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Module 9: Single and Multivariate Linear Models > The Linear Model > Properties of Least Squares Estimation - Quiz

Properties of Least Squares Estimation - Quiz

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Question 1
1/1 point (graded)
Why do we generally use OLS (the "ordinary least squares") estimator to estimate β_0 and β_1? (Select all reasons that hold under the Classical Linear Regression Model.)

☑ a. Provides the most efficient unbiased estimate of βs

☑ b. Assuming normality of errors, it is the maximum likelihood estimator

☐ c. Is the fastest estimator to calculate

☑ d. Provides estimates that are consistent and asymptotically normal

✔

Explanation
We generally use OLS estimators because they hold several nice properties (a, b, and d above) that do not hold true of the other estimators we have seen. There may be times when the other estimators are useful (e.g. when you're worried about outliers having undue influence), but typically we choose to use OLS estimators because the properties are so good.

Submit	You have used 1 of 2 attempts

✔ Correct (1/1 point)

Question 2

1/1 point (graded)
There are closed-form solutions for least squares estimators.

- ⦿ a. True ✔

- ○ b. False

Explanation
Unlike some other estimators where we have to do complicated numerical minimization, least squares estimators do have closed-form solutions. It is tedious to derive the closed-form solutions using summation notation, but we will do this with matrix notation in a later lecture.

Submit	You have used 1 of 1 attempt

✔ Correct (1/1 point)

The Multivariate Linear Model
due Nov 28, 2016 05:00 IST   ✎

Module 9: Homework
due Nov 21, 2016 05:00 IST   ✎

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