

## **Unit D:** Applying Basic Economic Principles in Agribusiness

### **Lesson 2:** Understanding the Effects of Supply and Demand Shifts

**Student Learning Objectives:** Instruction in this lesson should result in students achieving the following objectives:

1. Discuss international trade and its influence on supply and demand.
2. Understand market surpluses and shortages.
3. Apply supply and demand principles in agribusiness.

**Recommended Teaching Time:** 2 hours.

**Recommended Resources:** The following resources may be useful in teaching this lesson:

<http://ingrimayne.com/econ/DemandSupply/Adjustment2.html>

### **List of Equipment, Tools, Supplies, and Facilities:**

Writing surface  
PowerPoint Projector  
PowerPoint Slides  
Copies of WS 2-1  
Copies of WS 2-2  
Copies of fake money (SP 2-3)

### **Terms:**

Competition  
Inputs  
International Trade  
Scarce  
Speculation  
Shortage  
Surplus

**Interest Approach:** Introduce this lesson by asking students about the goods they use. Are there any foods they eat that are not grown in the country? Do they have or use any products that are produced in another country? (Some products may have labels that say "Made in China" or another country) Give students examples of these products. Ask students how they think these products arrive in our country. Use this discussion to lead into Objective 1—discussing the importance of international trade and how it influences supply and demand.

# Summary of Content and Teaching Strategies

**Objective 1:** Discuss international trade and its influence on supply and demand.

**Anticipated Problem:** How does international trade influence supply and demand?

## **PowerPoint Slide 3**

- I. **International trade** is the exchange of goods and services between different countries. It basically works the same as trading from village to village or from province to province only sometimes the trading rules are stricter.
  - A. All around the world, people are consuming products that are often available year-round. Transportation, communication, and trading between nations have made this possible. Consumers are all happy that they can have products that are not in-season in their own country, but are still concerned about the safety of what they consume.

## **PowerPoint Slide 4**

1. Security is just one issue that must be taken into consideration when trading. Every country takes measures to insure the safety of their people.
  - a. We still need to make sure that the products that have been imported are safe and healthy to eat. We need to know that the products we are consuming are free of hazardous pesticide residue and other foreign materials that could cause us harm.

## **PowerPoint Slide 5**

- b. Only products that are free from disease and other pests are permissible to trade. Pests can be imported into a country with food and crop imports. It is important that harmful pests are not introduced into another country by trading infected products or commodities.
2. Other issues include mutual assistance, monetary balances, economic growth, economic development, and technical advancement.

## **PowerPoint Slide 6**

- B. The largest benefit to international trade is to keep the workforce productive and efficient.
  1. With international trade, businesses and organizations can compare prices to obtain the lowest price possible.
  2. If we did not have foreign **competition**, many items would be more expensive to buy than what you currently pay. Competition is rivalry between two or more businesses or organizations.

## **PowerPoint Slide 7**

- C. Another advantage to international trade is that some products that we cannot grow in this country are still available to us. Many products are imported because our country does not grow enough to satisfy the demand for them.
  1. Many countries could increase the supply of products, but it is beneficial for countries to specialize in just a few things.
  2. As environmental conditions are different in each region, it is wise to grow crops that are best suited for those environmental conditions. For example, almonds which are easily grown in Afghanistan can be exported. Wood products that are readily available and easily grown in other regions of the world can be imported.

### **PowerPoint Slide 8**

- D. Nations that participate in international trade benefit their consumers in many respects:
  - 1. A wider distribution of **scarce** resources is made available. Scarce is not having enough product or commodity to meet consumer demand.
  - 2. Specialization is encouraged and promotes a comparative advantage. This usually lowers production costs and therefore lowers consumer's costs.
  - 3. A peaceful coexistence is promoted because the countries are communicating.
  - 4. Improved technology can be exchanged between countries which works faster than if each country had to figure out everything for themselves.

### **PowerPoint Slide 9**

- E. International trade works because of rules and agreements made between countries. There are many trade barriers set up to protect countries from hurting themselves by trading.
- F. Because international trade exists, when supply in one region decreases due to uncontrollable circumstances such as weather, trade can be used to supplement and increase supply in that region.
- G. In the same way, other regions may desire a particular product grown in our region, increasing the demand for that product. This desire may be caused by a low supply in their region or simply having more need for our product.

**\*\*\*To help students master this objective, use the PowerPoint Presentation to explain and discuss the information.**

## **Objective 2:** Understand market surpluses and shortages.

**Anticipated Problem:** What are market surpluses and shortages?

### **PowerPoint Slide 10**

- II. Within an economy, there are times that too much or too little of a product or commodity is on the market. This occurs when supply or demand is increased or decreased.
  - A. A **surplus** is when there is an excess amount of a product. Consumers can purchase as much product as they want at the current price and a significant amount of product remains unsold.

### **PowerPoint Slide 11**

- 1. Several reasons can cause a surplus:
  - a. Increased supply. Too much product in the market causes excess supply to remain unsold.
    - i. More businesses begin producing the product.
    - ii. For crops that are grown, weather conditions may be just right that an unusually high amount of the commodity is produced.

### **PowerPoint Slide 12**

- b. Decreased demand. When demand decreases, consumers do
  - i. Price may be too high and consumers are buying other products.
  - ii. Better products are being produced and consumers prefer to buy these better products.

### **PowerPoint Slide 13**

- 2. As a result of the surplus, some businesses will offer to sell their product at a lower price. Meanwhile, other business may choose to stop producing the product. Some businesses might fail due to lower profits and be forced to stop producing the product.
- 3. A graphic shows how supply and demand are affected during a surplus and a new equilibrium price is discovered.
  - a. Since the quantity demanded ( $Q_D$ ) is less than the quantity supplied ( $Q_S$ ), a surplus exists.

#### **PowerPoint Slide 14**

- B. A **shortage** is when there is not enough of a product. Consumers desire to buy more product, but all of the product is sold.
  - 1. Several reasons can cause a shortage:
    - a. Decreased supply. Not enough product on the market causes a scarcity.
      - i. Businesses may have stopped producing the product. This could be a result of higher production expenses.
      - ii. For crops that are grown, weather or environmental conditions (not enough rain, too much rain, pest invasion, etc.) may have caused an unusually low amount of the commodity to be produced.

#### **PowerPoint Slide 15**

- b. Increased demand.
  - i. Price may be too low and consumers want to buy an extra amount to store and use at a later time.
  - ii. Increased population means there are more consumers to purchase products.
  - iii. Increased demand may also be caused by a sudden interest in the product. Consumers may have found a new use for the product or believe the product to be better than other similar products.

#### **PowerPoint Slide 16**

- 2. As a result of the shortage, some businesses will increase their production so that they can sell more products at the higher price. Other businesses may begin to produce the product in order to take advantage of their high price.
- 3. A graphic shows how supply and demand are affected during a shortage and a new equilibrium price is discovered.
  - a. Since the quantity supplied ( $Q_S$ ) is less than the quantity demanded ( $Q_D$ ), a shortage exists.

**\*\*\*To help students master this objective, use the PowerPoint Presentation to explain and discuss the information. Then have students complete WS 2-1.**

**Objective 3:** Apply supply and demand principles in agribusiness.

**Anticipated Problem:** How can supply and demand principles used in agribusiness?

#### **PowerPoint Slide 17**

- III. When operating a business, it is important to consider world and local supply and demand. The laws of supply and demand affect each business and in order to operate a successful business, changes may need to be made as a result of shifts in supply and demand.
  - A. When planning a business, consider how the product or commodity will be sold and marketed.

#### **PowerPoint Slide 18**

**\*\*\*Tell students, "You are to plan a business that would grow a certain agricultural commodity and sell it to local consumers." Then ask students, "What might you need to ask about supply and demand to ensure the business would be profitable and successful?"**

- 1. If the product will be sold to local consumers, the business planner should ask himself:
  - a. Is there enough local demand to support the production and profitable sale of this product?
  - b. How many other businesses are providing the supply for this market? Could our business offer supply at a lower price?

- c. Could a **niche market** be developed?
  - i. A niche market is a special or unique product or service that is being sold to a specific group of consumers who desire the product or service. Other businesses do not address the needs or desires of the group of consumers.
  - ii. One way to indicate if a niche market could be developed is to ask several consumers if they would be interested in the proposed product. A survey could be developed about the product, its price, and how consumers might use it to indicate if the product would be successful.

#### **PowerPoint Slide 19**

**\*\*\*Tell students, "You are to plan a business that would grow a certain agricultural commodity and sell it to a buyer that will sell the commodity at another location." Then ask students, "What might you need to ask about supply and demand to ensure the business would be profitable and successful?"**

- 2. If the product will be sold to a buyer who will sell the product at another location, the business planner should ask himself:
  - a. Is there enough regional or global demand to support the production and profitable sale of this product?
  - b. Does the buyer have standards for the product that he buys? How can I be sure that the product I produce will meet these standards?
    - i. Standards may include a minimum weight, disease and pest free, a certain maturity.
  - c. Could a written contract be made to guarantee a set price for my product?
- 3. It is also important to consider the **inputs** that are needed to produce the product or commodity. An input is something that is needed to be "put in" or used to produce the product or commodity.
  - a. Are the inputs affordable?

#### **PowerPoint Slide 20**

- B. When operating a business, it is important to know up-to-date information about your consumers and the global status of your product.
  - 1. Information can be obtained by reading periodicals, the internet, or by contacting an extension educator.

#### **PowerPoint Slide 21**

- a. If information shows that supply or demand for the product is shifting, steps should be taken to compensate for this change. When this is done, the business should remain profitable.
- b. For example, if the demand is increasing for almonds, an almond grower should consider increasing the amount of almonds he produces.
- c. Inputs for the business also need to be considered. If supply or demand is shifting for the inputs, changes within the business may be required in order to remain profitable.
- d. For example, if the cost of fertilizer to produce cotton increases significantly, a cotton grower should consider alternatives such as growing cotton with less fertilizer and producing less cotton or growing a different crop that does not require fertilizer.

#### **PowerPoint Slide 22**

**\*\*\*Tell students, "You are a business owner that grows agricultural commodities." Then ask students, "What might you need to ask about supply and demand to ensure the business will remain profitable and successful?"**

- 2. Some questions the business owner should ask himself are:
  - a. Is the demand for the product I produce remaining the same? Will it change in the near future? What changes does the business need to make to remain profitable?
  - b. Is the supply of the product I produce remaining the same? Will it change in the near future? What changes does the business need to make to remain profitable?

- c. Is the price I sell my product to local consumers comparable to the price of this product in other regions? Or am I receiving a comparable price from buyers that are taking this product?

**PowerPoint Slide 23**

- C. It is important to remember that with agribusinesses that produce crops or raise livestock the amount of time to make changes is longer than with other businesses.
  - 1. Although a grower plans to change the amount of a certain commodity that he produces, this may not actually occur until the next growing season.

**PowerPoint Slide 24**

- 2. For example, if the price of melons decreases and the price of apples increases in June, several melon growers might decide to stop growing melons and plant apple orchards instead. Although the melon growers have made their decision, they will still harvest their melons in July and August. It will not be known until next harvest that there is a decreased supply of melons.
  - a. If enough melon growers stop producing melons, the actions by these growers will cause a major decrease in supply, if all other things remain constant, the price of melons will increase. Also, they will be placing apples on the market, increasing the total supply of apples. If all other things remain constant, the price of apples will decrease.

**PowerPoint Slide 25**

- 3. By owning and operating a business, it is known that a certain amount of risk is involved. In order to remain profitable, some changes may need to be made to the business. If changes are made at the wrong times, an adverse affect may be true, causing the business to lose profit. Some **speculation**, or predicting what will happen in the future, needs to be made correctly for the business changes to have the best possible outcome.

**\*\*\*To help students master this objective, use the PowerPoint Presentation to discuss the information. For the given questions above, help students think critically to solve the questions. By answering these questions, they will discover some of the information given in lesson.**

**Review/Summary:** Review this lesson by playing a game with students. Divide students into two groups with an equal number of students per group. Tell students that each group is a country. Have students make up a pretend name for their country. The winner of the game is the country who's citizens have all the goods to meet their needs (food, shelter, clothing) when the game is over. If all citizens in both countries have enough goods to meet their needs, the country with the most money will win. Both countries will begin with the same amount of money in their economy and will have the same total input cost for all goods.

Each student (citizen) within a country is given a set amount of money to spend and tickets that represent the goods he produces. Each student is allowed to set the price that for which they will sell their products or they can choose to negotiate the price with each consumer. (Use SP 2-1 for the individuals in one country and SP 2-2 for the individuals in the other country.) Citizens are not allowed to give another citizen their money; however, they can re-sell any extra goods they may have purchased to another citizen. Also, citizens only have the goods they produce or sell, they cannot gather any other materials from their country.

## **Review/Summary, Continued:**

When you say "Go!" students may begin to trade within their country (There is a ban on international trade during this portion of the game.) Allow students to trade for a few minutes then stop and ask students to discuss what is happening in their own country's economies. Then, when you say "Go!" again, students may begin international trade. Allow students to trade for a set amount of time (5-8 minutes are recommended.) At the end of this time, allow each citizen to record the products he has acquired and any money he has remaining in his possession on WS 2-2. Then students should complete the questions on the worksheet. To determine the winning country, find out if all members have products to meet their needs. If needed, allow each group to count the total amount of money in their economy. Lead a discussion asking students about what happened during the game.

- >How did each of you determine the price of your product?
- >Did the international trade help you gain the goods you needed?
- >Were there any shortages?
- >Were there any surpluses?
- >Did anyone not have enough money? Did you receive any help from other citizens? How did they help?

**Evaluation:** A sample written test is attached.

## **Answers to Test:**

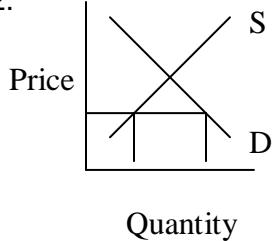
### **Part One: Matching**

1 = c, 2 = a, 3 = b, 4 = d, 5 = f, 6 = e,

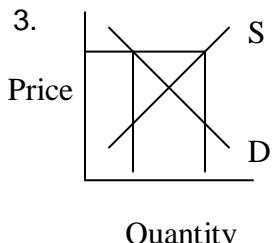
### **Part Two: Short Answer**

1. Use Objective 1 to score this question.

2.



3.



4. Use Objective 3 to score this question.

# Understanding the Effects of Supply and Demand Shifts

**Part One**

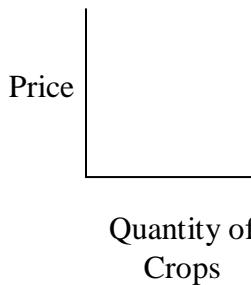
**Instructions.** For each of the following items, determine and write if the situation will cause a shortage or a surplus.

- \_\_\_\_\_ 1. An overabundance of pests destroys half of the apple crop.
- \_\_\_\_\_ 2. The population increases by 50%.
- \_\_\_\_\_ 3. Demand for melons decreases.
- \_\_\_\_\_ 4. The new, popular clothing item to wear is silk, so many more consumers begin to purchase silk.
- \_\_\_\_\_ 5. The price of inputs for wheat decreases, so more agribusinessmen begin producing wheat.
- \_\_\_\_\_ 6. Demand for goat's milk increases.
- \_\_\_\_\_ 7. The price wheat for bread is unusually low.
- \_\_\_\_\_ 8. More agribusinesses begin producing pomegranates to take advantage of the high profits that can be made.

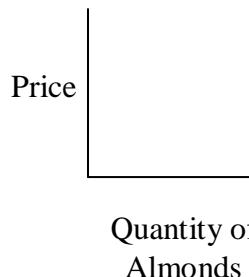
**Part Two**

**Instructions.** For each of the following items, draw a graphic that describes the situation.

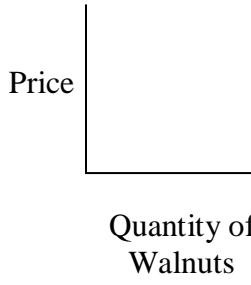
9. Poor weather conditions cause fewer crops to be produced.



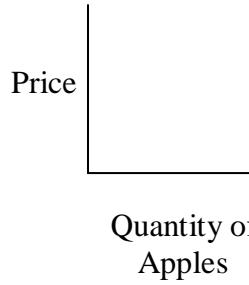
10. The price of almonds increases, but the price of walnuts remains the same.



11. The price of almonds increases, but the price of walnuts remains the same.



12. Consumers stop buying as many apples and start buying more applesauce



# Understanding the Effects of Supply and Demand Shifts

## Part One

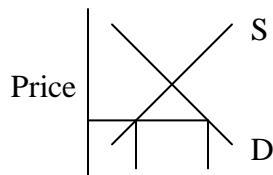
**Instructions.** For each of the following items, determine and write if the situation will cause a shortage or a surplus.

- |                |   |
|----------------|---|
| Shortage _____ | 1. An overabundance of pests destroys half of the apple crop.   |
| Shortage _____ | 2. The population increases by 50%.   |
| Surplus _____  | 3. Demand for melons decreases.   |
| Shortage _____ | 4. The new, popular clothing item to wear is silk, so many more consumers begin to purchase silk.           |
| Surplus _____  | 5. The price of inputs for wheat decreases, so more agribusinessmen begin producing wheat.                  |
| Shortage _____ | 6. Demand for goat's milk increases.  |
| Shortage _____ | 7. The price wheat for bread is unusually low.  |
| Surplus _____  | 8. More agribusinesses begin producing pomegranates to take advantage of the high profits that can be made. |

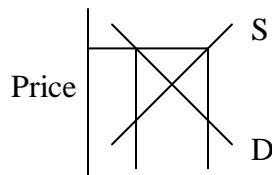
## Part Two

**Instructions.** For each of the following items, draw a graphic that describes the situation.

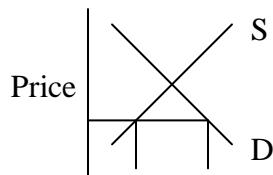
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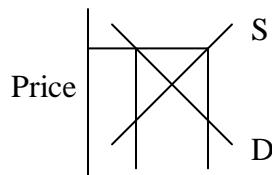
10. The price of almonds increases, but the price of walnuts remains the same.



11. The price of almonds increases, but the price of walnuts remains the same.



12. Consumers stop buying as many apples and start buying more applesauce



# Understanding the Effects of Supply and Demand Shifts

*Instructions. Record the goods you purchased and any money you have remaining. Then answer the following questions.*

## **Goods:**

Food-

Shelter-

## Clothing-

## Money:

1. Were you able to purchase all of the goods you need to survive (food, shelter, and clothing)? Why or why not?
  2. What would have happened if international trade was not allowed?
  3. What are the benefits of international trade?
  4. Did you notice any shortages that occurred? What happened as a result of the shortage?

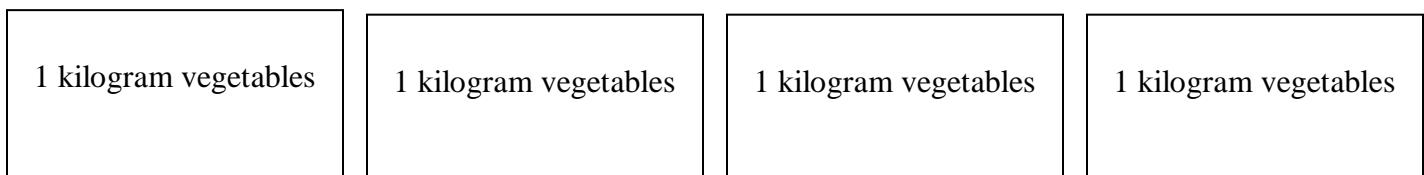
# Understanding the Effects of Supply and Demand Shifts

## Review Game Tickets

**\*\*Note to Instructor:** These game pieces can be used as they are or can be modified for the game. Please use only the number of game pieces needed (if there are less students than game pieces, determine which pieces will not be used.) If there are more students, additional game pieces can be created. Cut out the tickets that are in the boxes and give to the proper students along with the appropriate amount of fictitious money. No one in Country 1 has products for shelter. This will show the importance of international trade. There will also be a shortage of clothing materials.

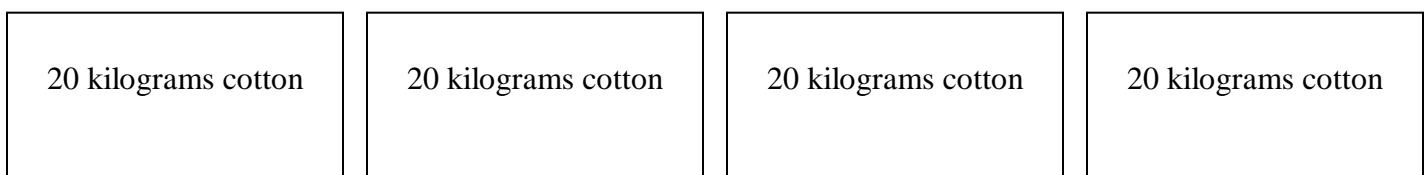
Citizen 1 \$10

Tell Citizen 1 that 1 kilogram vegetables costs \$2 to produce.



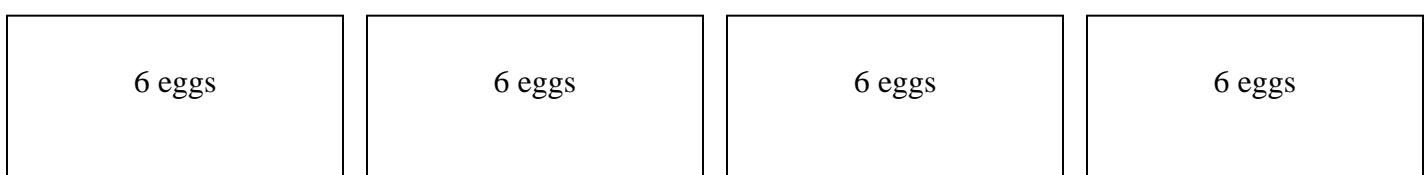
Citizen 2 \$6

Tell Citizen 2 that 20 kilograms of cotton costs \$3 to produce.



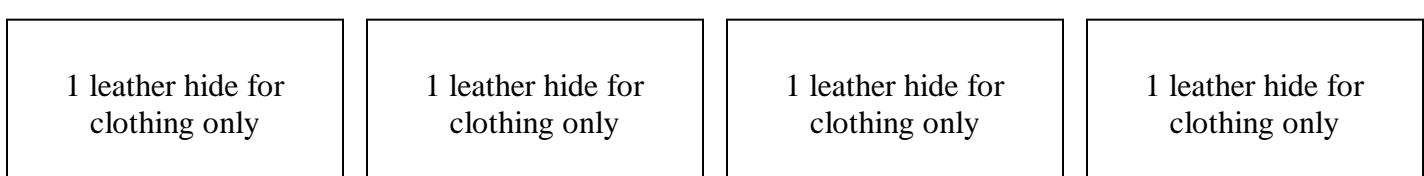
Citizen 3 \$9

Tell Citizen 3 that 6 eggs costs \$1 to produce.



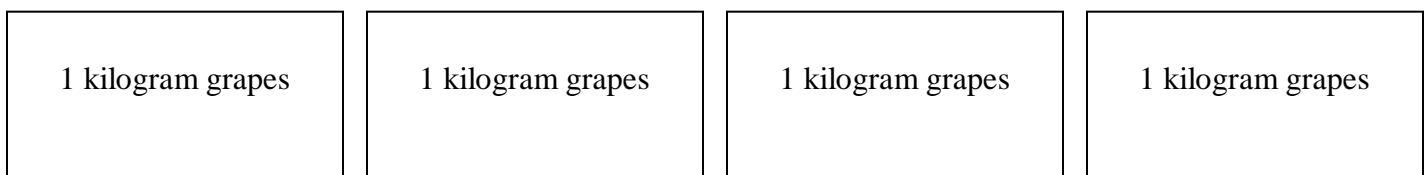
Citizen 4 \$5

Tell Citizen 4 that 1 leather hide costs \$4 to produce.



Citizen 5 \$8

Tell Citizen 5 that 1 kilogram of grapes costs \$3 to produce.



# Understanding the Effects of Supply and Demand Shifts

## Review Game Tickets

**\*\*Note to Instructor:** These game pieces can be used as they are or can be modified for the game.

Please use only the number of game pieces needed (if there are less students than 'citizens,' determine which 'citizens' will not be used.) If there are more students, additional game pieces can be created. Cut out the tickets that are in the boxes and give to the proper students along with the appropriate amount of factious money. No one in Country 2 has products to make clothing. This will show the importance of international trade. There will also be a shortage of shelter materials.

Citizen 6 \$10

Tell Citizen 6 that 1 kilogram of almonds costs \$2 to produce.

1 kilogram almonds	1 kilogram almonds	1 kilogram almonds	1 kilogram almonds
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Citizen 7 \$9

Tell Citizen 7 that 25 kilograms straw costs \$2 to produce.

25 kilograms straw	25 kilograms straw	25 kilograms straw	25 kilograms straw
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Citizen 8 \$4

Tell Citizen 8 that 10 kilograms of wood costs \$5 to produce.

10 kilograms wood	10 kilograms wood	10 kilograms wood	10 kilograms wood
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Citizen 9 \$6

Tell Citizen 9 that 1 kilogram fruit costs \$3 to produce.

1 kilogram fruit	1 kilogram fruit	1 kilogram fruit	1 kilogram fruit
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Citizen 10 \$9

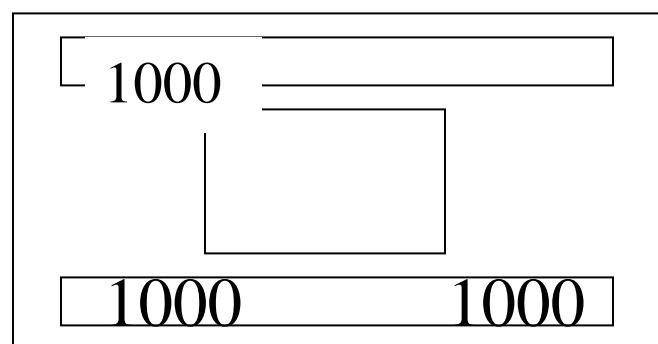
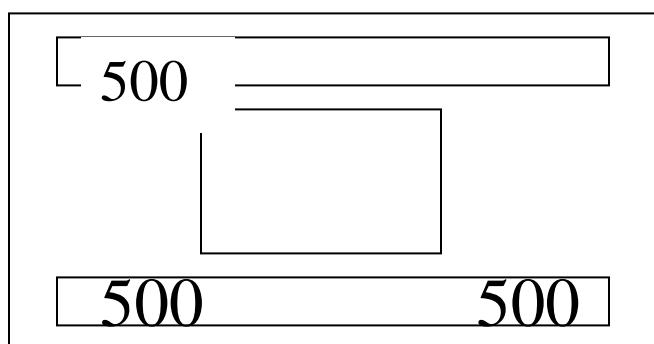
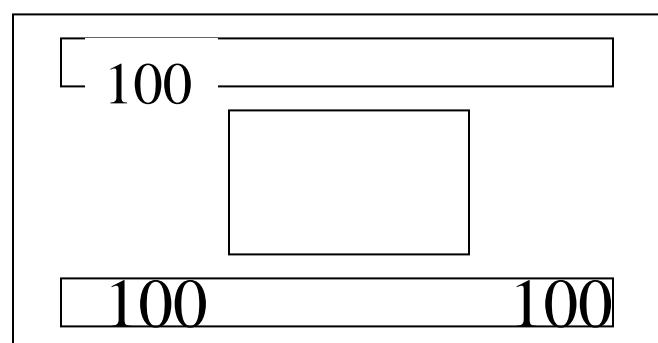
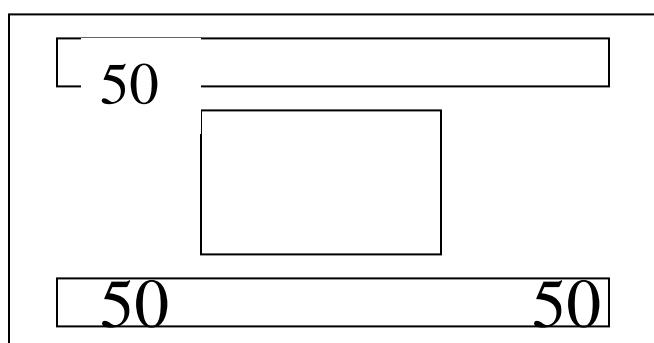
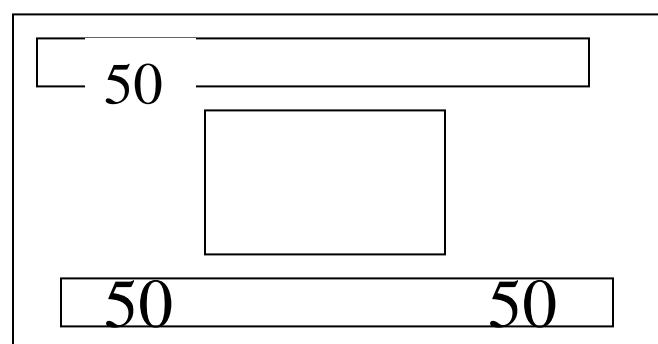
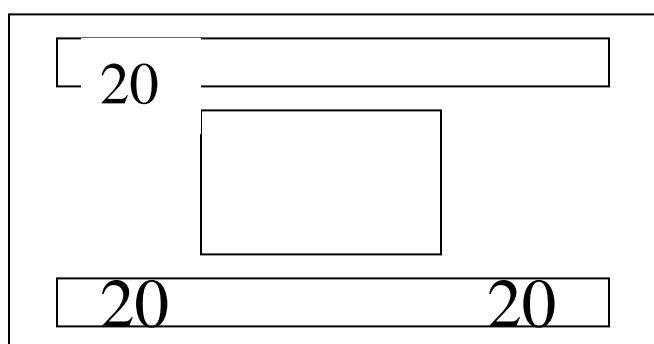
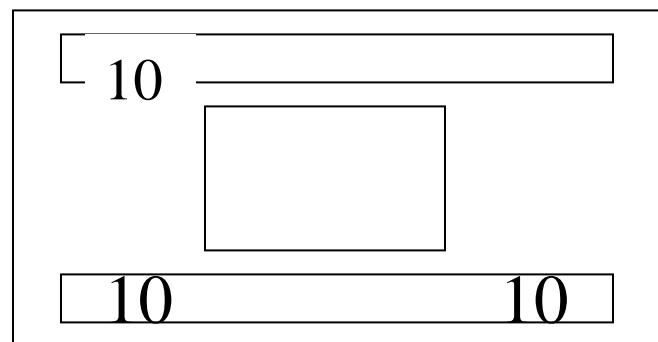
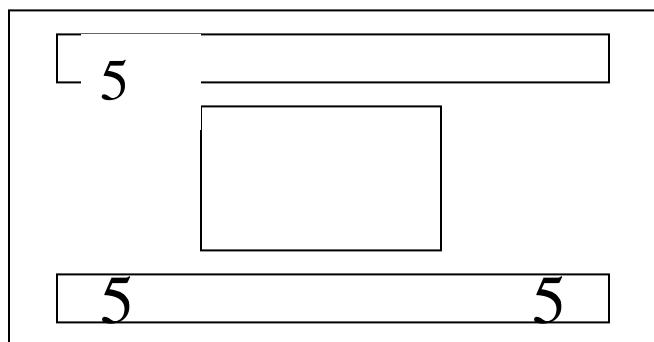
Tell Citizen 10 that 2 liters of goats milk costs \$1 to produce.

2 liters goats milk			
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SP: 2-3

## Understanding the Effects of Supply and Demand Shifts

### Fake Money



**Test****Understanding the Effects of Supply and Demand Shifts****Part One: Matching**

*Instructions.* Match the term with the correct response. Write the letter of the term by the definition.

- |                 |                       |
|-----------------|-----------------------|
| a. speculation  | d international trade |
| b. input        | e. shortage           |
| c. niche market | f. surplus            |

\_\_\_\_\_ 1. A special or unique product or service that is being sold to a specific group of consumers who desire the product or service.

\_\_\_\_\_ 2. Predicting what will happen in the future.

\_\_\_\_\_ 3. Something that is needed to be "put in" or used to produce the product or commodity.

\_\_\_\_\_ 4. The exchange of goods and services between different countries.

\_\_\_\_\_ 5. Too much product available for consumers to purchase.

\_\_\_\_\_ 6. Too little product available for consumers to purchase.

**Part Two: Short Answer**

*Instructions.* Use complete sentences and correct spelling to provide the information below.

1. Explain how international trade affects supply and demand.

2. Draw an illustration of a shortage.

3. Draw an illustration of a surplus.

4. What should a business planner consider regarding supply and demand?