HW 10.5

Sunday, October 18, 2020 3:09 PM

Passed solution review

5. In the years 2000 and 2001, the bubble burst for many Internet and computer firms. As they closed shop, some of the firms had to liquidate sizable assets, such as inventories of products. Suppose eToys is going out of business and the company seeks a buyer for a truckload of Elmo dolls in its warehouse. Imagine that eToys holds an auction on eBay to sell the dolls and that two retailers (players 1 and 2) will bid for them. The rules of the auction are as follows: the retailers simultaneously and independently submit sealed bids and then eToys gives the merchandise to the highest bidder, who must pay his bid. It is common knowledge that the retailer who obtains the load of dolls can resell the load for a total of \$15,000. Thus, if player i wins the auction with bid b_i, then player i's payoff is \$15,000 $-$ b_i. The losing retailer gets a payoff of \$0. If the retailers make the same bids ($b_1 = b_2$), then eToys declares each player the winner with probability 1/2, in which case player i obtains an expected payoff of $(1/2)(15{,}000 - b_i)$. What will be the winning bid in the Nash equilibrium of this auction game? If you can, describe the equilibrium strategies and briefly explain why this is an equilibrium. (Hint: This is similar to the Bertrand game.)

$b_1 = b_2 = 15k$

If they pay more, they lose money. If they pay less, they're not guaranteed a win.

This is mildly similar to the beach problem about how many customers you'd need to settle in section 1 of the beach.

forgot to say how to actually win

win and profit = 15000 - a - e where e is the smallest increment possible.

Never bid > 15000