

Experimental Instructions

Game Overview

The experiment consists of 24 rounds, including 4 practice rounds and 20 payment rounds. In each round, you will be allocated to a group of 4 participants. 3 of you will be randomly assigned as buyers and the 4th participant will be assigned as seller. Both the groups and roles are randomly reassigned between payment rounds.

A product will be sold in your group in each round. All the buyers will start with a starting capital endowment of 150 points. The buyers submit bids for the product and the buyer with the highest bid in the group will successfully buy the product. If more than one buyer chooses the same highest bid, the computer will determine by lottery which participant will buy the product. The buyer will not literally receive a product. If the buyer wins, she\he will receive an amount equal to the value of the product minus her\his bid (in points), then plus the starting endowment. Otherwise she\he only receives the endowment. Meanwhile, the seller will receive the highest bid as her\his revenue.

Product Value

If you are a buyer, then an important piece of information is about the value of the product you are bidding for. The value of the product has two components: a “private value” + a “common value”.

- For each buyer the private value will lie between 50 and 150 points, and each number between 50 and 150 is equally likely. The private value of one buyer is independent of the private value of the other buyer. Your private value therefore (very) probably differs from those of the others. At the start of a round you will get to know your private value. You will never know the private value of other buyers, just like other buyers will not know your private value.
- The common value of the product is determined as follows. Each buyer in the group will receive a common signal. A common signal lies between 50 and 150 points. The common signal of the one buyer is independent of the common signals of the other buyers. At the start of a round each buyer will only get to know her\his own common signal. The COMMON VALUE equals the AVERAGE of the common signals of the buyers in a group. If the average is not an integer, it will be rounded to the nearest integer. For each buyer, all values between 50 and 150 are equally likely to be the common signal.

Note that the private value differs for each buyer, while the common value is exactly the same for all buyers of the group. You know your private value at the time of bidding. You will only know your own common signal at the time of bidding. You will not know the common value for sure, because you don't know others' common signals. Thus at the time of bidding you only partially know the value of the product.

Example:

Buyer A observes a private value of 70 and a common signal of 75.

Buyer B observes a private value of 50 and a common signal of 84.

Buyer C observes a private value of 110 and a common signal of 111.

So, the common value of the group = $(75+84+111)/3 = 90$.

Each buyer only observes her own private value and common signal so no one knows the true common value.

If Buyer A bid 120 and won, she earns $70+90-120+150(\text{endowment})=190$ points.

Buyers B and C did not win and each earned 150 points.

In some rounds, the value of the product ONLY includes the common value. You can think of it as an auction where every buyer has 0 private value. Please pay attention to the auction description before you submit your bid in each round.

Buyer's Profit

Only the buyer with the highest bid earns an amount other than the starting endowment, which equals her/his private value plus the common value minus her/his own bid. **Notice that this amount may be negative.** If the highest bidder bids higher than the value of the product, she/he will make a loss. Just like a profit is automatically added to the amount earned up to that round, a loss will automatically be subtracted. Note also that in the most unfavorable case the value of the product will equal 100 points, when the common value equals 50 points and your private value equals 50 points. In the most favorable case the value of the product will equal 300 points, when the common value equals 150 points and your private value equals 150 points. This is the reason that your bid will have to lie between 100 and 300 points.

Seller's Choice and Information

When all buyers have entered their bid in a round, the results of the round will be communicated. **All the group members will get to know all bids in their group.** The buyers will be told whether she/he was or was not the highest bidder. Since the highest bid becomes public information, the seller also knows her/his revenue. Then, the seller decides whether she/he wants to retake the auction.

- If the seller chooses to retake the auction, all the buyers will resubmit their bids, and the result of the second auction will be the final result.
- If the seller chooses not to retake the auction, the round ends immediately and the current highest bidder receives the product.

When the round ends (with one or two rounds of auctions), you observe all the bids, the common value, the total value, and your payoff of the current round. Then a new round will start. In the new round again a product will be sold. For each buyer the product will have a different value. Each buyer receives a new private value for the product and a new common signal. Your value for the product in a round will thus not depend on your value for the product in any other round.