

Homework # 5 assigned 3 March 2003, due 12 March 2003

Read Chapters 7, 8 and 9 in the text. They are short and somewhat repetitive of each other. Then do the following problems. Please use a word processor to type your solutions. You may handwrite the equations, if you prefer.

Please show your work even if you use S-Plus or a calculator to do the computations. Show the equations and indicate the numbers that you put into the equations. For instance, for problem 9.29:

$$\begin{aligned}\chi^2 &= \sum_{i,j} (\text{observed}_{ij} - \text{expected}_{ij})^2 / \text{expected}_{ij}; \text{expected}_{ij} = e_{ij} = n_i n_j / n; \\ \chi^2 &= \sum_{i,j} (n_{ij} - e_{ij})^2 / e_{ij} = (173 - 184.75)^2 / 184.75 + (125 - 113.25)^2 / 113.25 + \dots \\ &+ (73 - 84.75)^2 / 84.75 = 4.593.\end{aligned}$$

Solutions for this homework will be posted on 13 March 2003, so this homework must not be late. The exam on 17 March 2003 will cover material in Chapters 1-9.

1. 7.2
2. 7.10
3. 7.20
4. 8.12. Note  $n_1 = n_2 = 26$ , so t-statistic must be used.  
Part c should read "Repeat part **b** without assuming..."
5. 8.20
6. 9.8
7. 9.10
8. 9.16
9. 9.22
10. 9.28