

IEOR 3600: HMWK 12

1. *Confidence intervals for the slope β_1 and intercept β_0* : Chapter 11. For Problems 1,2,3,6 (pages 399-401) that you did for HMWK 10, construct a 95% confidence interval for the slope β_1 , and the intercept β_0 (using Page 410). (We are assuming the linear model $Y = \beta_0 + \beta_1 x + \epsilon$ with error ϵ that is normally distributed with mean 0 and variance σ^2 .)
2. *t- test for testing if $\beta_1 = 0$* : Use the t test as explained in Example 11-2, Page 406: For the same problems above (1,2,3,6), do a test $H_0 : \beta_1 = 0$ versus $H_1 : \beta_1 \neq 0$ using $\alpha = 0.05$ for 1,2, and $\alpha = 0.01$ for 3,6. For each case, also find the P -value.
3. For Problem 6, do the t test with $\alpha = 0.01$ for $H_0 : \beta_1 = -0.05$ versus $H_1 : \beta_1 < -0.05$.
4. *Prediction intervals*: (Use Page 414 “prediction interval” method). Page 415: 37(d), 39(d), 42(d)
5. *Multiple linear regression (Ch. 12)* Page 448: 1,2.