Homework Solutions
Applied Regression Analysis

WEEK 6

Exercise Four

Test whether the two SOFA cohorts differ significantly, controlling for mechanically ventilated days.

> From exercise three we know that the interaction term is not significant. Hence, we will fit a model without the interaction term. Type "regress max_grip SOFA MVdays" in the command window. Your output should look like the second part of the output in the previous exercise.
>
> From the output, we see that, after controlling for *MVdays*, there is no difference between the SOFA groups (i.e., p = .294). This is the p-value of the t-test which can be obtained from the column next to the t statistic in the table.

Exercise Five

Test whether the two SOFA cohorts have the same slope. Do they have the same intercept? Are they coincident?

> From the same output that we used exercise three, we see that, for the model containing sofa11 MVdays and MVxSOF, the interaction term is not significant, so we cannot reject Ho: β_3 = 0 so we conclude that the lines are parallel. From the model containing sofa11 and *MVdays (*the output that we used for the previous exercise*)* we see that we cannot reject Ho: β_2 = 0 as the p-value for its t test is greater than 0.05, so the lines have the same intercept. Therefore we conclude that the lines are coincident.