

STAT 200B: Assignment 6

due in class Tuesday, March 17th 2009

Homework

From the book: Problems 4.9.7 and 4.9.14.

Lab

Consider the `cars` dataset in `R`. Let X_i be the speed for test i , and let Y_i be the stopping distance for test i . Consider the model $Y_i = \beta_0 + \beta_1 X_i + \epsilon_i$, where $\epsilon_i \sim N(0, \sigma^2)$. Here, β_0 , β_1 , and σ^2 are unknown parameters. Estimate these 3 parameters, and provide 95% exact confidence intervals for the first two. Plot the data along with the fitted line. Plot the residuals as a function of X . Do any of the model's assumptions appear to be suspect?