

CS 6100 Homework 5

Homework Chapter 7

1. Consider the real-world example of negotiation of buying a house.
 - a. What represents a “deal”?
 - b. Is the deal single attribute or multiple attribute?
 - c. Is it a task oriented domain? a worth oriented domain? a state oriented domain?
 - d. Is it 1-1, 1-n, n-n?
 - e. What represents a concession?
 - f. Is a particular protocol involved? If so, what are the rules?
2. **shill**: *a decoy who acts as an enthusiastic customer in order to stimulate the participation of others*. Why are shills not a potential problem in Dutch, Vickrey, and first price-sealed bid auctions?
3. In many of the auction methods, the bidder depends on reasonable actions by the other bidders. If bidder A knows that one of the other bidders is random (his bids are not related to the value of the object and not related to previous bids), how would that affect bidder A? What type of auction is best for this situation?
4. An agent is RISK AVERSE if the utility he attaches to the expected return of an auction, received as a lump sum payment, is STRICTLY GREATER than the utility he attaches to actual participation in the auction. [In this case the agent would be willing to pay a small "premium" to avoid participation in the auction, i.e., to avoid risk, and his utility function is strictly concave.]
Which type of auction is best for a risk-averse bidder? Why?
5. Why does a Vickrey auction encourage a bidder to bid his true value? Since he only has to pay the price of the second bid, why wouldn't his best strategy be to bid high (so he wins) but only have to pay the price of the second bid?
6. In an English auction, a proxy bidder (see the notes for chapter 7 on the web) allows a bidder to bid his true valuation, but get the advantages of under-bidding. If all bidders used a proxy bidder, what would be the result? Does it degenerate into any other well-known format?
7. A Dutch auction gets more money from a risk averse buyer. Why?
8. Show an example where an agent is best off bidding insincerely if the second-price auction is implemented as open-cry instead of sealed bid.