

Essentials of Economics

Chapter 3: The Market Forces

General Economics

Ferdowsi University of Mashhad

Winter Term 2023-24

Demand

- ❖ **Quantity Demanded:** the **amount** of a good that buyers are **willing** and **able** to purchase.
- ❖ **law of demand:** the claim that, other things equal, the quantity demanded of a good **falls** when the price of the good rises.
- ❖ **Demand curve:** a graph of the relationship between the price of a good and the quantity demanded.
- ❖ **Market Demand:** the sum of all the individual demands for a particular good or service.

- ❖ **Quantity Demanded:** the **amount** of a good that buyers are **willing** and **able** to purchase.
- ❖ **law of demand:** the claim that, other things equal, the **quantity demanded** of a good **falls** when the **price** of the good **rises**.
- ❖ **Demand curve:** a graph of the relationship between the price of a good and the quantity demanded.
- ❖ **Market Demand:** the sum of all the individual demands for a particular good or service.

- ❖ **Quantity Demanded:** the **amount** of a good that buyers are **willing** and **able** to purchase.
- ❖ **law of demand:** the claim that, other things equal, the **quantity demanded** of a good **falls** when the **price** of the good **rises**.
- ❖ **Demand curve:** a graph of the relationship between the price of a good and the quantity demanded.
- ❖ **Market Demand:** the sum of all the individual demands for a particular good or service.

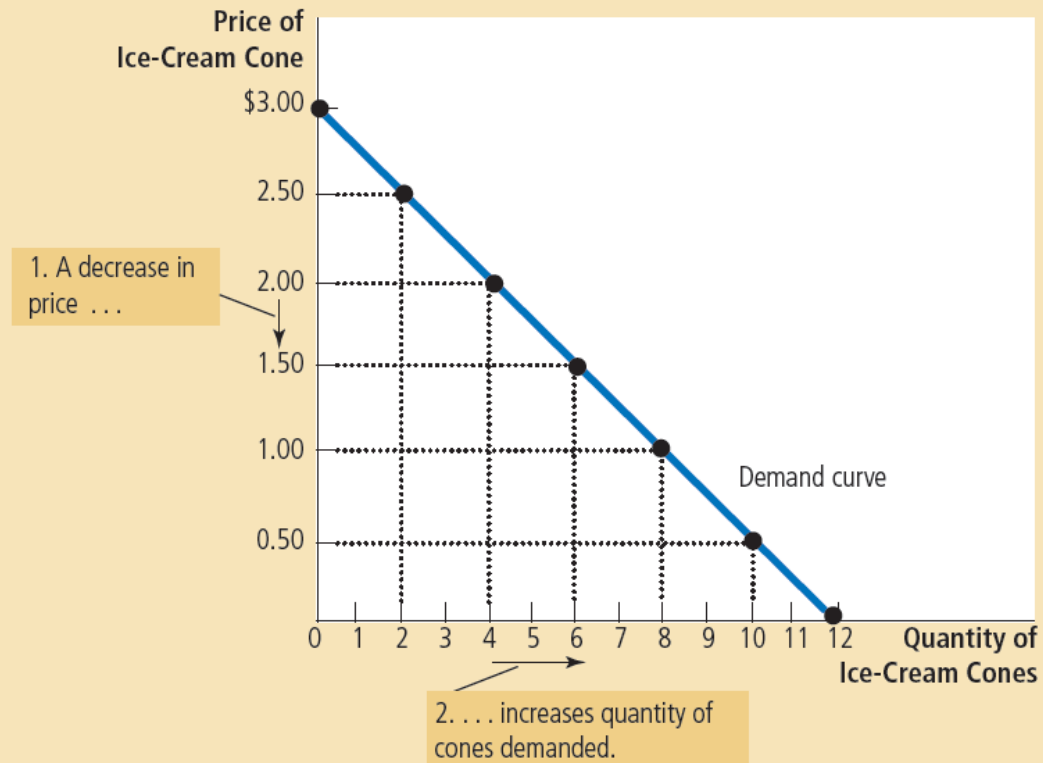
- ❖ **Quantity Demanded:** the **amount** of a good that buyers are **willing** and **able** to purchase.
- ❖ **law of demand:** the claim that, other things equal, the **quantity demanded** of a good **falls** when the **price** of the good **rises**.
- ❖ **Demand curve:** a graph of the relationship between the price of a good and the quantity demanded.
- ❖ **Market Demand:** the sum of all the individual demands for a particular good or service.

Figure 1

Catherine's Demand Schedule and Demand Curve

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

The demand schedule is a table that shows the quantity demanded at each price. The demand curve, which graphs the demand schedule, illustrates how the quantity demanded of the good changes as its price varies. Because a lower price increases the quantity demanded, the demand curve slopes downward.



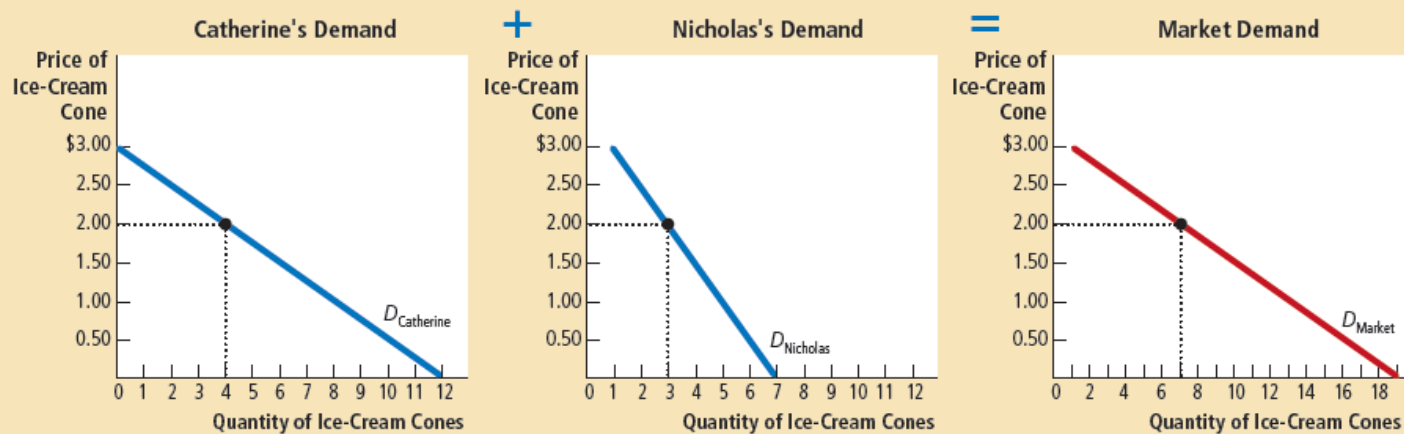
Demand

The quantity demanded in a market is the sum of the quantities demanded by all the buyers at each price. Thus, the market demand curve is found by adding horizontally the individual demand curves. At a price of \$2.00, Catherine demands 4 ice-cream cones, and Nicholas demands 3 ice-cream cones. The quantity demanded in the market at this price is 7 cones.

Figure 2

Market Demand as the Sum of Individual Demands

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



Shifts in the Demand Curve

Shifts in the Demand Curve

Shifts in the Demand Curve: If something happens to alter the quantity demanded **at any given price**, the demand curve **shifts**.

For example, suppose the American Medical Association discovered that people who regularly eat ice cream live longer, healthier lives. The discovery would raise the demand for ice cream. At any given price, buyers would now want to purchase a larger quantity of ice cream, and the demand curve for ice cream would shift.

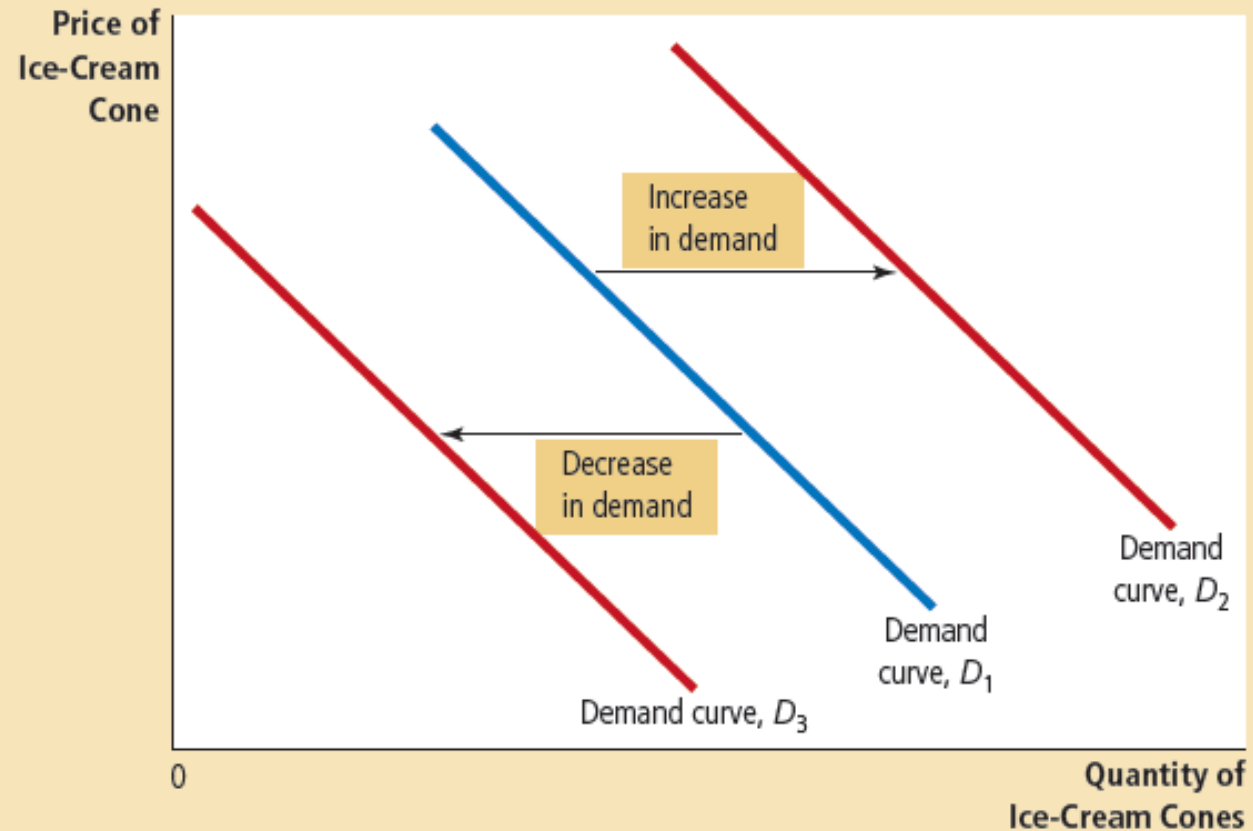
- Any change that increases the quantity demanded at every price.

Shifts in the Demand Curve

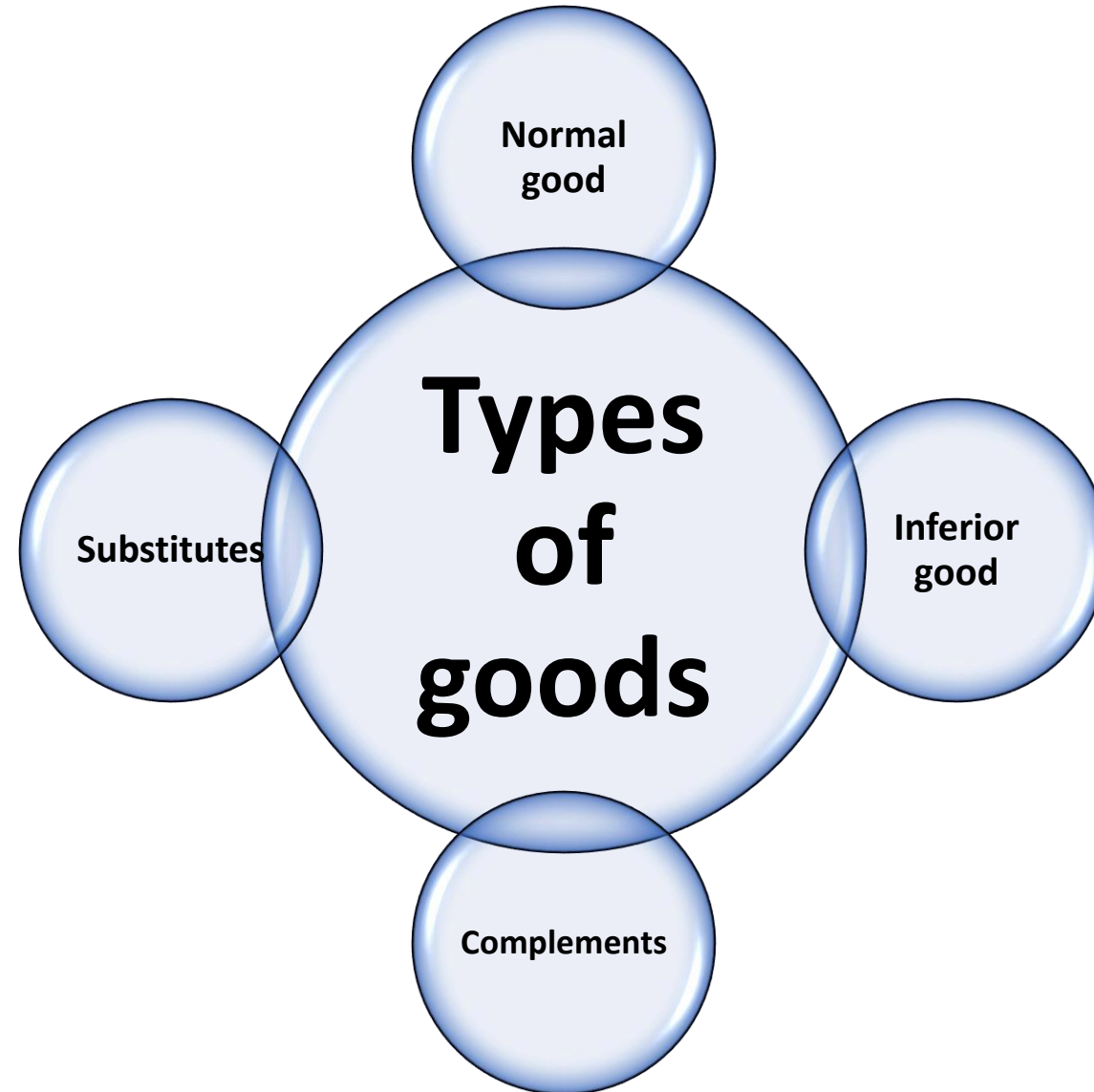
Figure 3

Shifts in the Demand Curve

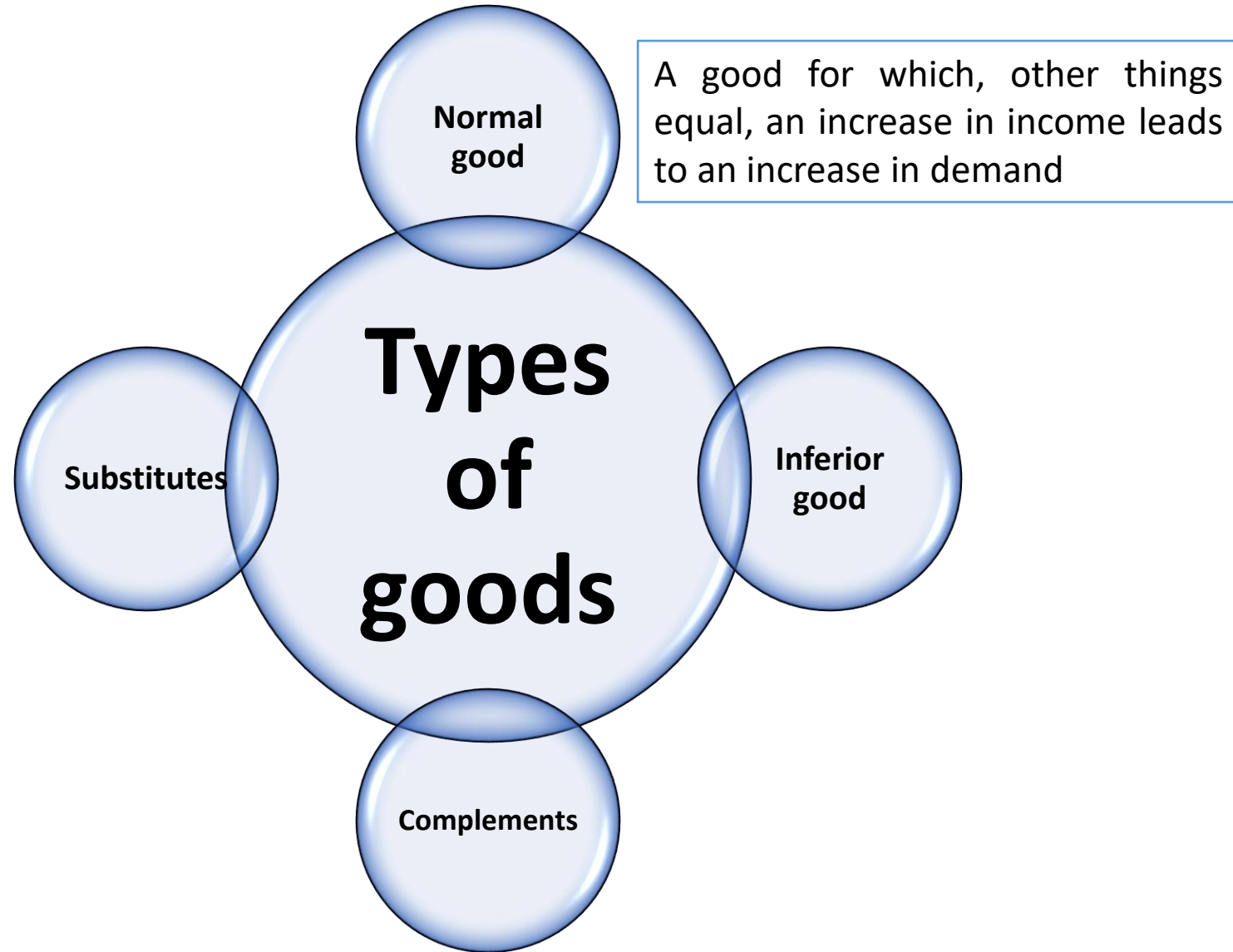
Any change that raises the quantity that buyers wish to purchase at any given price shifts the demand curve to the right. Any change that lowers the quantity that buyers wish to purchase at any given price shifts the demand curve to the left.



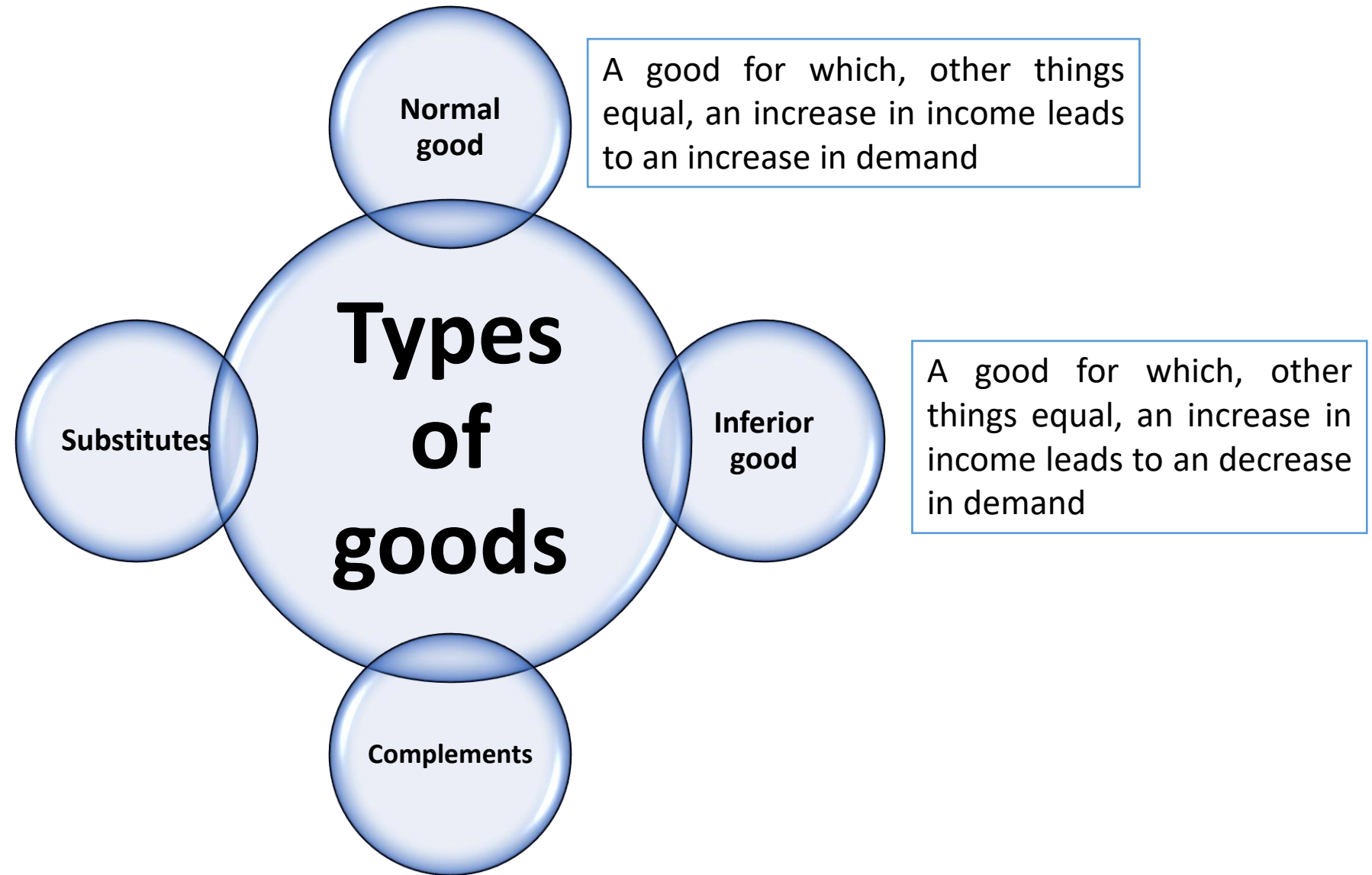
Shifts in the Demand Curve



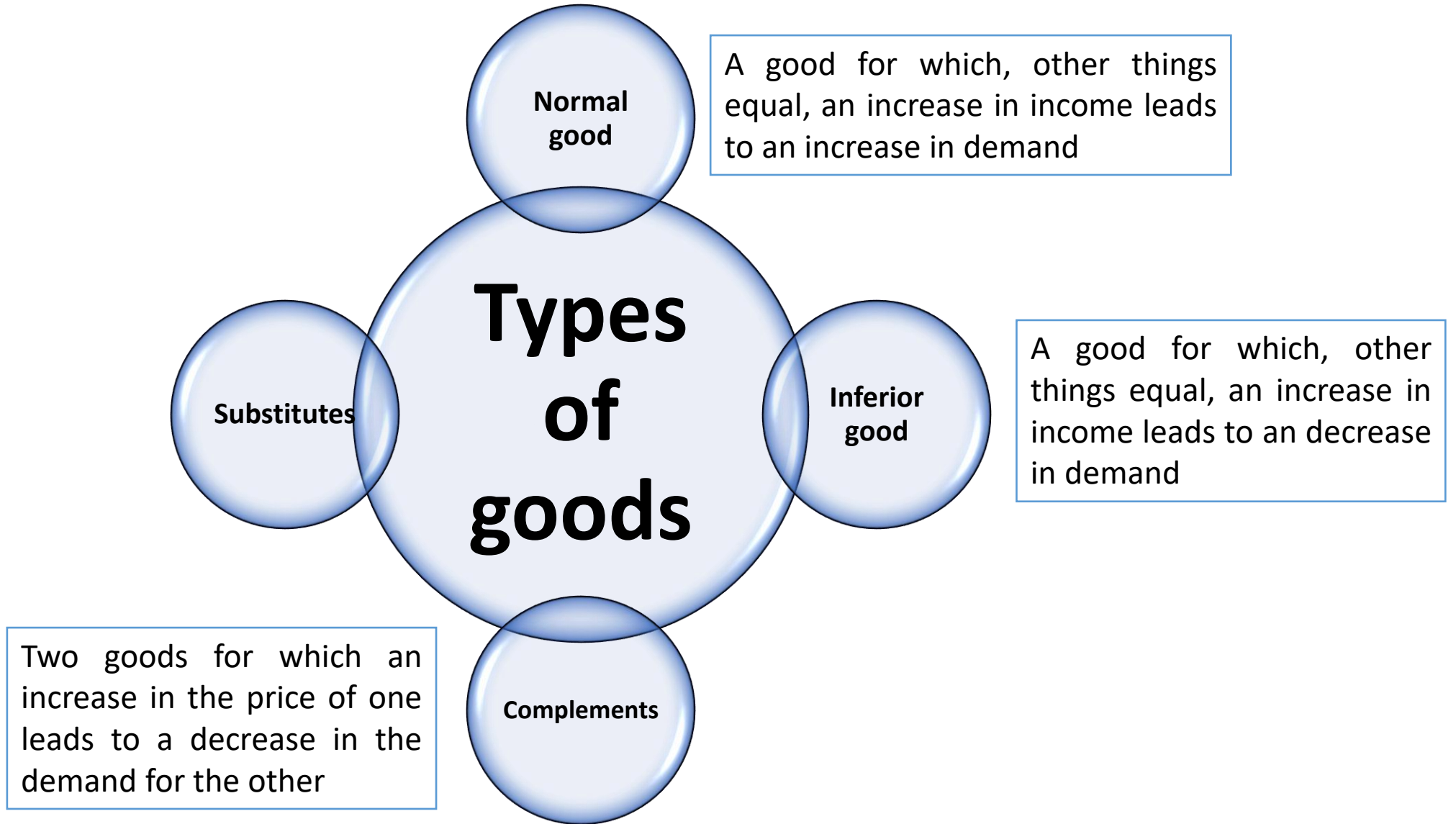
Shifts in the Demand Curve



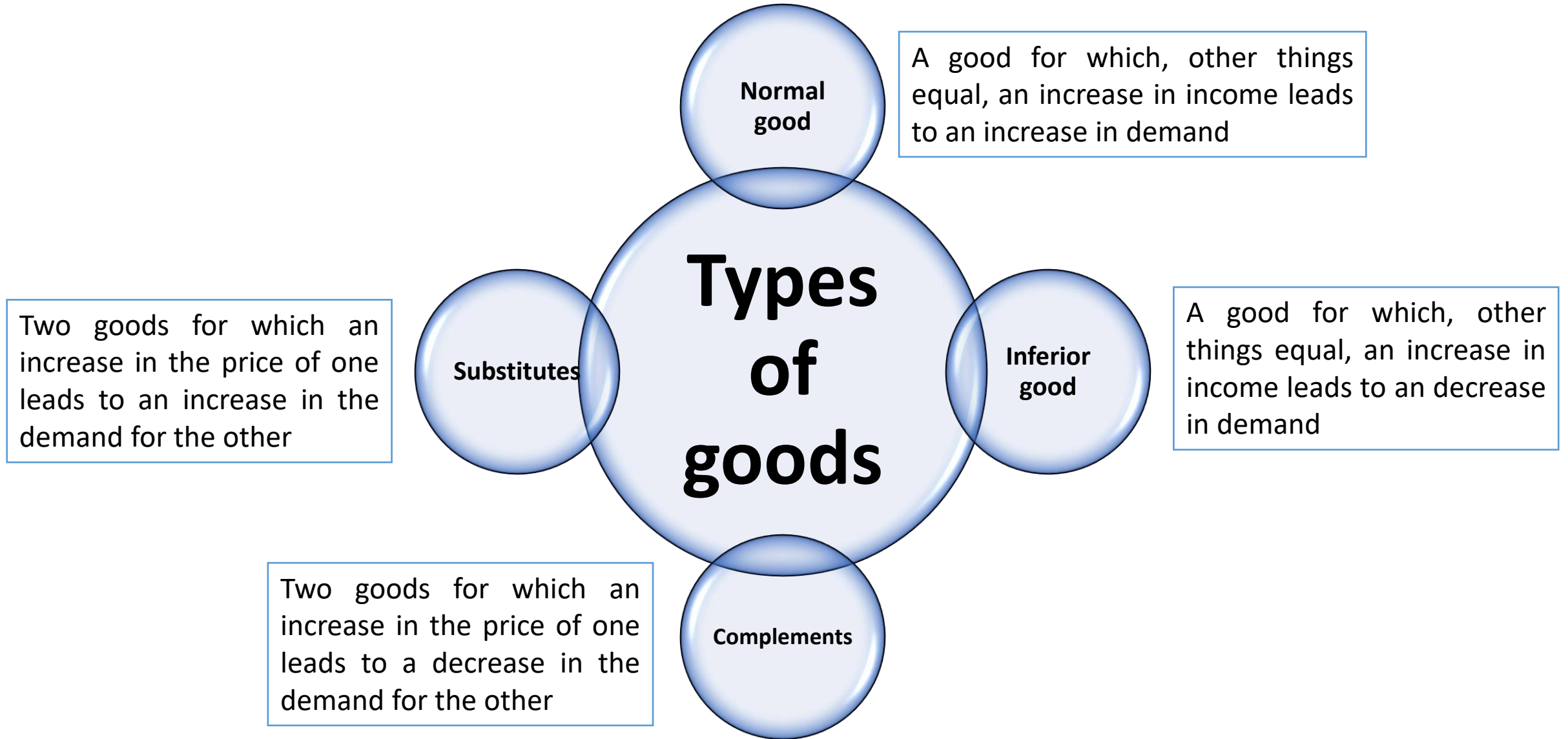
Shifts in the Demand Curve



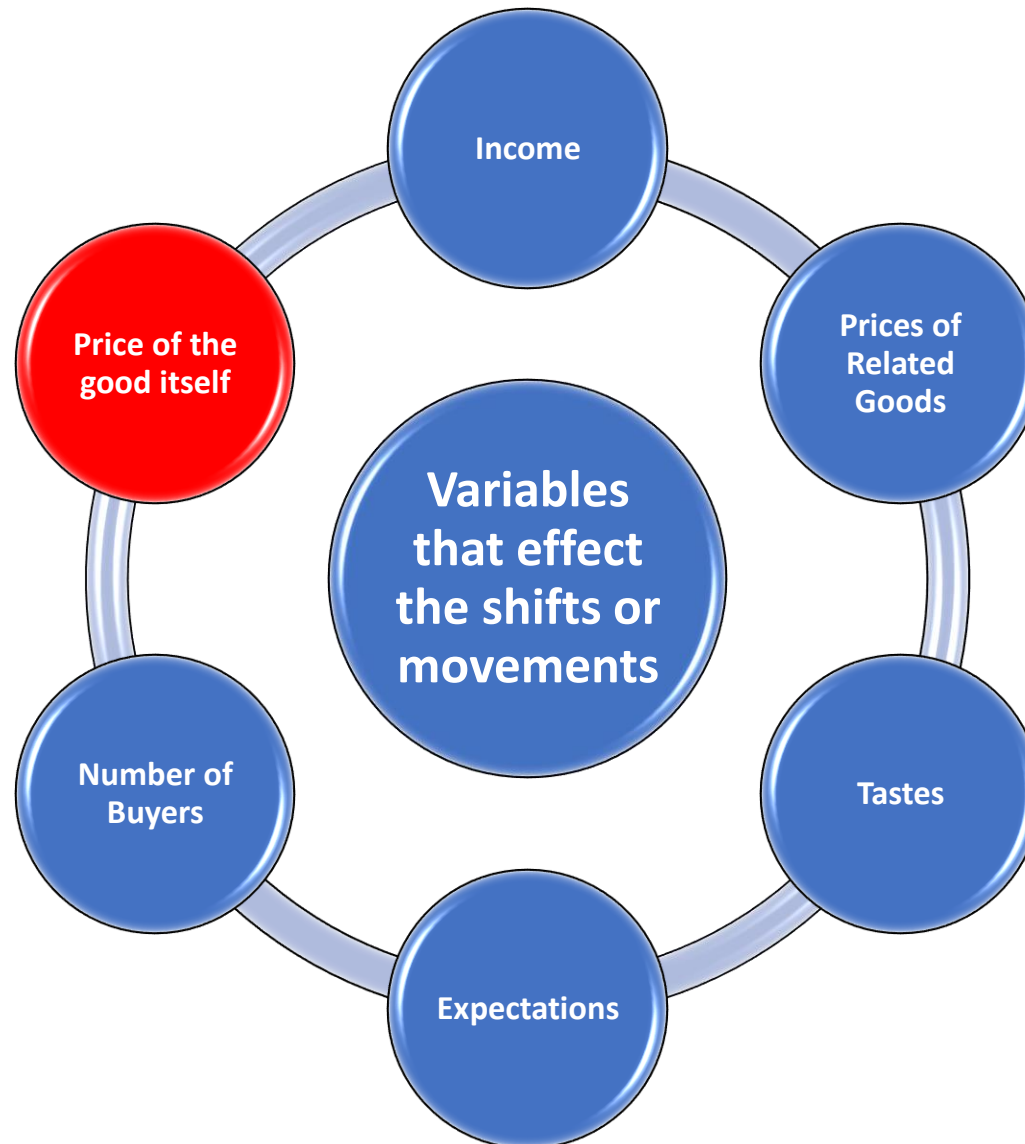
Shifts in the Demand Curve



Shifts in the Demand Curve



Shifts in the Demand Curve



Shifts

Movements

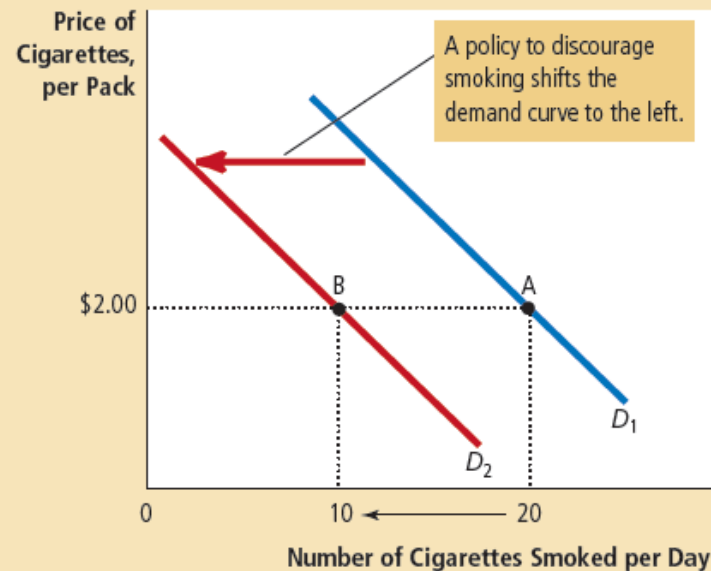
Two Ways to Reduce the Quantity of Smoking Demanded

Figure 4

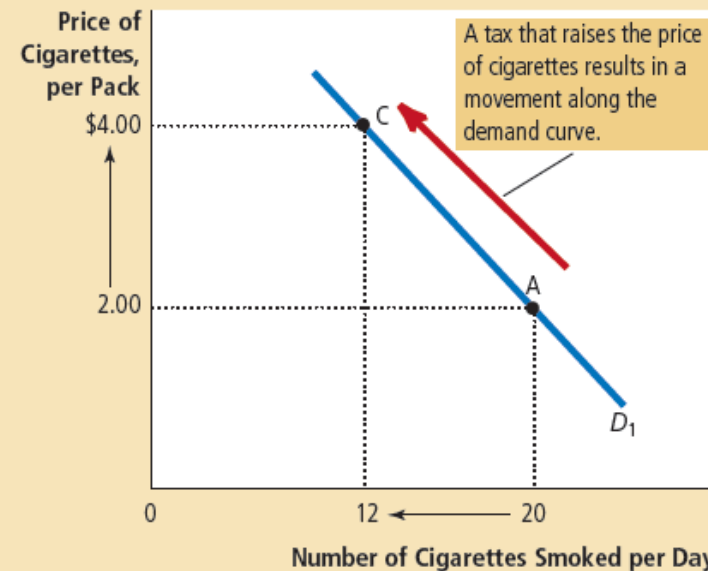
Shifts in the Demand Curve versus Movements along the Demand Curve

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 \$2.00 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 \$2.00 to \$4.00, the quantity demanded falls from 20 to 12 cigarettes per day, as reflected by the movement from point A to point C.

(a) A Shift in the Demand Curve



(b) A Movement along the Demand Curve



Supply

- ❖ **Quantity supplied:** the **amount** of a good that Sellers are **willing** and **able** to sell.
- ❖ **law of demand:** the claim that, other things equal, the quantity Supplied of a good **raises** when the price of the good rises.
- ❖ **Supply curve:** a graph of the relationship between the price of a good and the quantity supplied.
- ❖ **Market Demand:** the sum of all the individual supplies for a particular good or service.

- ❖ **Quantity supplied:** the **amount** of a good that Sellers are **willing** and **able** to sell.
- ❖ **law of demand:** the claim that, other things equal, the quantity Supplied of a good **raises** when the price of the good rises.
- ❖ **Supply curve:** a graph of the relationship between the price of a good and the quantity supplied.
- ❖ **Market Demand:** the sum of all the individual supplies for a particular good or service.

- ❖ **Quantity supplied:** the **amount** of a good that Sellers are **willing** and **able** to sell.
- ❖ **law of demand:** the claim that, other things equal, the quantity Supplied of a good **raises** when the price of the good rises.
- ❖ **Supply curve:** a graph of the relationship between the price of a good and the quantity supplied.
- ❖ **Market Demand:** the sum of all the individual supplies for a particular good or service.

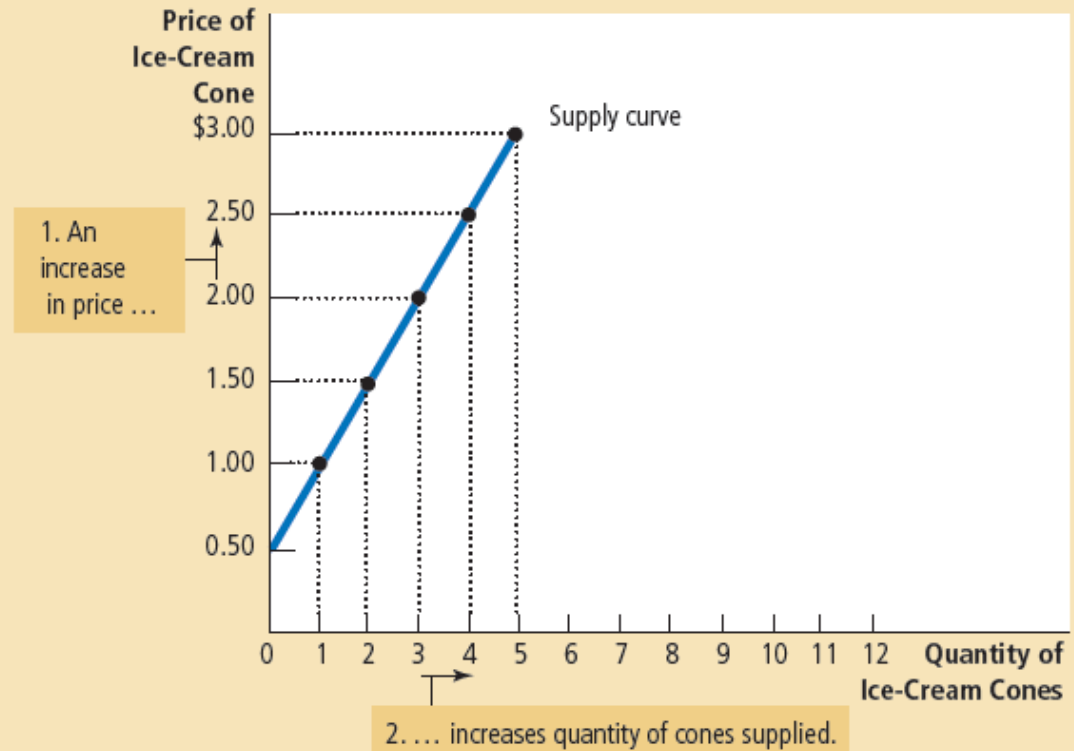
- ❖ **Quantity supplied:** the **amount** of a good that Sellers are **willing** and **able** to sell.
- ❖ **law of demand:** the claim that, other things equal, the quantity Supplied of a good **raises** when the price of the good rises.
- ❖ **Supply curve:** a graph of the relationship between the price of a good and the quantity supplied.
- ❖ **Market Demand:** the sum of all the individual supplies for a particular good or service.

Figure 5

Ben's Supply Schedule and 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.

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



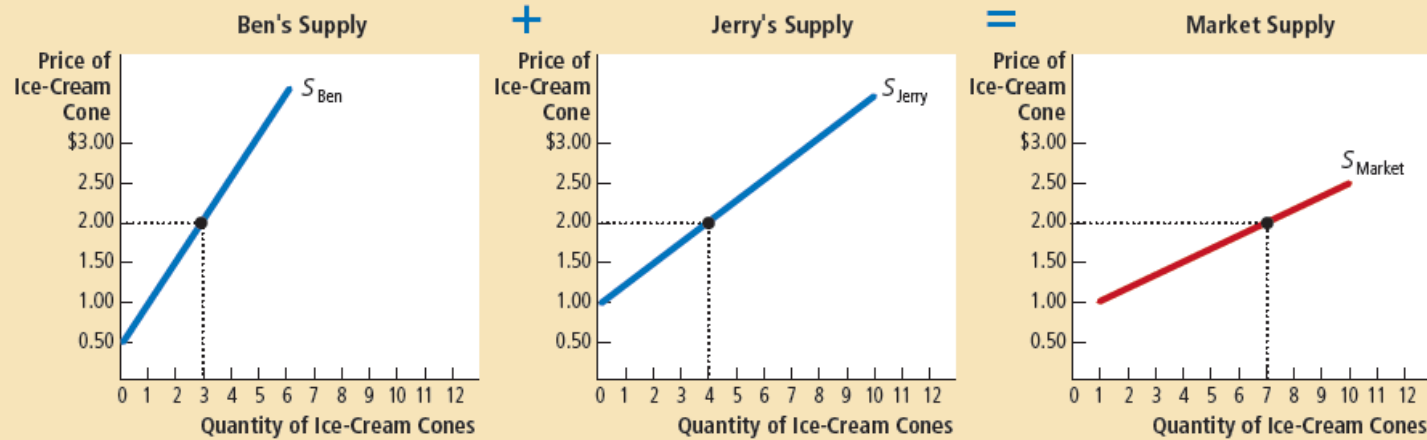
Supply

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.

Figure 6

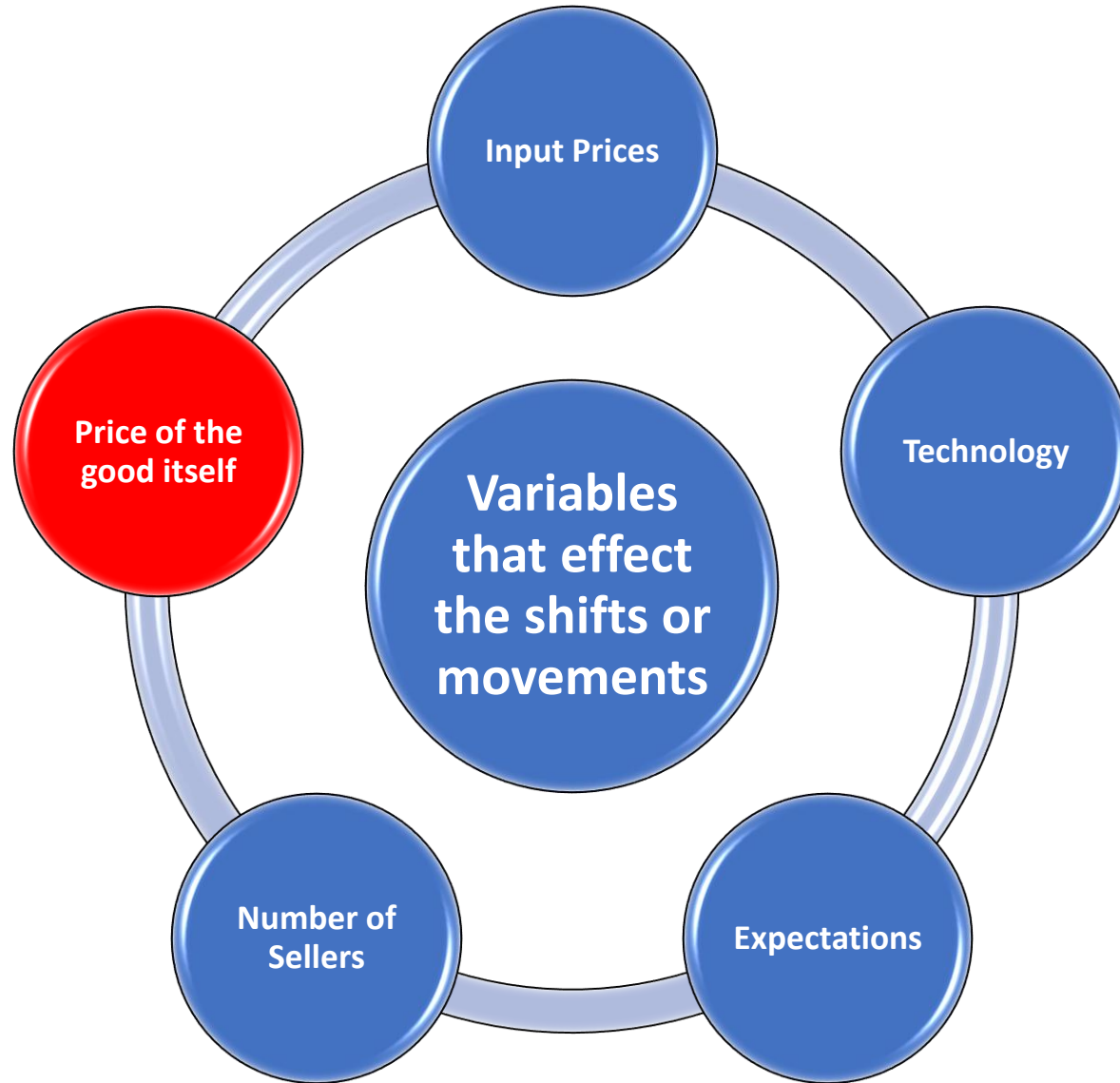
Market Supply as the Sum of Individual Supplies

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



Shifts in the Supply Curve

Shifts in the Supply Curve



Equilibrium

- ❖ **Equilibrium:** a situation in which the market price has reached the level at which quantity supplied equals quantity demanded.
- ❖ **Equilibrium price:** the price that balances quantity supplied and quantity demanded.
- ❖ **Equilibrium quantity:** the quantity supplied and the quantity demanded at the equilibrium price.
- ❖ **Surplus:** a situation in which quantity supplied is greater than quantity demanded.
- ❖ **Shortage:** a situation in which quantity demanded is greater than quantity supplied.

- ❖ **Equilibrium:** a situation in which the market price has reached the level at which quantity supplied equals quantity demanded.
- ❖ **Equilibrium price:** the price that balances quantity supplied and quantity demanded.
- ❖ **Equilibrium quantity:** the quantity supplied and the quantity demanded at the equilibrium price.
- ❖ **Surplus:** a situation in which quantity supplied is greater than quantity demanded.
- ❖ **Shortage:** a situation in which quantity demanded is greater than quantity supplied.

- ❖ **Equilibrium:** a situation in which the market price has reached the level at which quantity supplied equals quantity demanded.
- ❖ **Equilibrium price:** the price that balances quantity supplied and quantity demanded.
- ❖ **Equilibrium quantity:** the quantity supplied and the quantity demanded at the equilibrium price.
- ❖ **Surplus:** a situation in which quantity supplied is greater than quantity demanded.
- ❖ **Shortage:** a situation in which quantity demanded is greater than quantity supplied.

- ❖ **Equilibrium:** a situation in which the market price has reached the level at which quantity supplied equals quantity demanded.
- ❖ **Equilibrium price:** the price that balances quantity supplied and quantity demanded.
- ❖ **Equilibrium quantity:** the quantity supplied and the quantity demanded at the equilibrium price.
- ❖ **Surplus:** a situation in which quantity supplied is greater than quantity demanded.
- ❖ **Shortage:** a situation in which quantity demanded is greater than quantity supplied.

- ❖ **Equilibrium:** a situation in which the market price has reached the level at which quantity supplied equals quantity demanded.
- ❖ **Equilibrium price:** the price that balances quantity supplied and quantity demanded.
- ❖ **Equilibrium quantity:** the quantity supplied and the quantity demanded at the equilibrium price.
- ❖ **Surplus:** a situation in which quantity supplied is greater than quantity demanded.
- ❖ **Shortage:** a situation in which quantity demanded is greater than quantity supplied.

Equilibrium

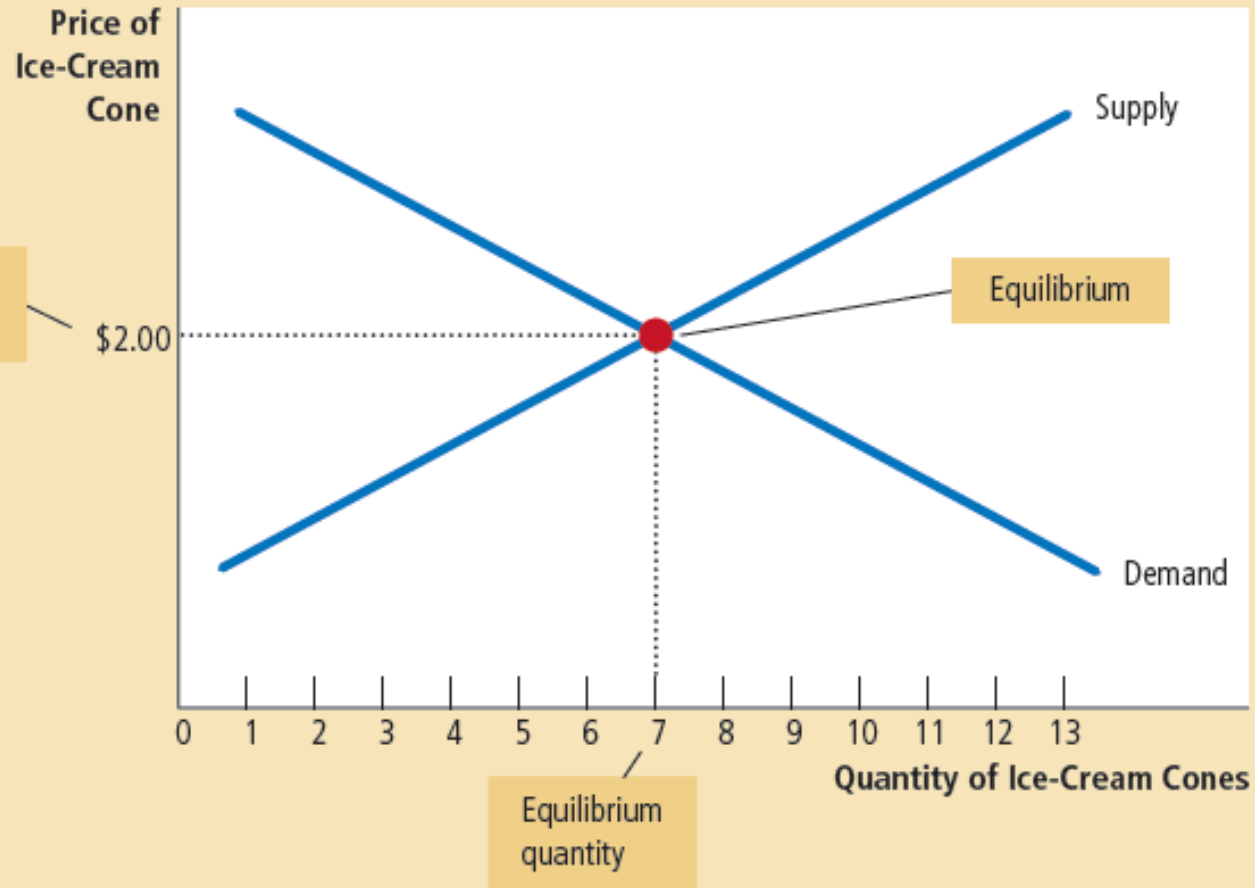


Figure 8

The Equilibrium of Supply and Demand

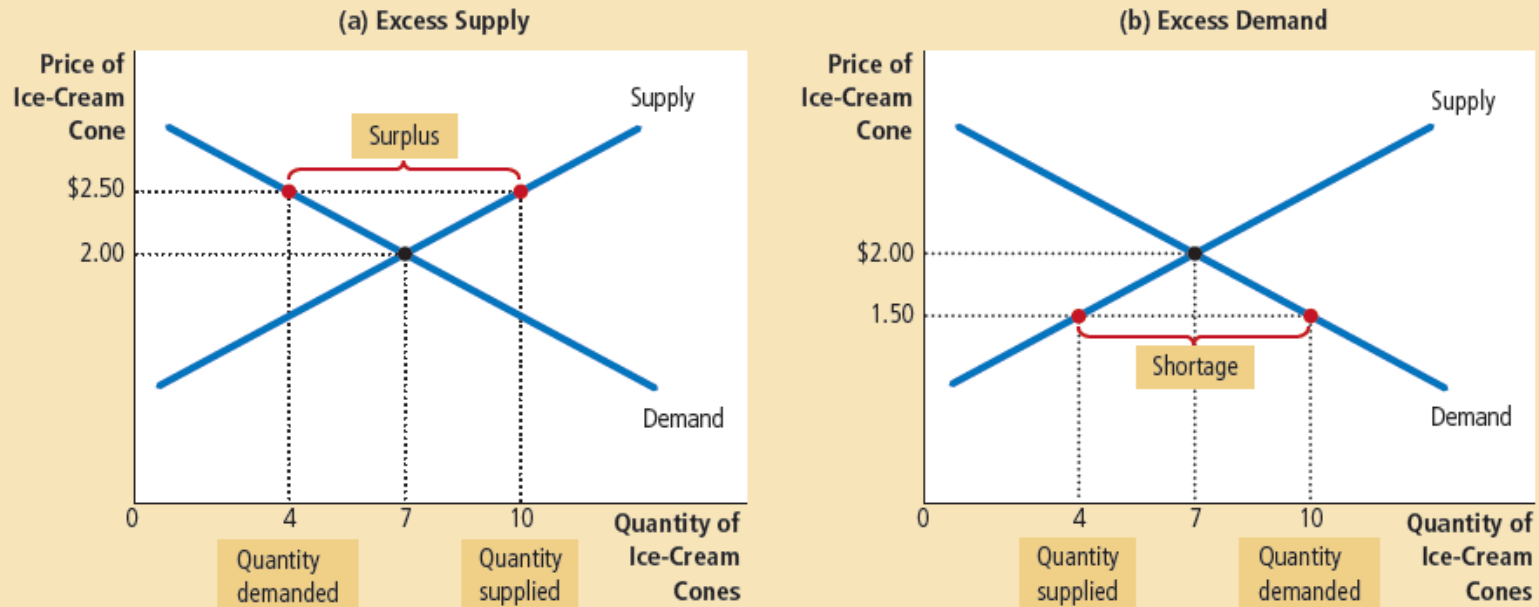
The equilibrium is found where the supply and demand curves intersect. At the equilibrium price, the quantity supplied equals the quantity demanded. Here the equilibrium price is \$2.00: At this price, 7 ice-cream cones are supplied, and 7 ice-cream cones are demanded.

Equilibrium

Figure 9

Markets Not in Equilibrium

In panel (a), there is a surplus. Because the market price of \$2.50 is above the equilibrium price, the quantity supplied (10 cones) exceeds the quantity demanded (4 cones). Suppliers try to increase sales by cutting the price of a cone, and this moves the price toward its equilibrium level. In panel (b), there is a shortage. Because the market price of \$1.50 is below the equilibrium price, the quantity demanded (10 cones) exceeds the quantity supplied (4 cones). With too many buyers chasing too few goods, suppliers can take advantage of the shortage by raising the price. Hence, in both cases, the price adjustment moves the market toward the equilibrium of supply and demand.



❖ **law of supply and demand:** the claim that the price of any good adjusts to bring the quantity supplied and the quantity demanded for that good into balance

❖ **Shortage:** a situation in which quantity demanded is greater than quantity supplied.

❖ **Three Steps to Analyzing Changes in Equilibrium:**

1. Decide whether the event shifts the supply or demand curve (or perhaps both).
2. Decide in which direction the curve shifts.
3. Use the supply-and-demand diagram to see how the shift changes the equilibrium price and quantity.

❖ **law of supply and demand:** the claim that the price of any good adjusts to bring the quantity supplied and the quantity demanded for that good into balance

❖ **Shortage:** a situation in which quantity demanded is greater than quantity supplied.

❖ **Three Steps to Analyzing Changes in Equilibrium:**

1. Decide whether the event shifts the supply or demand curve (or perhaps both).
2. Decide in which direction the curve shifts.
3. Use the supply-and-demand diagram to see how the shift changes the equilibrium price and quantity.

❖ **law of supply and demand:** the claim that the price of any good adjusts to bring the quantity supplied and the quantity demanded for that good into balance

❖ **Shortage:** a situation in which quantity demanded is greater than quantity supplied.

❖ **Three Steps to Analyzing Changes in Equilibrium:**

1. Decide whether the event shifts the supply or demand curve (or perhaps both).
2. Decide in which direction the curve shifts.
3. Use the supply-and-demand diagram to see how the shift changes the equilibrium price and quantity.

❖ **law of supply and demand:** the claim that the price of any good adjusts to bring the quantity supplied and the quantity demanded for that good into balance

❖ **Shortage:** a situation in which quantity demanded is greater than quantity supplied.

❖ **Three Steps to Analyzing Changes in Equilibrium:**

1. Decide whether the event shifts the supply or demand curve (or perhaps both).
2. Decide in which direction the curve shifts.
3. Use the supply-and-demand diagram to see how the shift changes the equilibrium price and quantity.

- ❖ **law of supply and demand:** the claim that the price of any good adjusts to bring the quantity supplied and the quantity demanded for that good into balance
- ❖ **Shortage:** a situation in which quantity demanded is greater than quantity supplied.
- ❖ **Three Steps to Analyzing Changes in Equilibrium:**
 1. Decide whether the event shifts the supply or demand curve (or perhaps both).
 2. Decide in which direction the curve shifts.
 3. Use the supply-and-demand diagram to see how the shift changes the equilibrium price and quantity.

Table 4

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

As a quick quiz, make sure you can explain at least a few of the entries in this table using a supply-and-demand diagram.

	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

Functions

Functions:

$$P = 10 Q_s$$

$$P = 30 - 15 Q_d$$

Or

$$Q_s = 0.1 P$$

$$Q_d = 2 - 0.06 P$$

Functions

Functions:

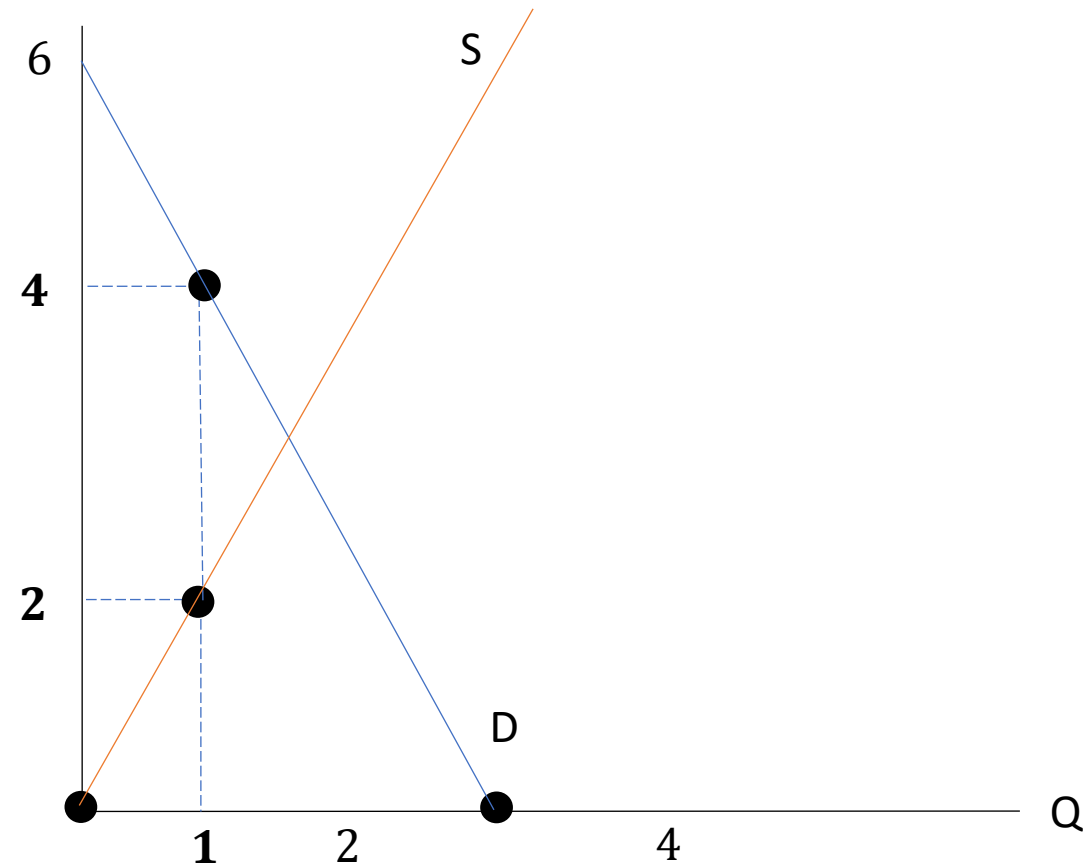
$$P = 10 Q_s$$

$$P = 30 - 15 Q_d$$

Or

$$Q_s = 0.1 P$$

$$Q_d = 2 - 0.06 P$$



Functions

Functions:

Determine the equilibrium price as well as quantity with respect to the following functions:

$$\begin{cases} P = 2 Q_s \\ P = 6 - 2 Q_d \end{cases}$$