# Guided Workshop 5: Prediction Interval for Straight-Line Regression

***Instructions:*** Download the file “Guided Workshop 5 – STARTER.xlsx”. I would recommend setting aside about an hour for this activity. When you are ready to start the workshop, open and begin the video “Guided Workshop 5: Prediction Interval for Straight-Line Regression”.

The video will have optional in-video questions to help teach you and guide you along. You won’t submit this document, but it will be a good template/guide for the activity.

At the end, after you have completed the Excel file above, you will open the “Guided Workshop 5 Submission” quiz, where you will enter the answers to the questions at the end of this document.

***Background/Objective***

For this workshop, you’ll be putting together a worksheet that will calculate, in real time (i.e., a live solution), a prediction interval on a future response for a straight-line linear regression model. The user can paste x-y data into a region of the worksheet, choose a risk level and desired x-value, and the prediction interval will be output. The analysis is very similar to that performed in the screencast “Confidence Interval on the Mean Response”. It is recommended that you have the Week 5 Cheat Sheet handy, as you will use several of the formulas on that document.

When you are done putting together your Excel file, answer the following questions in the “Guided Workshop 5 Submission Quiz” on Coursera (the text fields below are only for your benefit – you won’t be submitting this document).

1. What is ? Click here to enter text.
2. What is ? Click here to enter text.
3. What is ? Click here to enter text.
4. What is the estimator for the slope, ? Click here to enter text.
5. What is the estimator for the intercept, ? Click here to enter text.
6. What is the standard error, ? Click here to enter text.
7. What is the Predicted y (cell N12) when ? Click here to enter text.
8. What is the lower end of a 95% prediction interval when ? Click here to enter text.
9. For the second set of data (depth vs. voltage), what is the upper end of a 98% prediction interval when ? Click here to enter text.

**That’s all! 😊**