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Conditional Expectation - Quiz

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Question 1

1/1 point (graded)

True or False: A conditional expectation is simply an expectation of a conditional distribution.

- (•) a. True ✔
- ( ) b. False

Explanation

This is true. A condition expectation is simply an expectation of a conditional distribution. Equivalently, $E[Y|X] = \int y f_{y|x}(y|x)dy$.

Submit You have used 1 of 1 attempts

✔ Correct (1/1 point)

▾ Module 5: Moments of a Random Variable, Applications to Auctions, & Intro to Regression

Moments of a Distribution and Auctions
Finger Exercises due Oct 31, 2016 at 05:00 IST

Expectation, Variance, and an Introduction to Regression
Finger Exercises due Oct 31, 2016 at 05:00 IST

Module 5: Homework
Homework due Oct 24, 2016 at 05:00 IST

▸ Exit Survey

Question 2

1/1 point (graded)

The "Law of Iterated Expectations" states that:

- (•) a. The expectation of the expectation of Y given X is equal to the expectation of Y ✔
- ( ) b. The expectation of Y given X is equal to the expectation of X given Y
- ( ) c. The expectation of Y given X is equal to the expectation of Y multiplied by the expectation of X
- ( ) d. The expectation of the expectation of Y given X is equal to the expectation of Y multiplied by the expectation of X

Explanation

The "law of iterated expectations" holds that the expectation of the expectation of Y given X is equal to the expectation of Y. Equivalently, $E[E[Y|X]] = E[Y]$.

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Question 3

1/1 point (graded)

The "Law of Total Variance" states that:

a. The variance of the expectation of Y is equal to the variance of Y given X added to the expectation of the variance of X given Y

b. The variance of Y is equal to the variance of Y given X added to the variance of X given Y

c. The variance of the expectation of Y is equal to the variance of Y given X added to the variance of X given Y

d. The variance of of Y is equal to the variance of the expectation of Y given X added to the expectation of the variance of Y given X ✔

Explanation

The "law of total variance" holds that variance of Y is equal to the variance of the expectation of Y given X added to the expectation of the variance of Y given X. Equivalently, $Var(E[Y|X]) + E[Var(Y|X)] = Var(Y)$.

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

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