

Lecture/text homework assignment # 8

Note: Please circle your answers when appropriate!

Do not assume equal variances for any of these problems.

1) Exercise 7.25 on p. 249 [7.30, p. 245] {7.2.8, p. 232}

But assume a sd of 2.63 for males. Note that you will need to calculate the d.f. since you can't use what the book gives you.

2) Exercise 7.81, p. 309 [7.99, p. 304] {7.S.15, p. 295}

Change the last two values form “low-chromium diet” as follows:

54.1 → 40.1

52.1 → 35.6

(use 40.1 and 35.6 instead of 54.1 and 52.1)

Note that you need to do the entire problem with just a calculator (the book doesn't give you the usual values). Hopefully you've figured out how to calculate means and standard deviations using your calculator (if not, it won't take you too awfully long).

(Feel free to try R if you want. Instructions are in the R-notes on the webpage, and you should have had them in the various lab handouts).

3) Exercise 7.26, p. 250 [7.31, p. 245] {7.2.10, p. 232}. **However, don't do this as in the book.** Instead, go ahead and assume equal variances ($\sigma_1^2 = \sigma_2^2$) and do the problem (i.e., you don't get to use what the book gives you from its formula “7.1).

4) Exercise 4.15 on p. 143 [4.18, p. 139] {4.4.2, p. 140} (make sure you answer the question “How do you know?”)

5) Exercise 4.16 on p. 143 [4.19, p. 140] {not in the 4th edition; so reproduced below}

All editions:

Comment: you're supposed to take the given values and make a q-q plot.

Also, verify the last three normal scores (i.e., calculate the last three normal scores by hand). *Some of you might find this just a bit easier if you sort the Rainfall column (sort the normal scores column with the Rainfall column), before you verify the last three normal scores. This is not necessary, though.*

{4th edition:}

You need to use the method of calculating z-scores presented in class (i.e., not the 4th edition method) or your normal scores will not match those given in the problem.

{Here is the actual problem}:

The June precipitation totals, in inches, for the city of Cleveland, Ohio for the years 1964 - 1978 are given in the following table together with the corresponding normal scores. (Note that the data are given in chronological order, so the normal scores are not listed in increasing order). Use these values to create a normal probability plot of the data. Do you conclude that the distribution is normal?

Year	Rainfall	Normal score
1964	2.06	-0.94
1965	3.05	-0.52
1966	1.83	-1.23
1967	1.17	-1.71
1968	2.32	-0.71
1969	4.61	0.52
1970	4.98	0.94
1971	3.79	0.16
1972	9.06	1.71
1973	6.72	1.23
1974	3.57	-0.16
1975	4.10	0.33
1976	3.64	0.00
1977	4.91	0.71
1978	3.30	-0.33

6) 7.63, p. 302 [7.80, p. 296] {7.10.4, p. 290} Do this by hand and show all parts.

7) 7.65, p. 302 [7.82, p. 297] {7.10.6, p. 290}. Make sure you can do all parts (a - d). *In addition, make sure you understand why you get the results you get here.*

BIOL 312: Problems are due at the beginning of lab, Tuesday, July 9th.