Homework Notes  Chapter 5

Chapter 5: [5.1, 5.3(M), 5.5, 5.7(M), 5.9(T), 5.11(M), 5.13, 5.15, 5.17-5.26], 5.27, 5.29, 5.31, 5.33, 5.34(M for equation, the rest by hand), 5.37(M), 5.38(M), 5.39(M), 5.41(M draw the lines on the graph by hand), 5.43, 5.49(A), 5.53(M), 5.55(M)

In my classes, before you do any homework problems, you should go through the worksheet as part of learning about the first 8 pages of this chapter.

5.1 – 5.3.  Be sure to learn to compute the equation of the regression line from the means, standard deviations, and correlation coefficient.  And also to use MINITAB to compute it. However, the interpretations are even more important than the computations.

5.5.  When you see numerical correlations given, you should visualize pictures more or less like those on page 108. From those, you can answer the question in this problem.

5.7.  Since there are so few points, this is not too much work to do by hand (except, of course, for finding the correlation in part c.) But you should also practice doing it with MINITAB. That will include finding the regression equation, storing the residuals, and then using those stored residuals – both to find the sum of them, and to find the required correlation coefficient. Even though it wasn’t requested here, you could also make a scatterplot of the residuals (on the vertical axis) versus the x-values (on the horizontal axis.)

5.9.  Use this applet to explore the concept of influence in regression. Write what you learn in your homework.

5.11.  This is a rather long problem.  It is a good idea to make a “plan” before you start working it to keep track of all the computations you need to do.  Notice that there is not a clear answer about how much difference a point has to make in order for it to be influential. Think about what the answer key says and ask about it if you need to do so.

5.13, 5.15.  These are somewhat open-ended questions.  It is important for you to write your answers in your own words and then determine whether what you say communicates the same type of answers as those given in the answer key.

5.27-5.37.  Notice there is much emphasis on interpretations. The tests will have that emphasis too.

5.38.  The point of this question is that the numerical summaries (correlation coefficient and regression line) are not adequate to understand the data set. You must also look at graphs. Since this is an even-numbered problem, I’m not giving you the answers. I believe you’ll find it fairly easy to answer these when you look at the scatterplots.

5.39 and 5.41.  Again, make a plan for each before you start working.

5.43-5.55.  All the problems assigned in here are typical types of summary problems that we see at the ends of most chapters. While some calculations are needed, the interpretations are most important.