

WORLD TRADE EQUILIBRIUM

FUNDAMENTAL QUESTIONS

1. What are the prevailing patterns of trade between countries? What goods are traded?

Trade occurs because specialization in production, based on **comparative advantage**, leads to increased output. Countries specialize in those products for which their opportunity costs are lower than costs in other nations; countries then trade what they produce beyond their own consumption and receive other countries' products in return.

The bulk of world trade occurs within industrialized countries; trade between industrialized countries and developing countries accounts for most of the rest. Canada is the largest buyer of U.S. exports, and Japan is the largest source of U.S. imports. Petroleum, motor vehicles, and petroleum products are the goods that have the largest trading volume, although world trade occurs across a great variety of products.

2. What determines the goods a nation will export?

A nation exports those goods for which it has a comparative advantage over other nations—that is, those goods for which its opportunity costs are lower than the opportunity costs of other nations. The **terms of trade**—how much of an exported good must be given up to obtain one unit of an imported good—are limited by the domestic opportunity costs of the trading countries.

3. How are the equilibrium price and the quantity of goods traded determined?

As with most other markets, demand and supply determine the equilibrium price and quantity. For internationally traded goods, the **export supply curve** shows how much countries are willing to export at different world prices. The **import demand curve** shows how much countries are willing to import at different world prices. The international equilibrium price and quantity traded equal the point at which the export supply curve and the import demand curve intersect.

4. What are the sources of comparative advantage?

There are two major sources of comparative advantage: productivity differences and factor abundance. Productivity differences come from differences in labor productivity and human capital, and from differences in technology. Factor abundance affects comparative advantage because countries have different resource endowments. The United States, with a large amount of high-quality farmland, has a comparative advantage in agriculture.

Productivity differences and factor abundance explain most, but not all, trade patterns. Other sources of comparative advantage are human skills differences, product life cycles, and consumer preferences. Consumer preferences explain **intraindustry trade**, in which countries are both exporters and importers of a product. Some consumers prefer brands made in their own country; others prefer foreign brands.

Key Terms

absolute advantage

comparative advantage

terms of trade

export supply curve

import demand curve

intraindustry trade

Quick-Check Quiz

Section 1: An Overview of World Trade

- The bulk of world trade occurs
 - in the Eastern trading area.
 - among developing countries.
 - among industrial countries.
 - between developing and industrial countries.
 - between industrial countries and the Eastern trading area.
- The United States imports the most from
 - Canada.
 - Germany.
 - Japan.
 - Mexico.
 - Russia.
- The United States exports the most to
 - Canada.
 - Germany.
 - Japan.
 - Mexico.
 - Russia.
- The most heavily traded good in the world is
 - crude petroleum.
 - airplanes.
 - motor vehicles.
 - televisions.
 - wheat.

Section 2: An Example of International Trade Equilibrium

1. A nation has an absolute advantage in producing a good when
 - a. it can produce a good more efficiently than can other nations.
 - b. the opportunity cost of producing a good, in terms of the forgone output of other goods, is lower than that of other nations.
 - c. it can produce a good less efficiently than can other nations.
 - d. the opportunity cost of producing a good, in terms of the forgone output of other goods, is higher than that of other nations.
 - e. the nation's export supply curve is below its import demand curve.

2. A nation has a comparative advantage in producing a good when
 - a. it can produce a good for a lower input cost than can other nations.
 - b. the opportunity cost of producing a good, in terms of the forgone output of other goods, is lower than that of other nations.
 - c. it can produce a good for a higher input cost than can other nations.
 - d. the opportunity cost of producing a good, in terms of the forgone output of other goods, is higher than that of other nations.
 - e. the nation's export supply curve is below its import demand curve.

3. The terms of trade are the
 - a. price of your country's currency in terms of another country's currency.
 - b. price of another country's currency in terms of your country's currency.
 - c. amount of an export good that must be given up to obtain one unit of an import good.
 - d. amount of an import good that must be given up to obtain one unit of an export good.
 - e. amount of imports divided by the amount of exports.

4. Limits on the terms of trade are determined by the
 - a. difference between domestic and world prices.
 - b. domestic opportunity costs of production within one country.
 - c. opportunity costs in each country.
 - d. ratio of the domestic price to the world price.
 - e. ratio of the world price to the domestic price.

5. The export supply and import demand curves for a country measure the
 - a. international surplus and shortage, respectively, at different world prices.
 - b. international shortage and surplus, respectively, at different world prices.
 - c. domestic surplus and shortage, respectively, at different world prices.
 - d. domestic shortage and surplus, respectively, at different world prices.
 - e. domestic surplus and shortage, respectively, at different exchange rates.

Use the information below to answer questions 6, 7, and 8.

Texas and Florida can both produce oranges and lemons. The amounts below are the amounts of oranges or lemons that they can produce using the same amount of resources.

	Number of Oranges		Number of Lemons
Texas	75 million	or	25 million
Florida	100 million	or	50 million

6. What is the opportunity cost of producing one lemon in Texas?
 - a. 50 oranges
 - b. 100 oranges
 - c. 25 oranges
 - d. 2 oranges
 - e. 3 oranges

7. Which state has a comparative advantage in producing oranges?
 - a. Texas
 - b. Florida
 - c. both Texas and Florida
 - d. neither Texas nor Florida
 - e. There is not enough information to determine which state has a comparative advantage in producing oranges.

8. To maximize overall consumer benefits from trade between Texas and Florida, which product(s) should Florida export to Texas?
 - a. neither oranges nor lemons
 - b. lemons
 - c. both oranges and lemons
 - d. oranges
 - e. There should be no trade between Texas and Florida.

Section 3: Sources of Comparative Advantage

1. The productivity-differences explanation of comparative advantage stresses
 - a. differences in labor productivity among countries.
 - b. the advantage that comes to a country that is the first to develop and produce a product.
 - c. the relative amounts of skilled and unskilled labor in a country.
 - d. differences in the amounts of resources countries have.
 - e. differences in tastes within a country.

2. The factor-abundance explanation of comparative advantage stresses
 - a. differences in labor productivity among countries.
 - b. the advantage that comes to a country that is the first to develop and produce a product.
 - c. the relative amounts of skilled and unskilled labor in a country.
 - d. differences in the amounts of resources countries have.
 - e. differences in tastes within a country.

3. The human-skills explanation of comparative advantage stresses
 - a. differences in labor productivity among countries.
 - b. the advantage that comes to a country that is the first to develop and produce a product.
 - c. the relative amounts of skilled and unskilled labor in a country.
 - d. differences in the amounts of resources countries have.
 - e. differences in tastes within a country.

4. The product-life-cycle explanation of comparative advantage stresses
 - a. differences in labor productivity among countries.
 - b. the advantage that comes to a country that is the first to develop and produce a product.
 - c. the relative amounts of skilled and unskilled labor in a country.
 - d. differences in the amounts of resources countries have.
 - e. differences in tastes within a country.

5. The consumer-preferences explanation of comparative advantage stresses
 - a. differences in labor productivity among countries.
 - b. the advantage that comes to a country that is the first to develop and produce a product.
 - c. the relative amounts of skilled and unskilled labor in a country.
 - d. differences in the amounts of resources countries have.
 - e. differences in tastes within a country.

Practice Questions and Problems

Section 1: An Overview of World Trade

1. The country that imports the most from the United States is _____; the country that exports the most to the United States is _____.
2. World trade is _____ (distributed across many, dominated by only a few) products.
3. The product that accounts for the most world trade is _____.
4. Use Table 1 in the text to answer the following questions.
 - a. Trade just within industrial countries accounts for _____ percent of world trade.
 - b. Trade just within the developing countries accounts for _____ percent of world trade.

Section 2: An Example of International Trade Equilibrium

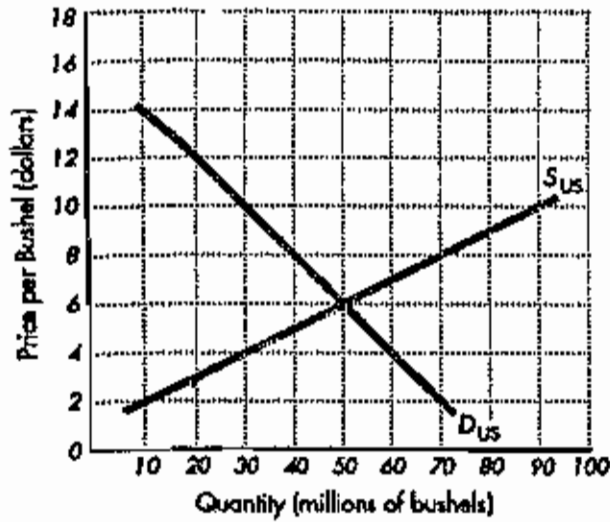
1. _____ (Comparative, Absolute) advantage is based on the relative opportunity costs of producing goods in different countries.
2. _____ (Comparative, Absolute) advantage occurs when a country can produce a good more efficiently than can other nations.
3. The _____ are the amount of an export good that must be given up to obtain one unit of an import good.

4. The _____ (export supply, import demand) curve is derived from the domestic surplus at different world prices.
5. The _____ (export supply, import demand) curve is derived from the domestic shortage at different world prices.
6. The table below shows the number of hours of labor needed to produce a ton of mangos and a ton of papayas in Samoa and in Fiji.

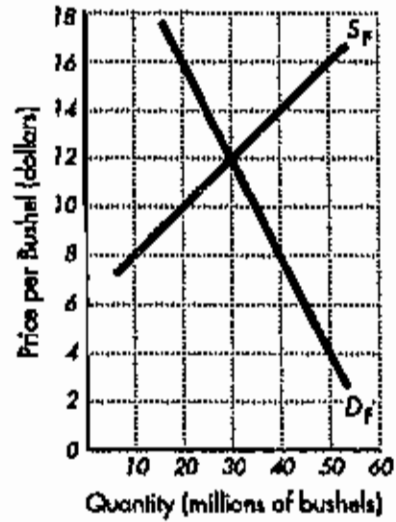
	Samoa	Fiji
Mangos	2	6
Papayas	1	2

- a. The country that has an absolute advantage in producing mangos is _____.
- b. The country that has an absolute advantage in producing papayas is _____.
- c. The opportunity cost of 1 ton of papayas in Samoa is _____.
- d. The opportunity cost of 1 ton of papayas in Fiji is _____.
- e. The country that has a comparative advantage in papayas is _____.
- f. The opportunity cost of 1 ton of mangos in Samoa is _____.
- g. The opportunity cost of 1 ton of mangos in Fiji is _____.
- h. The country that has a comparative advantage in mangos is _____.
- i. The limits on the terms of trade are 1 ton of mangos for between _____ and _____ tons of papayas.
7. The graphs on the next page show the soybean markets in the United States and in France (we assume that no other country in the world is involved in trade in soybeans).
- a. Before doing an analysis, let's look at the soybean markets in the two countries. The price in the United States without trade is _____ per bushel; in France it is _____ per bushel. Because market prices reflect opportunity costs, the country that has a comparative advantage in soybean production and that should export soybeans is _____.
- b. On graph c on the following page, draw in the import demand and export supply curves for the United States and France.

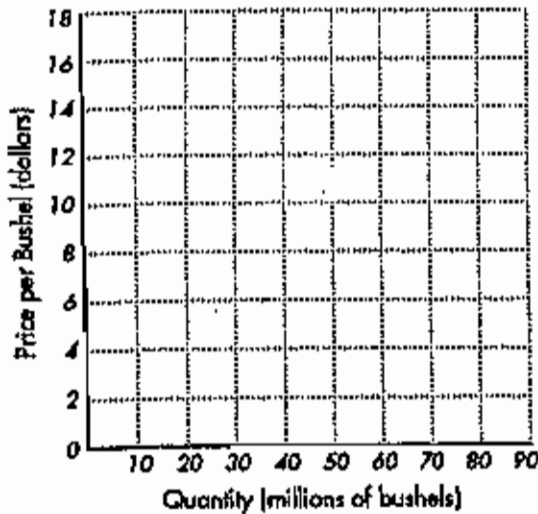
(a) United States



(b) France



(c) World



- c. The equilibrium world price of soybeans is _____ per bushel. The quantity traded is _____ bushels.
- d. The United States produced _____ bushels of soybeans and consumed _____ bushels. The United States is an _____ (exporter, importer) of soybeans.
- e. France produced _____ bushels of soybeans and consumed _____ bushels. France is an _____ (exporter, importer) of soybeans.
- f. In the problem above, what is the effect of trade on the price of soybeans in the United States? _____
France? _____

Section 3: Sources of Comparative Advantage

1. Name the comparative-advantage theory that matches each explanation of comparative advantage listed below.
 - a. Differences in labor productivity among countries: _____
 - b. The advantage that comes to a country that is the first to develop and produce a product: _____
 - c. The relative amounts of skilled and unskilled labor in a country: _____
 - d. Differences in the amounts of resources countries have: _____
 - e. Differences in tastes within a country: _____
2. The productivity-differences theory of comparative advantage is known as the _____ model.
3. The factor-abundance theory of comparative advantage is known as the _____ model.
4. Differences in consumer tastes within a country explain _____, in which a country is both an exporter and an importer of a differentiated product.

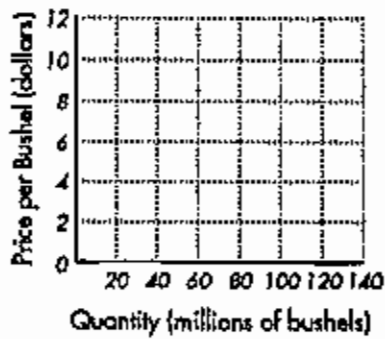
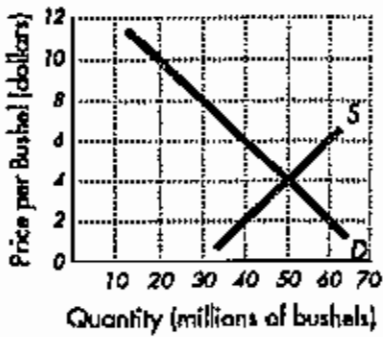
Thinking About and Applying World Trade Equilibrium

I. World Trade Equilibrium

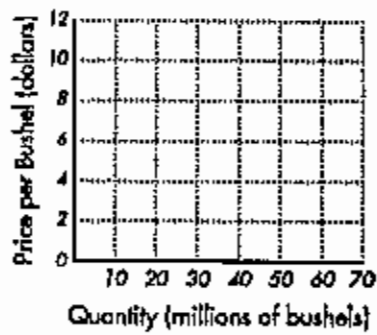
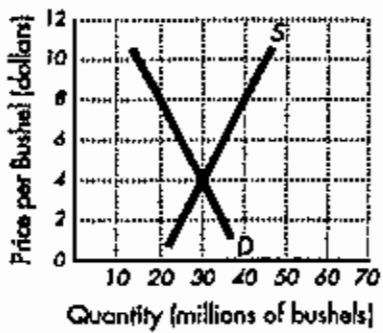
The graphs on the following page show the domestic markets for wheat in the United States, Canada, Argentina, and Russia.

1. Draw the import demand and export supply curves for the four countries; then sum the import demand and export supply curves for the four countries to draw the world import demand and export supply curves on graph e.

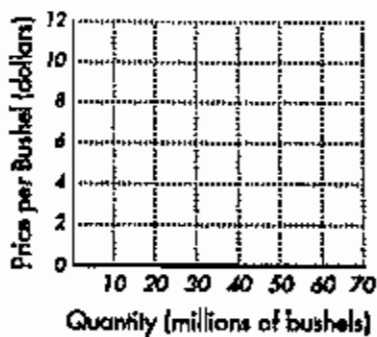
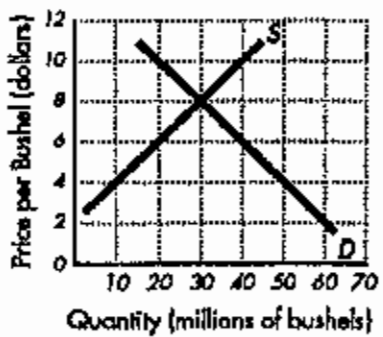
(a) United States



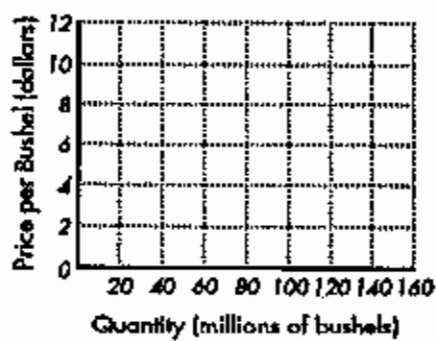
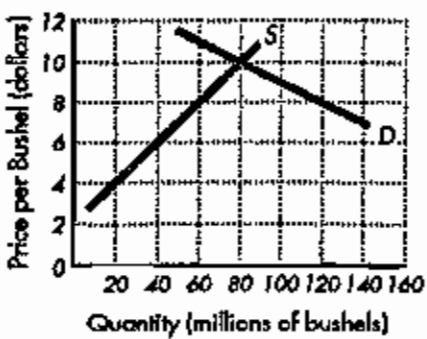
(b) Canada



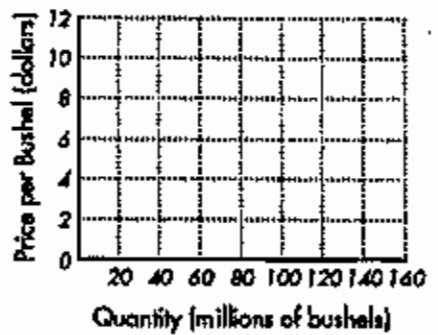
(c) Argentina



(d) Russia



(e) World



2. The equilibrium world price is _____; the quantity traded is _____ bushels.
3. The United States produced _____ bushels and consumed _____ bushels. The United States is a(n) _____ (exporter, importer, nontrader) of wheat.
4. Canada produced _____ bushels and consumed _____ bushels. Canada is a(n) _____ (exporter, importer, nontrader) of wheat.
5. Argentina produced _____ bushels and consumed _____ bushels. Argentina is a(n) _____ (exporter, importer, nontrader) of wheat.
6. Russia produced _____ bushels and consumed _____ bushels. Russia is a(n) _____ (exporter, importer, nontrader) of wheat.

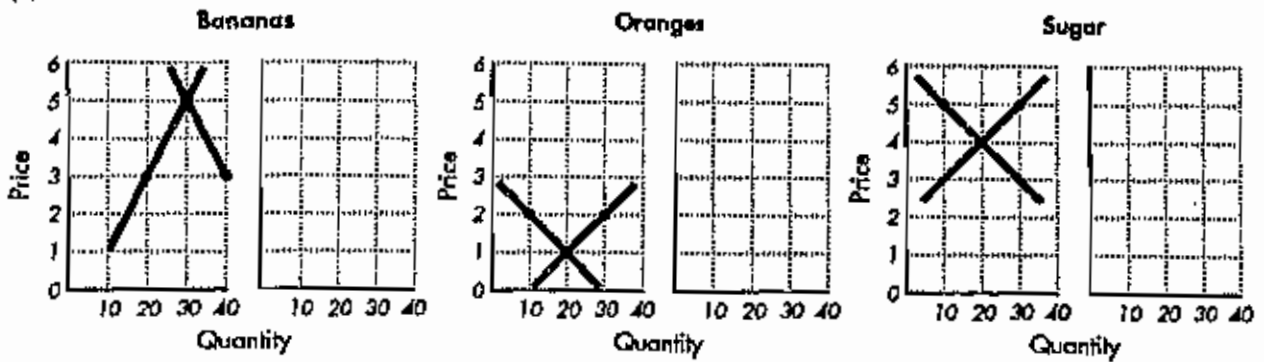
II. Triangular Trade

Many people complain about the trade imbalance between the United States and Japan. Economists generally don't worry much about trade imbalances with specific countries; they believe that trade between any two countries need not balance as long as each country's trade with all countries taken together is roughly balanced. Let's look a little further at this idea.

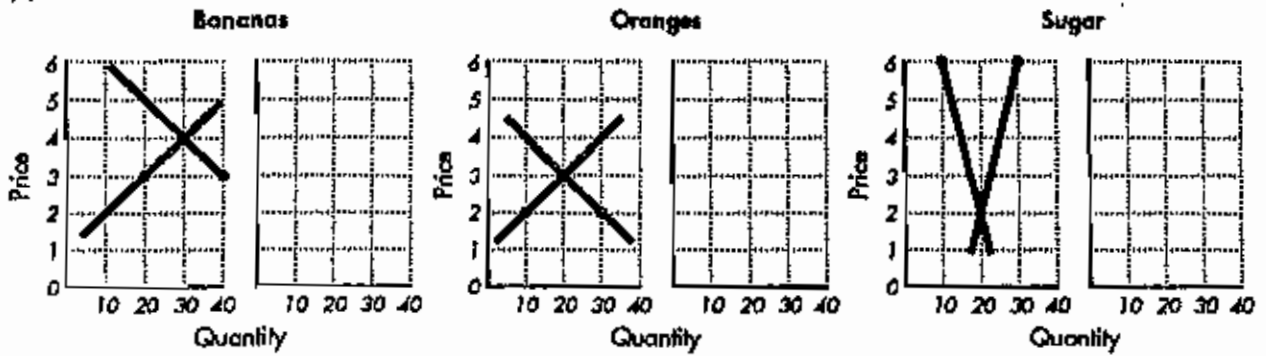
The graphs on the following page show the domestic markets for bananas, oranges, and sugar in Guatemala, Honduras, and Costa Rica.

1. Draw the import demand and export supply curves for the three countries for each product; then sum the import demand and export supply curves for each product to draw the world import demand and export supply curves on the world graphs.

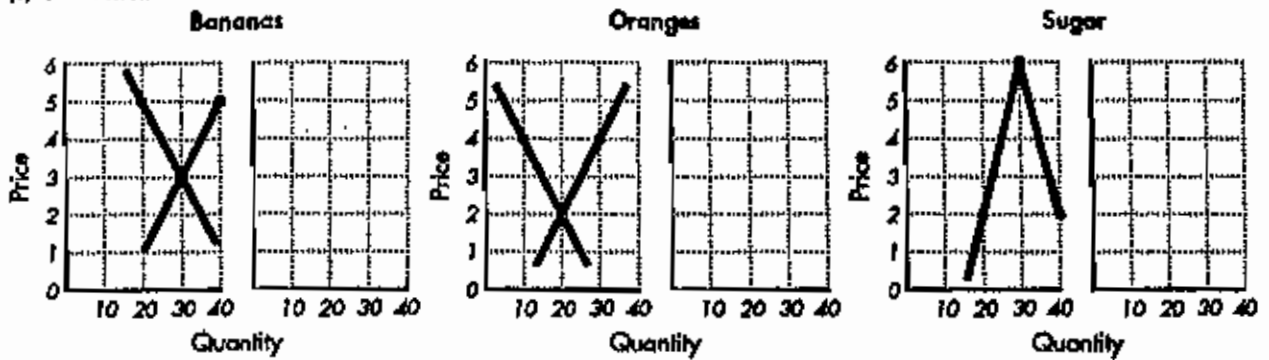
(a) Guatemala



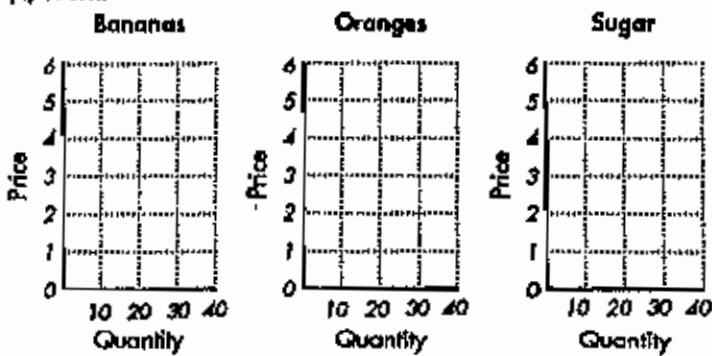
(b) Honduras



(c) Costa Rica



(d) World

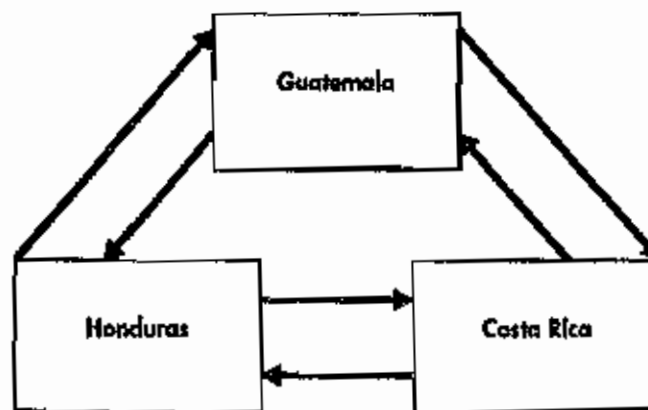


2. Find the equilibrium world price and quantity traded for each product, the amounts produced and consumed of each product in each country, and the status of each country as an importer, exporter, or nontrader.

	World Price	Quantity Traded
Bananas	\$ _____	_____
Oranges	_____	_____
Sugar	_____	_____

	Amount Produced	Amount Consumed	Status
Guatemala			
Bananas	_____	_____	_____
Oranges	_____	_____	_____
Sugar	_____	_____	_____
Honduras			
Bananas	_____	_____	_____
Oranges	_____	_____	_____
Sugar	_____	_____	_____
Costa Rica			
Bananas	_____	_____	_____
Oranges	_____	_____	_____
Sugar	_____	_____	_____

3. On the diagram below, put in the amounts of dollars flowing between each pair of countries, and which product and how much of it flows between each pair of countries.



Chapter 20 (Economics Chapter 35) Homework Problems

Name _____

1. Compare and contrast the concepts of absolute advantage and comparative advantage. Which is the determining factor in determining what products a country should produce?
2. If Japan exports television sets to the United States, this results in a(n) _____ (increase, decrease) in the price of television sets in the United States and a(n) _____ (increase, decrease) in the price of television sets in Japan. If the United States exports beef to Japan, this results in a(n) _____ (increase, decrease) in the price of beef in the United States and a(n) _____ (increase, decrease) in the price of beef in Japan.
3. In the past, many developing countries were anxious to adopt the high-technology production techniques used by the industrial countries. Knowing the sources of comparative advantage, can you see how adopting high-technology production techniques may work against developing countries?
4. How does the theory of comparative advantage explain the fact that the United States exports cars to Germany and also imports cars from Germany?

5. A recent edition of the *Wall Street Journal* reported that Chile has pushed ahead of the United States as the world's largest producer of copper. The article notes:

Chile has great advantages: Its new mines tap such high grade ore and are so huge and cost efficient that they would be very profitable even if copper prices slumped to 61 cents a pound, as they did from 1984 until 1986. Some, but not all U.S. mines could survive. Most in Africa, Australia, Canada and the former Soviet Union wouldn't stand a chance. . . .

[A] combination of better ore and looser environmental regulations elsewhere has all but dried up exploration in the U.S. . . . "It's not that we're more lenient here," says Gustavo Lagos, director of the mining center at the Universidad Catolica de Chile. "There are no people in Atacama and no scenery to destroy."

- a. According to the article, does Chile have an absolute advantage in copper production? A comparative advantage? Defend your answers.
- b. Which theory of the sources of comparative advantage applies here?

If your instructor assigns these problems, write your answers above, then tear out this page and hand it in.

Answers

Quick-Check Quiz

Section 1: An Overview of World Trade

1. c; 2. a; 3. a; 4. c

If you missed any of these questions, you should go back and review Section 1 in Chapter 20 (*Economics*, Chapter 35).

Section 2: An Example of International Trade Equilibrium

1. a; 2. b; 3. c; 4. c; 5. c; 6. c; 7. a; 8. b

If you missed any of these questions, you should go back and review Section 2 in Chapter 20 (*Economics*, Chapter 35).

Section 3: Sources of Comparative Advantage

1. a; 2. d; 3. c; 4. b; 5. c

If you missed any of these questions, you should go back and review Section 3 in Chapter 20 (*Economics*, Chapter 35).

Practice Questions and Problems

Section 1: An Overview of World Trade

- Canada; Canada
- distributed across many
- motor vehicles
- a. 46
b. 15

Section 2: An Example of International Trade Equilibrium

- Comparative
- Absolute
- terms of trade
- export supply
- import demand
- Samoa (Mangos cost only 2 hours of labor in Samoa; they cost 6 hours of labor in Fiji.)
 - Samoa (Papayas cost only 1 hour of labor in Samoa; they cost 2 hours of labor in Fiji.)
 - $\frac{1}{2}$ ton of mangos (Mangos take twice as much labor time as papayas in Samoa, so you can produce half as many mangos in the same amount of time.)
 - $\frac{1}{3}$ ton of mangos (Mangos take three times as much labor time as papayas in Fiji, so you can produce one-third as many mangos in the same amount of time.)
 - Fiji (Fiji has the lower opportunity cost: it has to give up only $\frac{1}{3}$ ton of mangos to get a ton of papayas, whereas Samoa has to give up $\frac{1}{2}$ ton.)
 - 2 tons of papayas (Papayas take half as much labor time as mangos in Samoa, so you can produce twice as many papayas in the same amount of time.)
 - 3 tons of papayas (Papayas take one-third as much labor time as mangos in Fiji, so you can produce three times as many papayas in the same amount of time.)

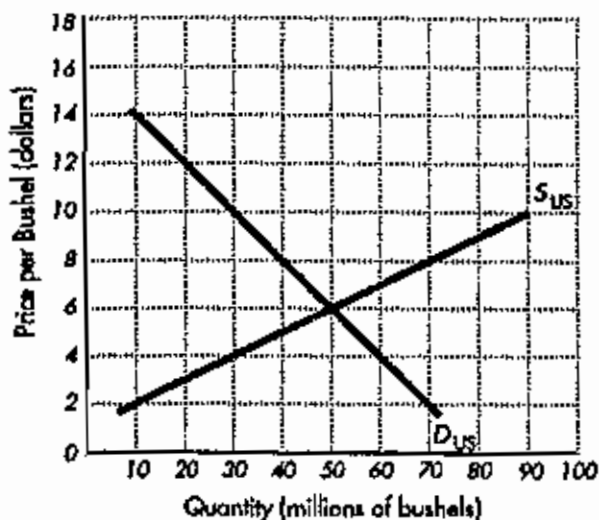
h. Samoa (Samoa has the lower opportunity cost: it has to give up only 2 tons of papayas to get a ton of mangos, whereas Fiji has to give up 3 tons.)

i. 2; 3

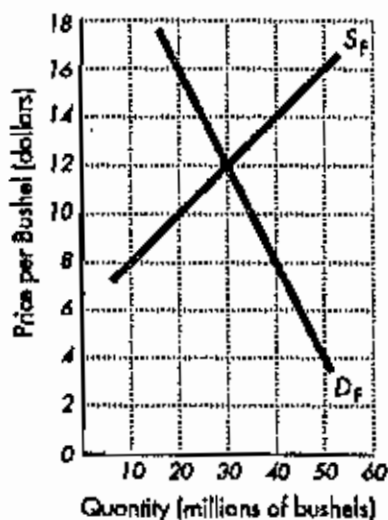
7. a. \$6; \$12; United States

b.

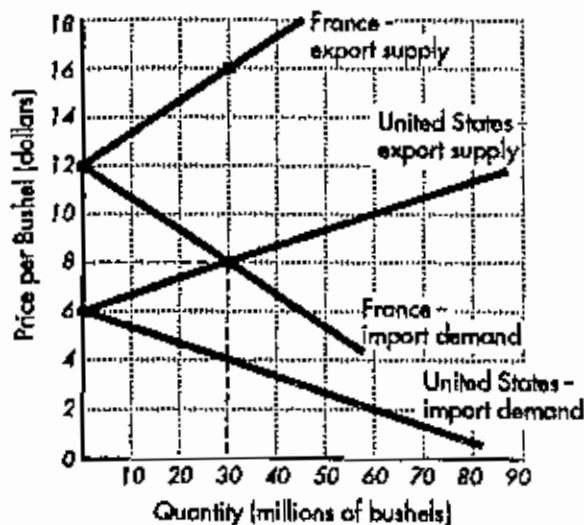
(a) United States



(b) France



(c) World



c. \$8; 30 million

d. 70 million; 40 million; exporter

e. 10 million; 40 million; importer

f. The price went up from \$6 to \$8; the price went down from \$12 to \$8.

Section 3: Sources of Comparative Advantage

- a. productivity differences
 - b. product life cycle
 - c. human skills
 - d. factor abundance
 - e. consumer preferences
- Ricardian
 - Heckscher-Ohlin
 - intraindustry trade

Thinking About and Applying World Trade Equilibrium

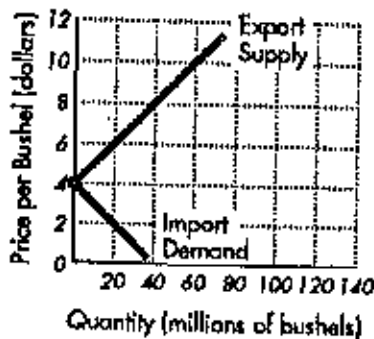
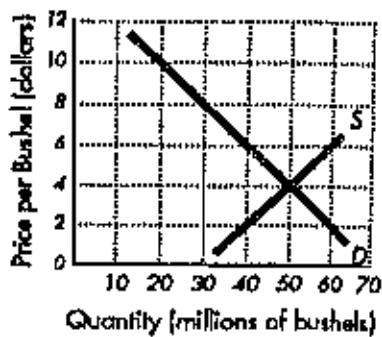
I. World Trade Equilibrium

- See the solution on the following page.
The domestic prices before trade vary between \$4 (United States and Canada) and \$10 (Russia). Russia will begin demanding imports if the world price is below \$10; if the price goes below \$8, Argentina also will demand imports. The United States and Canada will begin supplying exports if the world price goes above \$4; if the price goes above \$8, Argentina also will supply exports. Graph e shows the amounts these countries will supply (export) and demand (import) at various prices.
- \$8; 60 million
- 70 million; 30 million; exporter
- 40 million; 20 million; exporter
- 30 million; 30 million; nontrader
- 60 million; 120 million; importer

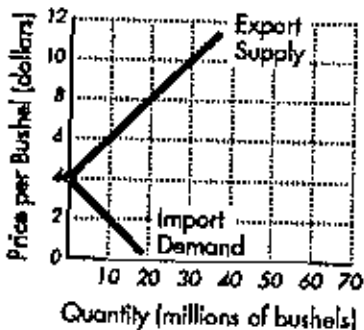
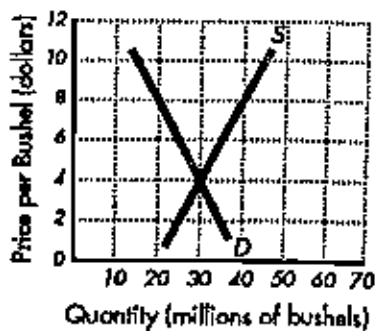
II. Triangular Trade

- See the solution on page 423.

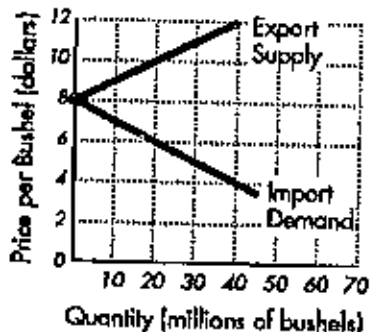
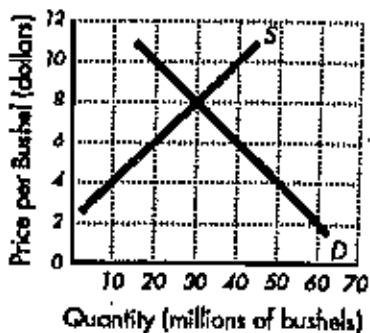
(g) United States



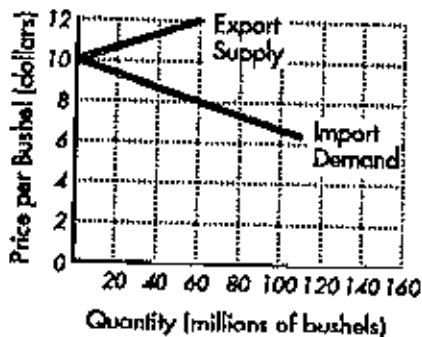
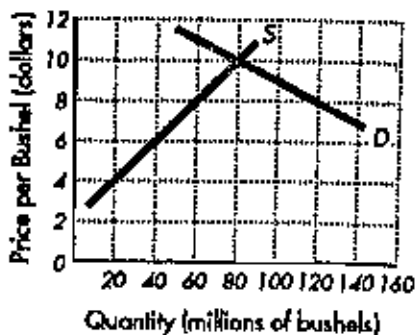
(h) Canada



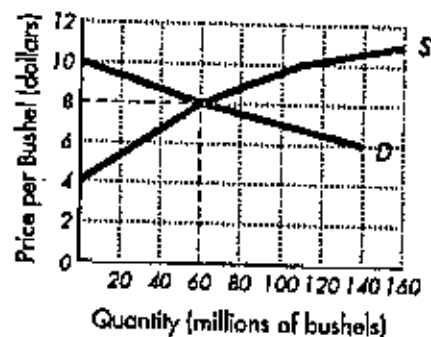
(i) Argentina



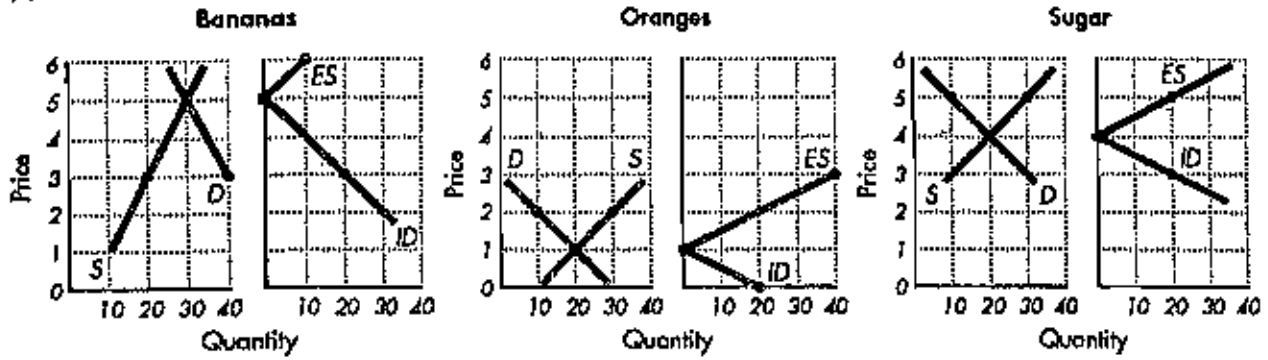
(j) Russia



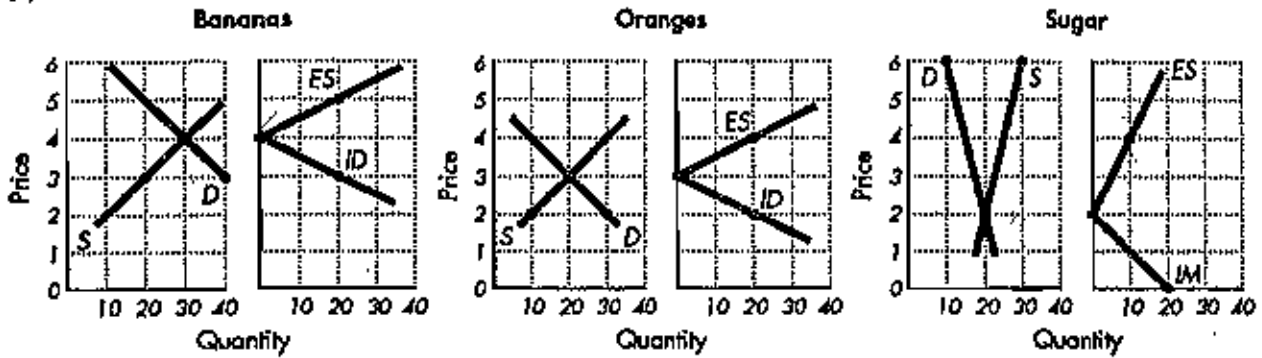
(k) World



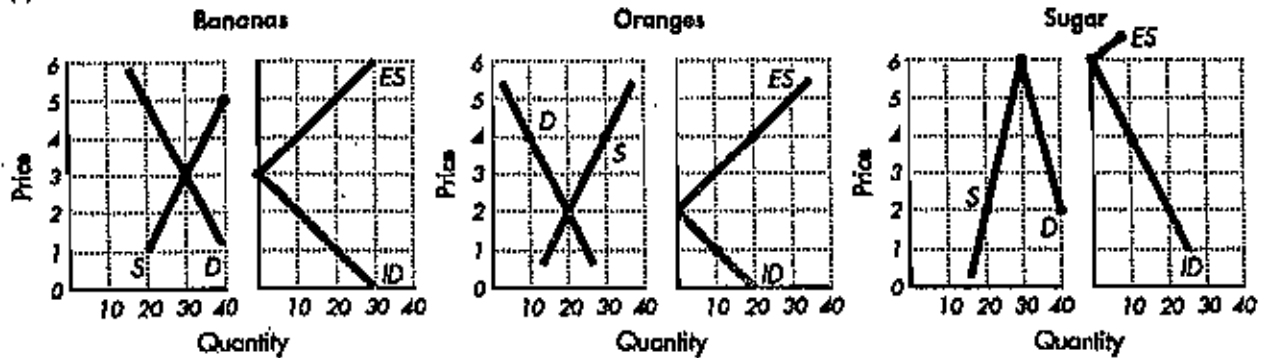
(a) Guatemala



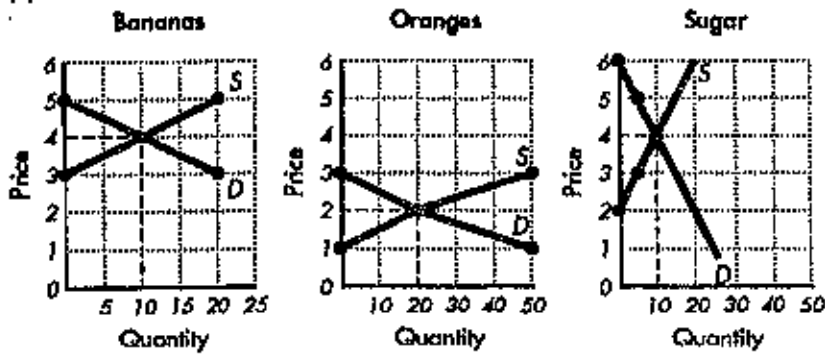
(b) Honduras



(c) Costa Rica



(d) World



2.

	World Price	Quantity Traded
Bananas	\$4	20
Oranges	2	20
Sugar	1	10

	Amount Produced	Amount Consumed	Status
Guatemala			
Bananas	25	35	Importer
Oranges	30	10	Exporter
Sugar	20	20	Nontrader
Honduras			
Bananas	30	30	Nontrader
Oranges	10	30	Importer
Sugar	25	15	Exporter
Costa Rica			
Bananas	35	25	Exporter
Oranges	20	20	Nontrader
Sugar	25	35	Importer

3.

