Be able to answer “Daily Analysis” type questions giving not just the type of analysis but also the Null and Alternate hypotheses.

Things you should be able to do in ANOVA with SAS PROC MIXED output

- Find error term(s), i.e. residual error = SS deviations / d.f. error = MSE
- Find and interpret “null test” of homogeneous variance when GROUP= Statement is requested in proc mixed.
- Compare two models using the AIC statistic when other tests are not available.
- Determine if there are significant differences among two or more treatments
- Understand the test of hypothesis for differences in treatment levels, ADJUSTED and UNADJUSTED, and be able to interpret pairwise tests of individual levels
    - Using range test (e.g. from Saxton’s macro)
    - Using pairwise tests (adjusted and unadjusted), only pairwise tests give a P value
    - Find the confidence interval of the estimated test for **differences** in treatment levels (if present in output)
- Find the estimated mean for each treatment level and its confidence interval (if present)
- Understand the test of hypothesis for LSMeans
- Understand the test of normality of residuals

Things you should be able to do in regression with SAS PROC REG output

- Find an interpret the intercept
- Find an interpret the slope
- Place a confidence interval on a slope or intercept
- Find estimate of the dependent variable for any given value of the independent variable
- Put a confidence interval on the predicted mean estimate
- Put a confidence interval on the estimate of an individual
- Test an hypothesized value of the slope
- Understand the test of normality of residuals
- Examine residuals for issues (outliers, non-homogeniety, curvature)