

Regression Review Self-Test

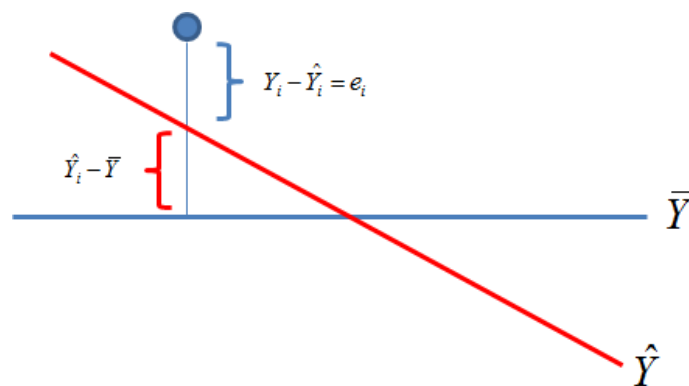
1. What do variance and standard deviation represent?
2. What is a sampling distribution?
3. What is the difference between the standard deviation and standard error?
4. What role does the standard error play in the confidence interval?

$$CI = b \pm (SE_b)(t\text{-value})$$

5. What are the definitions of covariance and correlation?
6. What does it mean to say that a regression line is a conditional average?
7. Explain the "intuitive" regression slope as an input, output function.

$$\text{Slope} = \text{cov}(x,y) / \text{var}(x)$$

8. How does the regression line split the variance of Y into the explained and unexplained portion?



9. What are the three parts of the standard error of the slope?

$$SE_b = \sqrt{\frac{\text{residual}}{\text{sampSize} \cdot \text{var}(x)}}$$