15.1 Inference for Linear Regression

- Is there really a linear relationship?
- What is the true slope?

$\hat{y} = a + bx$ (predicted) → used to estimate

a, b: statistics (from sample)

$y = \alpha + \beta x$: parameters (true values)

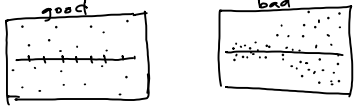
Conditions

Linear (actual relationship linear)
- check scatterplot for linear shape
- no pattern in residual plot

Independent (is each observation indep. of another?)
- If sampling without replacement, use the 10% rule

Normal (for all x's, y varies normally)
- make stemplot, histogram, dot plot, or normal probability plot of residuals and check for no strong skewness or outliers

Equal Variance (st. dev. of y is the same for all x's)
- scatter of residuals should be about the same for each x.



Random

* Dont overreact to minor violations