2/5/18
Day 5

Four: Predictions

There are three sorts of uncertainty associated w/ the linear regression prediction:

1) The coefficients $\hat{\beta}_i$ estimate β_i i.e. the least squares plane only estimates the true population plane. Use confidence intervals
   - A reducible error
2) Model bias from assuming the true model is linear. Another reducible error.
3) The error from ε. We use prediction intervals to see how much Y will vary from $\hat{Y}$.
   - Prediction intervals are wider than confidence intervals.

Recall $Y = f(X) + \varepsilon$.

- Confidence intervals aim to bound $f(X)$
- Prediction intervals aim to bound Y.