UNIVERSITY OF ALBERTA
EDMONTON·ALBERTA·CANADA

ECON 101 Introduction to Microeconomics

WEEK 4 (Fall 2023)

Mon, Sept 25 and Wed, Sept 27

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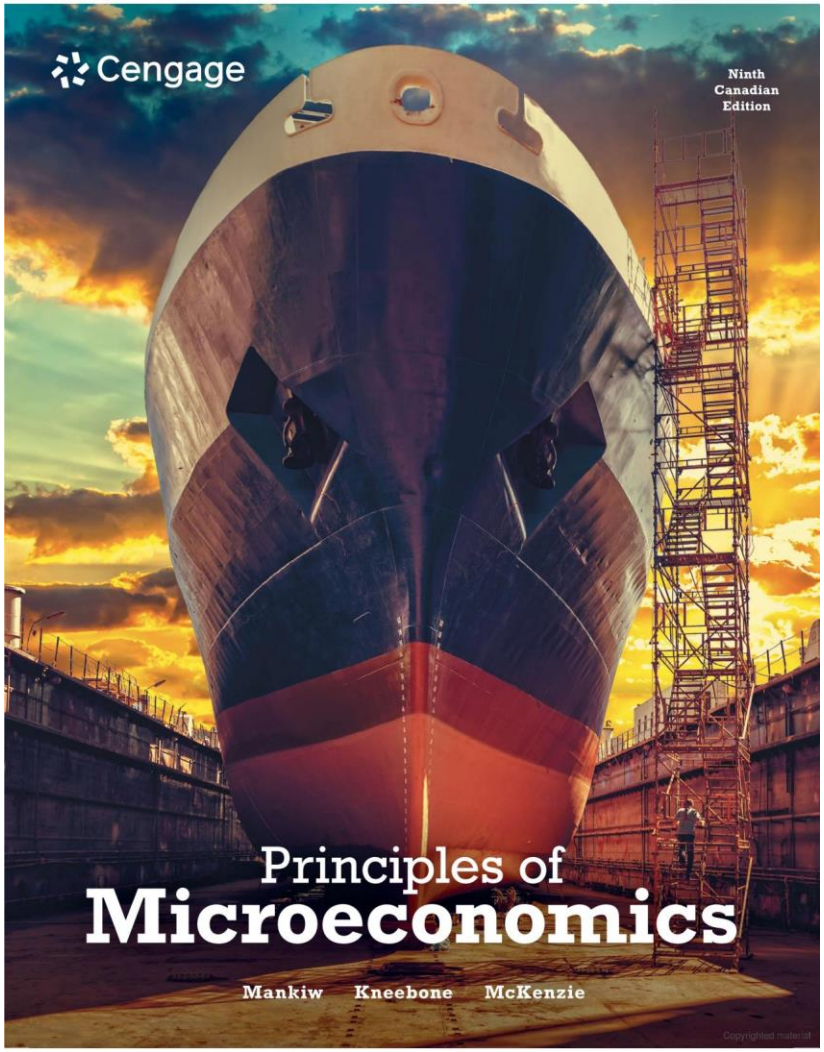
RECAP

- Economic model – Simplification
- Two simplified models –
  - Circular flow diagram
  - Production possibilities frontier (PPF)
- Positive vs. Normative
- Trade – Voluntary exchange
- Absolute advantage – looks at lower input cost
- Comparative advantage – looks at lower opportunity cost
- Specialization gives gains from trade

Chapter 4

Market Forces of Supply and Demand



Learning Objectives (Week 4)

This chapter answers the following questions:

- What factors affect buyers' demand for goods?
- What factors affect sellers' supply of goods?
- How do supply and demand determine the price of a good and the quantity sold?
- How do changes in the factors that affect demand or supply affect the market price and quantity of a good?
- How do markets allocate resources?

Concepts Highlights, Part 1

Demand: A buyer's willingness and ability to purchase for a certain good or service.

Quantity Demanded: The amount of a good or service that a buyer is willing and able to purchase.

Supply: A seller's willingness and ability to sell a certain good or service.

Quantity Supplied: The amount of a good that sellers are willing and able to sell.

Concepts Highlights, Part 2

Law of Demand: The claim that, other things equal, the quantity demanded of a good falls when the price of the good rises.

Law of Supply: The claim that, other things equal, the quantity supplied of a good rises when the price of the good rises.

Surplus: A situation in which quantity supplied is greater than quantity demanded.

Shortage: A situation in which quantity demanded is greater than the quantity supplied.

Concepts Highlights, Part 3

Market Forces of Supply and Demand: Supply and demand are the two sources that make market economies work. They determine the quantity of each good produced and the price at which it is sold.

Market: A market comprises a group of buyers and sellers of a particular good or service and the institution or arrangement by which they trade.

Perfect Competition: Many buyers and sellers; buyers and sellers are price takers.

Monopoly: There is only one seller. Buyers are price takers. E.g., water, electricity, or gas supplied by a local public utility.

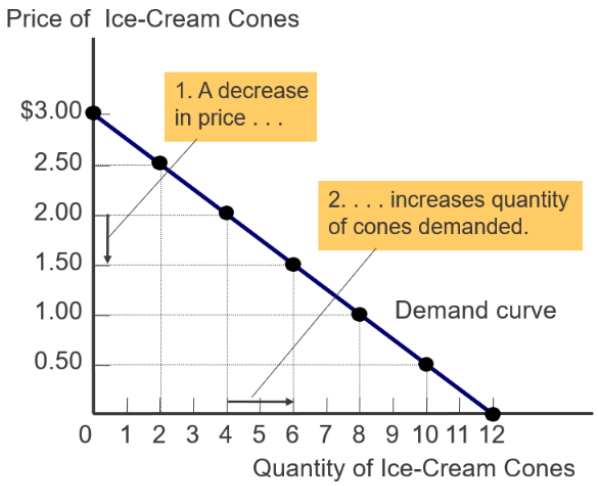
Concepts Highlights, Part 4

Demand Schedule: A table that shows the relationship between the price of a good and the quantity demanded.

Price of Ice-Cream Cone	Quantity of Ice-Cream Cones Demanded
$0.00	12 cones
0.50	10
1.00	8
1.50	6
2.00	4
2.50	2
3.00	0

Demand Schedule

Demand Curve: a graph of the relationship between the price of a good and the quantity demanded.



Demand Curve

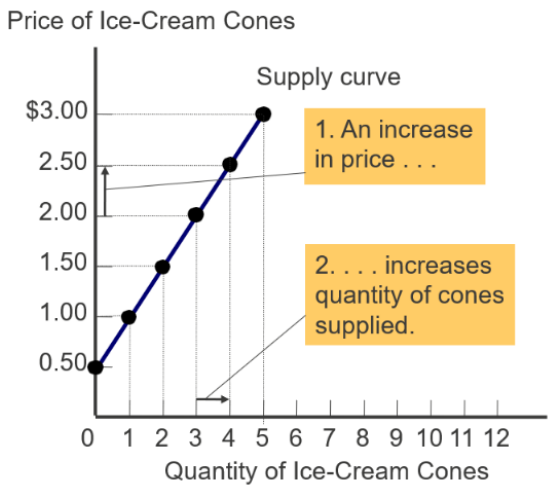
Concepts Highlights, Part 5

Supply Schedule: A table that shows the relationship between the price of a good and the quantity supplied.

Price of Ice-cream Cone	Quantity Of Cones Supplied
$0.00	0 cones
0.50	0
1.00	1
1.50	2
2.00	3
2.50	4
3.00	5

Supply Schedule

Supply Curve: A graph of the relationship between the price of a good and the quantity supplied.



Supply Curve

Concepts Highlights, Part 6

Normal Good: A good for which an increase in income leads to an increase in demand. E.g., ice cream and clothes.

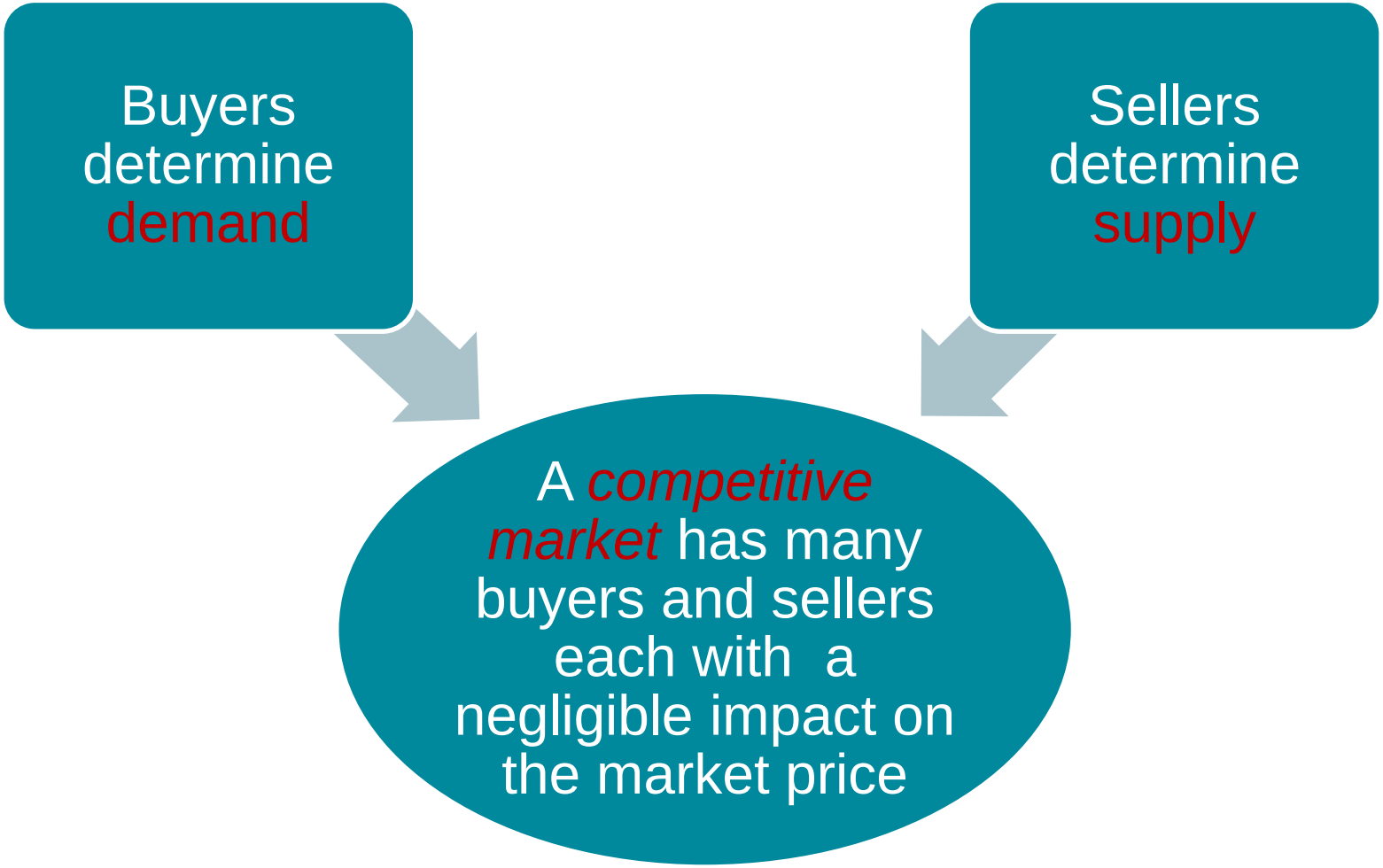
Inferior Good: A good for which an increase in income leads to a decrease in demand. E.g., bus rides.
(hint: buy a car or take a cab, instead.)

Substitutes: two goods for which an increase in the price of one leads to an increase in the demand for the other. E.g., hotdogs (hot sausage) and hamburgers; sweaters and jackets; movie tickets and video rentals; coffee and tea.

Complements: two goods for which an increase in the price of one leads to a decrease in the demand for the other. E.g., petrol and cars; computer and software; mobile phone and sim card.

Concepts Highlights, Part 7

Markets and competition



Individual and Market Demand, Part 1

Demand Schedule and Demand Curve

Demand schedule

Table showing relationship between the price of a good and the quantity demanded, holding all other relevant factors fixed.

Demand curve

Graph showing relationship between the price of a good and the quantity demanded, holding all other relevant factors fixed.

Other relevant factors: prices of other goods, tastes, income, expectations, and number of buyers.

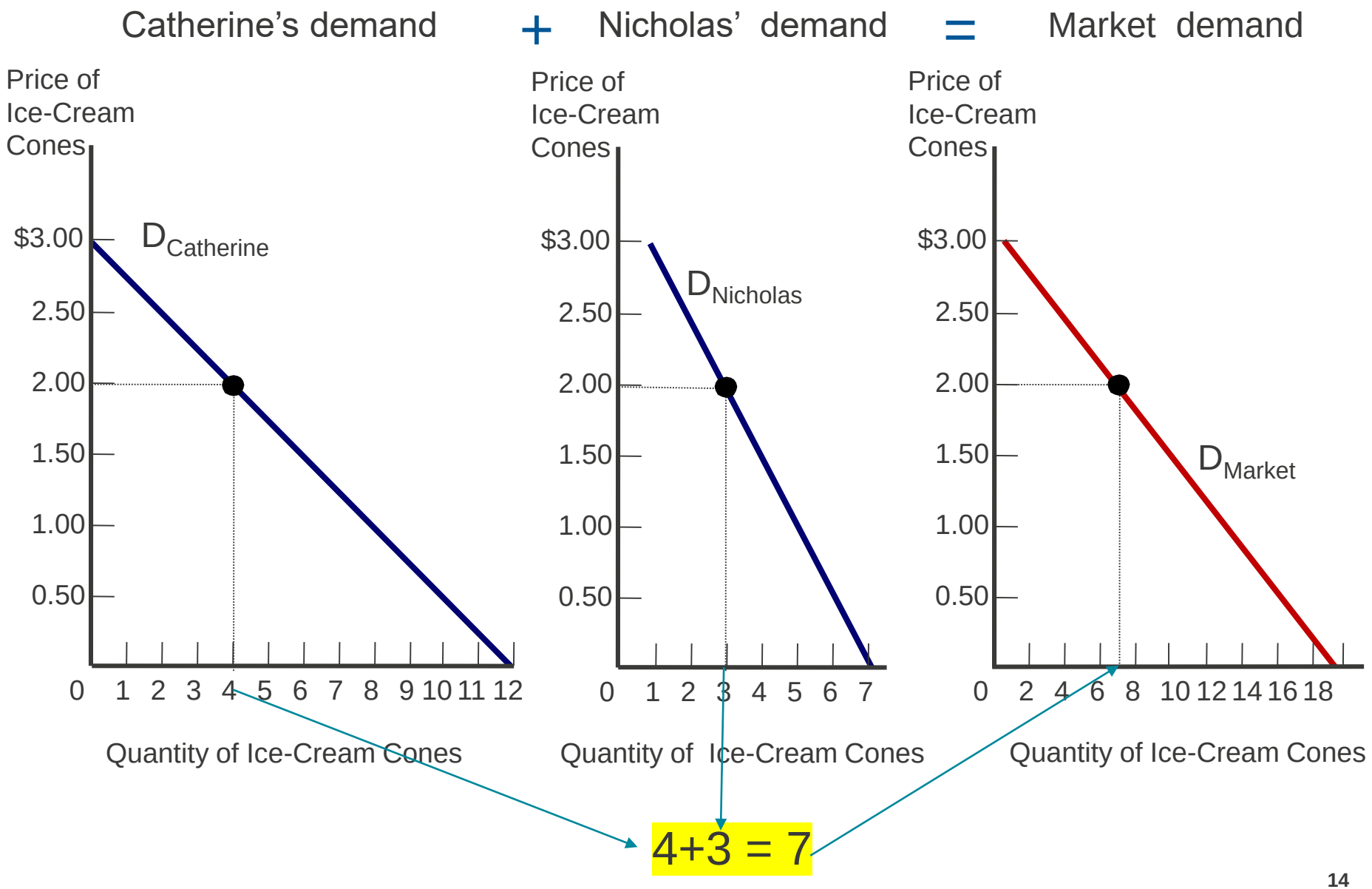
Individual and Market Demand, Part 2

Market demand schedule is the sum of all *individual demand schedules* for a particular good or service

Price of Ice-Cream Cone	Catherine		Nicholas		Market
$0.00	12	+	7	=	19 cones
0.50	10		6		16
1.00	8		5		13
1.50	6		4		10
2.00	4		3		7
2.50	2		2		4
3.00	0		1		1

Individual and Market Demand, Part 3

Individual demand curves are summed horizontally to obtain the market demand curve.



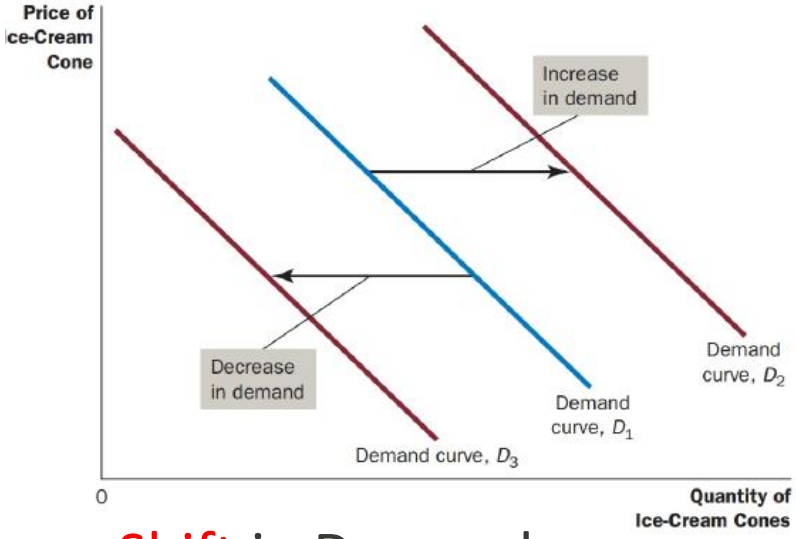
Change in Demand and Shift in Demand

- Change in Demand:

Movement along the demand curve

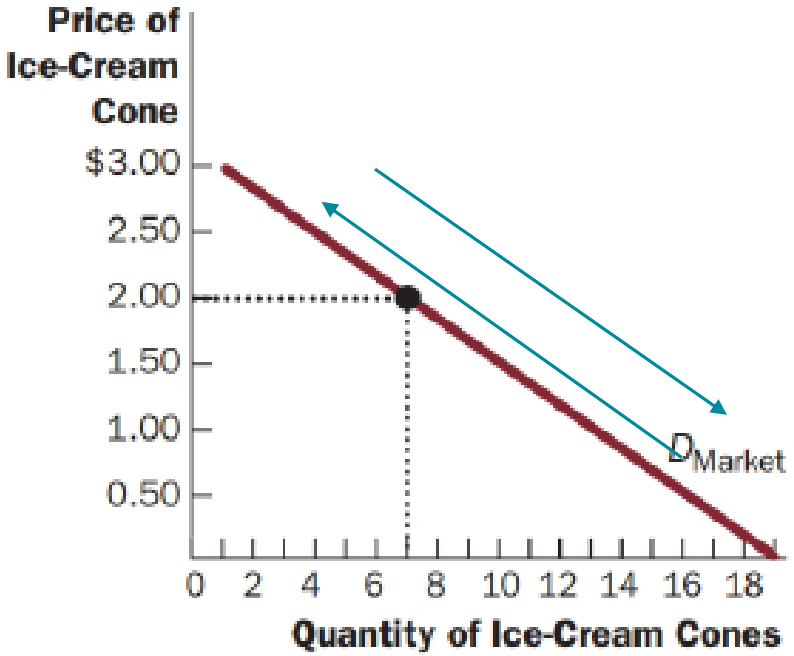
- Shift in Demand:

Demand curve shifts because of **increase or decrease** in demand



Shift in Demand

Demand increases or decreases



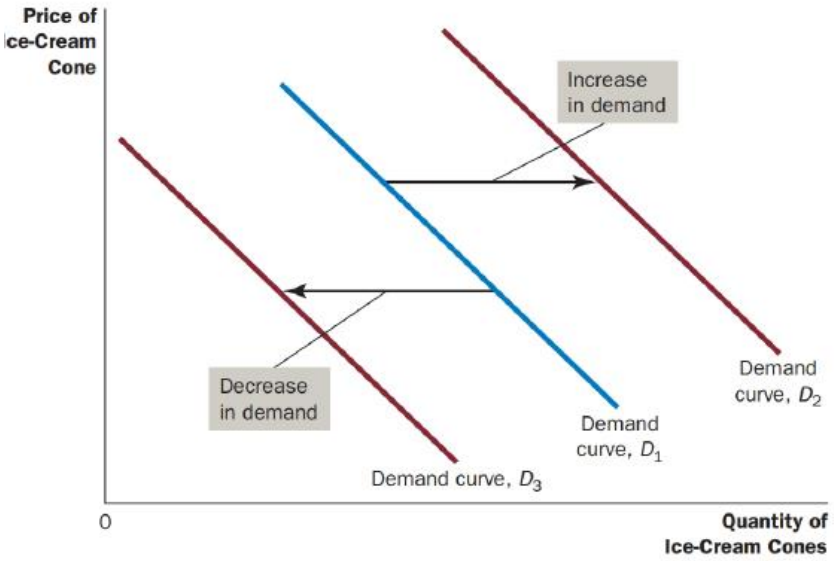
Change in Demand

"Quantity demanded of a good" increases/decreases

Shift in Demand Curve, Part 1

Variables that can shift the demand curve

1. Income
2. Price of related goods
3. Tastes
4. Expectations
5. Number of buyers
6. Advertisements/Announcements



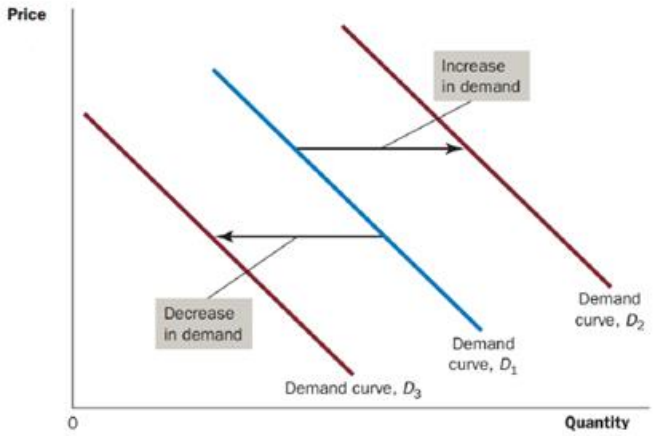
Shift in Demand

Shift in Demand Curve, Part 2

1. Income

- Normal good, other things constant
  - An increase in income leads to an increase in demand: Shifts D curve to the right

Normal Goods



Shift in Demand

- Inferior good, other things constant
  - An increase in income leads to a decrease in demand: Shifts D curve to the left

Inferior Goods

Shift in Demand Curve, Part 3

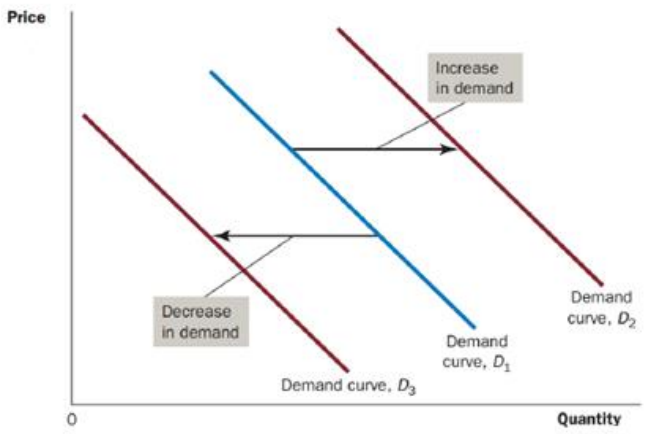
2. Prices of related goods (1)

- Two goods are substitutes if
  - An increase in the price of one leads to an increase in the demand for the other
- Examples: pizza and hamburgers
  - An increase in the price of pizza increases demand for hamburgers, shifting hamburger demand curve to the right

Cappuccino

Latte

Cappuccino and latte are substitutes



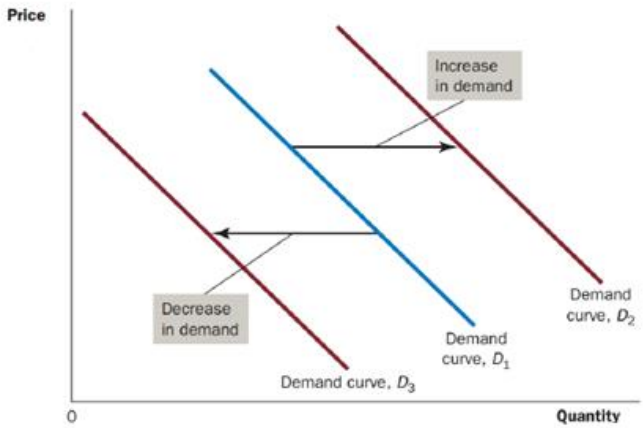
Shift in Demand

Shift in Demand Curve, Part 4

2. Prices of related goods (2)

- Two goods are complements if a fall in the price of one good raises the demand for another good.
- Example: petrol and car; computer and software; peanut butter and jam

DVD Player



Shift in Demand

DVD

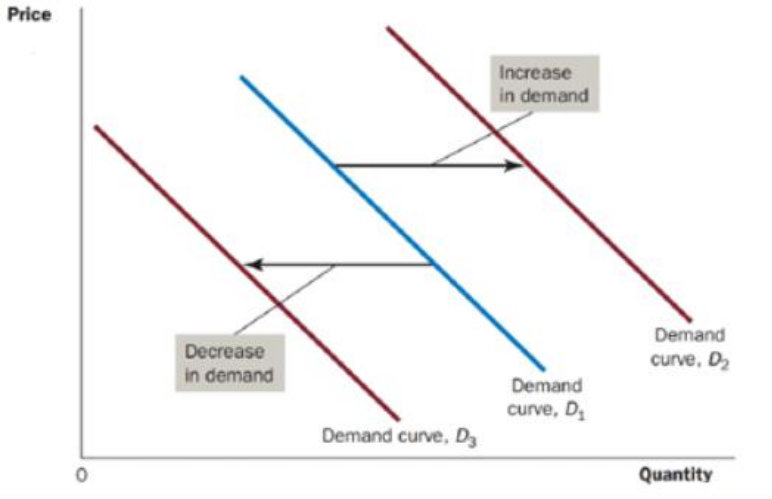
Source: Internet

DVD player and DVD are complements

Shift in Demand Curve, Part 5

3. Tastes

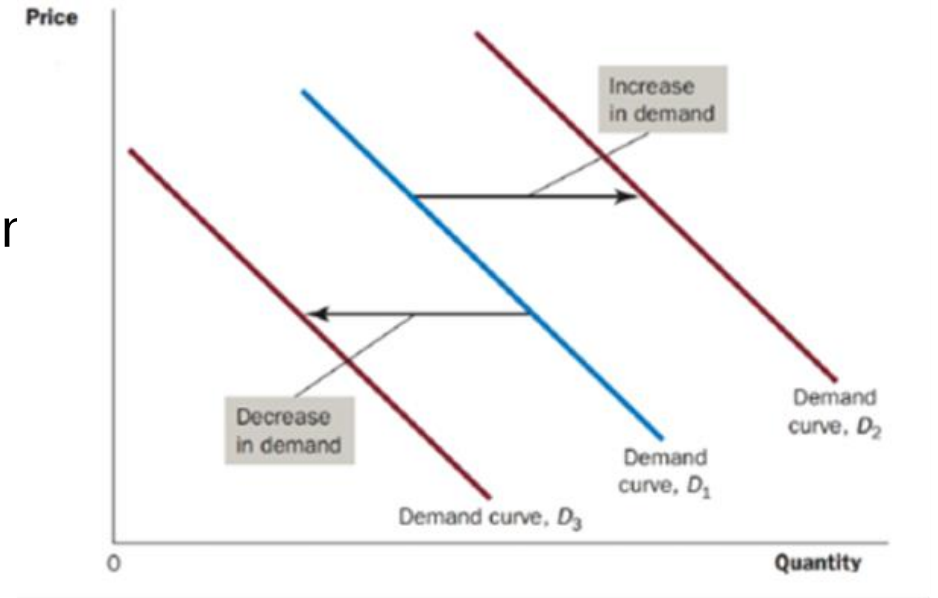
- Anything that causes a shift in tastes toward a good will increase demand for that good and shift its D curve to the right
- Example:
  - The Atkins diet became popular in the ’90s, caused an increase in demand for eggs, shifted the egg demand curve to the right



Shift in Demand Curve, Part 6

4. Expectations about the future

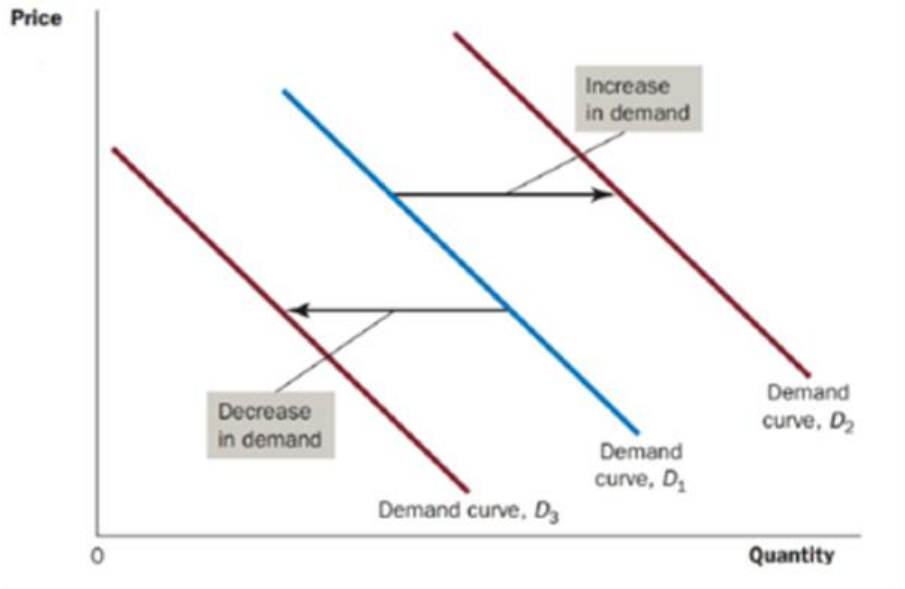
- Expect an increase in income, increase in current demand
- Expect higher prices, increase ir current demand
- Example:
  - If people expect their incomes to rise, their D for meals at expensive restaurants may increase now



Shift in Demand Curve, Part 7

5. Number of buyers – increase

- Market demand – increases



6. Advertisements/Announcements

– Advertisements increase the demand

Shift in Demand Curve, Part 8

TABLE 4.1
Variables That Influence Buyers

Variable	A Change in This Variable . . .
Price of the good itself	Represents a movement along the demand curve
Income	Shifts the demand curve
Prices of related goods	Shifts the demand curve
Tastes	Shifts the demand curve
Expectations	Shifts the demand curve
Number of buyers	Shifts the demand curve

This table lists the variables that affect how much consumers choose to buy of any good. Notice the special role that the price of the good plays: A change in the good's price represents a movement along the demand curve, whereas a change in one of the other variables shifts the demand curve.

Shift in Demand Curve, Part 9

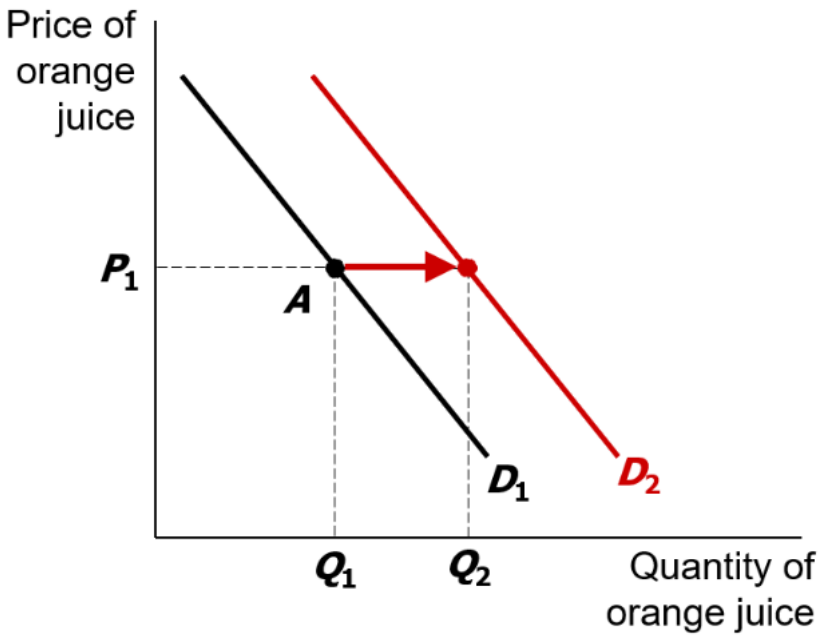
Active Learning 1: The demand curve

Draw the demand curve for orange juice, D_1, and a point A (P_1, Q_1) on the demand curve. What happens in each of the following scenarios? Why?

A. The price of apple juice increases
B. The price of orange juice falls
C. Consumers' income falls (and orange juice is a normal good)

Shift in Demand Curve, Part 10

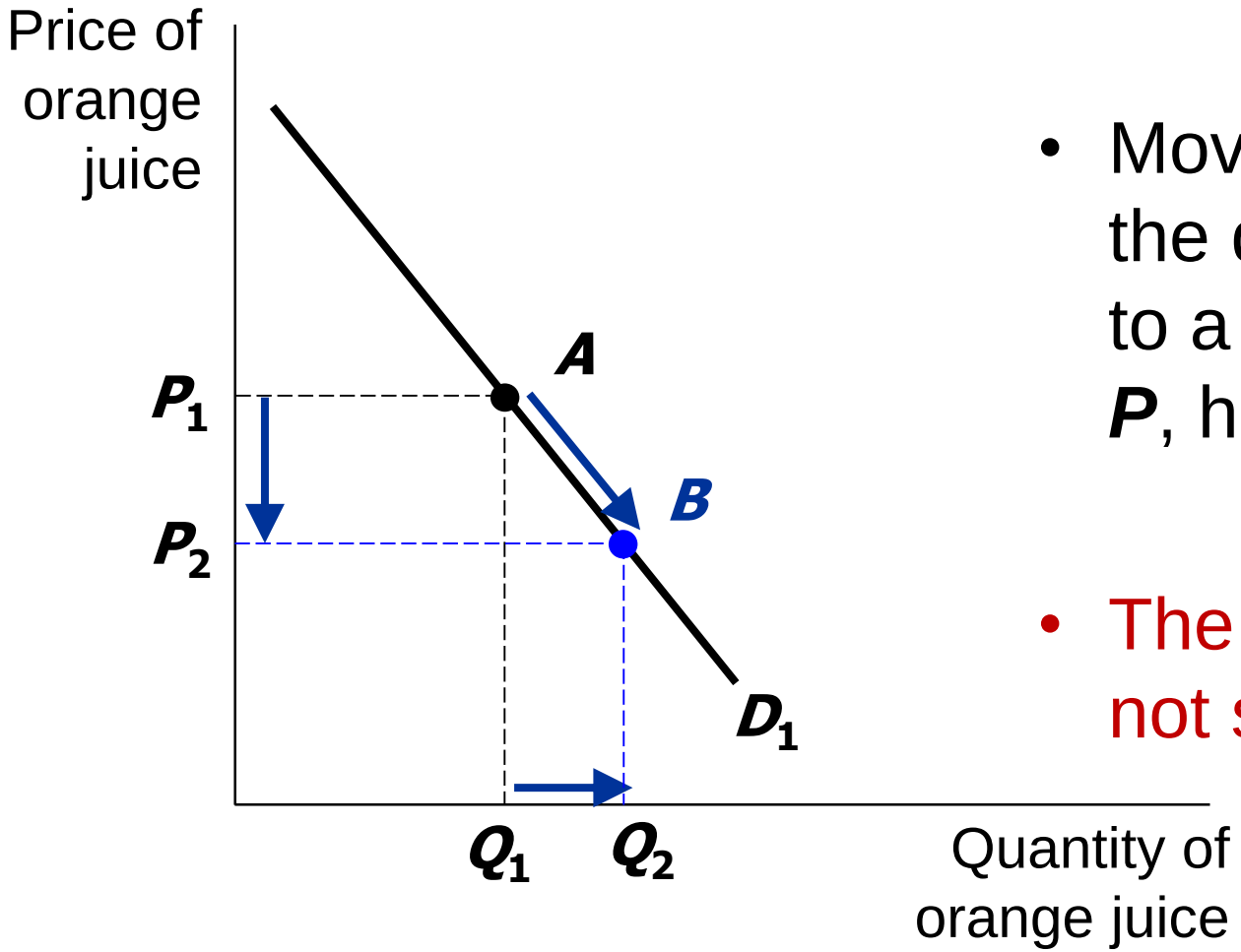
Active Learning 1**A.** Price of apple juice increases



- Orange juice and apple juice are substitutes.
- A higher price of apple juice prompts consumers to buy more orange juice (at P_1)
- The demand for orange juice increases (shifts to the right)

Shift in Demand Curve, Part 11

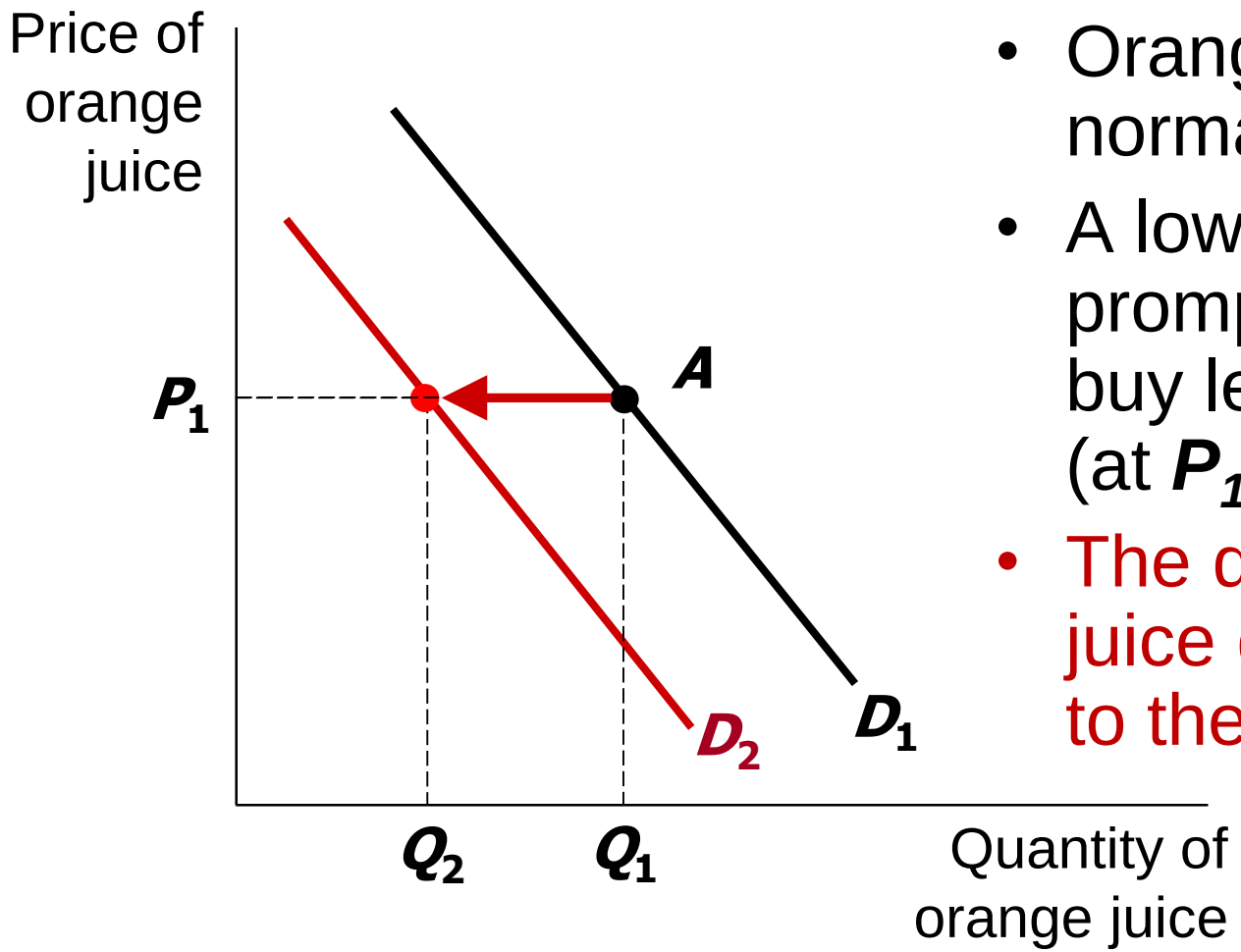
Active Learning 1**B.** The price of orange juice falls



- Move down along the demand curve to a point with lower ***P***, higher ***Q***.
- The ***D*** curve does not shift.

Shift in Demand Curve, Part 12

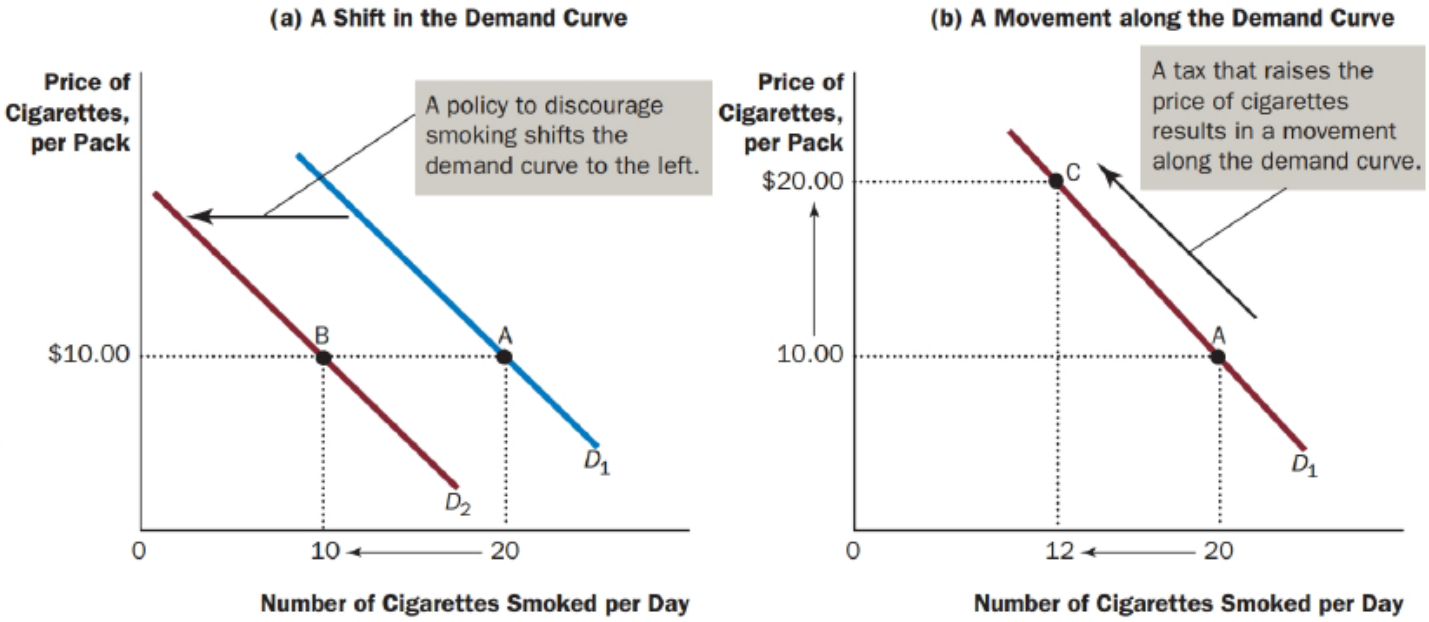
Active Learning 1**C.** Consumers' income falls



- Orange juice is a normal good.
- A lower income prompts consumers to buy less orange juice (at P_1).
- The demand for orange juice decreases (shifts to the left

Shift in Demand Curve, Part 13

Shifts in the Demand Curve versus Movements along the Demand Curve



If warnings on cigarette packages convince smokers to smoke less, the demand curve for cigarettes shifts to the left.

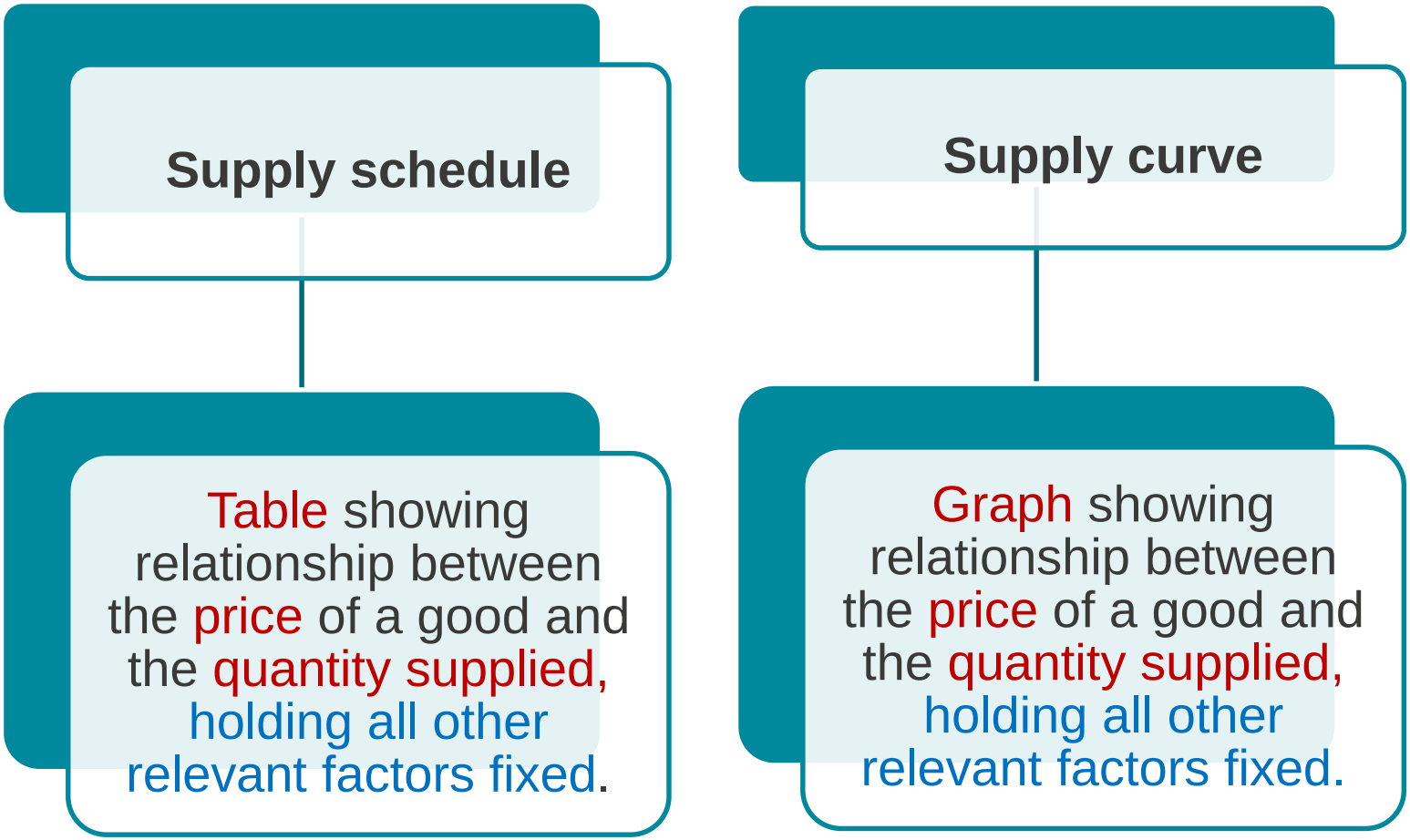
- In panel (a), the demand curve shifts from D_1 to D_2

At a price of $10.00 per pack, the quantity demanded falls from 20 to 10 cigarettes per day, as reflected by the shift from point A to point B. By contrast, if a tax raises the price of cigarettes, the demand curve does not shift. Instead, we observe a movement to a different point on the demand curve.

- In panel (b), when the price rises from $10.00 to $20.00, the quantity demanded falls from 20 to 12 cigarettes per day, as reflected by the movement from point A to point C.

Individual and Market Supply, Part 1

Supply schedule and curve



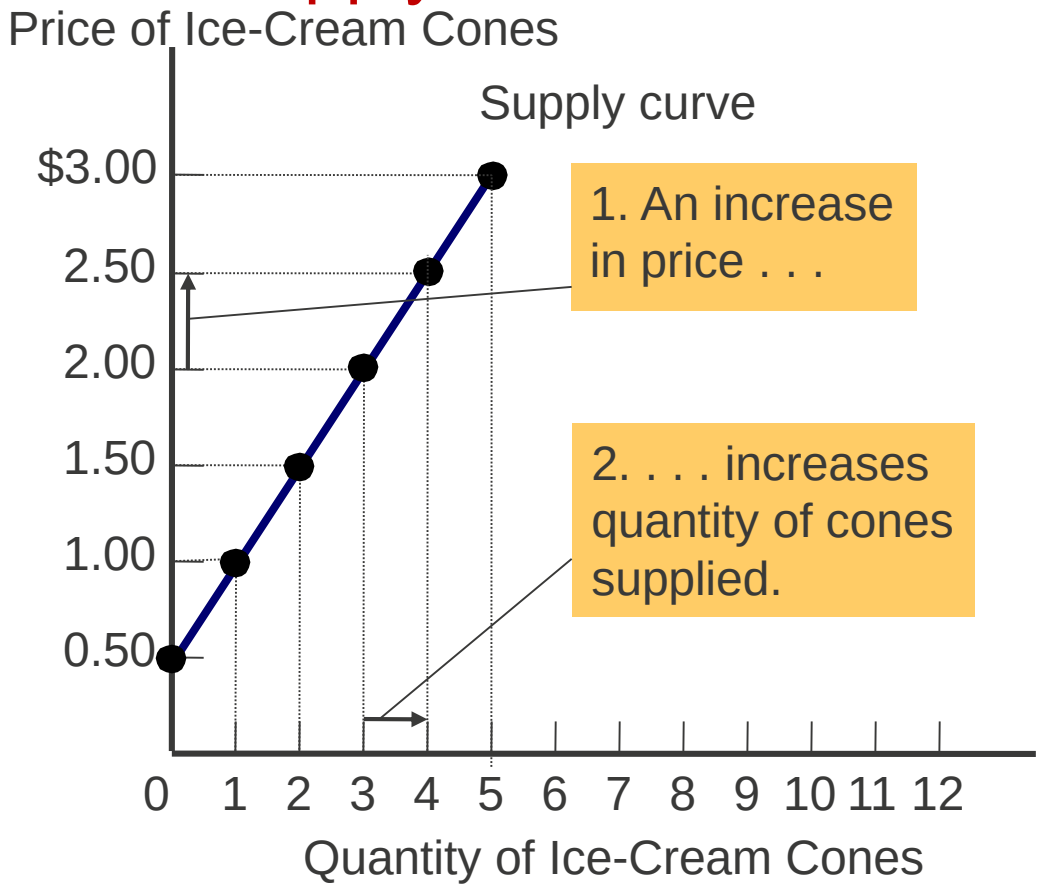
Other relevant factors fixed: input prices, technology, expectations, and number of sellers.

Individual and Market Supply, Part 2

Ben's Supply Schedule and Supply Curve

Price of Ice-cream Cone	Quantity Of Cones Supplied
$0.00	0 cones
0.50	0
1.00	1
1.50	2
2.00	3
2.50	4
3.00	5

Supply Schedule



Supply Curve

The supply schedule is a table that shows the quantity supplied at each price. This supply curve, which graphs the supply schedule, illustrates how the quantity supplied of the good changes as its price varies. Because a higher price increases the quantity supplied, the supply curve slopes upward.

Individual and Market Supply, Part 3

Market Supply as the Sum of Individual Supplies

Market supply schedule is the sum of all *individual supply schedules* for a particular good or service

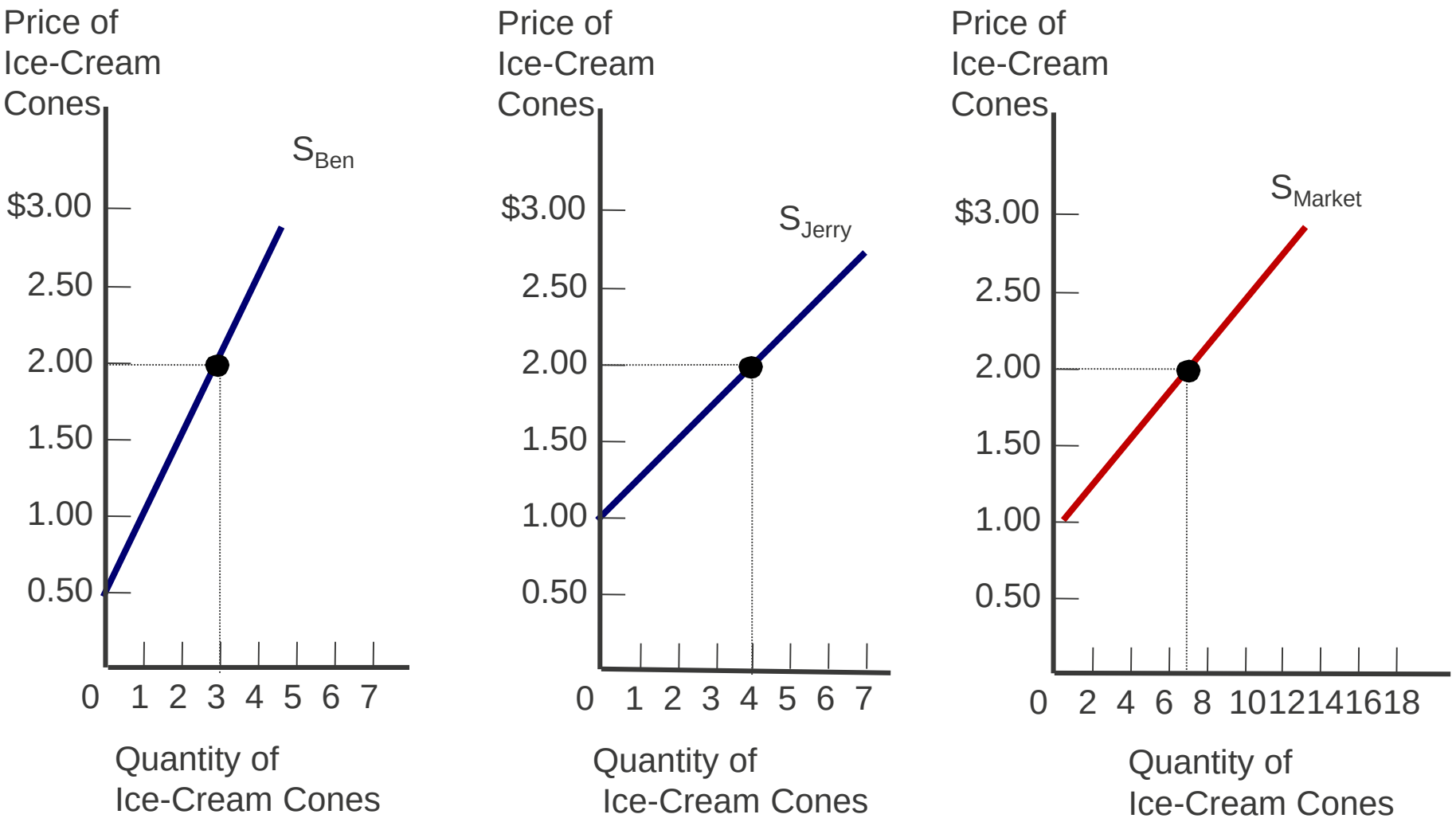
Price of Ice-Cream Cone	Ben		Jerry		Market
$0.00	0	+	0	=	0 cones
0.50	0		0		0
1.00	1		0		1
1.50	2		2		4
2.00	3		4		7
2.50	4		6		10
3.00	5		8		13

The quantity supplied in a market is the sum of the quantities supplied by all the sellers at each price. Thus, the market supply curve is found by adding horizontally the individual supply curves. At a price of $2.00, Ben supplies 3 ice-cream cones, and Jerry supplies 4 ice-cream cones. The quantity supplied in the market at this price is 7 cones.

Individual and Market Supply, Part 4

Market Supply as the Sum of Individual Supplies

Ben's supply + Jerry's supply = Market supply



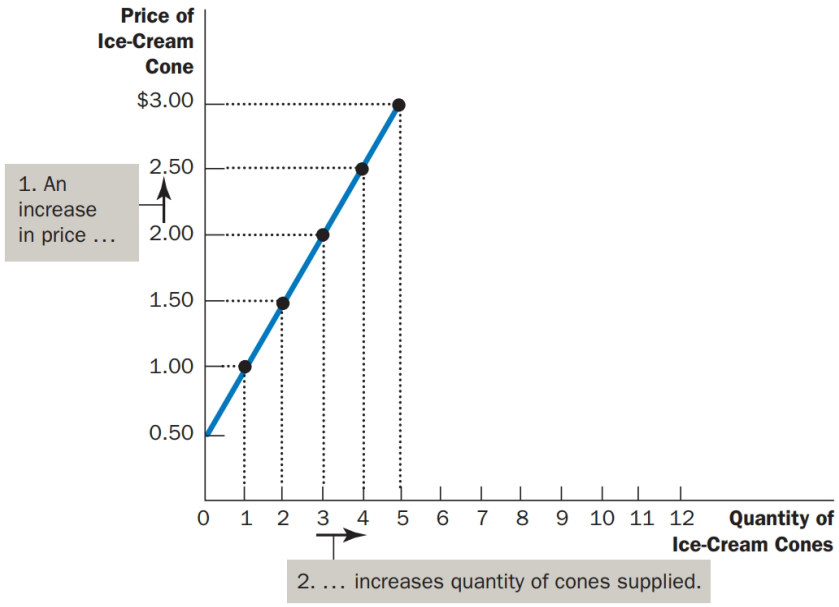
Individual supply curves are summed horizontally to obtain the market supply curve.

Change in Supply and Shift in Supply

- Change in Supply: Movement along the supply curve

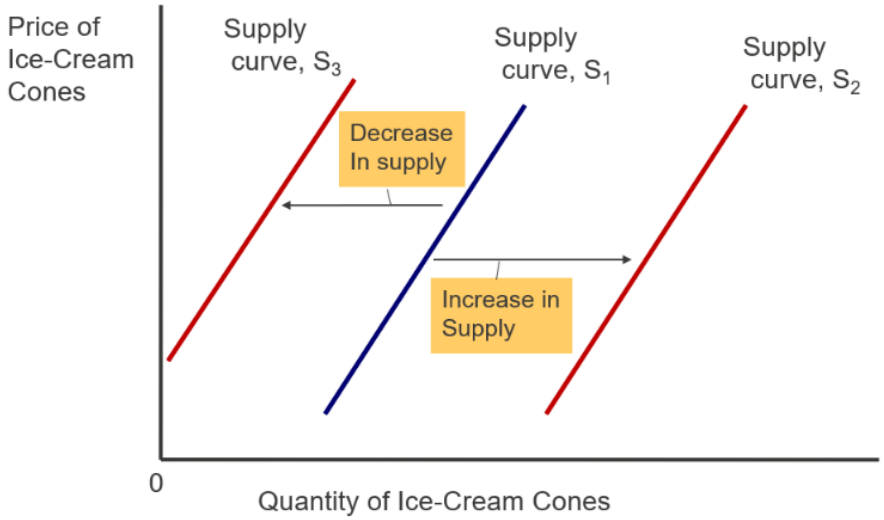
- Shift in Supply:

Supply curve shifts because of **increase or decrease** in supply.



Change in Supply

"Quantity supplied of a good" increases/decreases



Shift in Supply

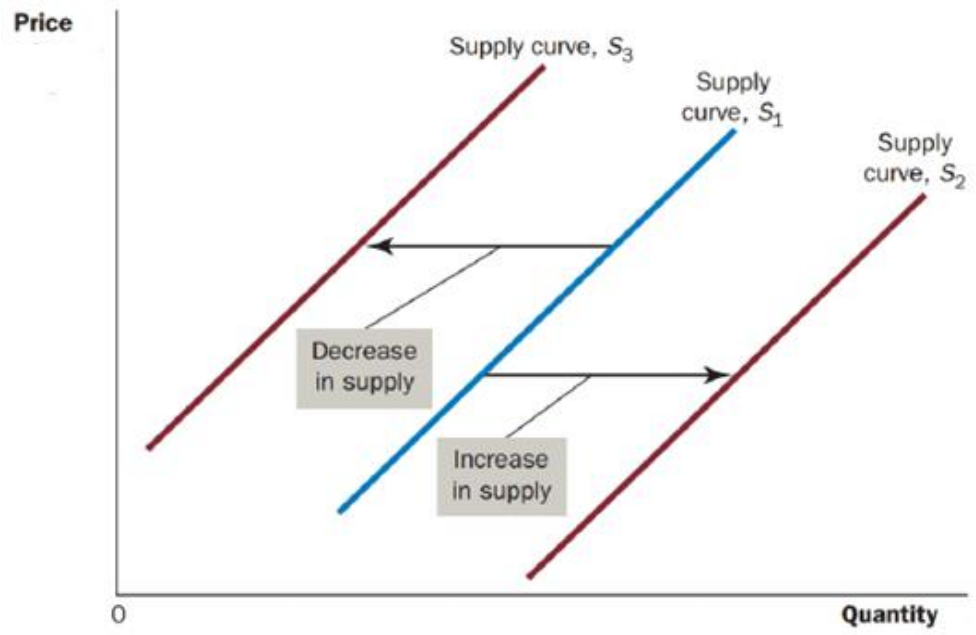
Supply increases/decreases

Shift in Supply Curve, Part 1

Variables that can shift the Supply Curve

FIGURE 4.7

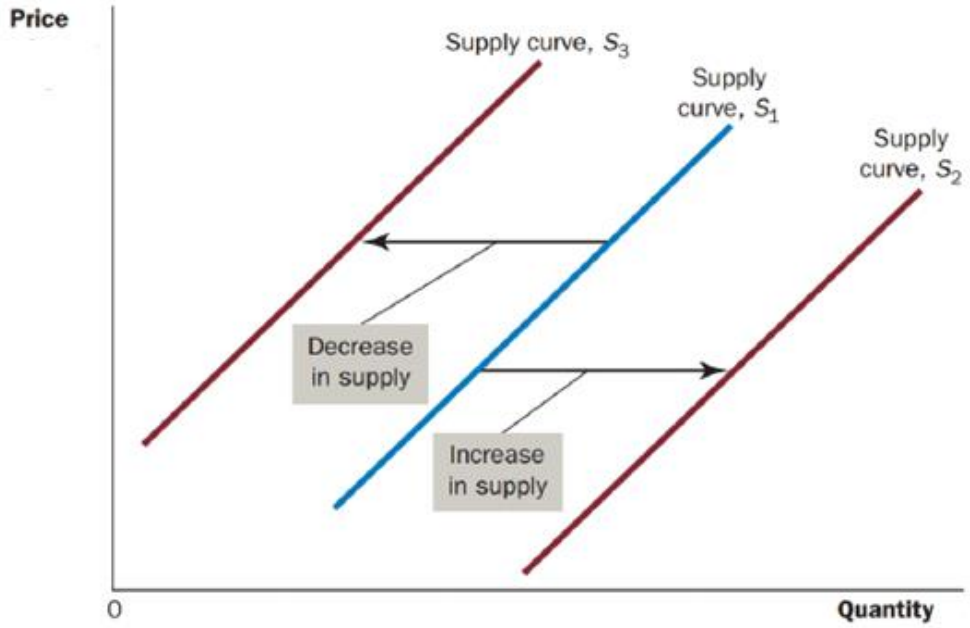
1. Input Prices
2. Technology
3. Expectations
4. Number of Sellers



Shift in Supply Curve, Part 2

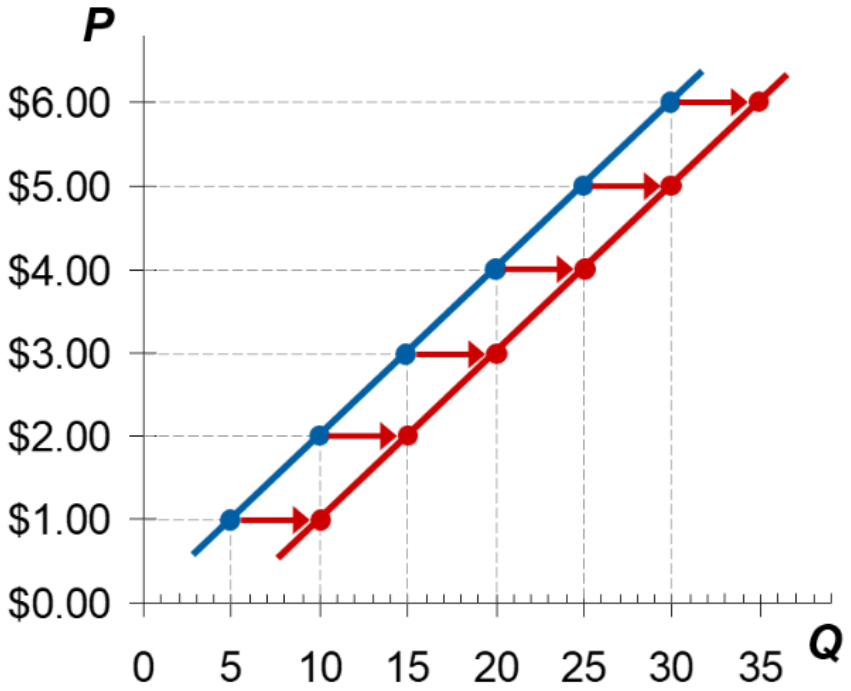
1. Input prices

- Supply is negatively related to prices of inputs
- Examples of input prices: wages, prices of raw materials
- A fall in input prices makes production more profitable at each output price
  - Firms supply a larger quantity at each price
  - The S curve shifts to the right



Shift in Supply Curve, Part 3

Supply Curve Shifters: Input Prices



Suppose the price of milk falls.

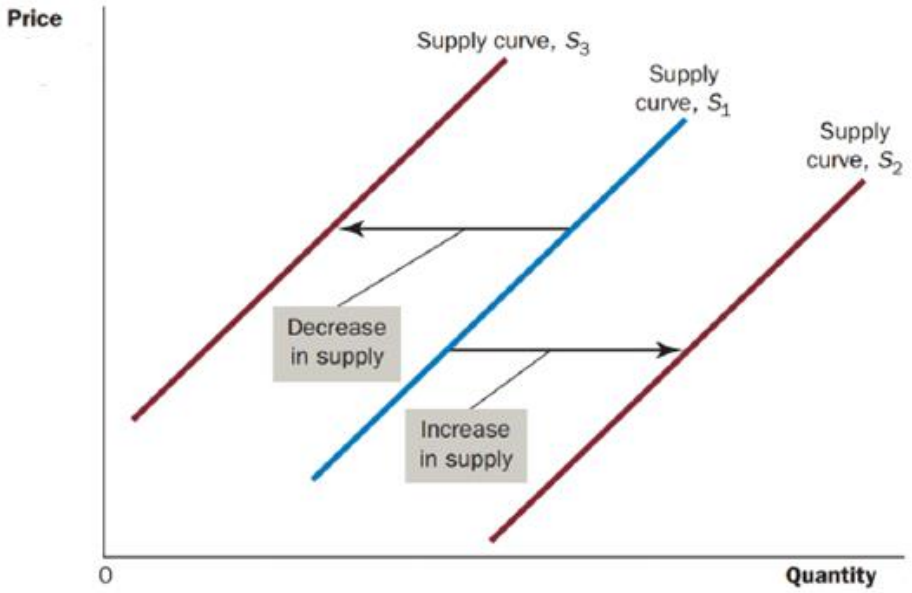
At each price, the quantity of lattes supplied will increase (by 5 in this example).

Shift in Supply Curve, Part 4

2. Technology

- Determines how much inputs are required to produce a unit of output

– A cost-saving technological improvement has the same effect as a fall in input prices, shifts S curve to the right



3. Number of sellers

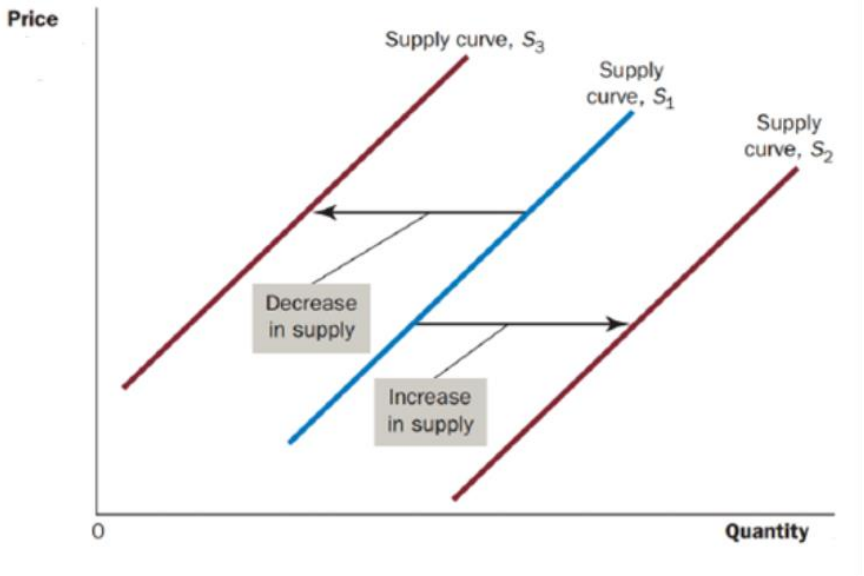
– An increase in the number of sellers

- Increases the quantity supplied at each price
- Shifts S curve to the right

Shift in Supply Curve, Part 5

4. Expectations about future

- Example: Events in the Middle East lead to expectations of higher oil prices
  - Owners of Texas oilfields reduce supply now, save some inventory to sell later at the higher price
  - S curve shifts left
- Sellers may adjust supply* when their expectations of future prices change
(*If good not perishable)



Shift in Supply Curve, Part 6

Variable	A Change in This Variable . . .
Price of the good itself	Represents a movement along the supply curve
Input prices	Shifts the supply curve
Technology	Shifts the supply curve
Expectations	Shifts the supply curve
Number of sellers	Shifts the supply curve

Shift in Supply Curve, Part 7

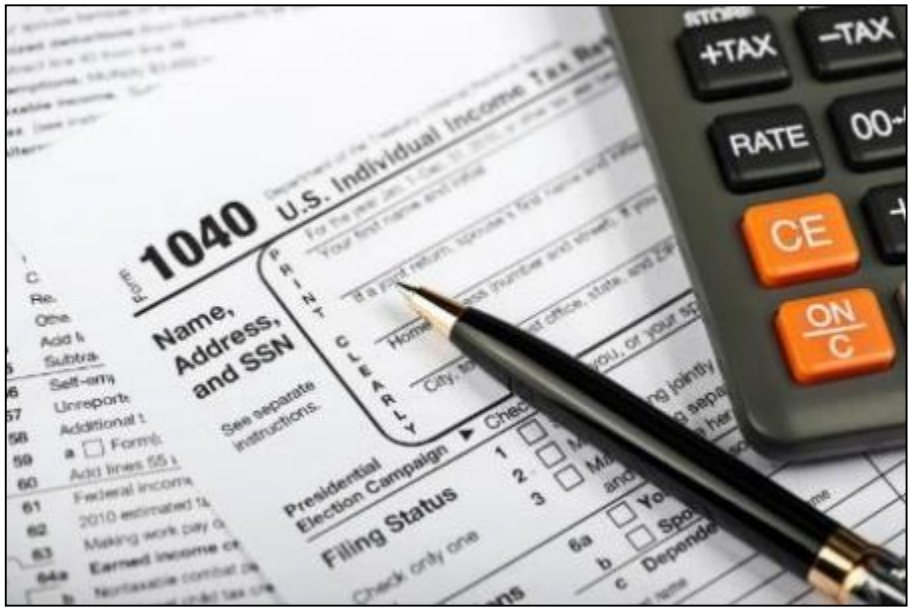
Active Learning 2 — Supply curve

Draw a supply curve for tax return preparation software. What happens to it in each of the following scenarios?

A. Retailers cut the price of the software.

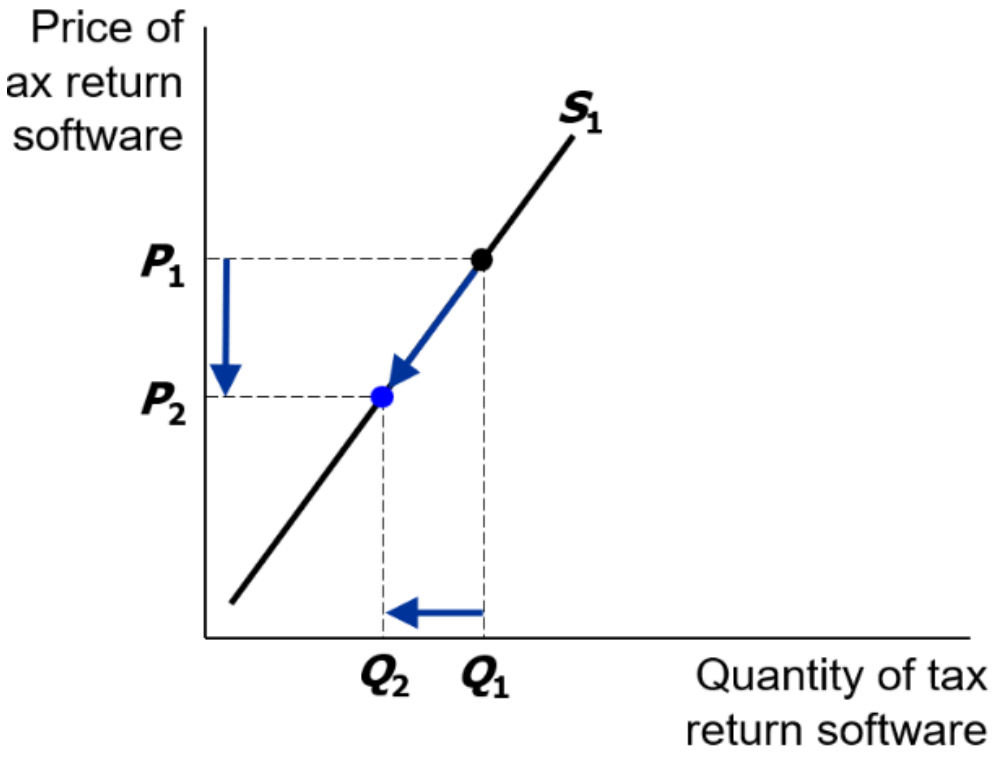
B. A technological advance allows the software to be produced at lower cost.

C. Professional tax return preparers raise the price of the services they provide.



Shift in Supply Curve, Part 8

Active Learning 2 **A.** Fall in price of tax return software

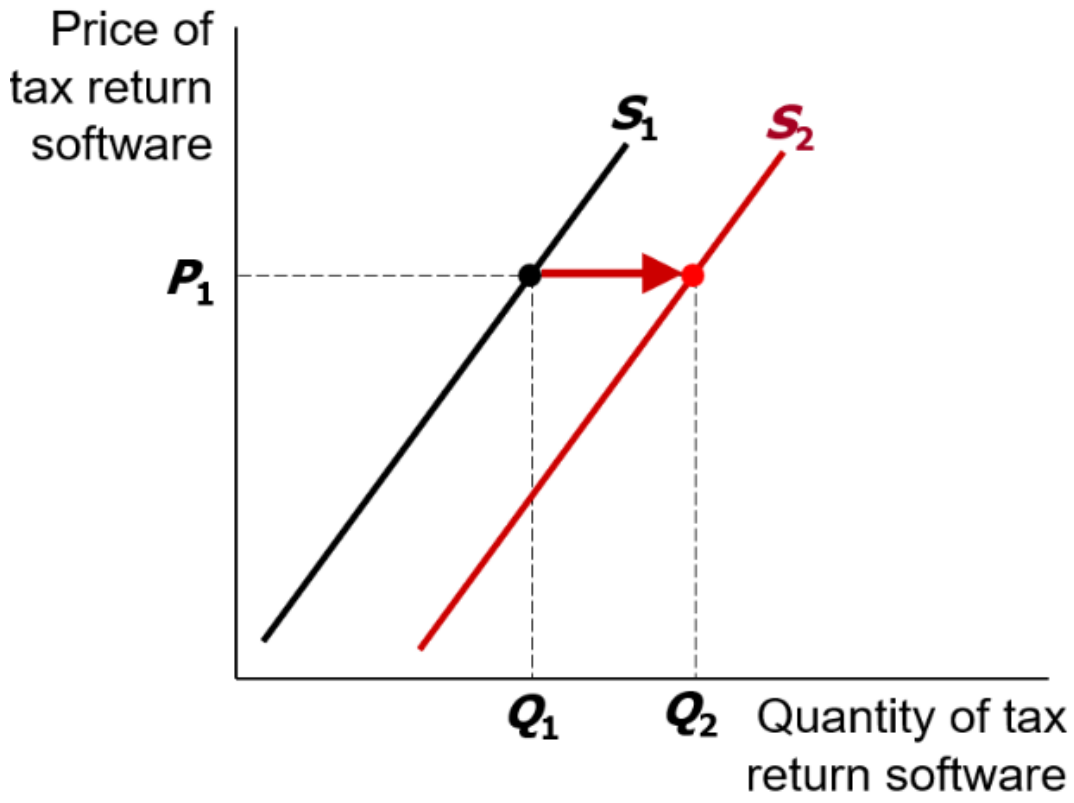


S curve does not shift.

Move down along the curve to a lower P and lower Q.

Shift in Supply Curve, Part 9

Active Learning 2 **B.** Fall in cost of producing software

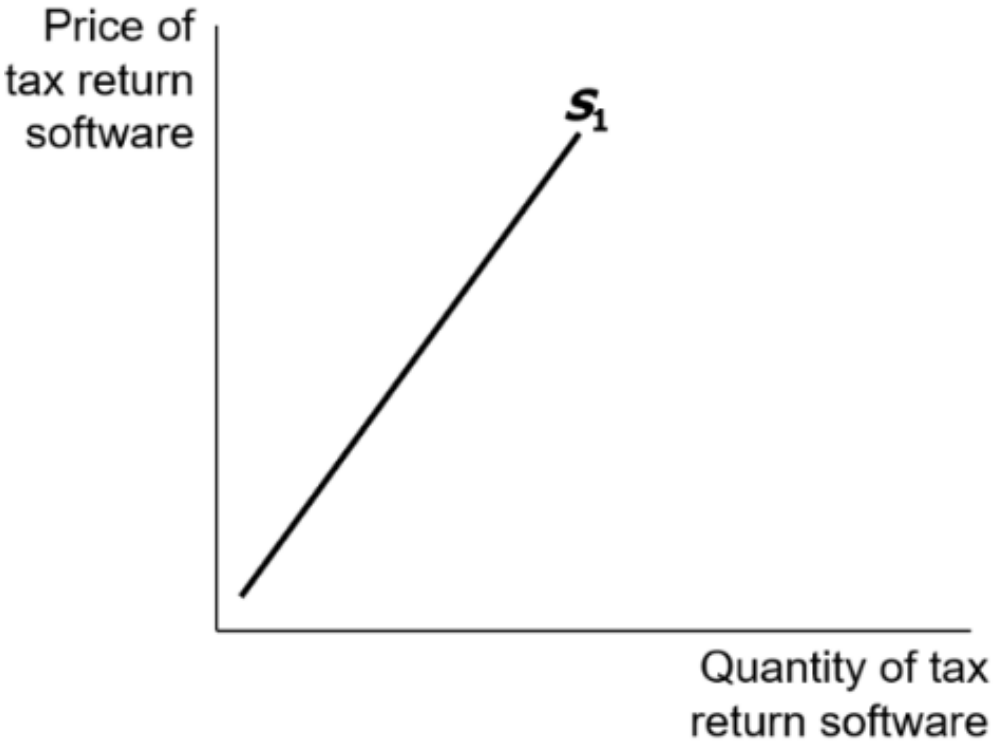


S curve shifts to the right:

at each price, Q increases.

Shift in Supply Curve, Part 10

Active Learning 2 **C.** Professional preparers raise their price

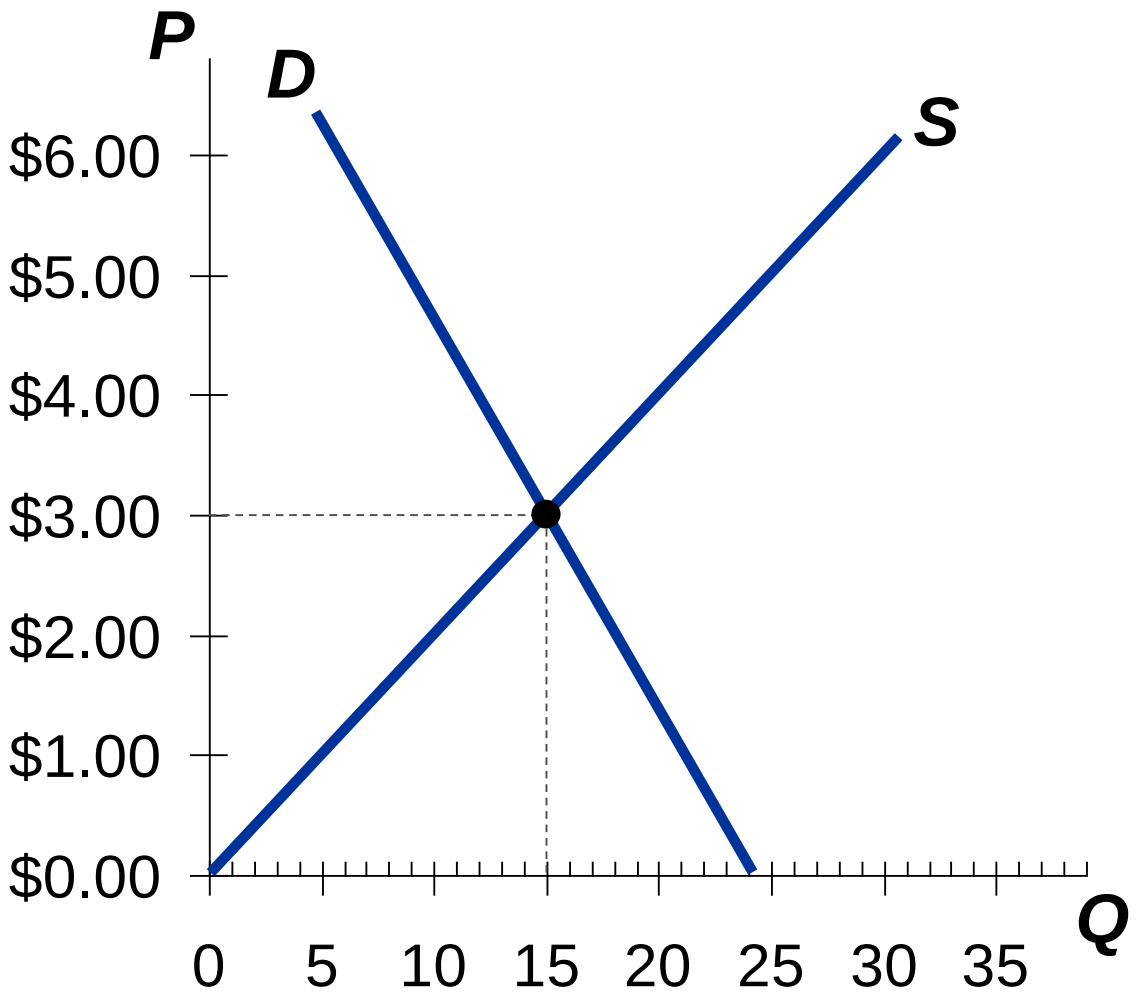


Trick question:

This shifts the demand curve for tax preparation software, not the supply curve.

Supply and Demand Together, Part 1

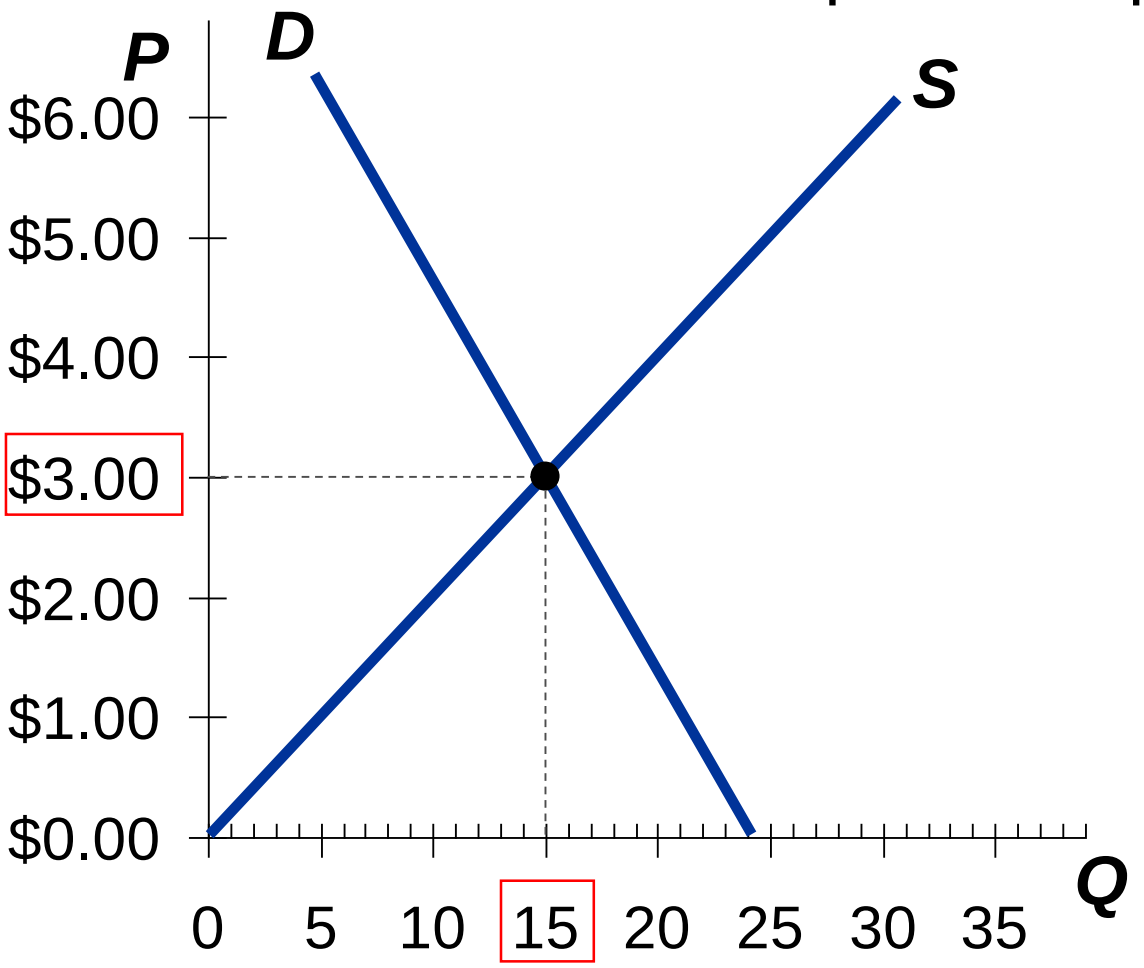
Equilibrium:
Price has reached the level where quantity supplied equals quantity demanded



Supply and Demand Together, Part 2

Equilibrium price: price where Q supplied = Q demanded

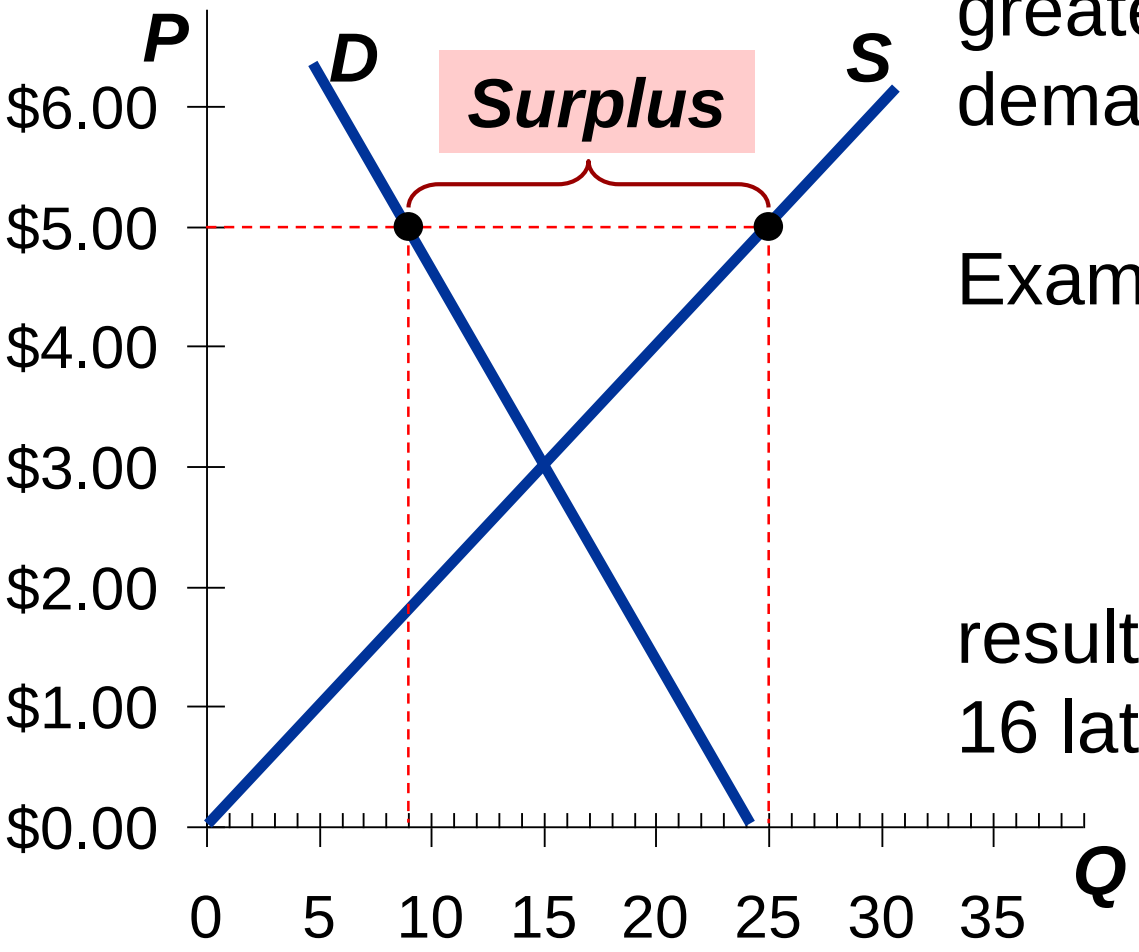
Equilibrium quantity: Q supplied and demanded at the equilibrium price



P	Q^D	Q^S
$0	24	0
1	21	5
2	18	10
3	15	15
4	12	20
5	9	25
6	6	30

Supply and Demand Together, Part 3

Markets Not in Equilibrium: Surplus



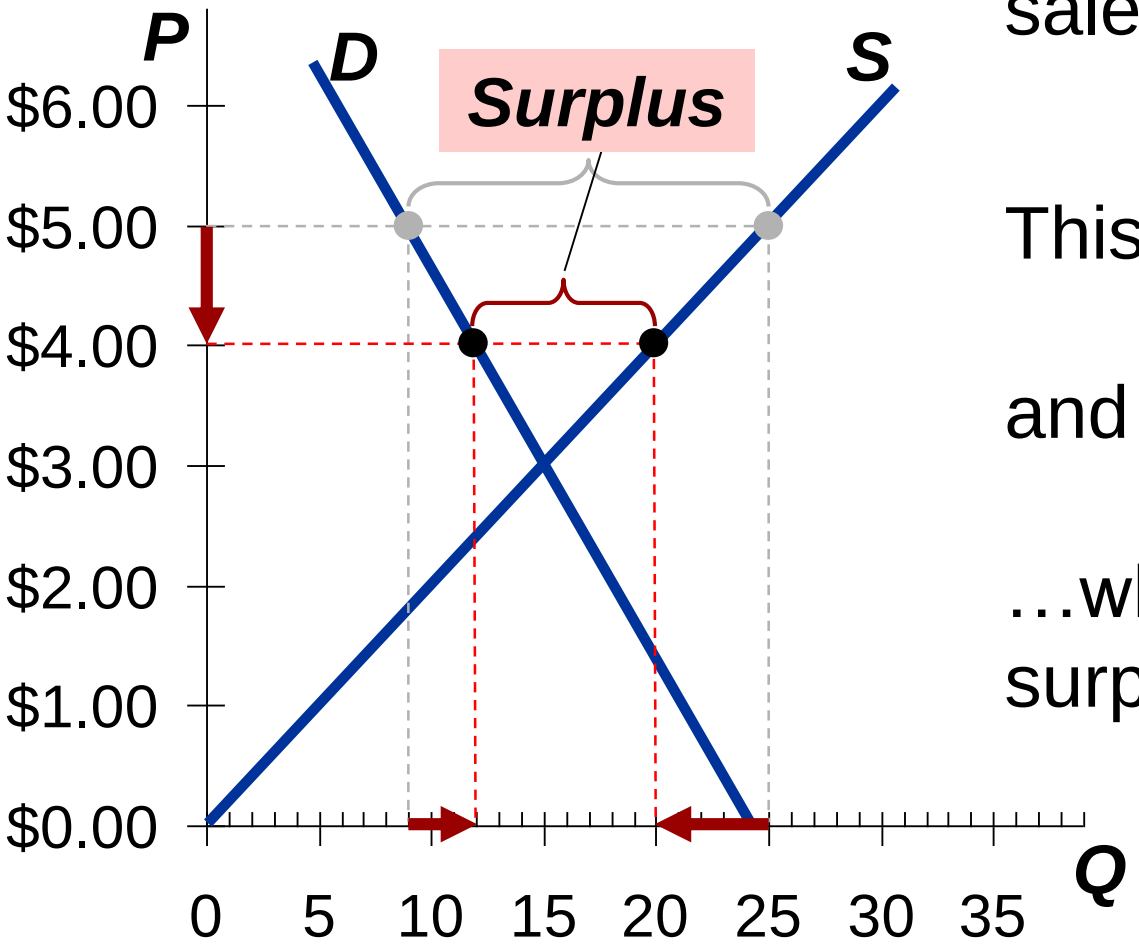
Surplus (excess supply): quantity supplied is greater than quantity demanded

Example: if P = \$5,
then Q^D = 9 lattes
and Q^S = 25 lattes

resulting in a surplus of 16 lattes

Supply and Demand Together, Part 4

Markets Not in Equilibrium: Surplus



Facing a surplus, sellers try to increase sales by cutting price.

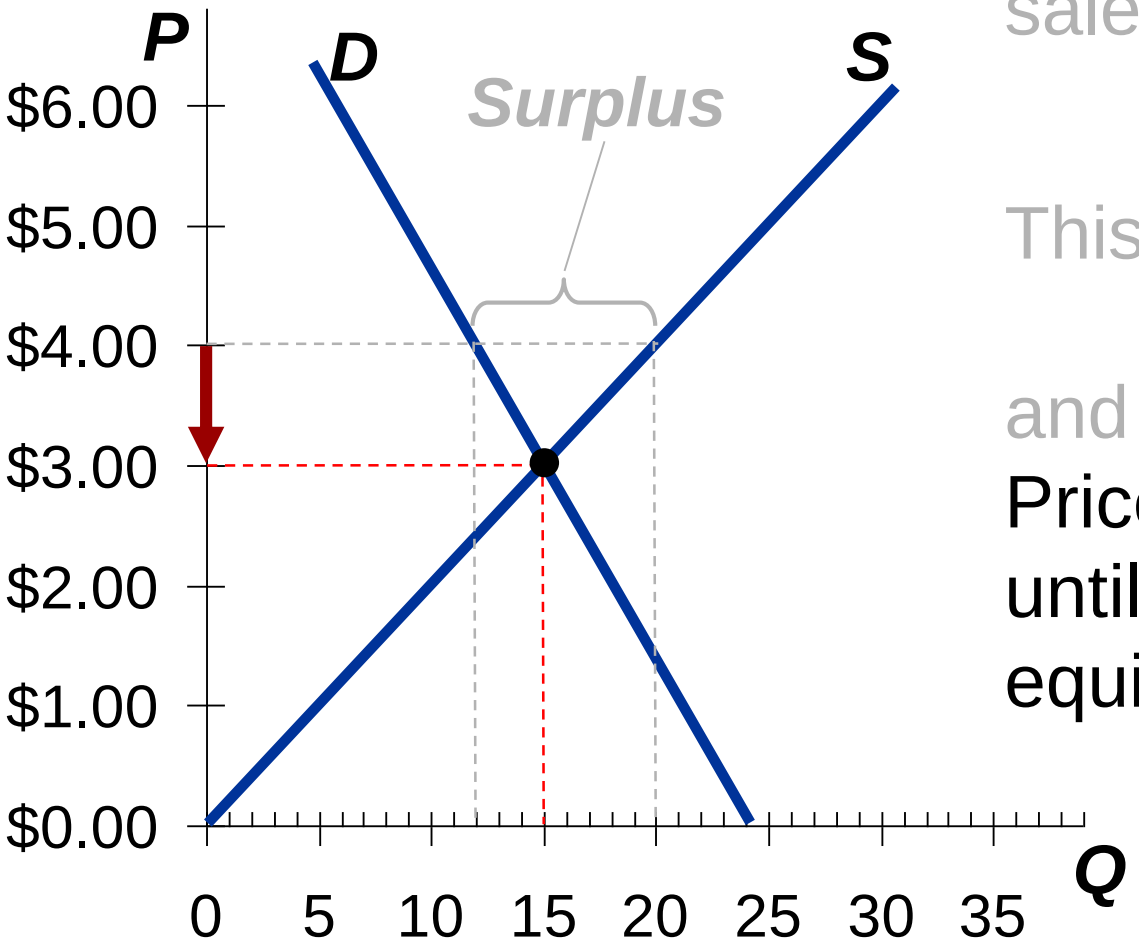
This causes Q^D to rise

and Q^S to fall…

…which reduces the surplus.

Supply and Demand Together, Part 5

Markets Not in Equilibrium: Surplus



Facing a surplus, sellers try to increase sales by cutting price.

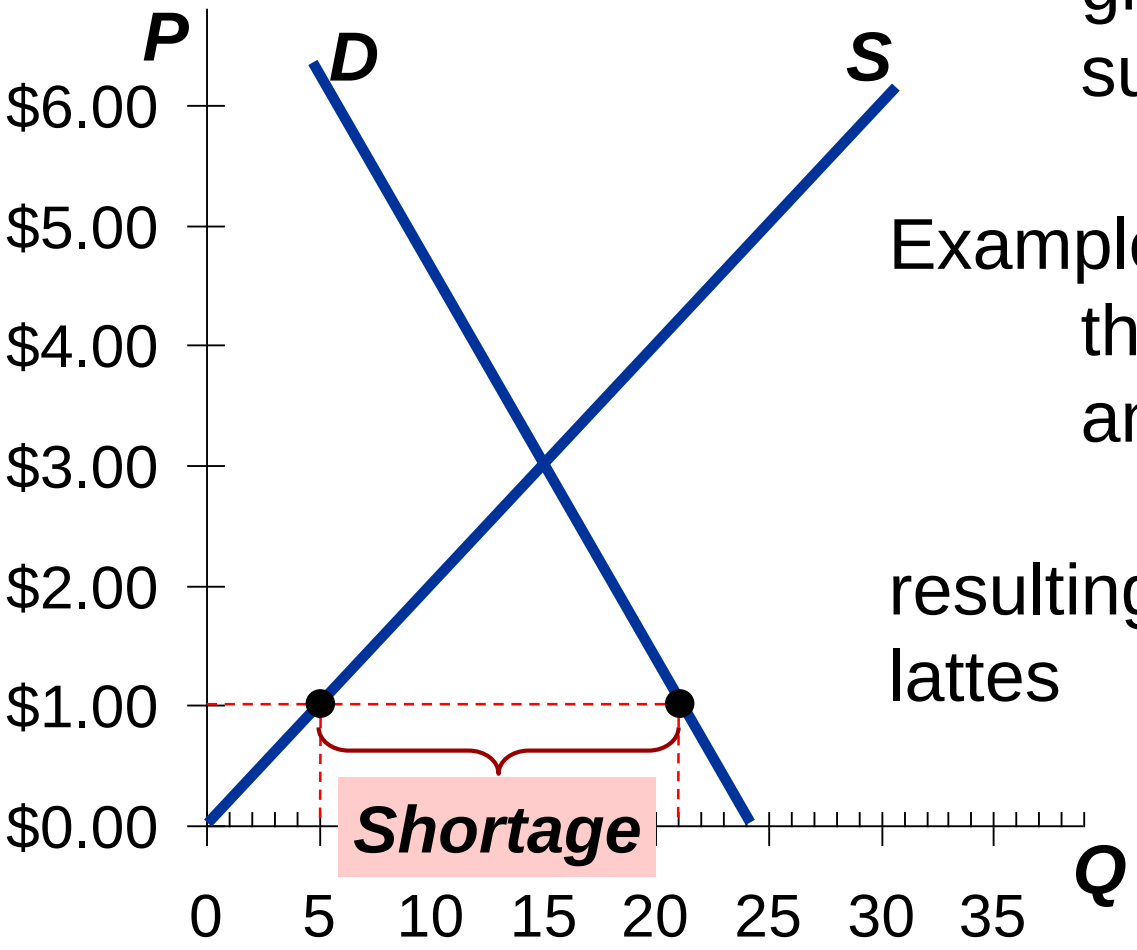
This causes Q^D to rise

and Q^S to fall…

Prices continue to fall until market reaches equilibrium.

Supply and Demand Together, Part 6

Markets Not in Equilibrium: Shortage



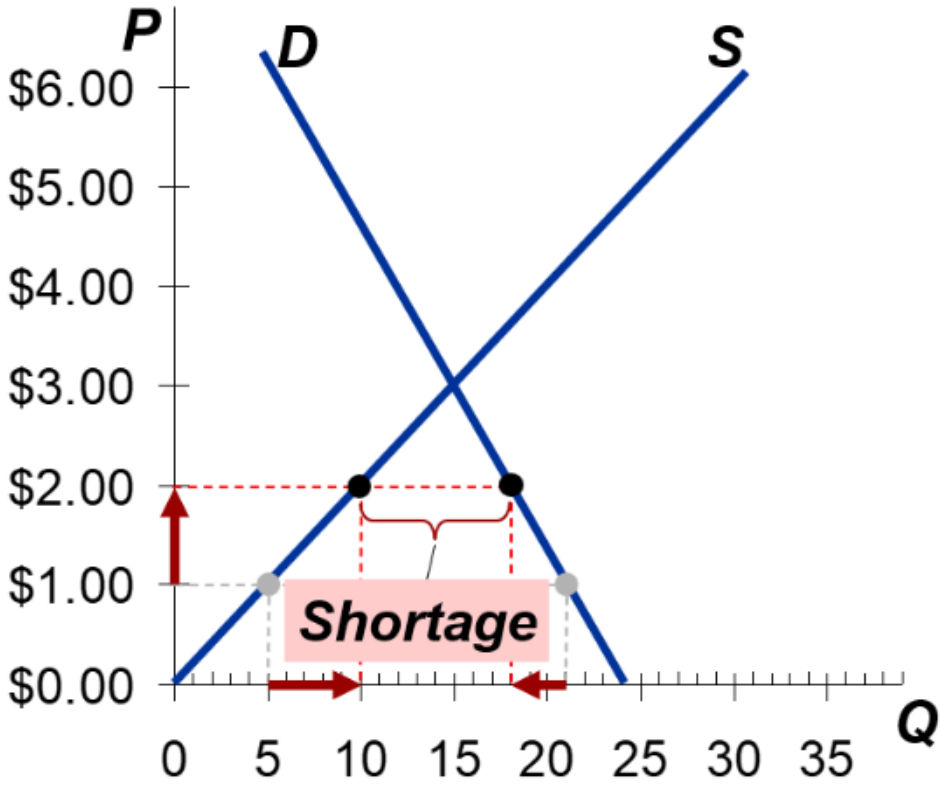
Shortage (excess demand): quantity demanded is greater than quantity supplied

Example: if P = \$1, then Q^D = 21 lattes and Q^S = 5 lattes

resulting in a shortage of 16 lattes

Supply and Demand Together, Part 7

Markets Not in Equilibrium: Shortage



Facing a shortage, sellers raise the price,

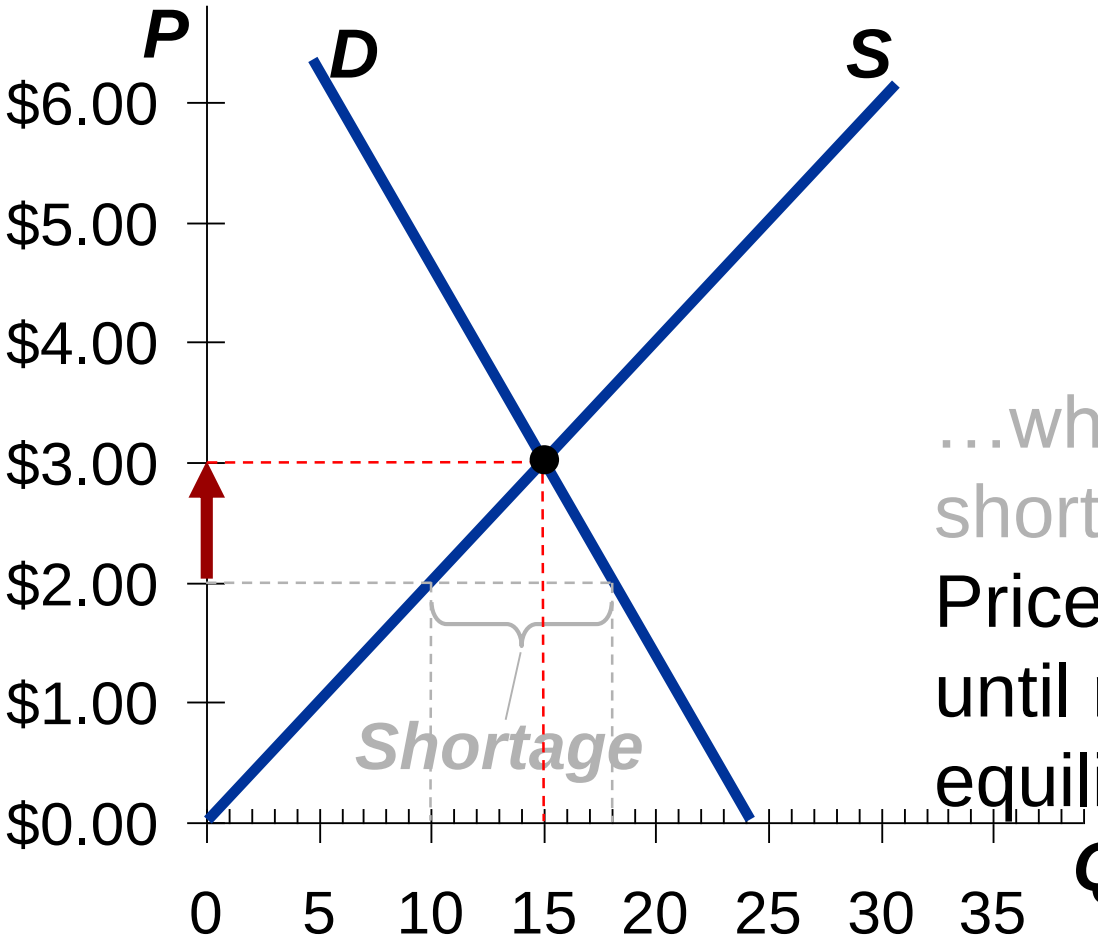
causing Q^D to fall

and Q^S to rise,

…which reduces the shortage.

Supply and Demand Together, Part 8

Markets Not in Equilibrium: Shortage



Facing a shortage, sellers raise the price,

causing Q^D to fall

and Q^S to rise,

…which reduces the shortage.

Prices continue to rise until market reaches equilibrium.

Supply and Demand Together, Part 9

Three steps to analyzing changes in equilibrium (1)

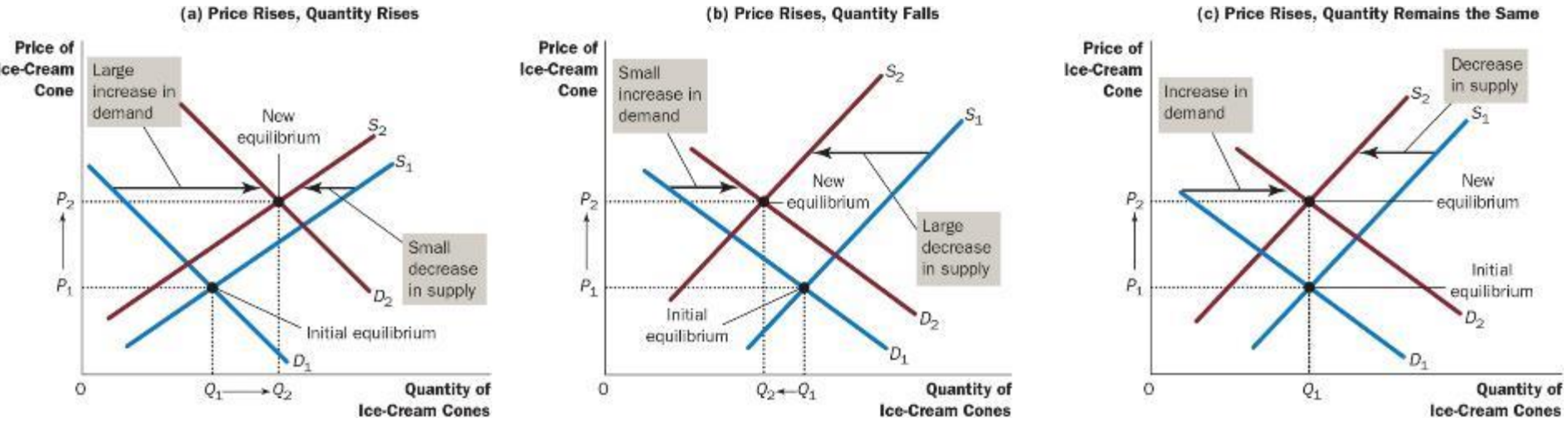
1. Decide whether the event shifts the supply or demand curve (or both).
2. Decide whether the curve(s) shift(s) to the left or to the right.
3. Use the supply-and-demand diagram to see how the shift affects equilibrium price and quantity .
   - Compare the initial and the new equilibrium
   - Effects on equilibrium price and quantity

Supply and Demand Together, Part 10

Three steps to analyzing changes in equilibrium (2)

FIGURE 4.12

A Shift in Both Supply and Demand



Supply and Demand Together, Part 11

Three steps to analyzing changes in equilibrium (3)

TABLE 4.4

What Happens to Price and Quantity When Supply or Demand Shifts?

	No Change in Supply	An Increase in Supply	A Decrease in Supply
No Change in Demand	*P* same *Q* same	*P* down *Q* up	*P* up *Q* down
An Increase in Demand	*P* up *Q* up	*P* ambiguous *Q* up	*P* up *Q* ambiguous
A Decrease in Demand	*P* down *Q* down	*P* down Q ambiguous	*P* ambiguous *Q* down

CHAPTER 4 Summary, Part 1

- Economists use the model of supply and demand to analyze competitive markets.
  - Many buyers and sellers, all are price takers
- The demand curve shows how the quantity of a good demanded depends on the price.
  - Law of demand: as the price of a good falls, the quantity demanded rises; the ***D*** curve slopes downward
- Other determinants of demand: income, prices of substitutes and complements, tastes, expectations, and number of buyers.
  - If one of these factors changes, the ***D*** curve shifts

CHAPTER 4 Summary, Part 2

- The supply curve shows how the quantity of a good supplied depends on the price.
  - Law of supply: as the price of a good rises, the quantity supplied rises; the ***S*** curve slopes upward.
- Other determinants of supply: input prices, technology, expectations, and number of sellers.
  - If one of these factors changes, supply curve shifts.
- The intersection of the supply and demand curves determines the market equilibrium.
  - At the equilibrium price, quantity demanded = quantity supplied

CHAPTER 4 Summary, Part 3

- The behavior of buyers and sellers naturally drives markets toward their equilibrium.
  - When the market price is above the equilibrium price, there is a surplus of the good, which causes the market price to fall.
  - When the market price is below the equilibrium price, there is a shortage, which causes the market price to rise.

CHAPTER 4 Summary, Part 4

- To analyze how any event influences a market, we use the supply-and-demand diagram to examine how the event affects the equilibrium price and quantity.
  1. Decide whether the event shifts the supply curve or the demand curve (or both).
  2. Decide in which direction the curve shifts.
  3. Compare the new equilibrium with the initial one.
- In market economies, prices are the signals that guide economic decisions and thereby allocate scarce resources.

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On Friday, we will discuss questions as posted on eClass. Please review the questions in advance so that you can better understand and participate in the discussion.

Next week, we will cover Chapter 5 Elasticity and Its Applications

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Thank you