STAT TEST CORRECTIONS

1) D ⋮ A

↓

must look at standard error!

2) B ⋮ C

Indicator variables under one categorical variable

3) 9, 53, 65 (B, C, D) → leverage

4) 66, 65, 53 (A, B, D) → studentized residuals

5) No Corrections

6) a No Correction

b. H_0: $\beta_1 = \beta_2 = \beta_3 = 0$

H_A: $\beta_1 \neq \beta_2 \neq \beta_3 \neq 0$

p-value: 1.669×10^{-12}

Since the p-value is less than the significance level of 0.05, we reject the null hypothesis and can claim at least one of the terms in Model 3 is significant.

7) a. Must say both the interaction term and the categorical variable to test significance

$H_0: \beta_2 = \beta_3 = 0$

$H_A: \beta_2 \neq \beta_3 \neq 0$

b) I would choose the test centered around the full Model 3 (6b). Looking at the normal quantile plots 3 fitted value plot, you can see Model 3 is most fit to the model assumptions of Normality, constant variance, and linearity. This mean it is most likely to produce valid results when undergoing hypothesis tests. While other models can perform these tests, the Normal plots have a worse fit, putting into question the significance tests.

8) In this case, I would use an added variable plot, check assumptions, and look at the R^2 value.