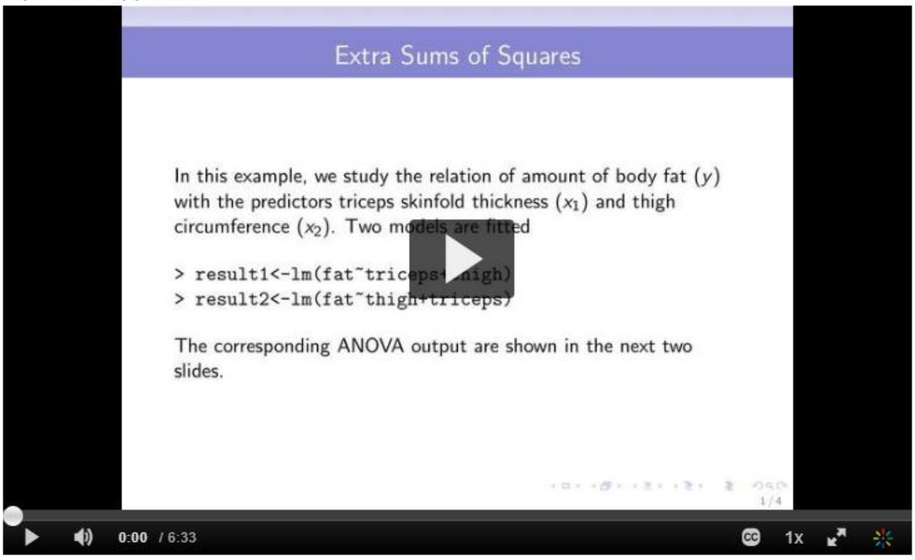
Topic 5.2: Extra Sums of Squares and the Partial *F* Test

Read Section 3.3.2 (after Example 3.4) of your textbook. As you read, take notes on the following.

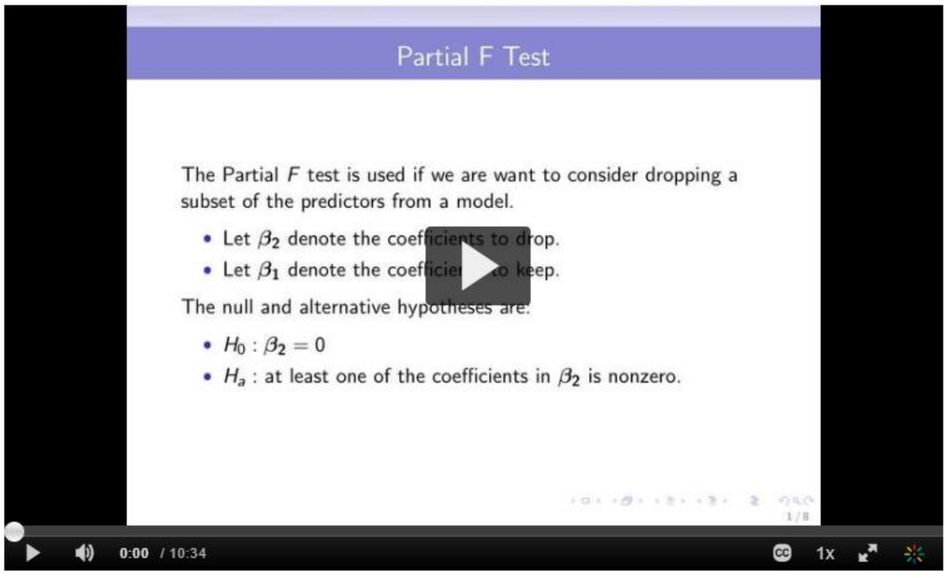
1. Describe, in your own words, what the extra sums of squares method does in a multiple linear regression model.
2. Consider the partial *F* test associated with the extra sums of squares method:
   - What are the null and alternative hypotheses?
   - How is $SS_R(\beta_2|\beta_1)$ written in terms of $SS_R(\beta_1)$ and $SS_R(\beta_2)$?
   - Write down the formula for the partial *F* statistic. What distribution is the partial *F* statistic compared to? Describe, in your own words, what the partial *F* statistic is measuring.
   - How is the partial *F* statistic different or similar to the *t* statistic and the ANOVA *F* statistic from previous modules?

Watch this video for an overview of the extra sums of squares method including a graphical representation, and an equivalent approach.



mod5_extra.pdf
Slides to accompany the "Extra Sums of Squares" video

mod5_partialF_example.pdf
Watch this video to go over a worked example on how to use the partial F test.



Refer to the file below to learn how the partial *F* test compares with the *t* test and ANOVA *F* test that you learned about in module 4.

mod5_tests.pdf
Hypothesis Testing in Multiple Linear Regression