

- 1) Using the data from Exercise 3.1 in Myers, Montgomery, and Anderson-Cook (MMA-C), complete the following analysis by hand.
 - a) Calculate an ANOVA and indentify the significant effects.
 - b) Draw the AB interaction plot. Interpret the plot. What levels of of the factors would you recommend?
 - c) Fit a regression model to the data using the effect estimates and coded variables.
 - d) Assuming that the regression model is adequate, at what rpm must the drill run to maintain vibration less than 25 for the 1/8 inch bit?

- 2) Using the data from Exercise 3.9 in MMA-C, complete the following analysis using an appropriate statistical software package.
Note: The level for factor D in Treatment Combination d should be +.
 - a) Calculate an ANOVA and indentify the significant effects.
 - b) Estimate treatment means for the significant effects and recommend appropriate settings.
 - c) Prepare residuals plots for the analysis. Are there any indications that the ANOVA assumptions have been violated?