

## STATS 500 - Homework 5

Due in class November 12

1. Using the `sat` data, fit a model with `total` as the response and `takers`, `ratio`, `salary` and `expend` as predictors using the following methods:

- (a) Ordinary least squares
- (b) Least absolute deviations
- (c) Huber's robust regression

Compare the results. In each case, comment on the significance of predictors.

2. Use the `prostate` data with `lpsa` as the response and the other variables as predictors. Implement the following variable selection methods to determine the “best” model:

- (a) Backward Elimination
- (b) Adjusted  $R^2$
- (c) Mallows'  $C_p$

Comment on the models selected (similarities and/or differences). Compare the fits of the full model and those selected by the methods above.