Lecture 35: Chapter 13, Section 2
Two Quantitative Variables
Interval Estimates

- PI for Individual Response, CI for Mean Response
- Explanatory Value Close to or Far from Mean
- Approximating Intervals by Hand
- Width of PI vs. CI
- Guidelines for Regression Inference

Looking Back: *Review*

- **4 Stages of Statistics**
  - Data Production (discussed in Lectures 1-4)
  - Displaying and Summarizing (Lectures 5-12)
  - Probability (discussed in Lectures 13-20)
  - Statistical Inference
    - 1 categorical (discussed in Lectures 21-23)
    - 1 quantitative (discussed in Lectures 24-27)
    - cat and quan: paired, 2-sample, several-sample (Lectures 28-31)
    - 2 categorical (discussed in Lectures 32-33)
    - 2 quantitative

Correlation and Regression *(Review)*

- Relationship between 2 quantitative variables
  - Display with scatterplot
  - Summarize:
    - Form: linear or curved
    - Direction: positive or negative
    - Strength: strong, moderate, weak

If form is linear, correlation r tells direction and strength.

Also, equation of least squares regression line lets us predict a response $\hat{y}$ for any explanatory value x.