STAT 3400 - Homework #11

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Due April 27, 2023

Problem 25.5.2

a. Most Correlated: Nights Out and Hours Slept Second Most Correlated: GPA and Nights Out Least Correlated: GPA and Hours Slept

b. Neither are significant predictor variables when used on their own because their p values are greater than our level of significance (0.05) in the models using each of them individually.

c. Neither are significant predictor variables when used together because their p values are greater than our level of significance (0.05) in the model using both of them together.

Problem 25.5.4

a. Most Correlated: Volume and Diameter Second Most Correlated: Volume and Height Least Correlated: Height and Diameter

b. Both are significant predictor variables when used on their own because their p values are less than our level of significance (0.05) in the models using each of them individually.

c. Both are significant predictor variables when used together because their p values are less than our level of significance (0.05) in the model using both of them together.

Problem 25.5.6

a. The could be multiple combinations of these variables for which the DDPRQ-10 score we predict is 30.594 because some predictors have a negative slope estimate while others have a positive slope estimate. One of the hypothetical combinations of predictors that would result in this value is a female physician who is 0 years old and that has had 0 years of training since 30.594 was the intercept.

b. There is no evidence of a significant association between DDPRQ-10 score and any of the physician features because all the p values not including the intercept are greater than our level of significance (0.05).

Problem 25.5.8

a. Most Correlated: Weeks and Weight Second Most Correlated: Weeks and Visits Least Correlated: Visits and Weight

b. Both are significant predictor variables when used on their own because their p values are less than our level of significance (0.05) in the models using each of them individually.

c. When using both visits and weeks to predict the baby's weight, weeks is significant but visits is not because the p value for weeks is less than our level of significance (0.05), but the p value for visits is higher.