

Instructions

This is an experiment in the economics of decision making. The instructions are simple. You will likely earn more money if you read them carefully and understand them fully. Your earnings will be paid to you privately, in cash, at the end of today's session.

In every round of this experiment you will be part of a group of four bidders (you and three other bidders). Each round, a single item will be offered for sale to your group, first at a fixed price and then, if no one accepts the fixed price, through an auction. Your value for the item will be shown on your computer screen. If you purchase the item, your earnings will be the difference between your value for the item and the purchase price. The selling procedure and how your value for the item is determined are described below.

Your Value for the Item

At the beginning of each round, the computer randomly draws a value between \$0 and \$10 inclusively, which is your value for the item offered for sale. Each value between \$0 and \$10 is equally likely to be drawn. Figure 1, below, shows your screen if your value were, for example, \$6.53.

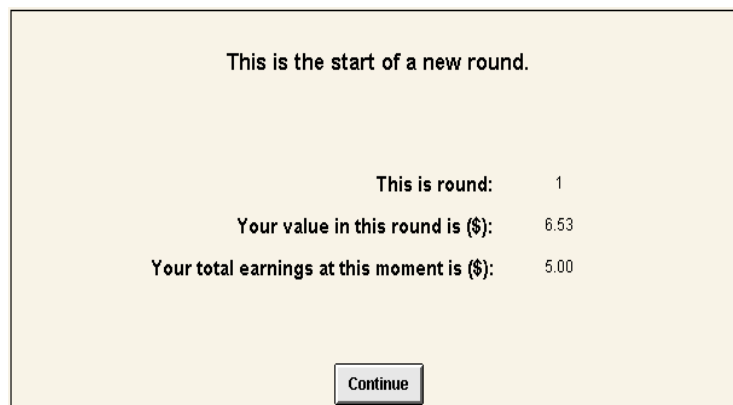


Figure-1

The computer also draws three other values, each between \$0 and \$10 (and with each value equally likely), one for each of the other three bidders in your group. Each bidder is informed only of his own value, and is not informed of the value of any other bidder in his group.

Selling Procedure

Each round the seller first offers the item for sale at a fixed price (called the “Buy Price”) of \$8.10. Figure 2 shows your screen, at the beginning of a round, if your value were \$6.53. In this screen you are offered the Buy Price of \$8.10. You may either accept or reject the Buy Price by clicking on the appropriate button. If exactly one bidder in your group accepts the Buy Price, then he wins the item, he pays \$8.10, and he earns an amount equal to his value minus \$8.10. If more than one bidder accepts the buy price, then the winner is selected at random from those who accepted. The round ends whenever one or more bidders accept the Buy Price.

Notice that you may accept or reject the Buy Price offered below.	
Your value for the item is (\$): 6.53	Your Decision: <input type="button" value="Accept the Buy Price"/> <input type="button" value="Reject the Buy Price"/>
The Buy Price is (\$): 8.10	

Figure-2

If no bidder accepts the Buy Price, then the item is offered for sale by an auction. In the auction, the price starts at \$0 but increases by \$0.05 every 0.20 second. At any moment you may drop out of the auction by clicking on the “Drop Out” button on your screen. (Figure 3 shows, for example, your screen if the price has reached \$1.25, your value is \$6.53, and you have not yet dropped out.) If you drop out, your earnings for the current round are \$0. The auction ends as soon as three of the bidders in your group drop out. The remaining bidder wins the auction, and purchases the item at the price at which the last bidder dropped out. The winning bidder earns his value minus the purchase price.

<p>Notice that soon the auction starts - price starts increasing from \$0.</p>	
<p>Your value for the item is (\$): 6.53</p> <p>Price at this moment is (\$): 1.25</p>	<p>Your Decision: <input type="button" value="Drop Out"/></p>

Figure-3

The Results

At the end of each round, you will be notified whether or not you won the item, the purchase price paid by the winner (which will be \$8.10 when Buy Price is accepted), and your earnings for the current round. Your computer screen will also display the total you have earned so far. (The total includes a \$5.00 starting balance you are given at the beginning of the experiment.) If your total earnings fall below \$0, then you will be declared “bankrupt,” your participation in the experiment will end, and a new participant will take your place. In that case your total earnings for the current experiment will be \$0. If you don’t go bankrupt, then you will be paid 80% of your total earnings at the end of today’s session.

$ \begin{aligned} & \textit{Your Actual Earnings} \\ & \textit{from an Experiment} \end{aligned} = (Total Earnings from the Experiment) \times 0.80 $

Figure 4, for example, shows your screen if you have purchased the item at the Buy Price of \$8.10 and your value is \$6.53. In this case, your earnings for the current round would be -\$1.57 (= \$6.53 – \$8.10). Your total earnings at the end of current round, including your starting balance, would be \$3.43 (= \$5.00 – \$1.57).

The winner of this round is:	YOU
Your value for the item was (\$):	6.53
The fixed price was (\$):	8.10
Your decision on the fixed price was:	Acceptance
Your earnings from this round is (\$):	-1.57
Your total earnings after this round is (\$):	3.43
End of round:	1

Figure-4

Figure 5 shows your screen if, instead, everyone rejects the buy price and you win the auction that follows. Suppose your value is \$6.53 and the purchase price is \$3.50 (since the third bidder dropped out at \$3.50). In this case, your earnings for the current round would be \$3.03 (= \$6.53 – \$3.50). Your total earnings at the end of current round, including your starting balance, would be \$8.03 (= \$5.00 + \$3.03).

The winner of this round is:	YOU
Your value for the item was (\$):	6.53
Purchase price for the item was (\$):	3.50
Your earnings from this round is (\$):	3.03
Your total earnings after this round is (\$):	8.03
End of round:	1

Figure-5

Figure 6 shows your screen if your total earnings ever fall below \$0.

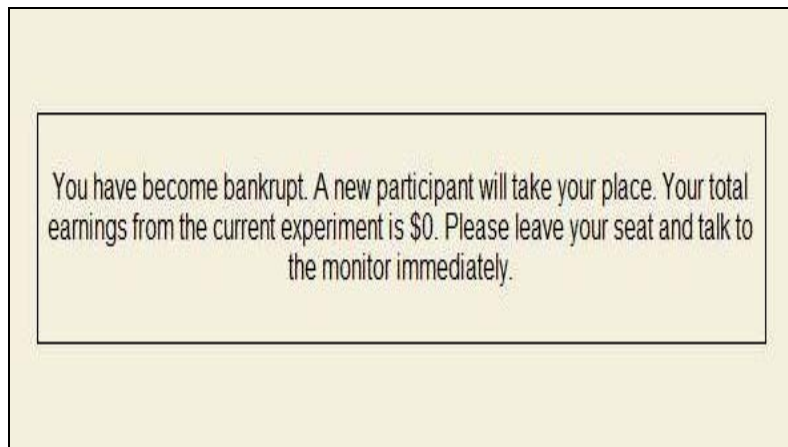


Figure-6

Some Examples

Example 1: Suppose that you and the other three bidders in your group all reject the Buy Price. Then the item is offered for sale by auction. The auction ends as soon three bidders drop out. The remaining bidder wins the auction.

Example 2: Suppose that you and one other bidder accept the Buy Price. Then you win the item with probability one-half. If you win, your earnings equal your value minus \$8.10. If you lose, your earnings are zero.

Example 3: Suppose everyone rejects the Buy Price. In the auction, the third bidder drops out when the price reaches \$4.25, and you have not yet dropped out. Then you win the auction and pay \$4.25. Your earnings equal your value minus the \$4.25 purchase price, and may be either positive (when your value exceeds \$4.25) or negative (when your value is less than \$4.25). Every other bidder in your group earns zero.

Example 4: Suppose everyone rejects the Buy Price. In the auction, you drop out at a price of \$5.50, and the third bidder drops out at a price of \$6.25. Then your earnings are zero. The last bidder remaining in the auction wins the item and pays a price of \$6.25. His earnings equal his value minus the \$6.25 purchase price.

You may not talk with any other participants during the experiment. If you have a question, please raise your hand and the lab monitor will come to answer your question.

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Your Value for the Item

At the beginning of each round, the computer randomly draws a value between \$0 and \$10 inclusively, which is your value for the item offered for sale. Each value between \$0 and \$10 is equally likely to be drawn. Figure 1, below, shows your screen if your value were, for example, \$6.53.

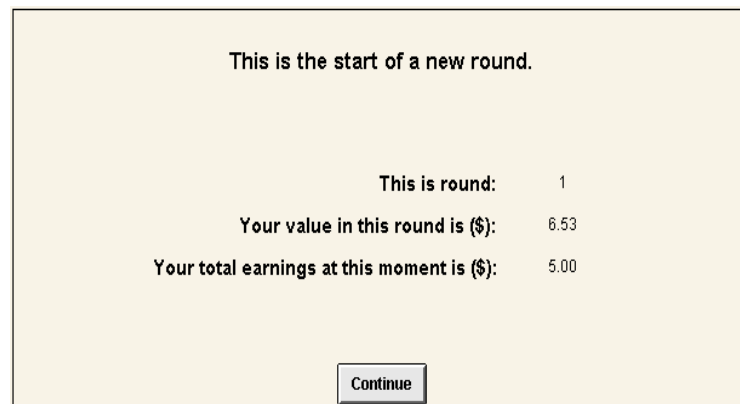


Figure-1

The computer also draws three other values, each between \$0 and \$10 (and with each value equally likely), one for each of the other three bidders in your group. Each bidder is informed only of his own value, and is not informed of the value of any other bidder in his group.

The Rules of the Auction

The auction begins after each bidder observes his value and clicks on the “Continue” button in the above screen. In the auction, the price starts at \$0 but increases by \$0.05 every 0.20 second. At any moment you may drop out of the auction by clicking on the “Drop Out” button on your screen. (Figure 2 shows, for example, your screen if the price has reached \$1.25, your value is \$6.53, and you have not yet dropped out.) If you drop out, your earnings for the current round are \$0. The auction ends as soon as three of the bidders in your group drop out. The remaining bidder wins the auction, and purchases the item at the price at which the last bidder dropped out. The winning bidder earns his value minus the purchase price.

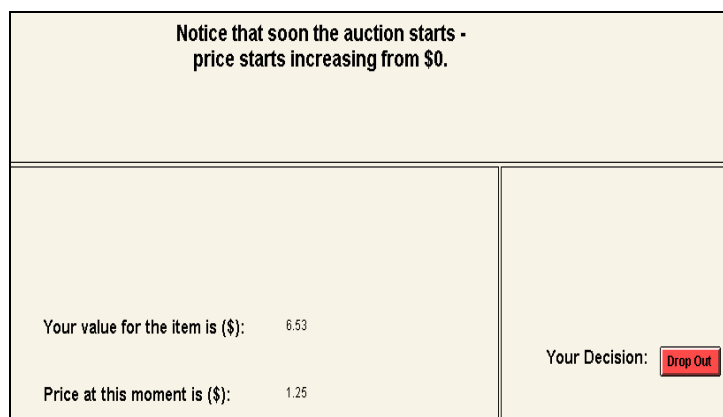


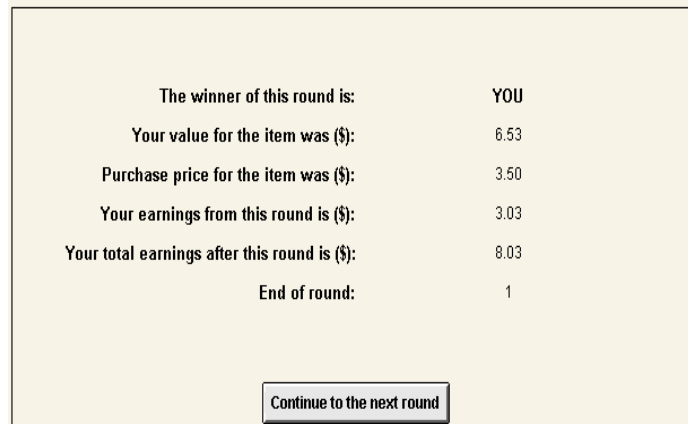
Figure-2

The Results of the Auction

At the end of each auction, you will be notified whether or not you won the item, the purchase price paid by the winner, and your earnings for the current auction. Your computer screen will display the total you have earned so far. (The total includes a \$5.00 starting balance you are given at the beginning of the experiment.) If your total earnings fall below \$0, then you will be declared “bankrupt,” your participation in the experiment will end, and a new participant will take your place. In that case your total earnings for the current experiment will be \$0. If you don’t go bankrupt, then you will be paid 80% of your total earnings at the end of today’s session.

$$\begin{array}{l} \textit{Your Actual Earnings} \\ \textit{from an Experiment} \end{array} = (\textit{Total Earnings from the Experiment}) \times 0.80$$

Figure 3, for example, shows your screen if you win the first auction, your value is \$6.53, and the purchase price is \$3.50. In this case, your earnings for the current auction would be \$3.03 ($=\$6.53 - \3.50). Your total earning, including your starting balance, would be \$8.03 ($=\$5.00 + \3.03).

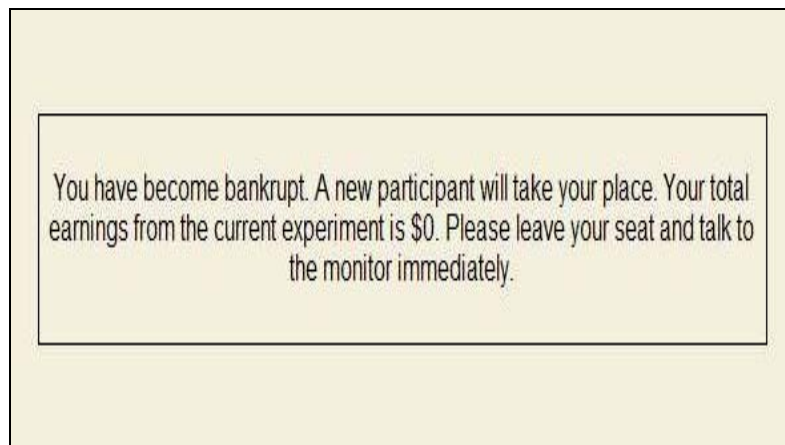


The screenshot shows a summary of the auction results. It lists the winner, the player's value for the item, the purchase price, the earnings from the round, and the total earnings after the round. The round ends with a 'Continue to the next round' button.

The winner of this round is:	YOU
Your value for the item was (\$):	6.53
Purchase price for the item was (\$):	3.50
Your earnings from this round is (\$):	3.03
Your total earnings after this round is (\$):	8.03
End of round:	1

Figure-3

Figure 4 shows your screen if your total earnings fall below \$0.



The screenshot displays a message indicating that the player has become bankrupt. The text states that a new participant will take their place and that their total earnings from the current experiment are \$0. The player is instructed to leave their seat and talk to the monitor immediately.

You have become bankrupt. A new participant will take your place. Your total earnings from the current experiment is \$0. Please leave your seat and talk to the monitor immediately.

Figure-4

Some Examples

Example 1: Suppose the third bidder drops out when the price reaches \$4.25 and you have not yet dropped out. Then you win the auction and pay \$4.25. Your earnings equal your value minus the \$4.25 purchase price, and may be either positive (when your value exceeds \$4.25) or negative (when your value is less than \$4.25). Every other bidder in your group earns zero.

Example 2: Suppose that you drop out at a price of \$5.50, and the third bidder drops out at a price of \$6.25. Then your earnings are zero. The last bidder remaining in the auction wins the item and pays a price of \$6.25. His earnings equal his value minus the \$6.25 purchase price.

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The Value for the Item

At the beginning of each round, the computer randomly draws an amount between \$0 and \$10 inclusively, which is your "signal" of the value of the item. Each amount between \$0 and \$10 is equally likely to be drawn. Your signal will be shown on your computer screen before the auction begins, but not the value. Figure 1, below, shows your screen if your signal were, for example, \$8.40.

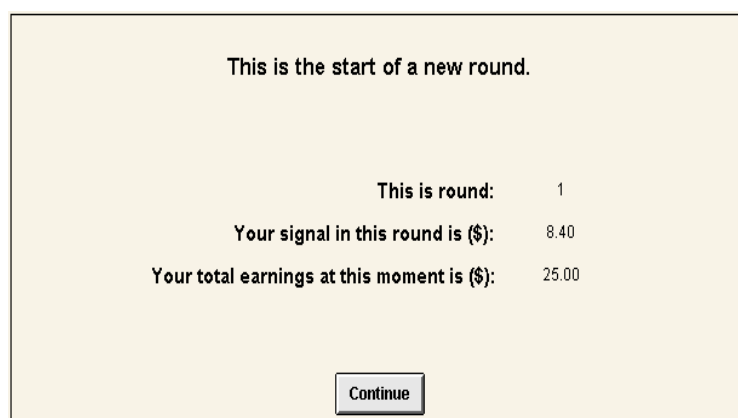


Figure-1

The computer also draws three other signals, each between \$0 and \$10 (and with each amount equally likely), one for each of the other three bidders in your group. Each bidder is informed only of his own signal, and is not informed of the signal of any other bidder in his group.

The value of the item is the *same* for all bidders and equal to the average of all four signals. If, for example, your signal is \$8.40 and the signals of the other three bidders are \$2.00, \$4.00 and \$6.00, then the value of the item is

$$\frac{\$8.40 + \$2.00 + \$4.00 + \$6.00}{4} = \$5.10.$$

While you observe your own signal prior to the auction, you observe the value of the item only at the end of the auction.

Your signal helps you narrow down the range of possible values for the item. If, for example, your signal is \$8.40, the lowest possible value for the item is

$$\frac{\$8.40 + \$0 + \$0 + \$0}{4} = \$2.10,$$

which would occur if every other bidder had a signal of \$0. The highest possible value for the item is

$$\frac{\$8.40 + \$10.00 + \$10.00 + \$10.00}{4} = \$9.60,$$

which would occur if every other bidder had a signal of \$10.00.

Selling Procedure

Each round the seller first offers the item for sale at a fixed price (called the “Buy Price”) of \$5.60. Figure 2 shows your screen, at the beginning of a round, if your signal were \$8.40. In this screen you are offered the Buy Price. You may either accept or reject the Buy Price by clicking on the appropriate button. If exactly one bidder in your group accepts the Buy Price, then the item is sold to him, he pays \$5.60, and he earns an amount equal to the value (average of the four signals) minus \$5.60. If more than one bidder accepts the buy price, then the computer selects one person at random from those who accepted, and the item is sold to him. The round ends whenever one or more bidders accept the Buy Price.

Notice that you may accept or reject the Buy Price offered below.	
Your signal for the item is (\$): 8.40 The Buy Price is (\$): 5.60	Your Decision: <input type="button" value="Accept the Buy Price"/> <input type="button" value="Reject the Buy Price"/>

Figure-2

If no bidder accepts the Buy Price, then the item is offered for sale by an auction. In the auction, the price starts at \$0 but increases by \$0.05 every 0.20 seconds. At any moment you may drop out of the auction by clicking on the “Drop Out” button on your screen. (Figure 3 shows, for example, your screen if the price has reached \$1.40, your signal is \$8.40, and you have not yet dropped out.) If you drop out, your earnings for the current round are \$0. The auction ends as soon as three of the bidders in your group drop out. The item is sold to the remaining bidder, and he pays the price at which the last bidder dropped out. This remaining bidder earns an amount equal to the value of the item minus the purchase price.

Notice that soon the auction starts - price starts increasing from \$0.	
Your signal for the item is (\$): 8.40 Price at this moment is (\$): 1.40	Your Decision: <input type="button" value="Drop Out"/>

Figure-3

The Results

At the end of each round, you will be notified to whom the item is sold (you or someone else), the four signals (including yours) that were randomly drawn by the computer, the value for the item (calculated as the average of these four signals), the purchase price paid by the buyer of the item in the current round, and your earnings for the current round. Your computer screen will also display the total you have earned so far. (The total includes a \$25.00 starting balance you are given at the beginning of the experiment.) If your total earnings fall below \$5, then you will be declared “bankrupt,” your participation in the experiment will end, and a new participant will take your place. You will be paid 65% of your total earnings at the end of today’s session.

<i>Your Actual Earnings from an Experiment</i>	=	<i>(Total Earnings from the Experiment) x 0.65</i>
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Figure 4, for example, shows your screen if you purchase the item at the Buy Price of \$5.60, your signal is \$8.40 (and signals of the other three bidders are \$2.00, \$4.00 and \$6.00), and the value of the item is \$5.10 (i.e., the average of the four signals). In this case, your earnings for the current auction would be -\$0.50 (= \$5.10 – \$5.60). Your total earnings at the end of current round, including your starting balance, would be \$24.50 (= \$25.00 – \$0.50).

The item is sold to:	YOU
Your signal for the item was (\$):	8.40
The value is found to be (\$):	5.10
The Buy Price was (\$):	5.60
Your decision on the Buy Price was:	Acceptance
Your earnings from this round is (\$):	-0.50
Your total earnings after this round is (\$):	24.50
End of round:	1

Figure-4

Figure 5 shows your screen if, instead, everyone rejects the buy price and you win the auction the auction that follows. Suppose your signal is \$8.40, the value of the item is \$5.10, and the purchase

price is \$4.45 (since the third bidder dropped out at \$4.45). In this case, your earnings for the current auction would be \$0.65 (= \$5.10 – \$4.45). Your total earning at the end of current round, including your starting balance, would be \$25.65 (= \$25.00 + \$0.65).

The item is sold to:	YOU
Your signal for the item was (\$):	8.40
The value is found to be (\$):	5.10
Purchase price for the item was (\$):	4.45
Your earnings from this round is (\$):	0.65
Your total earnings after this round is (\$):	25.65
End of round:	1

Figure-5

Figure 6 shows your screen if your total earnings ever fall below \$5.

You have become bankrupt. A new participant will take your place. Your total earnings from the current experiment is what you have earned. Please leave your seat and talk to the monitor immediately.

Figure-6

Some Examples

Example 1: Suppose that you and the other three bidders in your group all reject the Buy Price. Then the item is offered for sale by auction. The auction ends as soon three bidders drop out. The item is sold to the remaining bidder.

Example 2: Suppose that you and one other bidder accept the Buy Price. Then there is one-half probability that the item will be sold to you. If it is sold to you, your earnings equal the value minus \$5.60 (your earnings will be positive when the value is larger than \$5.60 and negative when it is smaller than \$5.60). If it is not sold to you, your earnings are zero.

Example 3: Suppose everyone rejects the Buy Price. In the auction, third bidder drops out when the price reaches \$4.25, and you have not yet dropped out. Then the item is sold to you and you pay \$4.25. Your earnings equal the value of the item minus the \$4.25 purchase price, and may be either positive (when the value exceeds \$4.25) or negative (when the value is less than \$4.25). Every other bidder in your group earns zero.

Example 4: Suppose everyone rejects the Buy Price. In the auction, you drop out at a price of \$5.50, and the third bidder drops out at a price of \$6.25. Then your earnings are zero. The item is sold to the last bidder remaining in the auction, and he pays a price of \$6.25. His earnings equal the value minus the \$6.25 purchase price.

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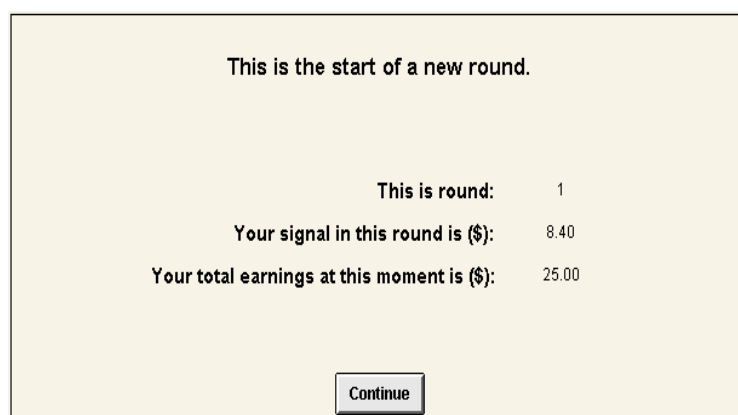


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which would occur if every other bidder had a signal of \$0. The highest possible value for the item is

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which would occur if every other bidder had a signal of \$10.00.

The Rules of the Auction

The auction begins after each bidder observes his signal and clicks on the “Continue” button in the above screen. In the auction, the price starts at \$0 but increases by \$0.05 every 0.20 seconds. At any moment you may drop out of the auction by clicking on the “Drop Out” button on your screen. (Figure 2 shows, for example, your screen if the price has reached \$4.30, your signal is \$8.40, and you have not yet dropped out.) If you drop out, your earnings for the current round are \$0. The auction ends as soon as three of the bidders in your group drop out. The item is sold to the remaining bidder, and he pays the price at which the last bidder dropped out. This remaining bidder earns an amount equal to the value of the item minus the purchase price.

Notice that soon the auction starts - price starts increasing from \$0.	
Your signal for the item is (\$): 8.40 Price at this moment is (\$): 4.30	Your Decision: <input type="button" value="Drop Out"/>

Figure-2

The Results of the Auction

At the end of each auction, you will be notified to whom the item is sold (you or someone else), the four signals (including yours) that were randomly drawn by the computer, the value for the item (calculated as the average of these four signals), the purchase price paid by the buyer of the item in the current round, and your earnings for the current auction. Your computer screen will display the total you have earned so far. (The total includes a \$25.00 starting balance you are given at the beginning of the experiment.) If your total earnings fall below \$5, then you will be declared “bankrupt,” your participation in the experiment will end, and a new participant will take your place. You will be paid 65% of your total earnings at the end of today’s session.

$\text{Your Actual Earnings from an Experiment} = (\text{Total Earnings from the Experiment}) \times 0.65$
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Figure 3 shows your screen if the item is sold to you in the first auction, your signal is \$8.40 (and the signals of the other three bidders are \$2.00, \$4.00 and \$6.00), the purchase price is \$4.45, and the value of the item is \$5.10 (i.e., the average of the four signals). In this case, your earnings for the current auction would be \$0.65 (= \$5.10 – \$4.45). Your total earnings at the end of current round, including your starting balance, would be \$25.65 (= \$25.00 + \$0.65).

The item is sold to:	YOU	Four signals (including yours) that were randomly drawn by the computer for this round were:
Your signal for the item was (\$):	8.40	8.40
The value is found to be (\$):	5.10	2.00
Purchase price for the item was (\$):	4.45	4.00
Your earnings from this round is (\$):	0.65	6.00
Your total earnings after this round is (\$):	25.65	

Figure-3

Figure 4 shows your screen if your total earnings fall below \$5.

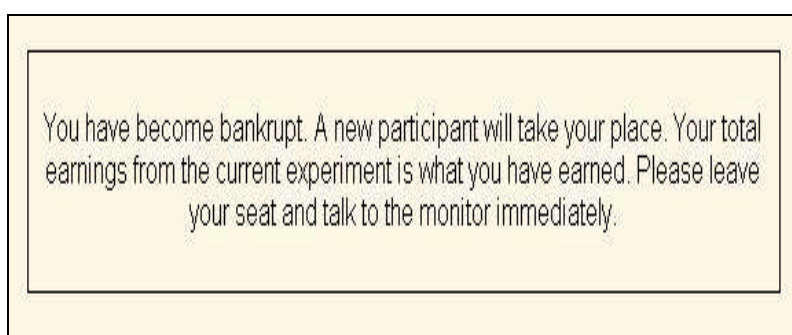


Figure-4

Some Examples

Example 1: Suppose the third bidder drops out when the price reaches \$4.25 and you have not yet dropped out. Then the item is sold to you, and you pay \$4.25. Your earnings equal the value of the item minus the \$4.25 purchase price, and may be either positive (when the value exceeds \$4.25) or negative (when the value is less than \$4.25). Every other bidder in your group earns zero.

Example 2: Suppose that you drop out at a price of \$5.50, and the third bidder drops out at a price of \$6.25. Then your earnings are zero. The item is sold to the last bidder remaining in the auction, and he pays a price of \$6.25. His earnings equal the value minus the \$6.25 purchase price.

You may not talk with any other participants during the experiment. If you have a question, please raise your hand and the lab monitor will come to answer your question.