Test

Dulce Ventura Corrections

1) b & d

2) c & d

5) a & b

8a) Based on the quantiles plot, we can say that the data is normally in the center, but has heavier tails as seen in the beginning & end of the plot. Overall, I say that it would meet the conditions of normality for inference. Given that the data comes from a random sample of singaporean diamonds, we can treat it as a random sample of diamonds at the time. We don't have information on where the diamonds are mined, from, but we can assume that the singaporean diamonds were chosen at random. Therefore, ~~this~~ it satisfys the randomness assumption for inference.

As for assessing the fit of the model, the residual plot does not demonstrate any pattern in the plots (they look random) therefore the linearity assumption is met. There is also constant variance throughout the plot except for some few points (they may be outliers). Overall, the constant variance assumption is met. Ite.

9d) To determine if this model is a good fit for the data after assessing the assumptions, we can utilise the p-value for β_1 on the ANOVA table. This p-value is produced by a ~~t-test. and allows us to either reject the null~~. The p-value inform us to reject the null hypothesis ($H_0: \beta_1 = 0$) and accept the alternative hypothesis ($H_a: \beta_1 \neq 0$) meaning that the slope of the linear relationship is not 0.

Another number we can use is the R^2 value. The coefficient of determination assesses the fit by computing the ratio of how much error the model accounts for over the total variation. The smaller the R^2, the less variation that the model accounts for indicating it may not be a good fit.