

Some Canonical Auctions

- English
- Japanese
- Dutch
- First-Price
- Second-Price
- All-Pay

English Auction

English Auction

- auctioneer starts the bidding at some “reservation price”
- bidders then shout out ascending prices
- once bidders stop shouting, the high bidder gets the good at that price

Japanese Auction

Japanese Auction

- Same as an English auction except that the auctioneer calls out the prices
 - all bidders start out standing
 - when the price reaches a level that a bidder is not willing to pay, that bidder sits down
 - once a bidder sits down, they can't get back up
 - the last person standing gets the good
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- analytically more tractable than English because jump bidding can't occur
 - consider the branching factor of the extensive form game...

Dutch Auction

Dutch Auction

- the auctioneer starts a clock at some high value; it descends
- at some point, a bidder shouts “mine!” and gets the good at the price shown on the clock

First-, Second-Price Auctions

First-Price Auction

- bidders write down bids on pieces of paper
- auctioneer awards the good to the bidder with the highest bid
- that bidder pays the amount of his bid

Second-Price Auction

- bidders write down bids on pieces of paper
- auctioneer awards the good to the bidder with the highest bid
- that bidder pays the amount bid by the second-highest bidder

All-Pay auction

All-Pay Auction

- bidders write down bids on pieces of paper
- auctioneer awards the good to the bidder with the highest bid
- everyone pays the amount of their bid regardless of whether or not they win

Auctions as Structured Negotiations

Any negotiation mechanism that is:

- **market-based** (determines an exchange in terms of currency)
- **mediated** (auctioneer)
- **well-specified** (follows rules)

Defined by three kinds of rules:

- rules for bidding
- rules for what information is revealed
- rules for clearing

Auctions as Structured Negotiations

Defined by three kinds of rules:

- rules for **bidding**
 - who can bid, when
 - what is the form of a bid
 - restrictions on offers, as a function of:
 - bidder's own previous bid
 - auction state (others' bids)
 - eligibility (e.g., budget constraints)
 - expiration, withdrawal, replacement
- rules for what information is revealed
- rules for clearing

Auctions as Structured Negotiations

Defined by three kinds of rules:

- rules for bidding
- rules for **what information is revealed**
 - when to reveal what information to whom
- rules for clearing

Auctions as Structured Negotiations

Defined by three kinds of rules:

- rules for bidding
- rules for what information is revealed
- rules for **clearing**
 - when to clear
 - at intervals
 - on each bid
 - after a period of inactivity
 - allocation (who gets what)
 - payment (who pays what)

Intuitive comparison of 5 auctions

	English	Dutch	Japanese	1 st -Price	2 nd -Price
Duration	#bidders, increment	starting price, clock speed	#bidders, increment	fixed	fixed
Info Revealed	2 nd -highest val; bounds on others	winner's bid	all val's but winner's	none	none
Jump bids	yes	n/a	no	n/a	n/a
Price Discovery	yes	no	yes	no	no

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- How should agents bid in these auctions?

Intuitive comparison of 5 auctions

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Info Revealed	2 nd -highest val; bounds on others	winner's bid	all val's but winner's	none	none
Jump bids	yes	n/a	no	n/a	n/a
Price Discovery	yes	no	yes	no	no
Regret	no	yes	no	yes	no