

How to solve an auction problem?

Identify the preferences of each bidder, the distribution of each willingness to pay, the type of the auction.

To determine the optimal bid of a given bidder, write down his expected utility [taking the above into account] where expectations refer to what he expects other bidders will do. The result is the best response of the bidder.

Do the same with all bidders.

Nash equilibrium: you have an equilibrium when the optimal bidding strategy of each bidder is consistent with the expectations of others.

References: auctions, problem set 2.