Fox Module 10 Advanced multiple regression

- Multiple correlation
- Standardized regression coefficients

Read Section 5.2.3, “Multiple correlation,” on pages 92-94.

Know the formula for the standard error of the regression on page 92 and in the gray box on page 83, using n-k-1 degrees of freedom. The formulas for RSS, RegSS, and R^2 are the same as those for simple linear regression.

Know the formula for the corrected (adjusted) R^2 on the top of page 94.

- The final exam may give R^2 and the number of data points and ask for the adjusted R^2.
- Alternatively, it may give the adjusted R^2 and back into the (unadjusted) R^2.

Some student projects use the adjusted R^2 to select the optimal number of explanatory variables. See the project template on sports won-loss records.

Read Section 5.2.4, “Standardized regression coefficients,” on pages 94-96. Know the example on page 96. The final exam asks you to work out standardized coefficients.

Fox does not emphasize standardized coefficients much. Other statisticians emphasize them more, particularly if some explanatory variables have diffuse distributions and some have compact distributions.

The final exam may give a set of N points and derive standardized coefficients. Other problems give coefficients and standard deviations and derive standardized coefficients.