

Auctions

Two things to note:

1. Throughout this section I will assume that there are only two bidders. This assumption is not all that unrealistic because for the types of auction we study, what really matters ultimately is the two highest bidders.
2. We will use logic rather than math to study the scenarios. The reason is, well, the math is just too hard...

I. Basics

Bidders: 1 and 2

Valuations: v_1 and v_2

- Valuations are how much the good worth to each bidder. Each bidder knows her own valuation but not others'.

Bidding Strategies: $b_1(v_1)$ and $b_2(v_2)$

- Bidding strategies are functions of valuations—given my valuation, my bid strategy will tell me what bid maximizes my expected utility. Unlike valuations, the bidding strategy of every bidder is common knowledge. Not that bad an assumption because we assume all bidders are identical except for their valuations.

Without loss of generality we shall assume the row of bidder 1 in our analyses. Our goal: get as large a gain as possible—in other words maximize $v_1 - b_1$.

II. English Auction

Open cry: The auctioneer publicly announces higher and higher prices until there is only one bidder left.

Suppose $v_1 > v_2$. What would happen? What should bidder 1 do?

Suppose instead $v_1 < v_2$. What would happen now and what should bidder 1 do?