Exercise 15.1: Auction Forensics

Recall

- two bidders, $U[0,1]$ values, first-price auction
- Bayes-Nash equilibrium strategy: $\sigma(v) = v/2$

Exercise 15.1: Auction Forensics

Setup:

- two bidders, $U[0,1]$ values, first-price auction
- bids are $b_1 = 0.1$ and $b_2 = 0.2$

Questions: What are the values

- of bidder 1?
- of bidder 2?

Lecture 15: Inference and Learning

Course work:

- Project 4 due tonight

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Last Time:

- optimization of truthful auctions (cont).
- optimal first-price auctions.
- learning to price.
- learning to auction.

Lecture 15: Inference and Learning

Course work:

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Last Time:

- optimization of truthful auctions (cont).
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- learning to price.
- learning to auction.

Today:

- value inference (econometrics)
- inference for learning bidders

Exercise 15.2: Proportional Bids

Recall

- in winner-pays-bid mechanism with bid-allocation-rule $\tilde{x}(\cdot)$, can infer value as $v = b + \tilde{x}(b)/\tilde{x}'(b)$.

Exercise 15.2: Proportional Bids

Setup:

- proportional bids $\tilde{x}_i(\mathbf{b}) = b_i / \sum_j b_j$
- winner-pays-bid
- observed bids: $b_1 = 1$, $b_2 = 2$

Questions: What is the value v_2 of bidder 2?