

Quiz #3

Steps in Robust Design (Data Analysis)

The factor effect plots below represent the results of an orthogonal array based matrix experiment.

- 1) How many total experiments were required to gather the data represented in the figures assuming one noise factor with two levels in the outer array and no replicates?
- 2) Which control factor should be used as the scaling factor assuming the additive model holds?
- 3) What settings of the other control factors will maximize the S/N ratio assuming the additive model holds?
- 4) What will be the predicted S/N ratio at the optimal settings selected in problem 3 above? (Estimate your answer from the graphs).
- 5) After optimizing the S/N ratio, what level should be selected for the scaling factor in order to place the mean response of the system at 16 seconds? (Assume an additive model holds for the mean response of the system)

