

Practice exercise on test and confidence interval for parameters.

Use the data in GPA.dta for this exercise.

(i) Consider the equation:

$$\text{colGPA} = \beta_0 + \beta_1 \text{hsGPA} + \beta_2 \text{ACT} + \beta_3 \text{skipped} + u$$

where colGPA is cumulative college grade point average, hsGPA of high school GPA, in hundreds, and skipped is the average lectures skipped per week. What are your expectations for the coefficients in this equation. Which ones are you unsure about?

(ii) Estimate the equation in part (i) and report the results. Test for the hypothesis $\beta_3 = 0$.

(iii) Construct a 90% confidence interval for β_3 . Interpret your results.

(iv) Test for the hypothesis $\beta_1 = .4$ against the two-sided alternative at the 5% significance level.

(v) Test for the hypothesis $\beta_1 = 1$ against $\beta_1 < 1$ at the 10% significance level.