

27.3 First Price Sealed Bid Auctions

Sunday, November 15, 2020

8:37 PM

2 bidders, v_i uniform on $[0,1]$

$$U_i = P(b_i > b_j) \cdot (v_i - b_i)$$

$$b_i > v_i \quad b_i = v_i \quad b_i < v_i$$

$$= b_i/a \cdot (v_i - b_i)$$

$$b_j > av_i \quad b_i > av_j \quad b_i/a > v_j$$

$$dU/db_i = v_i - b_i/a - b_i/a \Rightarrow v_i = 2b_i \Rightarrow a = 1/2 \quad \text{and} \quad b_i^* = v_i/2$$