions manual is wrong and gives the wrong χ^2 value.
 The back of the book is correct, though.

 Look at: #21.

SECTION 9-4 (TWO DEPENDENT SAMPLES – MATCHED PAIRS)

Section 9-4: #9* (use the traditional method)

> On #9: Take differences as (April BMI – September BMI). Use $s_d \approx 0.7711$. The solutions manual has a typo: $\overline{d} = 0.01$, not 0.1.

CHAPTER 11 (MORE CHI-SQUARE TESTS)

Section 11-2: (Do the traditional method for each.)
   #11, 20, 21 (use the top of p.567)

> Look at: #18 (this came up when we discussed runs and clusters), 19

Section 11-3: #1, 2, and …

   (Do the traditional method for each.)
   #7, 9*, 19

> On #9: The solutions manual has incorrect E values in the table. The rest is correct.

> Look at: #24

Section 11-4: Skip, though ANOVA is good to know!

CHAPTER 10 (CORRELATION AND REGRESSION)

Section 10-2: #33, 35, 36. Understand my notes, lecture, and handout.

> Look at: #37.

Section 10-3: Understand my notes and lecture.

Section 10-4: #5, 7. Understand the coefficient of determination, r^2. See p.531. For more background, you can read pp.529-531.

Section 10-5: Skip. Rank correlation is an interesting topic, though. It deals with…rankings (matched pairs of them). It is an example of a nonparametric (or distribution-free) test. We don't need such assumptions as a roughly normal distribution.