Statistics 520

Five Minute Quiz 5

Fall 2025

1. (2 pts.) Which of the following are needed in an additive error regression model in order for least squares estimators to have optimal small sample properties, such as being UMVU?

   (a) The response variables are linear functions of the error terms.

   (b) The error terms have constant variance.

   (c) The error terms have normal distributions.

   (d) Estimators of the regression parameters are linear combinations of the response variables.

   Answer: (a), (b) and (d)

2. (2 pts.) True or False. Relative to the analysis of regression models having additive errors,

   (a) In order to arrive at sampling distributions for ordinary and weighted least squares estimators we typically assume the error terms have normal distributions.

   (b) In order to arrive at approximate (asymptotic) sampling distributions for generalized least squares estimators we typically assume the error terms have normal distributions.

   Answer: (a) is True, (b) is False