

MITx: 14.310x Data Analysis for Social Scientists

Helj



Bookmarks

- Module 1: The Basics of R and Introduction to the Course
- ► Entrance Survey
- Module 2: Fundamentals of Probability, Random Variables, Distributions, and Joint Distributions
- Module 3: Gathering and Collecting Data,
 Ethics, and Kernel
 Density Estimates
- Module 4: Joint,
 Marginal, and
 Conditional
 Distributions &
 Functions of Random
 Variable

Module 5: Moments of a Random Variable, Applications to Auctions, & Intro to Regression > Moments of a Distribution and Auctions > A Model for Auctions - Quiz

A Model for Auctions - Quiz

 \square Bookmark this page

Question 1

1/1 point (graded)

In this and other lecture videos, the concept of the $m{n^{th}}$ order statistic refers to:

- a. The mean, or expectation, of a random variable
- b. The minimum value of the random variable
- ullet c. The random variable defined as the maximum among a group of $m{n}$ independent and identically distributed random variables llet
- ullet d. If you order the values of the random variable, choose n, and the n^{th} order statistic is the value at position n

Explanation

Generally speaking, the n^{th} order statistic refers to the maximum in an i.i.d. group of random variables.

 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

<u>Homework due Oct 24, 2016 at 05:00 IST</u>

Exit Survey

Submit

You have used 1 of 2 attempts

✓ Correct (1/1 point)

Question 2

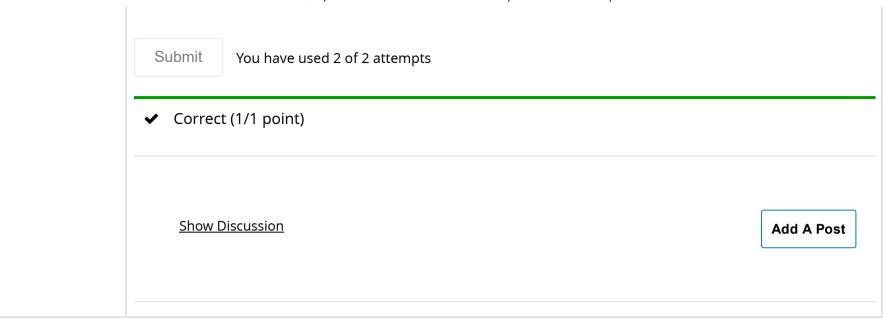
1/1 point (graded)

As presented in class, expected profits from a sale at a posted price are calculated by:

- a. Taking the expected value of the highest bid
- b. Multiplying the posted price by the probability that at least one potential buyer has a value above the posted price
- c. Multiplying the posted price by the probability that all potential buyers bids above the posted price
- d. Taking the nth order statistic of the buyer values

Explanation

Expected profits from a sale are calculated as the probability that at least one potential buyer has a value above the posted price. This is represented by the equation $E(\pi(p)) = pP(max_iV_i \geq p)$, where p refers to the amount that you would get if you decided to sell at a posted price and $P(max_iV_i \geq p)$ refers to the probability that you sell the good. The probability that you sell the good is the probability that the n^{th} order statistic (or the maximum value) of the set of values is greater than or equal to p.



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