STA 3180 Statistical Modelling: Model Selection

Extra Practice Problems: Model Selection

1. Suppose you have a dataset with 10 predictors and you want to select the best model. How would you go about solving this problem?

Answer: To solve this problem, I would first use a method such as stepwise regression or best subset selection to identify the best model. This involves fitting all possible models with different combinations of predictors and then selecting the model with the lowest AIC or BIC value. [CORRECT]

2. Suppose you have a dataset with 10 predictors and you want to select the best model. You decide to use forward selection. What is the first step in this process?

Answer: The first step in forward selection is to fit a model with only the intercept term. Then, the predictor with the highest correlation with the response variable is added to the model. This process is repeated until the model with the lowest AIC or BIC value is found. [CORRECT]

3. Suppose you have a dataset with 10 predictors and you want to select the best model. You decide to use backward elimination. What is the first step in this process?

Answer: The first step in backward elimination is to fit a model with all 10 predictors. Then, the predictor with the lowest correlation with the response variable is removed from the model. This process is repeated until the model with the lowest AIC or BIC value is found. [CORRECT]

4. Suppose you have a dataset with 10 predictors and you want to select the best model. You decide to use best subset selection. What is the first step in this process?

Answer: The first step in best subset selection is to fit all possible models with different combinations of predictors. Then, the model with the lowest AIC or BIC value is selected. [CORRECT]