Week 12 homework problems

1. Use the `Highway` data involved in problem **10.2**. Use the response log(`rate`×`len`) and treat `lwid` as the focal regressor. Test the significance of `lwid` in explaining the response. Use the guidelines from Section 2 in the lecture videos to determine which of the other regressors (`adt`, `trks`, `lane`, `acpt`, `sigs`, `itg`, `slim`, `shld`, and `htype`) to test `lwid` in the presence of. Assume that scientific considerations dictate that `acpt` and `slim` be included in the model that tests `lwid`. Interpret the result of your test.

2. Do problem **10.3**.

3. Use the `galapagos` data described in problem **10.6**. Regard `NS` as the response and `Area`, `Anear`, `Dist`, `DistSC`, and `Elevation` as the possible regressors. Assume `Elevation` equals 80 m for Baltra, 10 m for Coamano, 38 m for Daphne Major, 71 m for Eden, 23 m for Las Plazas, and 28 m for Seymour. Fit a linear model with LASSO with three values of λ: 0.3, 0.2, and 0.1. Report the regressors your three models admit and compare their coefficient estimates.