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## TRADE WITHOUT MONEY

### OVERVIEW

1. Absolute advantage means the ability of a country to produce a larger quantity of a good with the same amount of resources as another country.
2. If each country has an absolute advantage in a different good, and both countries specialize in the good in which they have the absolute advantage and trade, each country gains additional goods from the trade than each could provide itself.
3. Comparative advantage means the ability of one country to produce a good with a lower opportunity cost than another country.
4. Even if one country has an absolute advantage in both goods, specialization and trade can benefit both countries if both specialize in the good in which they have the comparative advantage.
5. Specialization and trade are based on comparative advantage and not absolute advantage. Trade will only occur if the terms of trade fall between the opportunity costs for the two countries.
6. The production possibilities for two countries can be added to show the possibility for gains from trade.

### MATCHING

- |       |    |                       |    |  |
|-------|----|-----------------------|----|--|
| _____ | 1. | absolute advantage    | a. | one country can produce a larger amount of a good with given resources than another country. |
| _____ | 2. | comparative advantage | b. | one country can produce a good with a smaller opportunity cost than the other country.       |

### TRUE-FALSE

- \_\_\_\_\_ 1. If one country has an absolute advantage in wheat, it will also have a comparative advantage in wheat.

- \_\_\_\_\_ 2. If one country has a comparative advantage in wheat, it will also have an absolute advantage.
- \_\_\_\_\_ 3. Where there are only two goods, one country could have the comparative advantage in both goods.
- \_\_\_\_\_ 4. Where there are only two goods, one country could have the absolute advantage in both goods.
- \_\_\_\_\_ 5. The decision to trade depends on which country has the absolute advantage.

### PROBLEMS

1. Suppose that there are two countries, the U.S. and the U.K., and two goods, wool and wine. Suppose that using a given amount of resources, the U.S. can produce 9 bolts of wool or 2 vats of wine. The U.K. can produce either 1 bolt of wool or 8 vats of wine with the same resources. The following table summarizes this information.

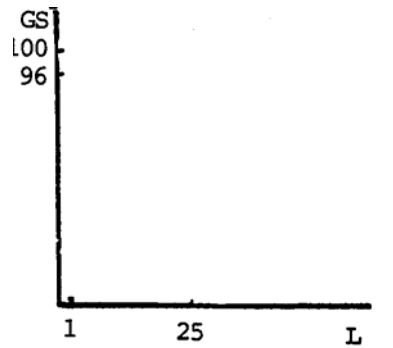
	U.S.	U.K.
Wool	9	1
Wine	2	8

- a. In which good should each specialize? \_\_\_\_\_
- b. If 3 bolts of wool trade for 1 vat of wine, how much wine could the U.S. get for 9 bolts of wool? \_\_\_\_\_  
Is that more wine than the U.S. could get by using the same resources to produce wine? \_\_\_\_\_
- c. Would the U.S. gain by producing wool and trading for wine? \_\_\_\_\_
- d. If 3 bolts of wool trade for 1 vat of wine, how much wool could the U.K. get for 8 vats of wine? \_\_\_\_\_ Is that more wool than the U.K. could get by using the same resources to produce wool? \_\_\_\_\_
- e. Would the U.K. gain by producing wine and trading for wool? \_\_\_\_\_
2. Suppose that the U.S. can produce 10 bolts of wool or 5 vats of wine, and the U.K. can produce 1 bolt of wool or 3 vats of wine with the same resources. Suppose that 1 bolt of wool trades for 1 vat of wine.
- a. If the U.S. produces 10 bolts of wool and trades half for wine, how much of each good will it have? \_\_\_\_\_
- b. Is the u.s. better off than if it produces only wine? \_\_\_\_\_
- c. If the U.K. produces 3 vats of wine and trades one for wool, how much of each good does the U.K. have? \_\_\_\_\_
- d. Is the U.K. better off than if it had produced only wool? \_\_\_\_\_

- e. Will it pay the U.S. to specialize in wool? \_\_\_\_\_
- f. Will it pay the U.K. to specialize in wine? \_\_\_\_\_
3. Suppose that both the U.S. and U.K. can produce wool or wine. The U.S. can produce 16 bolts of wool or 4 vats of wine. The U.K. can produce 6 bolts of wool or 3 vats of wine. Suppose that 3 bolts of wool trade for 1 vat of wine.
- a. Find the opportunity cost of producing 1 vat of wine for the U.S. \_\_\_\_\_
- b. Find the opportunity cost of producing 1 vat of wine for the U.K. \_\_\_\_\_
- c. Which has the comparative advantage in producing wine? \_\_\_\_\_
- d. Find the opportunity cost of producing 1 bolt of wool for the U.S. \_\_\_\_\_
- e. Find the opportunity cost of producing 1 bolt of wool for the U.K. \_\_\_\_\_
- f. Which has the comparative advantage in producing wool? \_\_\_\_\_
- g. Explain how the two countries can gain by specializing and trading. \_\_\_\_\_

4. Suppose that Country M can use all of its resources to produce 100 gingersnaps (GS) or Country M can produce only one other good, lemonade (L). The opportunity cost of 1 gallon of lemonade is 4 gingersnaps. The following steps will help you find Country M's production possibilities.

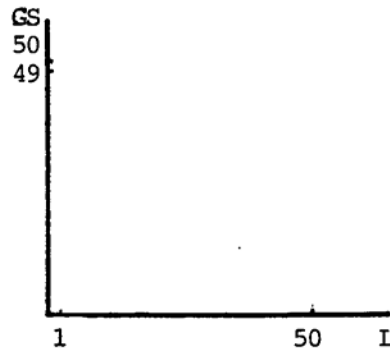
- a. If M uses all resources GS to produce gingersnaps, 100 how many gingersnaps can 96 produce? \_\_\_\_\_ How many resources does M have left to produce lemonade? \_\_\_\_\_ How much lemonade can M produce? \_\_\_\_\_ Find this point on the graph and label it A.



- b. If M gives up 4 gingersnaps, how much lemonade does M get? \_\_\_\_\_ How do you know? \_\_\_\_\_ What is the new amount of gingersnaps produced? \_\_\_\_\_ What is the new amount of lemonade produced? \_\_\_\_\_ Find this point on the graph and label it B. If this process keeps up, what will the production possibilities look like? Draw it in.

5. Suppose now that there is another country, Country R. R can also produce two goods, gingersnaps and lemonade. In Country R, if all resources are devoted to gingersnaps, Country R can produce 50 gingersnaps. The opportunity cost of a gingersnap in R is a gallon of lemonade.

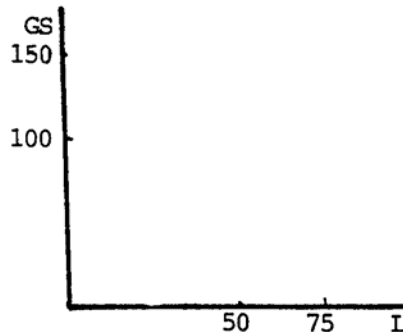
- a. If R uses all resources to produce gingersnaps, GS how many gingersnaps can R produce? \_\_\_\_\_ How many resources does R have left to produce lemonade? \_\_\_\_\_ How much lemonade can R produce? \_\_\_\_\_ Find this point on the graph and label it G.



- b. If R gives up 1 gingersnap, how much lemonade does R get? \_\_\_\_\_ How do you know? \_\_\_\_\_ What is the new amount of gingersnaps produced? \_\_\_\_\_ What is the new amount of lemonade produced? \_\_\_\_\_ Find this point on the graph and label it F. If this process keeps up, what will the production possibilities for Country R look like? Draw it in.

6. We can find the joint production possibilities for the two countries, M and R.

- a. What if both countries produce only gingersnaps. What is the largest number of gingersnaps they can produce? \_\_\_\_\_ How much lemonade are they making? \_\_\_\_\_ Find this point on the graph; label it X.
- b. Which country has the smallest opportunity cost for each unit of lemonade? \_\_\_\_\_



If this country uses all its resources to produce lemonade while the other country still produces only gingersnaps, how many gingersnaps will be produced? \_\_\_\_\_ How much lemonade? \_\_\_\_\_ Find this combination on the graph and label it Y. Connect X and Y with a straight line. Now how much lemonade can be produced if both countries produce only lemonade? \_\_\_\_\_ How many gingersnaps are being produced? \_\_\_\_\_ Find this point on the graph and label it Z. Connect Y and Z with a straight line. The curve from X to Y to Z is the world production possibilities curve.

7. Use the information from problems 4, 5, and 6 to answer these questions. Suppose that Country M produces 60 gingersnaps and 10 gallons of lemonade. Is Country M on its production possibilities? \_\_\_\_\_ Suppose that Country R produces 25 gingersnaps and 25 gallons of lemonade. Is Country R on its production possibilities? \_\_\_\_\_ How many total gingersnaps do the two countries produce?

\_\_\_\_\_ How many total gallons of lemonade do the two countries produce? \_\_\_\_\_ Find this combination on the world production possibilities you found in problem 6. What conclusion can you draw? \_\_\_\_\_

### IN THE NEWS

1. Japan is a nation of limited natural resources. Japan pays for the resources that it imports by using the resources to produce goods for export.
  - a. What is the alternative for the resource owner? \_\_\_\_\_
  - b. Why does the resource owner sell the resources to Japan? \_\_\_\_\_
  - c. What alternative does Japan have? \_\_\_\_\_
  
2. In 1938, the British prime minister, Neville Chamberlain, went to Munich, Germany where he signed a treaty which gave part of Czechoslovakia to Germany. Chamberlain returned to Britain and proclaimed that he had gained "Peace in our time." It was a year later that Germany, under Hitler, attacked Poland and World War II began.
  - a. What did Germany gain by the treaty? \_\_\_\_\_
  - b. What did Great Britain gain by the treaty? \_\_\_\_\_
  - c. Suppose that in 1938 Britain had the choice of giving part of Czechoslovakia to Germany or going to war, and that Germany was ready for war but Britain was not. What did the British gain by the treaty under these conditions? \_\_\_\_\_  
\_\_\_\_\_
  
3. Richard Rodgers was a well known composer. He wrote the music for *Oklahoma*, *South Pacific*, and *The Flower Drum Song* among others. But he did not write the words. He worked primarily with two lyricists, Larry Hart and then Oscar Hammerstein II. After both died, Rodgers continued composing and wrote his own lyrics.
  - a. Rodgers had an absolute advantage in writing music. What if he also had an absolute advantage in writing lyrics? Should Rodgers write both music and lyrics or should he write the music and let the lyricist write the words? Why? \_\_\_\_\_  
\_\_\_\_\_
  - b. What did Hart and Hammerstein gain by their association with Rodgers? \_\_\_\_\_  
\_\_\_\_\_
  
4. Iceland is well known for one export, cod. Because of a short growing season and cold climate, Iceland grows few crops and must trade for nearly all food, except fish.

- a. If Iceland does not trade, how much wheat can it grow? \_\_\_\_\_
- b. What does Iceland give up by devoting so many resources to fishing? \_\_\_\_\_  
\_\_\_\_\_
- c. Why can't other countries fish just as cheaply as Iceland? \_\_\_\_\_  
\_\_\_\_\_

### PRACTICE TEST

Circle the correct answer.

1. Absolute advantage means:
- a. one country produces a better quality good than another.
  - b. two countries can both produce the good equally well.
  - c. one country has the ability to produce a larger quantity of a good with the same resources.
  - d. one country has the ability to produce a smaller quantity of a good with fewer resources.
2. Every time Kelly waxes a car, she gives up the opportunity to sweep 3 garages. When Chris waxes a car, he misses the opportunity to sweep 2 garages. Who has the comparative advantage in waxing cars?
- a. Kelly
  - b. Chris
  - c. Both
  - d. Neither
3. The opportunity cost of a lime is 3 sodas for country A and 5 sodas for country B. Which country has the comparative advantage in soda production?
- a. Country A
  - b. Country B
  - c. Country B has no comparative advantage.
  - d. Not enough information to tell.
4. Gains from trade can occur if:
- a. one country has a comparative advantage in all goods.
  - b. one country has no comparative advantage in any good.
  - c. no country has a comparative advantage in a good.
  - d. each country has a comparative advantage in a good.

5. Suppose that country A has a comparative advantage in apples. Then it must have:
  - a. an absolute advantage in apples.
  - b. a comparative advantage in tires.
  - c. a lower opportunity cost of producing apples.
  - d. all the above.

## ANSWERS

### Matching

1. a
2. b

### True-False

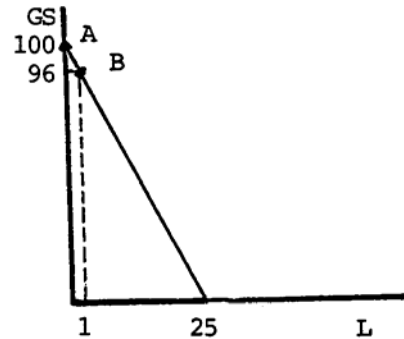
1. F
2. F
3. F
4. T
5. F

## Problems

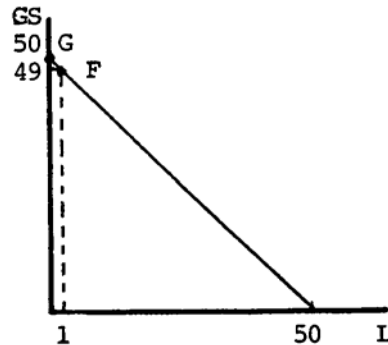
1.
  - a. The U.S. should produce wool, and the U.K. should produce wine, their absolute advantages.
  - b. The U.S. could get 3 vats of wine, which is one more wine than the U.S. could get by producing wine.
  - c. The U.S. would gain by producing wool and trading for wine.
  - d. The U.K. could get 24 bolts of wool, which is 23 more bolts than the U.K. could get by producing wool.
  - e. The U.K. would gain by producing wine and trading for wool.
2.
  - a. The U.S. would have 5 bolts of wool and 5 vats of wine.
  - b. Yes, because if it only produced wine, it would only have 5 vats of wine and no wool.
  - c. The U.K. would have 2 vats of wine and 1 bolt of wool.
  - d. The U.K. is better off because it has 2 vats of wine and a bolt of wool. If it used all of its resources to produce wool, it would have a bolt of wool and no wine.
  - e. Yes, because the U.S. gains by specializing and trading.
  - f. Yes, because the U.K. gains by specializing and trading.
3.
  - a. The opportunity cost of 1 vat of wine for the U.S. is 4 bolts of wool.
  - b. The opportunity cost of 1 vat of wine for the U.K. is 2 bolts of wool.
  - c. The U.K. has the comparative advantage in wine because it has the lower opportunity cost for wine.
  - d. The opportunity cost of 1 bolt of wool for the U.S. is 1/4 vat of wine.
  - e. The opportunity cost of 1 bolt of wool for the U.K. is 1/2 vat of wine.

- f. The U.S. has the comparative advantage in wool because it has the lower opportunity cost for wool.
- g. If the U.S. produced 16 bolts of wool, it could give up 12 bolts of wool and get 4 vats of wine. Then the U.S. would have 4 bolts of wool and 4 vats of wine. It would be better off than if it had transformed all of its resources into wine. The U.K. could produce 3 vats of wine, its comparative advantage, and trade 2 for 6 bolts of wool. It would be better off because it has more than if it had used the same resources to produce wool. So if the U.S. specializes in wool, the U.K. specializes in wine, and they trade, both will gain from trade even though the U.S. has the absolute advantage in the production of both goods.

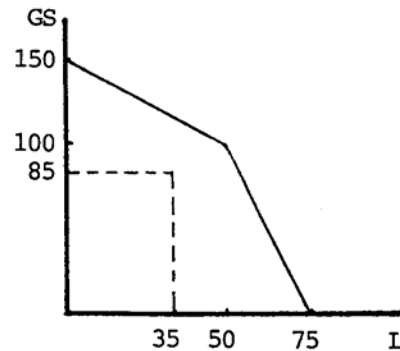
4. a. 100, 0, 0  
 b. 1 gallon, the opportunity cost tells how many gingersnaps we have to give up to get 1 gallon of lemonade, 96,1



5. a. 50, 0, 0  
 b. 1 gallon, the opportunity cost tells how many gingersnaps we have to give up to get 1 gallon of lemonade, 49,1



6. a. 150 gingersnaps, 0 gallons of lemonade  
 b. R  
 100 gingersnaps, 50 gallons of lemonade, if both produce lemonade, 75 gallons are produced .



7. yes, yes,  $60 + 25 = 85$  gingersnaps,  $10 + 25 = 35$  gallons of lemonade, they are not on the world production possibilities. Both countries could gain if they specialized and traded.

In the News

1.
  - a. The resource owner can use the resources and produce the goods itself.
  - b. Because Japan can turn the resources into goods at a lower opportunity cost than the resource owner. So the resource owner gains.
  - c. Japan has few alternatives. If it does not import and produce for export, its standard of living will go down. So Japan also gains from the trade.
2.
  - a. Germany gained part of Czechoslovakia.
  - b. Great Britain believed it had gained peace.
  - c. In this case, the British gained time to prepare for war. Unfortunately, the British believed that they had gained peace and were hardly better prepared in 1939 than in 1938.
3.
  - a. If Rodgers wanted to write more musicals, then he should have left the words to a lyricist. Even if he had an absolute advantage in lyrics, he probably had a comparative advantage in music. This means that he should specialize in music and let someone else specialize in lyrics.
  - b. They probably gained more success as song writers than if they had written both the music and lyrics themselves. They had the comparative advantage in lyrics, even if Rodgers might have been a better lyric writer.
4.
  - a. Iceland can grow little wheat.
  - b. By devoting resources to fishing, Iceland loses whatever else the resources could produce. Since the resources could produce little wheat, the wheat cost of fishing is low.
  - c. Some countries can fish just as cheaply if we mean that the money cost is the same. But the opportunity cost of fishing is much higher for most countries so they devote their resources to other goods, such as wheat, let Iceland fish, and then trade for fish.

#### Practice Test

1.c., 2.b., 3.b., 4.d., 5.c.