**Synthesis of Results for Part 2**

1. **How does the ANOVA- vs regression-design perform?**

The regression design performed the best due to the linear nature of the data. The regression had the lowest p values and thus the easiest to obtain significance with. Because of the linear nature of the data, it makes sense that the regression was the better fit for the data. The ANOVAs overall had higher p values resulting in an increased difficulty in obtaining significant results, as can be seen on the graph below. The ANOVAs were not as effective for this data because ANOVAs test data that are grouped into categories. Because the linear data was continuous and not categorical, the ANOVA designs were not able to describe this continuous data set as effectively as the regression.

1. **Does the relative performance of these experimental designs depend on the number of levels in the ANOVA experiment (2, 4, vs. 8)?**

Yes, it would appear that ANOVA level has an positive relationship with performance, meaning that as ANOVA level increases, the performance of the model also increases. This can be seen in the average p-values we obtained for each ANOVA level in the final part of the project, as the p-values for the 8 level are less than those of the 4 and 2 level ANOVA. This means that the model has a stronger fit for the 8 level than for the 4 and 2 level. We hypothesize that this is due to the number of segments in each level. The 8 level ANOVA is divided into the most segments, making it the closest of our tested levels to the continuous regression, meaning it is the closest fit of the ANOVA models.

