

Demand Curves, Movements along Demand Curves, and Shifts in Demand Curves

Part A: A Change in Demand versus a Change in Quantity Demanded

Student Alert: The distinction between a “change in demand” and a “change in quantity demanded” is very important!

Table 1-4.1 shows the market demand for a hypothetical product: Greebes. Study the data and plot the demand for Greebes on the graph in Figure 1-4.1. Label the demand curve D, and answer the questions that follow.

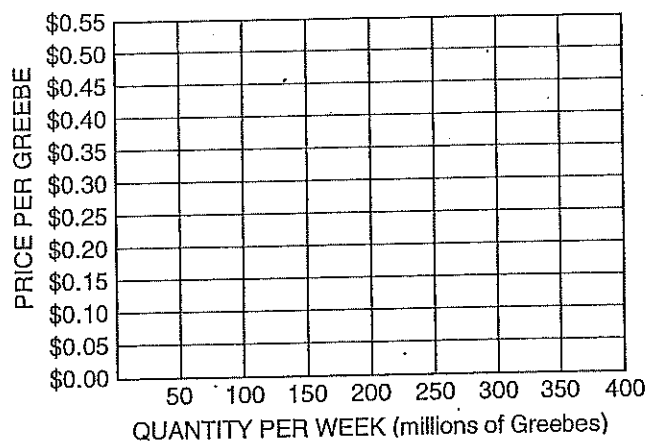


Table 1-4.1
Demand for Greebes

Price (per Greebe)	Quantity demanded per week (millions of Greebes)
\$0.10	350
\$0.15	300
\$0.20	250
\$0.25	200
\$0.30	150
\$0.35	100
\$0.40	50
\$0.45	0



Figure 1-4.1
Demand for Greebes



- The data for demand curve D indicate that at a price of \$0.30 per Greebe, buyers would be willing to buy _____ million Greebes. All other things held constant, if the price of Greebes increased to \$0.40 per Greebe, buyers would be willing to buy _____ million Greebes. Such a change would be a decrease in (*demand / quantity demanded*). All other things held constant, if the price of Greebes decreased to \$0.20, buyers would be willing to buy _____ million Greebes. Such a change would be called an increase in (*demand / quantity demanded*).

Now, let's suppose there is a change in federal income-tax rates that affects the disposable income of Greebe buyers. This change in the *ceteris paribus* (all else being equal) conditions underlying the original demand for Greebes will result in a new set of data, shown in Table 1-4.2. Study these new data; and add the new demand curve for Greebes to the graph in Figure 1-4.1. Label the new demand curve D_1 and answer the questions that follow.



Table 1-4.2
New Demand for Greebes

Price (per Greebe)	Quantity demanded per week (millions of Greebes)
\$0.05	300
\$0.10	250
\$0.15	200
\$0.20	150
\$0.25	100
\$0.30	50

- Comparing the new demand curve (D_1) with the original demand curve (D), we can say that the change in the demand for Greebes results in a shift of the demand curve to the (*left / right*). Such a shift indicates that at each of the possible prices shown, buyers are now willing to buy a (*smaller / larger*) quantity; and at each of the possible quantities shown, buyers are willing to offer a (*higher / lower*) maximum price. The cause of this demand curve shift was a(n) (*increase / decrease*) in tax rates that (*increased / decreased*) the disposable income of Greebe buyers.

Now, let's suppose that there is a dramatic change in people's tastes and preferences for Greebes. This change in the *ceteris paribus* conditions underlying the original demand for Greebes will result in a new set of data, shown in Table 1-4.3. Study these new data, and add the new demand curve for Greebes to the graph in Figure 1-4.1. Label the new demand curve D_2 and answer the questions that follow.



Table 1-4.3

New Demand for Greebes

Price (per Greebe)	Quantity demanded per week (millions of Greebes)
\$0.20	350
\$0.25	300
\$0.30	250
\$0.35	200
\$0.40	150
\$0.45	100
\$0.50	50

3. Comparing the new demand curve (D_2) with the original demand curve (D), we can say that the change in the demand for Greebes results in a shift of the demand curve to the (*left / right*). Such a shift indicates that at each of the possible prices shown, buyers are now willing to buy a (*smaller / larger*) quantity; and at each of the possible quantities shown, buyers are willing to offer a (*lower / higher*) maximum price. The cause of this shift in the demand curve was a(n) (*increase / decrease*) in people's tastes and preferences for Greebes.

Part B: Do You Get It?

Now, to test your understanding, choose the answer you think is the best in each of the following multiple-choice questions.

4. All other things held constant, which of the following would *not* cause a change in the demand (shift in the demand curve) for motorcycles?
 - (A) A decrease in consumer incomes
 - (B) A decrease in the price of motorcycles
 - (C) An increase in the price of bicycles
 - (D) An increase in people's tastes and preferences for motorcycles
5. "Rising oil prices have caused a sharp decrease in the demand for oil." Speaking precisely, and using terms as they are defined by economists, choose the statement that best describes this quotation.
 - (A) The quotation is correct: an increase in price causes a decrease in demand.
 - (B) The quotation is incorrect: an increase in price causes an increase in demand, not a decrease in demand.
 - (C) The quotation is incorrect: an increase in price causes a decrease in the quantity demanded, not a decrease in demand.
 - (D) The quotation is incorrect: an increase in price causes an increase in the quantity demanded, not a decrease in demand.
6. "As the price of domestic automobiles has risen, customers have found foreign autos to be a better bargain. Consequently, domestic auto sales have been decreasing, and foreign auto sales have been increasing." Using only the information in this quotation and assuming everything else remains constant, which of the following best describes this statement?
 - (A) A shift in the demand curves for both domestic and foreign automobiles
 - (B) A movement along the demand curves for both foreign and domestic automobiles
 - (C) A movement along the demand curve for domestic autos, and a shift in the demand curve for foreign autos
 - (D) A shift in the demand curve for domestic autos, and a movement along the demand curve for foreign autos

Reasons for Changes in Demand

Part A: Does the Demand Curve Shift?

Read the eight newspaper headlines in Table 1-5.1, and use the table to record the impact of each event on the demand for U.S.-made autos. In the second column, indicate whether the event in the headline will cause consumers to buy more or less U.S.-made autos. Use the third column to indicate whether there is a change in demand (ΔD) or a change in quantity demanded (ΔQ_d) for U.S.-made autos. In the third column, decide whether the demand curve shifts to the right or left or does not shift. Finally, indicate the letter for the new demand curve. Use Figure 1-5.1 to help you. Always start at curve B, and move only one curve at a time.



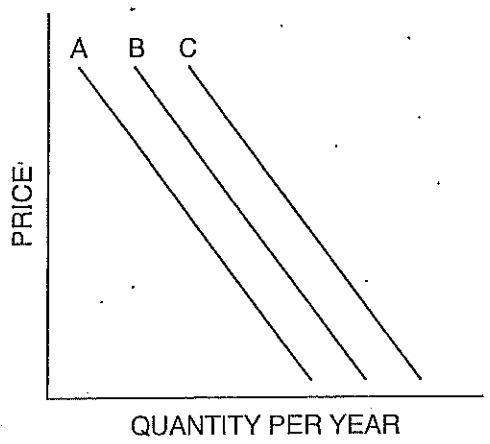
Table 1-5.1

Impact of Events on Demand for U.S.-Made Autos

Headline	Will consumers buy more or less U.S. autos?	Is there a change in demand (ΔD) or a change in quantity demanded (ΔQ_d)?	Does the demand curve for U.S. autos shift to the right or left or not shift?	What is the new demand curve for U.S. autos?
1. Consumers' Income Drops	<i>More / Less</i>	$\Delta D / \Delta Q_d$	<i>Right / Left / No Shift</i>	<i>A / B / C</i>
2. Millions of Immigrants Enter the U.S.	<i>More / Less</i>	$\Delta D / \Delta Q_d$	<i>Right / Left / No Shift</i>	<i>A / B / C</i>
3. Price of Foreign Autos Drop	<i>More / Less</i>	$\Delta D / \Delta Q_d$	<i>Right / Left / No Shift</i>	<i>A / B / C</i>
4. Major Cities Add Inexpensive Bus Lines	<i>More / Less</i>	$\Delta D / \Delta Q_d$	<i>Right / Left / No Shift</i>	<i>A / B / C</i>
5. Price of U.S. Autos Rises	<i>More / Less</i>	$\Delta D / \Delta Q_d$	<i>Right / Left / No Shift</i>	<i>A / B / C</i>
6. Price of U.S. Autos Expected to Rise Soon	<i>More / Less</i>	$\Delta D / Q_d$	<i>Right / Left / No Shift</i>	<i>A / B / C</i>
7. Families Look Forward to Summer Vacations	<i>More / Less</i>	$\Delta D / \Delta Q_d$	<i>Right / Left / No Shift</i>	<i>A / B / C</i>
8. U.S. Auto Firms Launch Effective Ad Campaigns	<i>More / Less</i>	$\Delta D / \Delta Q_d$	<i>Right / Left / No Shift</i>	<i>A / B / C</i>



Figure 1-5.1
Demand for U.S.-Made Autos



Part B: Why Does the Demand Curve Shift?

Categorize each change in demand in Part A according to the reason why demand changed. A given demand curve assumes that consumer expectations, consumer tastes, the number of consumers in the market, the income of consumers, and the prices of substitutes and complements are unchanged. In Table 1-5.2, place an X next to the reason that the event described in the headline caused a change in demand. One headline will have no answer because it will result in a change in quantity demanded rather than a change in demand.



Table 1-5.2
Reasons for a Change in Demand for U.S.-Made Autos

Reason	Headline number							
	1	2	3	4	5	6	7	8
9. A change in consumer expectations								
10. A change in consumer tastes								
11. A change in the number of consumer in the market								
12. A change in income								
13. A change in the price of a substitute good								
14. A change in the price of a complementary good								

Supply Curves, Movements along Supply Curves, and Shifts in Supply Curves

In this activity, we will assume that the supply curve of Greebes is upward sloping.

Part A: A Change in Supply versus a Change in Quantity Supplied

Student Alert: The distinction between a “change in supply” and a “change in quantity supplied” is very important!

Study the data in Table 1-6.1 and plot the supply of Greebes on the graph in Figure 1-6.1. Label the supply curve S and answer the questions that follow:

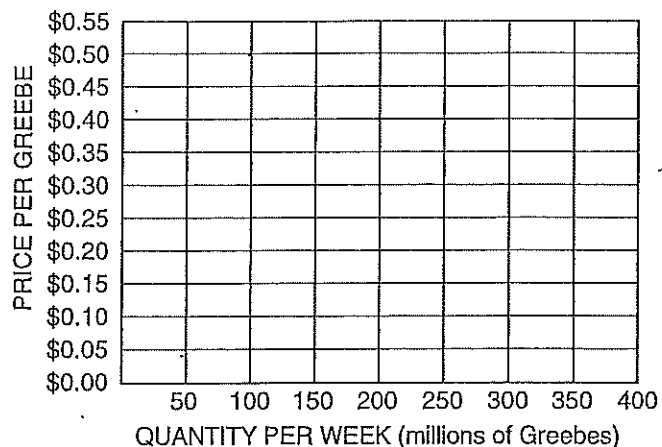


Table 1-6.1
Supply of Greebes

Price (per Greebe)	Quantity supplied per week (millions of Greebes)
\$0.05	0
\$0.10	50
\$0.15	100
\$0.20	150
\$0.25	200
\$0.30	250
\$0.35	300
\$0.40	350



Figure 1-6.1
Supply of Greebes



- The data for supply curve S indicate that at a price of \$0.25 per Greebe, suppliers would be willing to offer _____ million Greebes. All other things held constant, if the price of Greebes increased to \$0.30 per Greebe, suppliers would be willing to offer _____ million Greebes. Such a change would be an increase in (*supply / quantity supplied*). All other things held things constant, if the price of Greebes decreased to \$0.20 per Greebe, suppliers would be willing to offer _____ million Greebes. Such a change would be called a decrease in (*supply / quantity supplied*).

Now, let's suppose that there is a change in the price of several of the raw materials used in making Greebes. This change in the *ceteris paribus* conditions underlying the original supply of Greebes will result in a new set of data, such as that shown in Table 1-6.2. Study the data, and plot this supply of Greebes on the graph in Figure 1-6.1. Label the new supply curve S_1 and answer the questions that follow.



Table 1-6.2

New Supply of Greebes

Price (per Greebe)	Quantity supplied per week (millions of Greebes)
\$0.15	0
\$0.20	50
\$0.25	100
\$0.30	150
\$0.35	200
\$0.40	250

2. Comparing the new supply curve (S_1) with the original supply curve (S), we can say that the change in the supply of Greebes results in a shift of the supply curve to the (*left / right*). Such a shift indicates that at each of the possible prices shown, suppliers are now willing to offer a (*smaller / larger*) quantity; and at each of the possible quantities shown, suppliers are willing to accept a (*higher / lower*) minimum price. The cause of this supply curve shift was a(n) (*increase / decrease*) in prices of several of the raw materials used in making Greebes.

Now, let's suppose that there is a dramatic change in the price of Silopanna, a resource used in the production of Greebes. This change in the *ceteris paribus* conditions underlying the original supply of Greebes will result in a new set of data shown in Table 1-6.3. Study the data, and plot this supply of Greebes on the graph in Figure 1-6.1. Label the new supply curve S_2 and answer the questions that follow.



Table 1-6.3

New Supply of Greebes

Price (per Greebe)	Quantity supplied per week (millions of Greebes)
\$0.10	150
\$0.15	200
\$0.20	250
\$0.25	300
\$0.30	350
\$0.35	400

3. Comparing the new supply curve (S_2) with the original supply curve (S), we can say that the change in the supply of Greebes results in a shift of the supply curve to the (*left / right*). Such a shift indicates that at each of the possible prices shown, suppliers are now willing to offer a (*smaller / larger*) quantity; and at each of the possible quantities shown, suppliers are willing to accept a (*lower / higher*) minimum price. The cause of this supply curve shift is a(n) (*increase / decrease*) in the price of Silopanna, a resource used in the production of Greebes.

Part B: Do You Get It?

Now, to check your understanding, choose the answer you think is the one best alternative in each of the following multiple-choice questions.

4. All other things held constant, which of the following would *not* cause a change in the supply of beef?
- (A) A decrease in the price of beef
 - (B) A decrease in the price of cattle feed
 - (C) An increase in the price of cattle feed
 - (D) An increase in the cost of transporting cattle to market

5. "Falling oil prices have caused a sharp decrease in the supply of oil." Speaking precisely, and using terms as they are defined by economists, choose the statement that best describes this quotation.
- (A) The quotation is correct: a decrease in price causes a decrease in supply.
 - (B) The quotation is incorrect: a decrease in price causes an increase in supply, not a decrease in supply.
 - (C) The quotation is incorrect: a decrease in price causes an increase in the quantity supplied, not a decrease in supply.
 - (D) The quotation is incorrect: a decrease in price causes a decrease in the quantity supplied, not a decrease in supply.
6. You overhear a fellow student say, "Economic markets are confusing. If supply increases, then price decreases; but if price decreases, then supply also will decrease. If supply falls, price will rise; but if price rises, supply also will rise." Dispel your friend's obvious confusion (in no more than one short paragraph) below.

Reasons for Changes in Supply

Part A: Does the Supply Curve Shift?

Read the eight newspaper headlines in Table 1-7.1, and use the table to record the impact of each event on the supply of cars from U.S. auto producers. In the second column, indicate whether the event in the headline will cause American auto producers to provide more or less cars. Use the third column to indicate whether there is a change in supply (ΔS) or a change in quantity supplied (ΔQ_s) of cars. In the third column, decide whether the supply curve shifts to the right or left or does not shift. Finally, indicate the letter for the new supply curve. Use Figure 1-7.1 to help you. Always start at curve B, and move only one curve at a time.

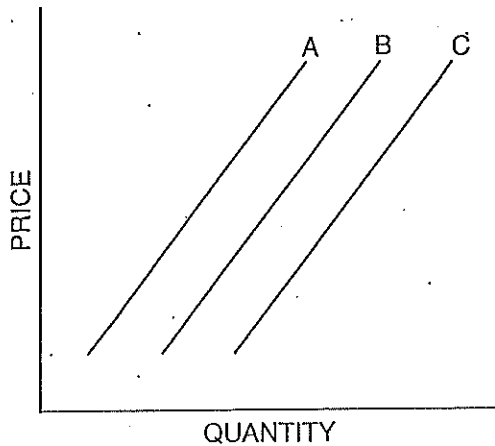


Table 1-7.1
Impact of Events on Supply of U.S.-Made Autos

Headline	Should U.S. auto firms produce more or less?	Is there a change in supply (ΔS) or a change in quantity supplied (ΔQ_s)?	Does the supply curve of cars shift to the right or left or not shift?	What is the new supply curve for cars?
1. Auto Workers' Union Agrees to Wage Cuts	<i>More / Less</i>	$\Delta S / \Delta Q_s$	<i>Right / Left / No Shift</i>	<i>A / B / C</i>
2. New Robot Technology Increases Efficiency	<i>More / Less</i>	$\Delta S / \Delta Q_s$	<i>Right / Left / No Shift</i>	<i>A / B / C</i>
3. Price of U.S. Cars Increases	<i>More / Less</i>	$\Delta S / \Delta Q_s$	<i>Right / Left / No Shift</i>	<i>A / B / C</i>
4. Nationwide Auto Workers Strike Begins	<i>More / Less</i>	$\Delta S / \Delta Q_s$	<i>Right / Left / No Shift</i>	<i>A / B / C</i>
5. Cost of Steel Decreases	<i>More / Less</i>	$\Delta S / \Delta Q_s$	<i>Right / Left / No Shift</i>	<i>A / B / C</i>
6. Major Auto Producer Goes Out of Business	<i>More / Less</i>	$\Delta S / \Delta Q_s$	<i>Right / Left / No Shift</i>	<i>A / B / C</i>
7. Government Gives Car Producers a Subsidy	<i>More / Less</i>	$\Delta S / \Delta Q_s$	<i>Right / Left / No Shift</i>	<i>A / B / C</i>



Figure 1-7.1
Supply of U.S.-Made Cars



Part B: Why Does the Supply Curve Shift?

Categorize each change in supply in Part A according to the reason why supply changed. In Table 1-7.2, place an X next to the reason that the headline indicated a change in supply. In some cases, more than one headline could be matched to a reason. It is possible a headline does not indicate a shift in supply because it will result in a change in quantity supplied rather than a change in supply.



Table 1-7.2
Impact of Events on Supply of U.S.-Made Autos

Reason	Headline number						
	1	2	3	4	5	6	7
8. A change in costs of inputs to production process							
9. A change in technology							
10. A change in the number of producers in the market							
11. Government policies							

Equilibrium Price and Equilibrium Quantity

Table 1-8.1 below shows the demand for Greebes and the supply of Greebes. Plot these data on the axes in Figure 1-8.1. Label the demand curve D and label the supply curve S. Then answer the questions that follow.

Student Alert: A “change in demand” or a “change in supply” results in a change in price, while a “change in quantity demanded” or a “change in quantity supplied” is the result of a change in price.

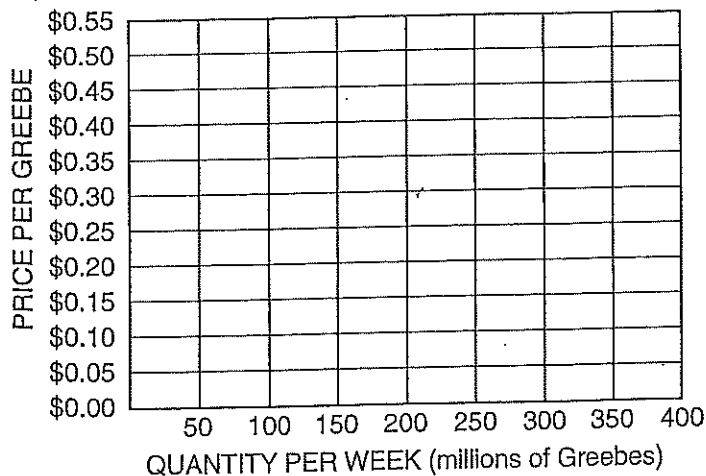


Table 1-8.1
Demand for and Supply of Greebes

Price (per Greebe)	Quantity demanded (millions of Greebes)	Quantity supplied (millions of Greebes)
\$0.05	400	0
\$0.10	350	50
\$0.15	300	100
\$0.20	250	150
\$0.25	200	200
\$0.30	150	250
\$0.35	100	300
\$0.40	50	350
\$0.45	0	400



Figure 1-8.1
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 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*) (*increased / decreased*) by _____ million Greebes, and the (*supply / quantity supplied*) (*increased / decreased*) 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 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*) (*increased / decreased*) by _____ million Greebes, and the (*supply / quantity supplied*) (*increased / decreased*) by _____ million Greebes.

4. At equilibrium, is each of the following true or false? Explain.
 - (A) The quantity demanded is equal to the quantity supplied.

 - (B) Demand equals supply.

5. Now, suppose a mysterious blight causes the supply schedule for Greebes to change as shown in Table 1-8.2:



Table 1-8.2

New Supply of Greebes

Price (per Greebe)	Quantity supplied (millions of Greebes)
\$0.15	0
\$0.20	50
\$0.25	100
\$0.30	150
\$0.35	200

Plot the new supply schedule on the axes in Figure 1-8.1 and label it S_1 . Label the new equilibrium E_1 . Under these conditions, competitive market forces would 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*).

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 as shown in Table 1-8.3:



Table 1-8.3

New Demand for Greebes

Price (per Greebe)	Quantity demanded (millions of Greebes)
\$0.15	200
\$0.20	150
\$0.25	100
\$0.30	50

Plot the new demand schedule on the axes in Figure 1-8.1 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 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: The Market for Jelly Beans

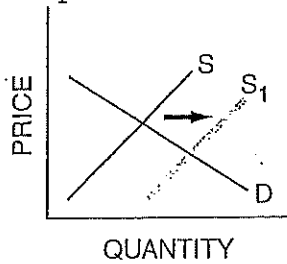
Fill in the blanks with the letter of the graph that illustrates each situation. You may use a graph more than once.



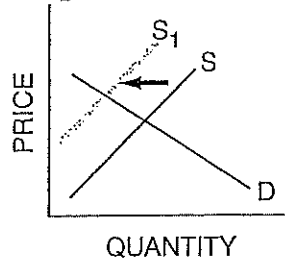
Figure 1-9.1

The Supply and Demand for Jelly Beans

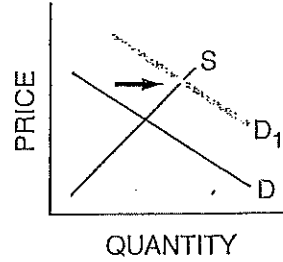
Graph A



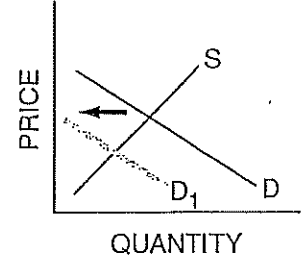
Graph B



Graph C



Graph D



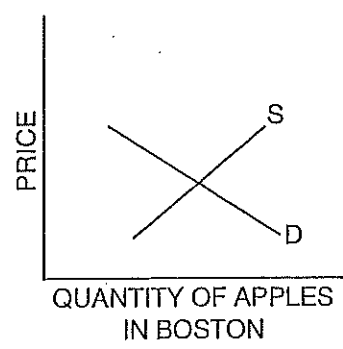
1. The price of sugar, a key ingredient in producing jelly beans, increases. _____
2. The price of bubble gum, a close substitute for jelly beans, increases. _____
3. A machine is invented that makes jelly beans at a lower cost. _____
4. The government places a tax on foreign jelly beans, which have 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. _____

Part B: Apples, Pears, and Pies

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.

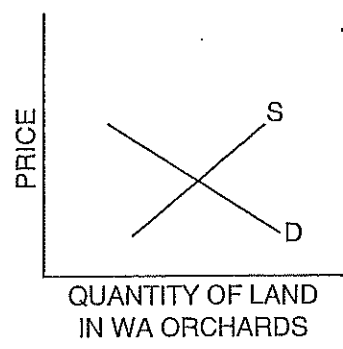
7. Apples in Boston

Price: *Rises / Unchanged / Falls*
 Quantity: *Rises / Unchanged / Falls*
 Reason:



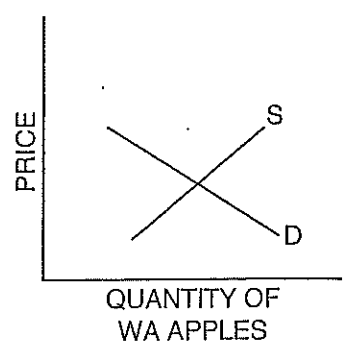
8. Land devoted to apple orchards in the state of Washington

Price: *Rises / Unchanged / Falls*
 Quantity: *Rises / Unchanged / Falls*
 Reason:



9. Apples grown in the state of Washington

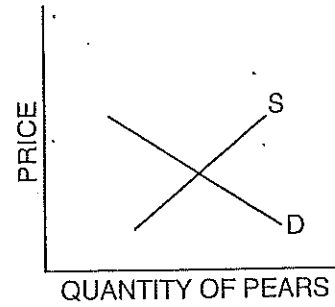
Price: *Rises / Unchanged / Falls*
 Quantity: *Rises / Unchanged / Falls*
 Reason:



10. Pears

Price: *Rises / Unchanged / Falls*Quantity: *Rises / Unchanged / Falls*

Reason:



11. Apple pies

Price: *Rises / Unchanged / Falls*Quantity: *Rises / Unchanged / Falls*

Reason:

