

**Introduction**

We are going to conduct a market in which some of you will be buyers and some of you will be sellers. The commodity to be traded is divided into distinct items or “units.” We will not specify a name for the commodity; we will simply refer to units.

Trading will occur in a sequence of periods. The prices that you negotiate in each trading period will determine your earnings, in dollars and cents. You will keep track of these earnings on the record sheet provided.

We will proceed in the following way. First I will explain how buyers and sellers compute their earnings, and then I will explain how sales and purchases are arranged in the market. Importantly, these instructions explain how *both* sellers and buyers calculate earnings and negotiate contracts. In today’s market, however, you will be *either* a buyer or a seller. Information specific to your roles in today’s market will be presented to you at the end of the instructions. After reading the instructions and reviewing your specific information, I will give you a chance to ask any questions you might have. Then we will begin the first trading period.

**Instructions for Sellers**

***Seller Costs***

Sellers record their sales on a sheet similar to the sample record sheet here:

<b>Period 1</b>				
	<b>Unit</b> (Column 1)	<b>Selling Price</b> (Column 2)	<b>Cost of unit</b> (Column 3)	<b>Earnings</b> (Column 2 - Column 3)
Row 1	<b>1</b>		<b>\$ 1.50</b>	
Row 2	<b>2</b>		<b>\$ 2.75</b>	
Row 3	<b>3</b>		<b>\$ 3.15</b>	
<b>Total earnings for Period 1</b> (Row 1 + Row 2 + Row 3)				

The information on the decision sheet you will be using is private. **Do not reveal it to anyone.**

On the seller’s record sheet, each table will represent a different trading period. In the period, a seller may sell from zero up to as many units as appear on the record sheet. In this example, the seller has a total of 3 units available to sell (unit 1, unit 2, and unit 3 in column 1). For the first unit that may be sold during the period, the seller incurs a cost per unit listed in Row 1, Column 3 (\$1.50 in the example above). If the second unit is sold during the same period, the seller incurs the cost listed in Row 2, Column 3 (\$2.75 in the example above). The cost of the third unit is in Row 3 (\$3.15). A seller may sell none, some, or all of the units, and may sell to a single or different buyers. You must sell your units in sequence! Sell unit 1 first, and then if there is a buyer, you may sell your 2<sup>nd</sup> unit and so forth. If you choose **not** to sell a unit, you **do not** incur the cost for that unit.

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<sup>1</sup> Instructions adapted from a few sources, primarily Davis and Holt (1993).

### ***Seller Profits***

Sellers earn money by selling units at prices that are **above** their costs. Profits are computed by subtracting each unit's cost from its selling price. Therefore,

$$\text{Your Earnings} = \text{Selling Price} - \text{Cost of Unit}$$

For example, the seller record sheet above shows that the cost of the first unit is \$1.50, the cost of the second unit is \$2.75 and the cost of the third unit is \$3.15. If the first unit is sold at a price of \$4.00, the second unit is sold at a price of \$4.25, and the third unit is not sold, the seller's profits would be:

Seller earnings from Period 1 are:

Unit 1 = \$4.00 – \$1.50 = \$2.50 (enter \$2.50 in Row 1, Column 2)

Unit 2 = \$4.25 – \$2.75 = \$1.50 (enter \$1.50 in Row 2, Column 2)

Unit 3 not sold = \$0 (enter \$0.00 in Row 3, Column 2)

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Total Earnings in Period 1 = \$4.00

This is recorded in the record sheet as shown below:

<b>Period 1</b>				
	<b>Unit</b> (Column 1)	<b>Selling Price</b> (Column 2)	<b>Cost of unit</b> (Column 3)	<b>Earnings</b> (Column 2 - Column 3)
Row 1	<b>1</b>	<b>\$ 4.00</b>	<b>\$ 1.50</b>	<b>\$ 2.50</b>
Row 2	<b>2</b>	<b>\$ 4.25</b>	<b>\$ 2.75</b>	<b>\$ 2.75</b>
Row 3	<b>3</b>		<b>\$ 3.15</b>	<b>0</b>
<b>Total earnings for Period 1</b> (Row 1 + Row 2 + Row 3)				<b>\$ 4.00</b>

## Instructions for Buyers

### Buyer Values

Buyers record their purchases on a sheet similar to the sample record sheet here:

Period 1				
	Unit (Column 1)	Value of unit (Column 2)	Purchase Price (Column 3)	Earnings (Column 2 - Column 3)
Row 1	1	\$ 6.25		
Row 2	2	\$ 5.05		
Row 3	3	\$ 3.00		
<b>Total earnings for Period 1</b> (Row 1 + Row 2 + Row 3)				

The information on the decision sheet you will be using today is private. **Do not reveal it to anyone.**

On the buyer's record sheet, each table will represent a different trading period. In the period, a buyer may purchase from zero up to as many units as appear on the record sheet. In this example, the buyer has a total of 3 units to purchase (unit 1, unit 2, and unit 3 in column 1). The value of the first unit that may be bought during the period is listed in Row 1, Column 2 (\$6.25 in the example above). If the second unit is bought during the same period, the buyer's value is listed in Row 2, Column 2 (\$5.05 in the example above). The value of the third unit is in Row 3 (\$3.00). A buyer may purchase none, some, or all of the units, and may buy from a single or different sellers. You must purchase your units in sequence! Buy unit 1 first, and then if there is a seller, you may buy your 2<sup>nd</sup> unit and so forth. If you choose **not** to buy a unit, you **do not** receive the value for that unit.

### Buyer Profits

Buyers earn money by purchasing units at prices that are **below** their values. Profits are computed by subtracting each unit's purchase price from its value. Therefore,

$$\text{Your Earnings} = \text{Value of Unit} - \text{Purchase Price}$$

For example, the buyer record sheet above shows that the value of the first unit is \$6.25, the value of the second unit is \$5.05 and the value of the third unit is \$3.00. If the first unit is bought at a price of \$4.00, the second unit is bought at a price of \$4.25, and the third unit is not bought, the buyer's profits would be:

Buyer earnings from Period 1 are:

Unit 1	= \$6.25 - \$4.00	= \$2.25	(enter \$2.25 in Row 1, Column 3)
Unit 2	= \$5.05 - \$4.25	= \$0.80	(enter \$0.80 in Row 2, Column 3)
Unit 3	not bought	= \$0	(enter \$0.00 in Row 3, Column 3)

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$$\text{Total Earnings in Period 1} = \$3.05$$

This is recorded in the record sheet as shown below:

Period 1				
	Unit (Column 1)	Value of unit (Column 2)	Purchase Price (Column 3)	Earnings (Column 2 - Column 3)
Row 1	1	\$ 6.25	\$ 4.00	\$ 2.25
Row 2	2	\$ 5.05	\$ 4.25	\$ 0.80
Row 3	3	\$ 3.00		0
Total earnings for Period 1 (Row 1 + Row 2 + Row 3)				\$ 3.05

### Trading Rules

I will begin each trading period with an announcement that the market is open. At any time during the period, any buyer is free to raise his/her hand and, when called on, to make a bid to buy a unit. Similarly, any seller is free to raise his/her hand and, when called on, to make an offer to sell a unit. All bids and offers pertain to a single unit, it is not possible to sell multiple units as a package.

All buyers and sellers have identification numbers. Your number is shown at the top of your record sheet. These numbers should be used when making a bid or offer. Buyers should use the word "bid," and sellers should use the word "ask."

For example, if Buyer 1 wants to buy one unit for \$4.00, then this buyer should raise his/her hand and, when called on, say, "**Buyer 1 bids \$4.00.**" Similarly, if Seller 5 wants to sell a unit for \$2.65, then this seller should raise his/her card and, when called on, say, "**Seller 5 asks \$5.65.**" The bids and asks will be recorded on an overhead as follows:

Current Ask	s5	\$5.65	
Enter Bid/Ask	<input type="text"/>	<input type="text"/>	<input type="button" value="Enter"/>
Current Bid	b1	\$4.00	

All bids and asks must follow an improvement rule. All bids must be higher than the highest outstanding bid, and all asks must be lower than the lowest outstanding offer. In the example here, the next bid must be above \$4.00, and the next ask must be below \$5.65.

Buyers are free to buy a unit from the seller with the lowest asking price at any time. Similarly, any seller may sell a unit to the highest bidder at any time. For example, say seller 4 would like to sell a unit for a \$4.00 (the same price as the outstanding bid of buyer 1). This seller would raise his/her hand, and when called on, would say, "**Seller 4 accepts Buyer 1's bid.**" This offer to sell for \$4.00 is recorded and the information is transferred to the "Trade History" portion of the overhead to indicate a trade has occurred between Buyer 1 and Seller 4. It will appear as follows:

TRADE HISTORY		
Price	Buyer	Seller
\$4.00	b1	s4

After a trade has occurred, the buyer and seller involved will immediately record the price on their record sheets. Those who are not involved in the contract should not record the sale on their record sheets.

After each trade takes place, bids and offers start over. You are not bound by the bid-ask improvement rule in placing the first bid or ask following a trade. No subject may buy or sell more units than what is shown on his/her record sheet, and no subject is required to conduct any transactions. Unless you have been called on, you are not to speak to anyone.

### Points for Both Buyers and Sellers to Remember

- Earnings in the examples above are for illustrative purposes only, your actual earnings may differ.
- Do not assume that other participants have the same costs or values as you.
- The prices you negotiate should be recorded immediately after you make a sale or purchase.
- In each Period, you may only buy or sell the number of units shown on your record sheet; you must wait until later trading periods to buy or sell additional units.
- You must sell or purchase “unit 1” first, even if others have bought or sold units in the same period. Once you have bought or sold your first unit, you may buy or sell your second unit.
- Sellers do not incur the cost for a unit unless they sell the unit. Similarly, buyers do not receive the value of a unit unless they purchase the unit.