Topic 2.5: Prediction Interval of a New Response

Read Section 2.5 of your textbook. As you read, take notes on the following questions.

1. Write down the formula for the prediction interval of a new response. For this prediction interval:
   - How does increasing the level of confidence affect the width of this interval?
   - How does model fit affect the width of this interval?
   - How does the width of this change as the value of the predictor variable moves farther away from the sample mean of the predictor?

2. Describe, in your own words, what a prediction interval of a new response tells us.

3. Compare the standard errors associated with the confidence interval of the mean response and the prediction interval of a new response. Which is larger? Explain why that answer makes practical sense.

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