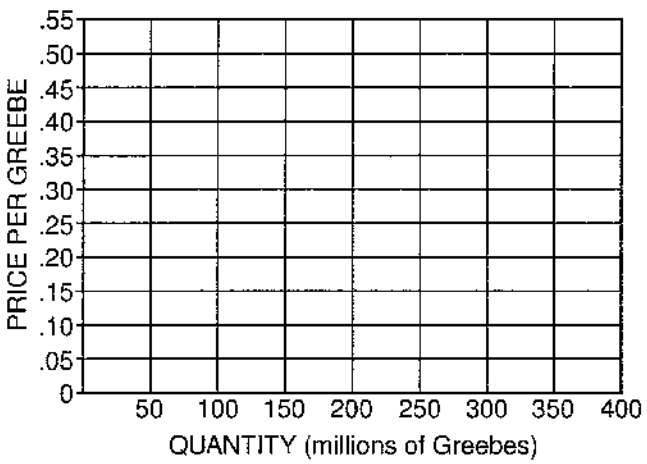
Equilibrium Price and Equilibrium Quantity

Figure 14.1 below shows the demand for Greebes and the supply of Greebes. Plot these data on the axes in Figure 14.2. Label the demand curve D and label the supply curve S. Then answer the questions that follow. Fill in the answer blanks, or underline the correct answer in parentheses.

Figure 14.1
Demand for and Supply of Greebes

Price ($ per Greebe)	Quantity Demanded (millions of Greebes)	Quantity Supplied (millions of Greebes)
$.15	300	100
.20	250	150
.25	200	200
.30	150	250
.35	100	300

Figure 14.2
Demand for and Supply of Greebes



1. Under these conditions, competitive market forces would tend to establish an equilibrium price of _____ per Greebe and an equilibrium quantity of _____ million Greebes.

2. If the price currently prevailing in the market is $0.30 per Greebe, buyers would want to buy _____ million Greebes and sellers would want to sell _____ million Greebes. Under these conditions, there would be a (*shortage / surplus*) of _____ million Greebes. Competitive market forces would tend to cause the price to (*increase / decrease*) to a price of _____ per Greebe.

   At this new price, buyers would now want to buy _____ million Greebes, and sellers now want to sell _____ million Greebes. Because of this change in (*price / underlying conditions*), the

Adapted from Phillip Saunders, *Introduction to Microeconomics: Student Workbook*, 18th ed. (Bloomington, Ind., 1998).

(*demand / quantity demanded*) changed by _____ million Greebes, and the (*supply / quantity supplied*) changed by _____ million Greebes.

3. If the price currently prevailing in the market is $0.20 per Greebe, buyers would want to buy _____ million Greebes, and sellers would want to sell _____ million Greebes. Under these conditions, there would be a *(shortage / surplus)* of _____ million Greebes. Competitive market forces would tend to cause the price to *(increase / decrease)* to a price of _____ per Greebe. At this new price, buyers would now want to buy _____ million Greebes, and sellers now want to sell _____ million Greebes. Because of this change in *(price / underlying conditions)*, the (*demand / quantity demanded*) changed by _____ million Greebes, and the (*supply / quantity supplied*) changed by _____ million Greebes.

4. Lightly shade the area of consumer surplus and producer surplus.

   (A) If the government sets the price at $0.35 and the quantity exchanged is 100 million Greebes, what will happen to the size of the combined total of consumer and producer surplus?

   (B) What does this say about the market system?

5. Now, suppose a mysterious blight causes the supply schedule for Greebes to change to the following:

Figure 14.3
New Supply of Greebes

Price ($ per Greebe)	Quantity Supplied (millions of Greebes)
$.20	50
.25	100
.30	150
.35	200

Plot the new supply schedule on the axes in Figure 14.2 and label it S_1. Label the new equilibrium E_1. Under these conditions, competitive market forces would tend to establish an equilibrium price of _____ per Greebe and an equilibrium quantity of _____ million Greebes.

Compared with the equilibrium price in Question 1, we say that because of this change in *(price / underlying conditions)*, the *(supply / quantity supplied)* changed; and both the equilibrium price and the equilibrium quantity changed. The equilibrium price *(increased / decreased)*, and the equilibrium quantity *(increased / decreased)*.

Compared with the consumer and producer surpluses in Question 4, consumer surplus has (*increased / decreased*), and producer surplus has (*increased / decreased*).

6. Now, with the supply schedule at S_1, suppose further that a sharp drop in people's incomes as the result of a prolonged recession causes the demand schedule to change to the following:

Figure 14.4
New Demand for Greebes

Price ($ per Greebe)	Quantity Demanded (millions of Greebes)
$.15	200
.20	150
.25	100
.30	50

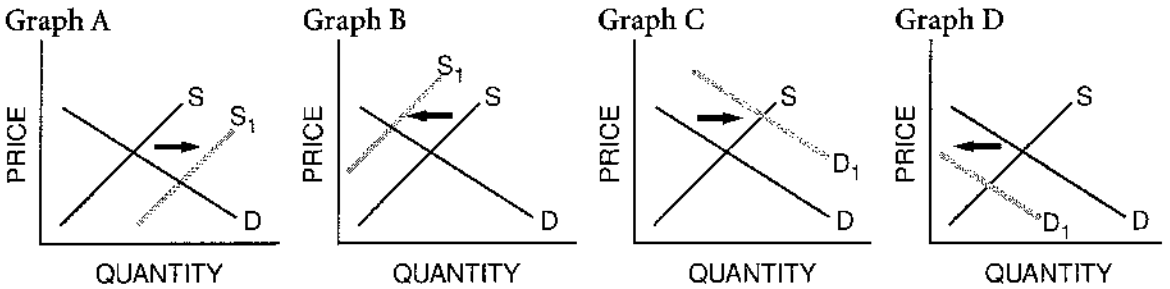
Plot the new demand schedule on the axes in Figure 14.2 and label it D_1. Label the new equilibrium E_2. Under these conditions, with the supply schedule at S_1, competitive market forces would tend to establish an equilibrium price of _____ per Greebe and an equilibrium quantity of _____ million Greebes. Compared with the equilibrium price in Question 5, because of this change in *(price / underlying conditions)*, the *(demand / quantity demanded)* changed. The equilibrium price *(increased / decreased)*, and the equilibrium quantity *(increased / decreased)*.

Shifts in Supply and Demand

Part A

Fill in the blanks with the letter of the graph that illustrates each situation. You may use a graph more than once.

Figure 15.1
Jelly Beans Supply and Demand



1. The price of sugar increases. _____
2. The price of bubble gum, a close substitute for jelly beans, increases. _____
3. A machine is invented that makes jelly beans at a lower cost. _____
4. The government places a tax on foreign jelly beans, which have a considerable share of the market. _____
5. The price of soda, a complementary good for jelly beans, increases. _____
6. Widespread prosperity allows people to buy more jelly beans. _____

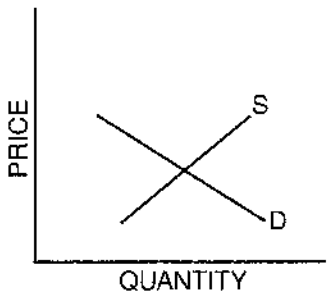
Activity written by Margaret Hamilton, Canton Country Day School, Canton, Ohio; Mary Kohelis, Brooke High School, Wellsburg, W. Va.; John Morton, National Council on Economic Education, New York, N.Y., and Francis Vottero, Shamokin Area High School, Shamokin, Pa. Part B adapted from G. Yohe, *Instructor's Resource Manual for Samuelson and Nordhaus Economics,* 14th ed. (New York: McGraw Hill College Division, 1992), p. 16.

Part B

Connecticut ships large amounts of apples to all parts of the United States by rail. Circle the words that show the effects on price and quantity for each situation, and complete the graphs below, showing how a hurricane that destroys apples before they are picked in Connecticut might affect the price and quantity of each commodity. Then provide your reasoning.

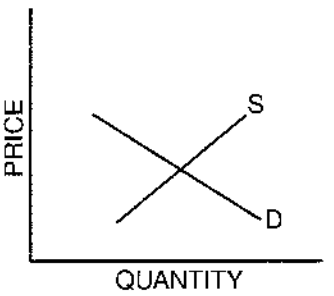
7. **Apples in Boston**

Price:	Rises	Unchanged	Falls
Quantity:	Rises	Unchanged	Falls
Reason:			



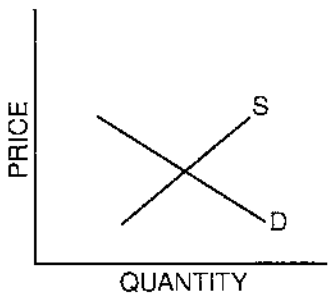
8. **Land devoted to apple orchards in the state of Washington**

Price:	Rises	Unchanged	Falls
Quantity:	Rises	Unchanged	Falls
Reason:			



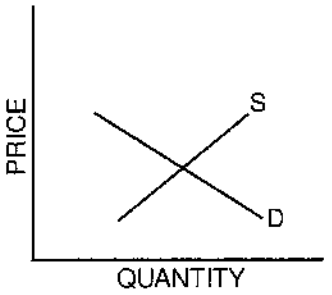
9. **Apples grown in the state of Washington**

Price:	Rises	Unchanged	Falls
Quantity:	Rises	Unchanged	Falls
Reason:			



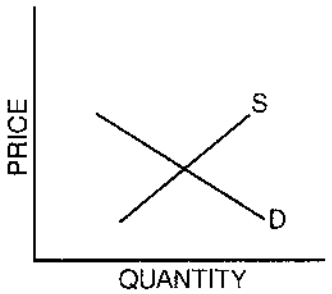
10. **Pears**

Price:	Rises	Unchanged	Falls
Quantity:	Rises	Unchanged	Falls
Reason:			



11. **Apple pies**

Price:	Rises	Unchanged	Falls
Quantity:	Rises	Unchanged	Falls
Reason:			

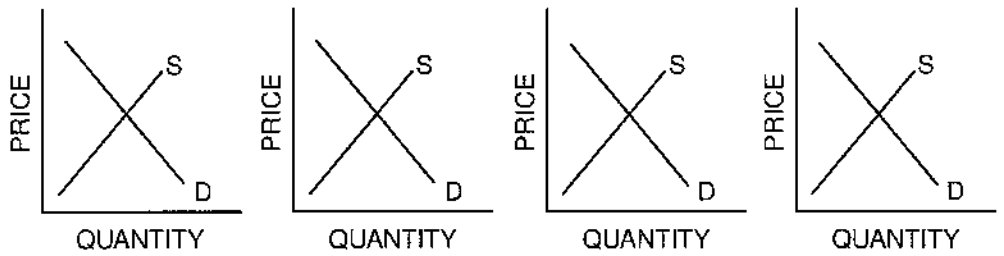


How Markets Allocate Resources

The following questions refer to a group of related markets in the United States during a long period of time. Assume that the markets are perfectly competitive and that the supply and demand model is completely applicable. The figures show the supply and demand in each market *before* the assumed change occurs. Trace through the effects of the assumed change, *other things constant.* Work your way from left to right. Shift only one curve in each market. For each market, draw whatever new supply or demand curves are needed, labeling each new curve S_1 or D_1. Then circle the correct symbol under each diagram (↑ for increase, — for unchanged, and ↓ for decrease). Remember to shift only one curve in each market.

1. Assume that a new fertilizer dramatically increases the number of potatoes that can be harvested with no additional labor or machinery. Also assume that this fertilizer does not affect wheat farming and that people are satisfied to eat either potatoes or bread made from wheat flour.

Figure 16.1
Effects of a New Fertilizer

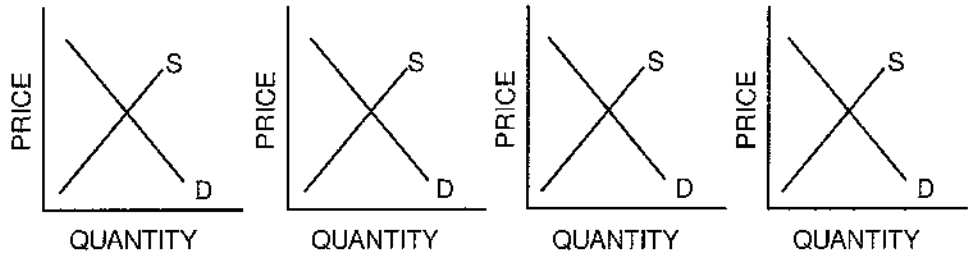


	Potatoes	Bread	Wheat	Wheat Harvesting Machinery
Demand:	↑ — ↓	↑ — ↓	↑ — ↓	↑ — ↓
Supply:	↑ — ↓	↑ — ↓	↑ — ↓	↑ — ↓
Equilibrium price:	↑ — ↓	↑ — ↓	↑ — ↓	↑ — ↓
Equilibrium quantity:	↑ — ↓	↑ — ↓	↑ — ↓	↑ — ↓

Adapted from Phillip Saunders, *Introduction to Microeconomics: Student Workbook*, 18th ed. (Bloomington, Ind., 1998).

2. Assume people's tastes change and there is an increase in the demand for briefcases and luggage made of leather. How would this affect the leather market and related markets? Draw the new curves and circle the appropriate symbols in all four markets.

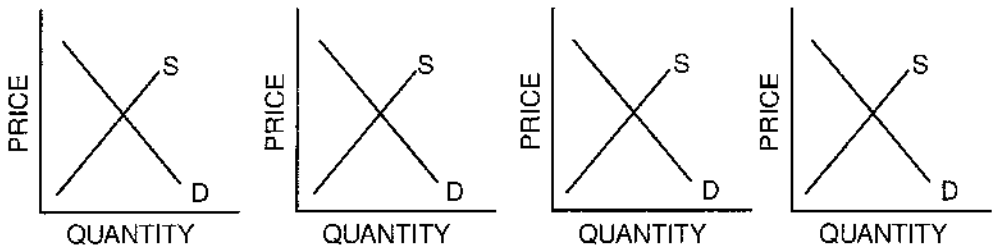
Figure 16.2
Effects of Increased Demand for Briefcases and Luggage



	Leather	Leather Shoes	Shoelaces for Leather Shoes	Shoelace Packaging Machinery
Demand:	↑ — ↓	↑ — ↓	↑ — ↓	↑ — ↓
Supply:	↑ — ↓	↑ — ↓	↑ — ↓	↑ — ↓
Equilibrium price:	↑ — ↓	↑ — ↓	↑ — ↓	↑ — ↓
Equilibrium quantity:	↑ — ↓	↑ — ↓	↑ — ↓	↑ — ↓

3. Assume that a heavy frost destroys half the world's coffee crop and that people use more cream in coffee than they do in tea.

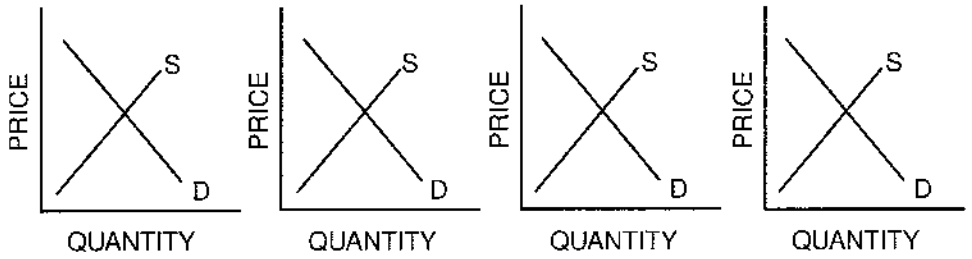
Figure 16.3
Effects of a Loss of Coffee Crop



	Coffee	Tea	Cream	Automatic Coffee Makers
Demand:	↑ — ↓	↑ — ↓	↑ — ↓	↑ — ↓
Supply:	↑ — ↓	↑ — ↓	↑ — ↓	↑ — ↓
Equilibrium price:	↑ — ↓	↑ — ↓	↑ — ↓	↑ — ↓
Equilibrium quantity:	↑ — ↓	↑ — ↓	↑ — ↓	↑ — ↓

4. Assume people's tastes change in favor of colored sports shirts, which are worn without neckties, and against white dress shirts, which are worn with neckties and tie clasps.

Figure 16.4
Effects of a Shift to Sports Shirts



	Sport Shirts	Dress Shirts	Neckties	Tie Clasps
Demand:	↑ — ↓	↑ — ↓	↑ — ↓	↑ — ↓
Supply:	↑ — ↓	↑ — ↓	↑ — ↓	↑ — ↓
Equilibrium price:	↑ — ↓	↑ — ↓	↑ — ↓	↑ — ↓
Equilibrium quantity:	↑ — ↓	↑ — ↓	↑ — ↓	↑ — ↓