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A Model for Auctions - Quiz

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Question 1

1/1 point (graded)

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

- a. The mean, or expectation, of a random variable
- b. The minimum value of the random variable
- c. The random variable defined as the maximum among a group of n independent and identically distributed random variables ✔
- 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.

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✔ 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 $E(\pi(p)) = pP(max_i V_i \geq p)$, where p refers to the amount that you would get if you decided to sell at a posted price and $P(max_i V_i \geq p)$ 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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