

INSTRUCTIONS EMPLOYED FOR THE RANDOM TREATMENT

This is an experiment in the economics of market decision making. The National Science Foundation and Ohio State University have provided funds for conducting this research. The instructions are simple, and if you follow them carefully and make good decisions you may earn a CONSIDERABLE AMOUNT OF MONEY which WILL BE PAID TO YOU IN CASH at the end of the experiment.

1. In this experiment there will be a market in which you will act as buyers of a fictitious commodity in a sequence of trading periods. A single unit of the commodity will be auctioned off in each trading period. There will be several trading periods.

2. Your task is to submit bids for the commodity in competition with other buyers. The precise value of the commodity at the time you make your bids will be unknown to you. Instead, each of you will receive information as to the value of the item which you should find useful in determining your bid. The process of determining the value of the commodity and the information you will receive will be described shortly.

3. The high bidder earns the item and makes a profit equal to the difference between the value of the commodity and the amount he/she bid. That is

$$(\text{VALUE OF ITEM}) - (\text{HIGHEST BID}) = \text{PROFITS}$$

for the high bidder. If this difference is negative, it represents a loss.

If you do not make the high bid on the item, you will earn zero profits. In this case, you neither gain nor lose money from bidding on the item.

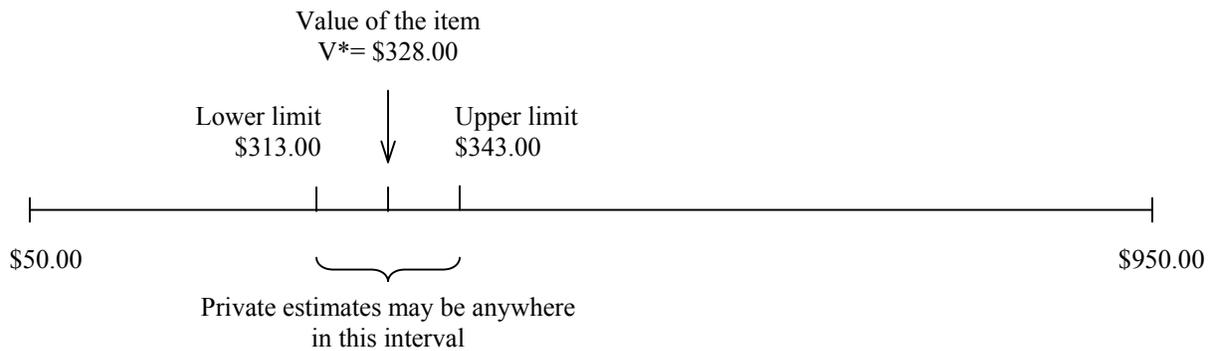
4. The value of the auctioned item (V^*) will be assigned randomly and will lie between \$50.00 and \$950.00 inclusively. For each auction, ANY VALUE within this interval has an EQUALLY LIKELY CHANCE of being drawn. The value of the item can never be less than \$50.00 or more than \$950.00. The V^* values are determined randomly and independently from auction to auction. As such a high V^* in one period tells you nothing about the likely value in the next period – whether it will be high or low. It doesn't even preclude drawing the same V^* value in later periods.

5. Private Estimates of V^* :

Although you do not know the value of the item V^* prior to bidding, you will receive information which will narrow down the range of possible values. This will consist of a randomly

drawn number from the interval whose lower bound is $V^* - \$15$, and whose upper bound is $V^* + \$15$. ANY VALUE within this interval has an EQUALLY LIKELY chance of being drawn and being assigned to one of you as your own private estimate of V^* . (Each bidder gets their own private estimate – different random draw from the interval $V^* - \$15$ and $V^* + \$15$.)

For example, suppose that $V^* = \$328.00$. Then each of your private estimates will consist of a randomly drawn number that will be between $\$313.00$ ($\$328.00 - \15.00) and $\$343.00$ ($\$328.00 + \15.00). Any number in this interval has an equally likely chance of being drawn as your own private estimate. The line diagram below shows what's going on in this example.



The data below provide some examples of the private estimates drawn in past auctions with 6 bidders. (Note we've ordered these estimates from lowest to highest.)

Value of the item $V^* = \$328.00$; Private estimates:

- 315.41
- 323.89
- 324.58
- 335.82
- 337.43
- 339.45

You will note that some private estimates are above the V^* and some are below V^* . Over a sufficiently long series of auctions, the differences between your private estimate and V^* will average out to zero (or very close to it). For any given auction, however, your private estimate can be above or below the value of the item V^* . That's the nature of the random selection process generating the private estimates.

You will also note that V^* must always be greater than or equal to your private estimate minus $\$15$. The computer calculates this for you and notes it. Further, V^* must always be less than or equal to your private estimate plus $\$15$. The computer calculates this for you and notes it.

Finally, you may receive a private estimate below $\$50.00$ (or above $\$950.00$). There is nothing

strange about this, it just indicates V^* is close to \$50.00 (or \$950.00).

6. At the end of each auction you will automatically be entered in to a lottery where you have a 50 – 50 chance of either earning 50¢ or 0¢. Over the course of the experiment you should earn positive average profits of 25¢ in each auction period from the lottery. Earnings from the lottery are totally unrelated to the auction outcomes. They are just a source of extra earnings.

7. At the beginning of today's session you will be given a starting cash balance of either \$10 or \$15. (Half of you will get \$10, the other half \$15, with these allocations determined randomly.) Your earnings from the auction and the lottery will be added to your starting cash balance.

The starting cash balance, and whatever subsequent profits you earn from the auction in conjunction with your lottery earnings, permit you to suffer losses in one auction and/or lottery to be recouped in part or in total in later auctions and/or lotteries. However, should your cash balance drop to zero (or less) during the experiment you will no longer be permitted to participate in today's session. Instead you'll be asked to leave the auction. (Note, however, that you will be eligible to participate in subsequent sessions.) You ARE permitted to bid in excess of your cash balance in any given period.

8. There are 16 participants in this experiment. In each trading period you will be randomly assigned to one of three positions: 6 persons will bid in one market, 6 will bid in another market, and 4 will be inactive. The random assignment is done again after each trading period so that the others bidding in your market will probably be different every period. The two auction markets operate simultaneously each period but are separate in the sense that bids in one market are irrelevant to the other market. At the end of each period, you will only see the results of the market in which you were participating in. Results posted on your computer screen will include the value of the item V^* , the private estimates of all bidders in your market along with their bids, and the earnings of the high bidder. Inactive bidders will also see the results from one of the markets.

9. No one may bid less than \$0.00 for the item and bids must be rounded to the nearest penny to be accepted. In case of ties for the high bid the computer will randomly determine who will earn the item.

There will be a reserve price of $V^* - \$30$ in each auction. If the high bid is below the reserve price the item will not be sold that auction period and the high bidder will earn \$0.

10. You are not to speak or in any other way communicate with any other participant while the experiment is in progress. This is important to the validity of the study and will not be allowed.

Let's summarize the main points:

AUCTION RULES

- (1) High bidder earns the item and makes a profit = value of item (V^*) – amount he/she bid. All other bidders earn zero. Profits can be positive or negative.
- (2) Prior to bidding the value of V^* is unknown to you but is always between \$50 and \$950. Any value in this interval has an equally likely chance of becoming V^* .
- (3) Your private estimate of V^* will be randomly drawn from the interval $V^* - \$15$ and $V^* + \$15$. Any value in this interval has an equally likely chance of being drawn as your own private estimate of V^* . Note that V^* can never be more than your private estimate plus \$15, or less than your private estimate minus \$15.
- (4) By random selection, in each auction period you can be an active or inactive bidder. Active bidders are randomly assigned to two separate markets with 6 bidders each.

YOUR TOTAL EARNINGS come from four sources:

- (1) Starting cash balance of either \$10 or \$15 chosen at random.
- (2) Auction earnings as explained above. There will be 2 practice runs of the auction with no money at stake. This will be followed by 30 auctions played for cash.
- (3) Lottery earnings: 50-50 chance of either gaining 50 cents or losing zero cents. Lottery outcomes are totally independent of auction outcomes.

Your cumulative earnings, which are shown on the computer screen are the sum of 1+2+3 above. Should they become zero or negative during the experiment, you will no longer be permitted to participate in today's session.

- (4) Everybody, including participants with negative cash balances, will receive \$5 participation fee.

Are there any questions?

ID _____

Today's date _____

Your name _____

Time: 3-5 OR 2-4 pm 7-9 pm

Period	Private Estimate	Your Bid	V* Item Value	Lottery Earnings	Your Auction Earnings	Net Balance
				Starting cash balance		_____
1(practice)	_____	_____	_____	_____	_____	_____
2(practice)	_____	_____	_____	_____	_____	_____
3	_____	_____	_____	_____	_____	_____
4	_____	_____	_____	_____	_____	_____
5	_____	_____	_____	_____	_____	_____
6	_____	_____	_____	_____	_____	_____
7	_____	_____	_____	_____	_____	_____
8	_____	_____	_____	_____	_____	_____
9	_____	_____	_____	_____	_____	_____
10	_____	_____	_____	_____	_____	_____
11	_____	_____	_____	_____	_____	_____
12	_____	_____	_____	_____	_____	_____
13	_____	_____	_____	_____	_____	_____
14	_____	_____	_____	_____	_____	_____
15	_____	_____	_____	_____	_____	_____
16	_____	_____	_____	_____	_____	_____
17	_____	_____	_____	_____	_____	_____
18	_____	_____	_____	_____	_____	_____
19	_____	_____	_____	_____	_____	_____
20	_____	_____	_____	_____	_____	_____
21	_____	_____	_____	_____	_____	_____
22	_____	_____	_____	_____	_____	_____
23	_____	_____	_____	_____	_____	_____
24	_____	_____	_____	_____	_____	_____
25	_____	_____	_____	_____	_____	_____
26	_____	_____	_____	_____	_____	_____
27	_____	_____	_____	_____	_____	_____
28	_____	_____	_____	_____	_____	_____
29	_____	_____	_____	_____	_____	_____
30	_____	_____	_____	_____	_____	_____
31	_____	_____	_____	_____	_____	_____
32	_____	_____	_____	_____	_____	_____

The participation fee will be added to your end-of-experiment earnings

-----EXAMPLE OF INPUT SCREEN -----

SUBJECT 5

Period: 1 Low : 50.00 High : 950.00 Epsilon: 15.00

<* Previous Result Screen *>

* <* Private Screen *>
*
*
* S-mkt bidders : 6
* Your balance : 10.00
*
* Private signal: 328.00
* Given this signal
* V*>313.00 V*<343.00
*
* Make your bid:
* Verify (Y/N) :
*
* V* value :
* Market price:
*
* Net Balance :
*

Please make your bid now

----- EXAMPLE OF OUTPUT SCREEN -----

SUBJECT 5

Period: 1

<* Previous Result Screen *>		*	<* Private Screen *>	
		*		
Period	Period	Period 1	*	S-mkt bidders : 6
		bid signal	*	Your balance : 10.00
		000 000	*	
		000 000	*	Private signal: 328.00
		000 000	*	Given this signal
		000 000	*	V*>316.00 V*<340.00
		000 000	*	
		000 000	*	Make your bid: 000
			*	Verify (Y/N) : Y
			*	
			*	V* value : 000
			*	Market price : 000
			*	Your profits :
		V* val = 000	*	Net Balance :11.00
		Profit = 000	*	Lottery earns : 1.00
