

1. Discussion of Problem Set #3

2. IPV FPSB Auctions with Various Distributions.

Suppose bidders' private values are distributed independently. Find symmetric equilibrium bidding strategies in a first-price sealed-bid auction if:

- (a) Valuations are uniformly distributed on $[0,1]$, $v \sim U[0,1]$.
- (b) Valuations are exponentially distributed on $[0,\infty)$, and there are only two bidders.
- (c) Valuations are distributed as $F(x) = x^a$ over $[0,1]$, where $a > 0$, and there are only two bidders.

3. Mixed Auction.

(*Krishna, 2.4.*) Consider an N -bidder auction which is a “mixture” of a first- and second-price auction in the sense that the highest bidder wins and pays a convex combination of his bid and the second-highest bid. Precisely, there is a fixed $\alpha \in (0,1)$ such that upon winning, bidder i pays $\alpha b_i + (1 - \alpha)(\max_{j \neq i} b_j)$. Find a symmetric equilibrium bidding strategy in such an auction when all bidders' values are distributed according to F .