

# Demand, Supply and Market Equilibrium

What are “demand” and “supply” and how do they work together to determine the prices of goods and services?

# Demand

- **Market:** An arrangement through which potential buyers and sellers come together to exchange goods and services. Supply and demand together make a market
- **Demand** - The desire, willingness, and ability on the part of people to buy certain quantities of a product at different price levels.
- Individual demand is how many goods a single person is willing to buy at any price.
- Market demand is how many goods all people are willing to buy.



# Demand Schedule

- A **demand schedule** is a table that lists the various quantities of a product or service that someone is willing to buy over a range of possible prices.

Price per Frosty	Quantity Demanded per day
2	4
1.50	8
1	13
.50	19
.25	25

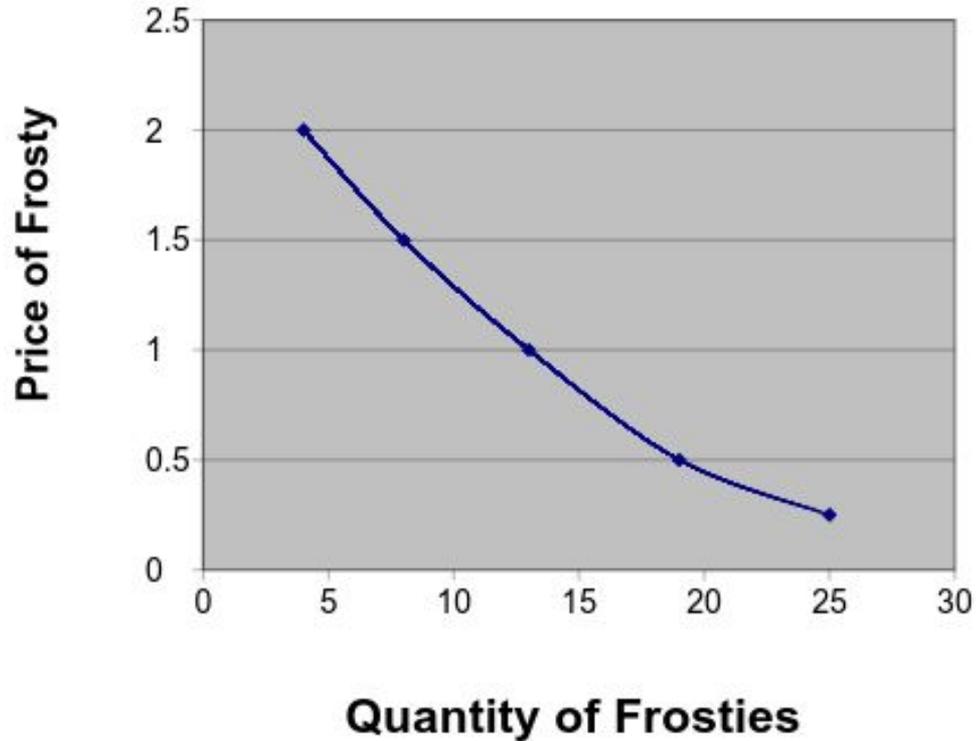
Demand Schedule for Wendy's Frosties

# Demand Graph

- A demand schedule can be shown as points on a graph.
  1. The graph lists prices on the vertical axis and quantities on the horizontal axis.
  2. Each point on the graph shows how many units of the product or service an individual will buy at a particular price.
  3. The **demand curve** is the line that connects these points.

# The Mighty Demand Curve

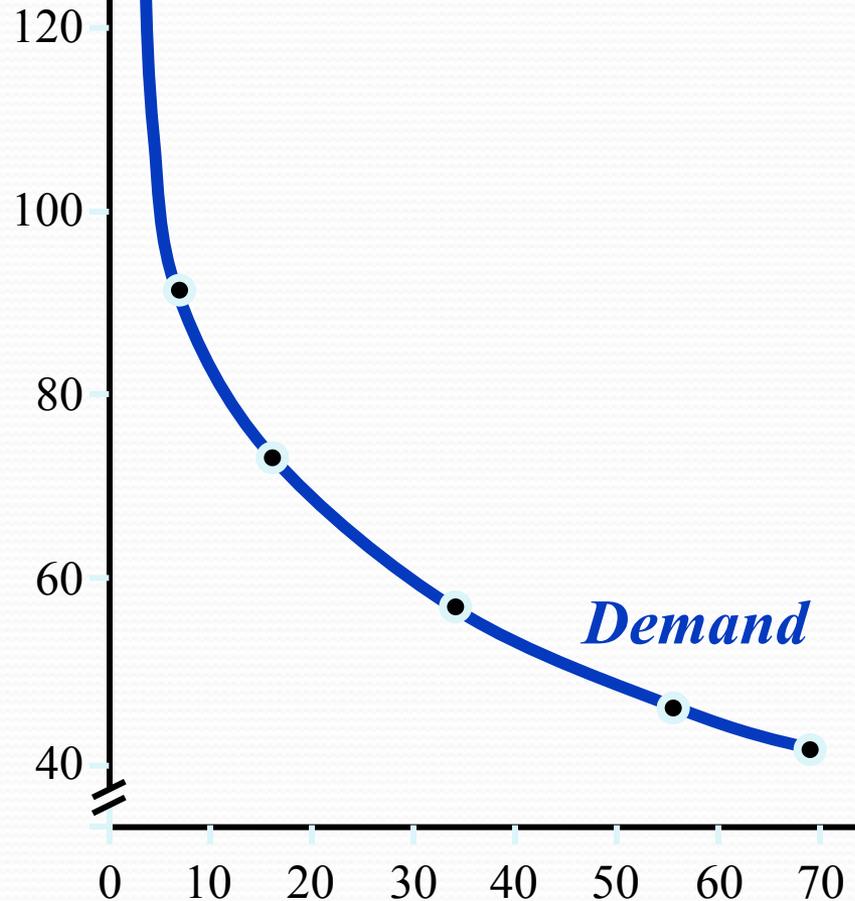
## Demand for Frosties



# Market Demand Schedule and Curve

Cell phone service price (monthly bill)	Cell phone subscribers (millions)
\$ 124	3.5
\$ 92	7.6
\$ 73	16.0
\$ 58	33.7
\$ 46	55.3
\$ 41	69.2

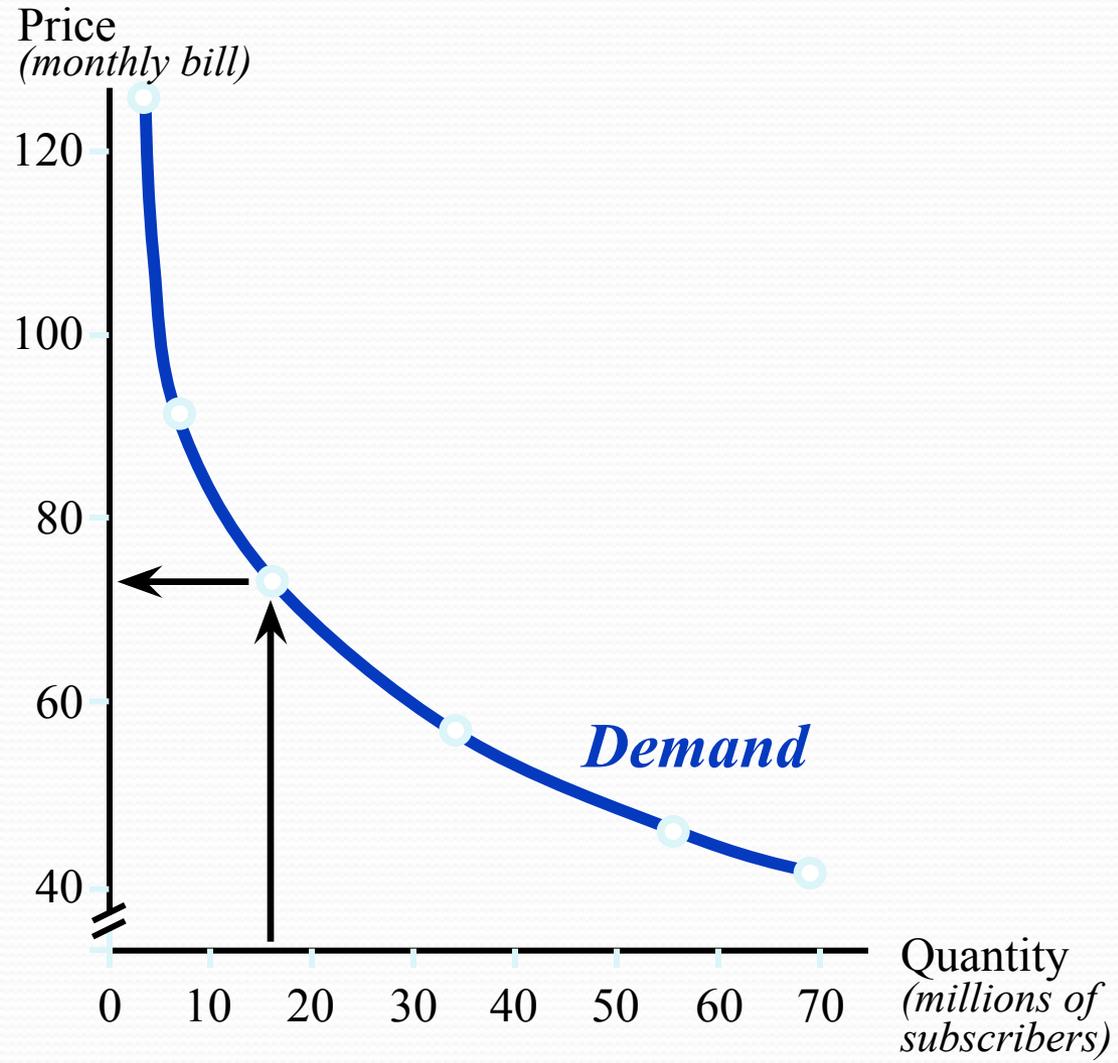
Price  
(monthly bill)



Quantity  
(millions of  
subscribers)

# Market Demand Schedule and Curve

- The height of the *demand curve* at any quantity shows the *maximum price* that consumers are willing to pay for that additional unit.
- For example, when 16 million units are consumed, the value of the last unit is \$73.



# Law of Demand



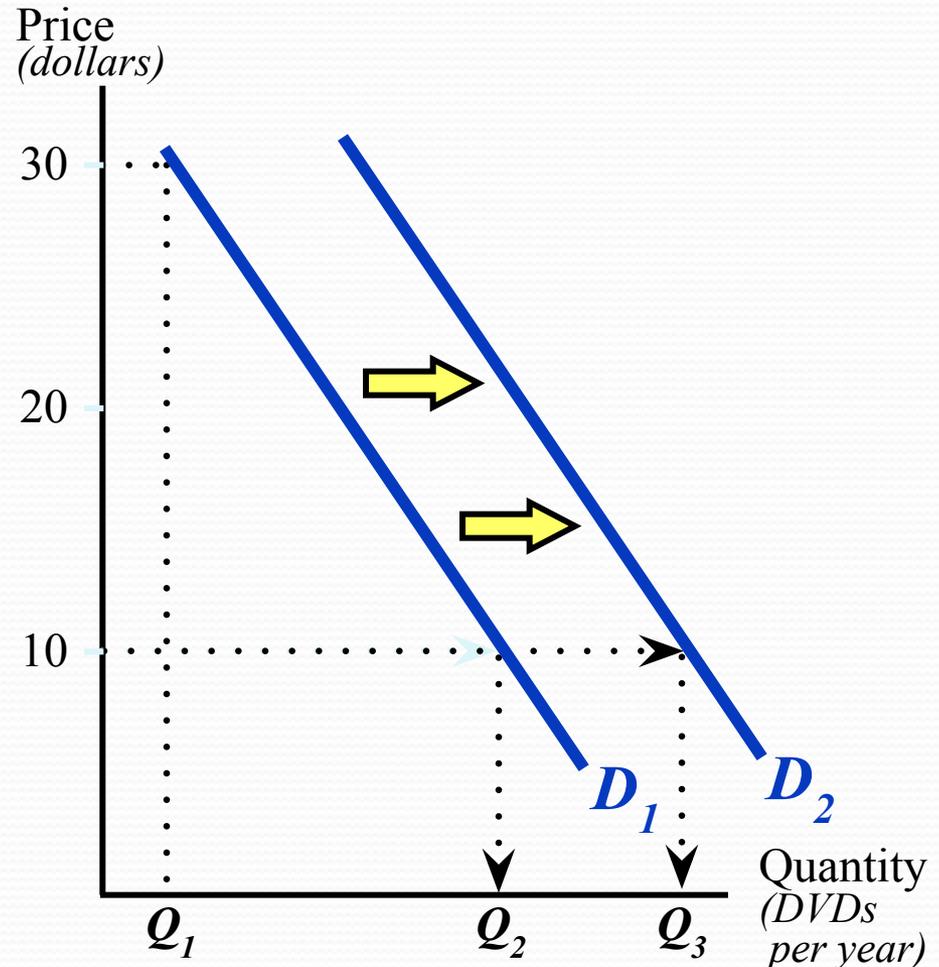
- The Law of Demand: A law stating that as the price of an item rises and other factors remain unchanged, the quantity demanded by buyers will fall; as the price of an item falls and other factors remain the same, the quantity demanded by buyers will rise.
- For this reason, the demand curve always slopes downward
- Utility: the pleasure, usefulness, or enjoyment we get from using a product.
- Principle of Diminishing Marginal Utility: Each additional unit of a product is less valuable than the one that came before it

# Changes in Demand

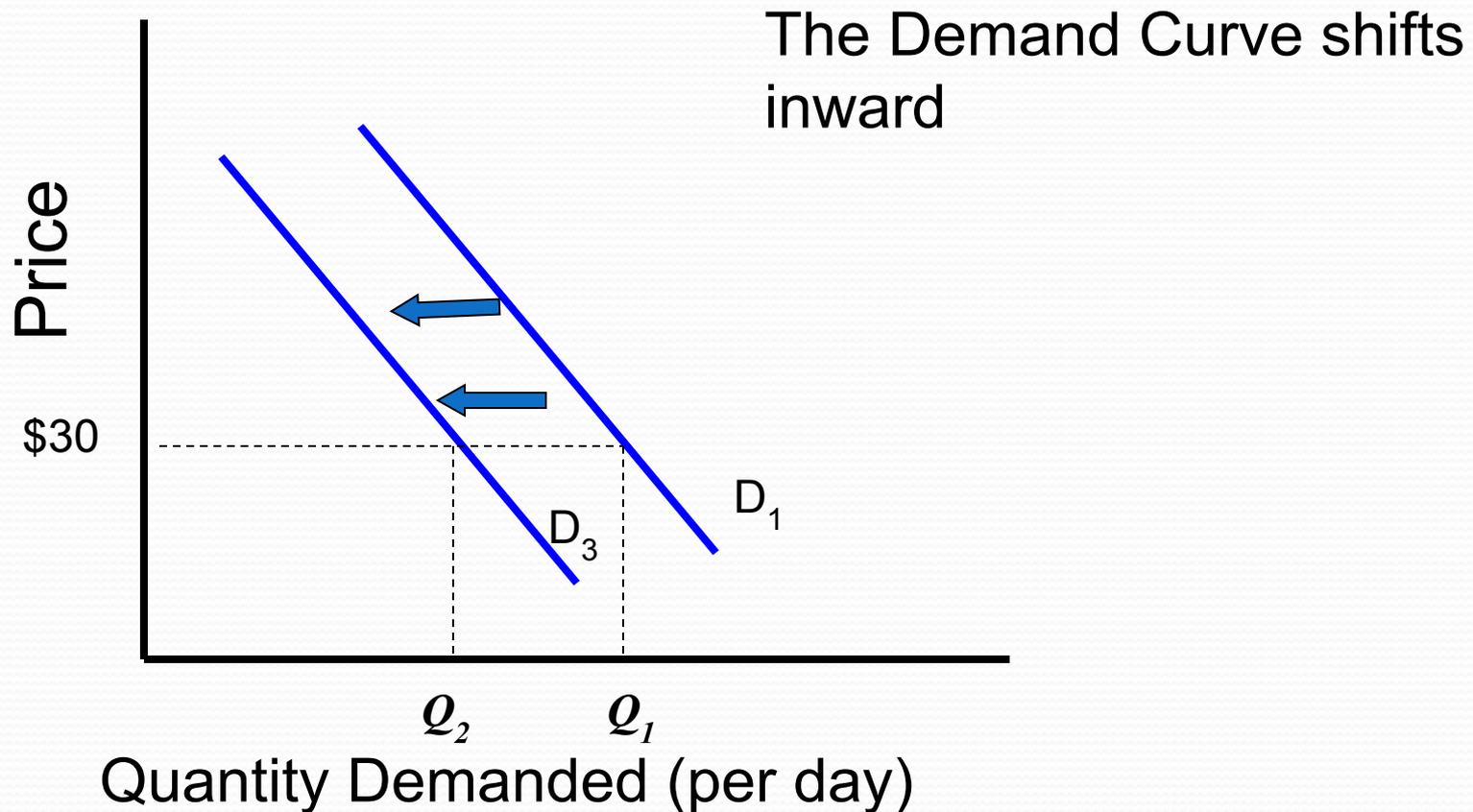
- When consumers decide to buy more or less of an item at all possible prices we experience a change in demand. If demand increases, the demand curve shifts right. If demand decreases, the demand curve shifts left.
- **6 things can cause demand to change:**
  1. Change in income of consumers
  2. Change in population
  3. Change in attitudes and tastes of consumers
  4. Change in consumer's expectations
  5. Change in availability and prices of substitute goods.
    - Substitute Good: A good that can be used in the place of/instead of another good.
  6. Change in availability and prices of complementary items.
    - Complementary Good: A good that is used with another good.
- **How changes in demand affect price:** Use the graph of the demand curve to show how demand shifts change the price. If demand shifts to the right, consumers are willing to buy goods at higher prices. If the demand curve shifts left, consumers are only willing to buy at lower prices.

# An Increase in Demand

- If DVDs cost \$30 each, the demand curve for DVDs,  $D_1$ , indicates that  $Q_1$  units will be demanded.
- If the price of DVDs falls to \$10, the *quantity demanded* of DVDs will increase to  $Q_2$  units (where  $Q_2 > Q_1$ ).
- Several factors will change the *demand* for the good : shift the entire demand curve).
- As an example, suppose consumer income increases. The demand for DVDs at all prices will increase.
- After the shift of demand,  $Q_3$  units are demanded at \$10 instead of  $Q_2$  ( $Q_3 > Q_2 > Q_1$ ).



# Decrease in Demand

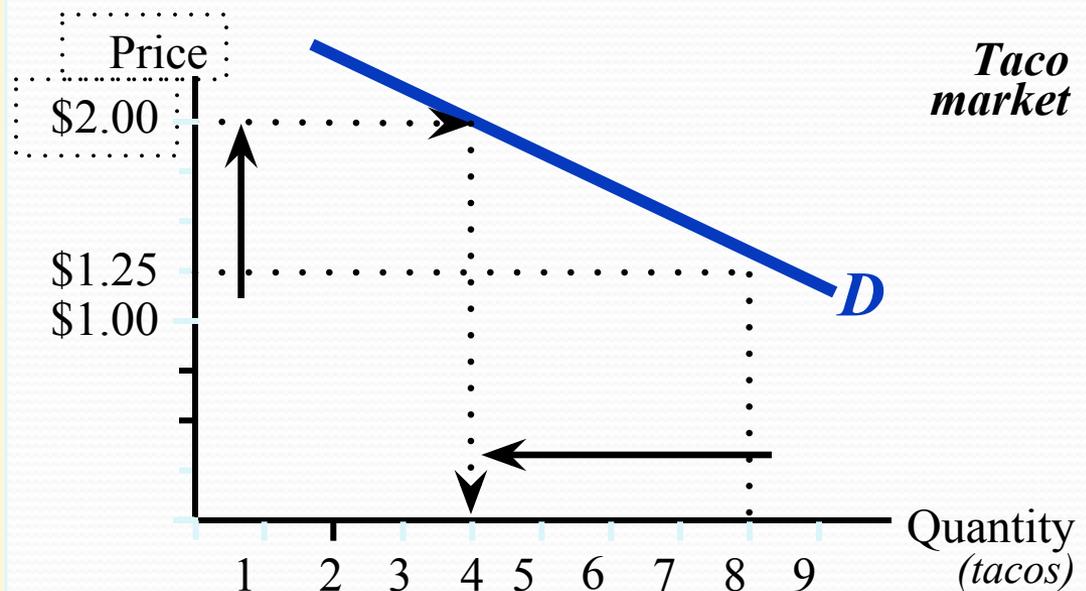
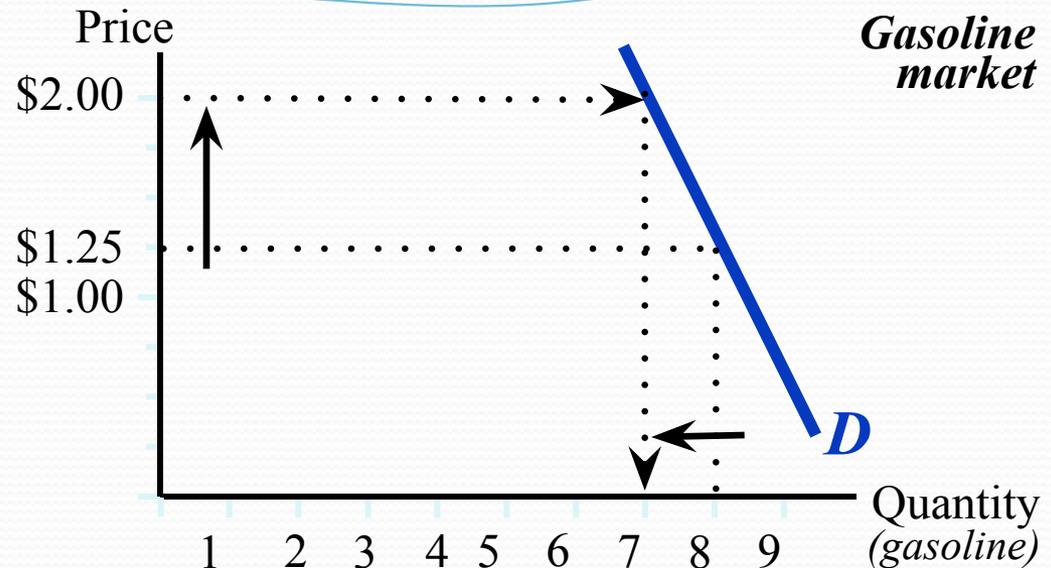


# Elasticity of Demand

- **Elasticity of demand:** A measure of the **responsiveness of quantity demanded to a change in price.**
- If a change in the price of an item has a very big effect on the quantity demanded, then the demand is elastic.
  - Most goods that are not considered essential are demand elastic. People will buy a lot of candy if it is 10 cents per candy bar, but they will buy almost no candy if it is \$2 per bar.
  - Other examples: cars, goods with substitutes, expensive items, purchases that can be postponed
- If a change in the price of an item has little effect on the quantity demanded, then the demand is inelastic.
  - Goods that are considered essential tend to be inelastic  
Examples: salt, sugar, turkey in late November or Frasier Firs in late December;
  - Oil has traditionally been inelastic but that fact appears to be changing recently.

# Elastic and Inelastic Demand Curves

- When the market price for gasoline rises from \$1.25 to \$2.00 a gallon, the quantity demanded in the market falls insignificantly from 8 to 7 million units per week.
- In contrast, when the market price for tacos rises from \$1.25 to \$2.00, quantity demanded in the market falls significantly from 8 to 4 million units per week.
- Because taco demand is highly sensitive to price changes, taco demand is described as *elastic*; because the demand for gas is largely insensitive to price changes, gasoline demand is described as *inelastic*.

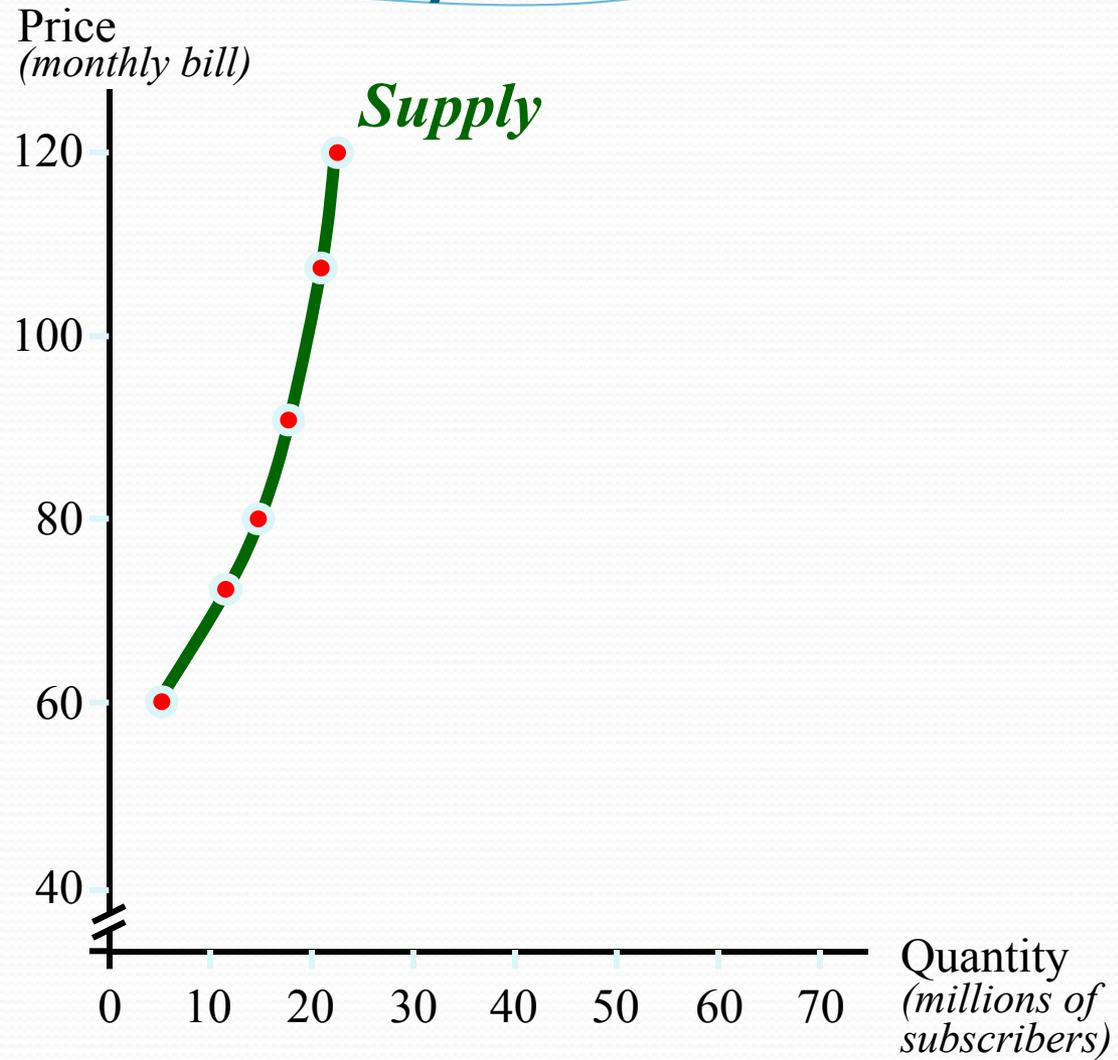


# Supply

- **Supply**: The ability and willingness of suppliers to make things available for sale at set prices
- **Opposite of Demand**: Buyers buy a certain number based on the price being charged. Producers produce a certain number based on the price consumers will pay.
- **Law of Supply** - as the price of an item rises the quantity supplied will rise; as the price of an item falls quantity supplied will fall. The higher the price of a good, the more incentive they have to sell more, so they produce more.
- **Supply Schedule** - chart showing amounts of an item sellers are willing to sell at various possible prices.
- **Supply Curve** - Graphical representation of a supply schedule. It generally slopes upward and to the right. This shows that at higher prices, suppliers are willing to produce more product.
- **Supply of Labor**: Consider selling your own labor. How many hours do you want to work if you are being paid \$6 per hour? What if you were being paid \$20 per hour?

# Supply Schedule/ Curve

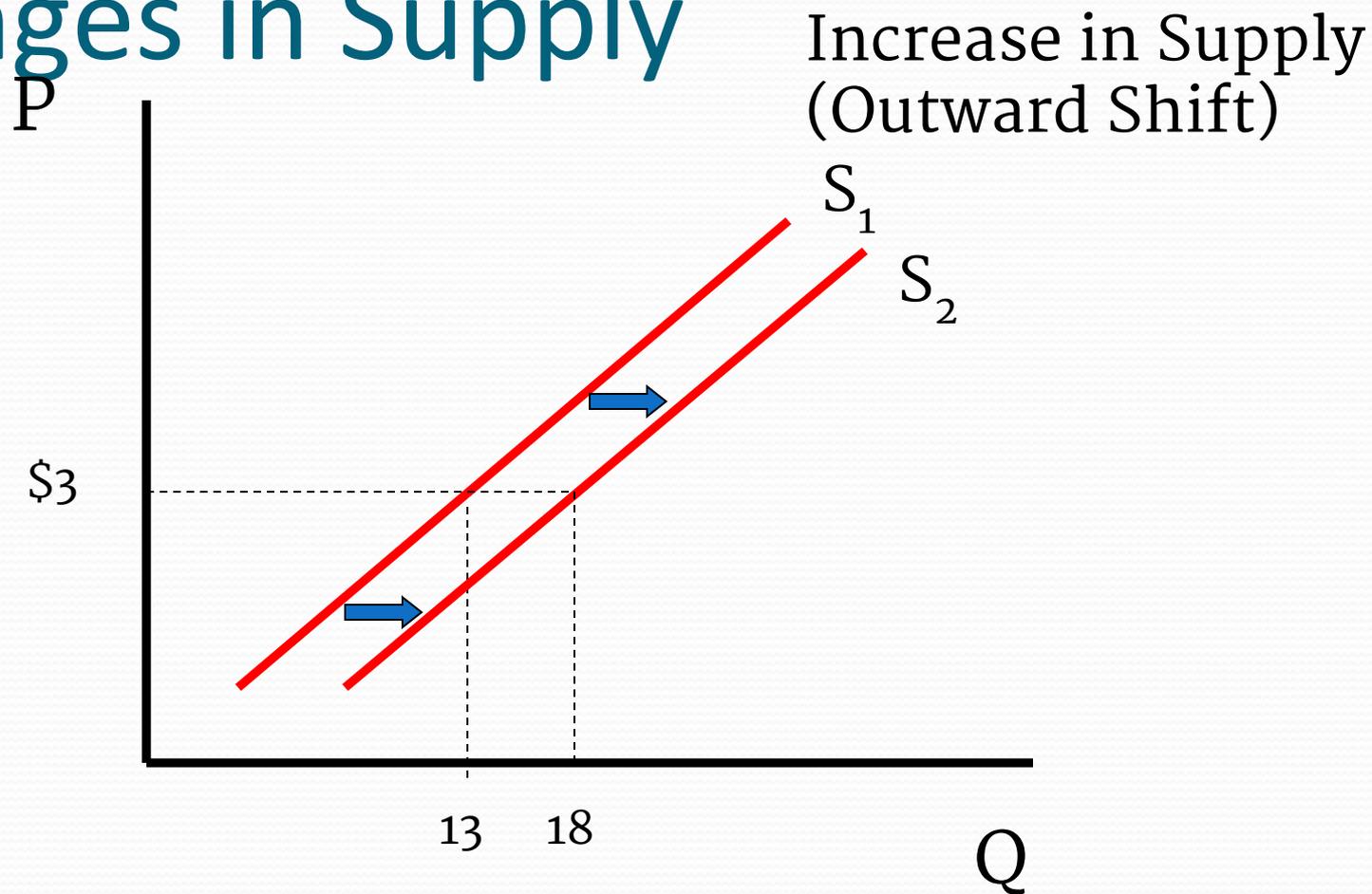
Cell phone service price (monthly bill)	Cell phone service supplied to market (millions)
\$ 60	5.0
\$ 73	11.0
\$ 80	15.1
\$ 91	18.2
\$ 107	21.0
\$ 120	22.5



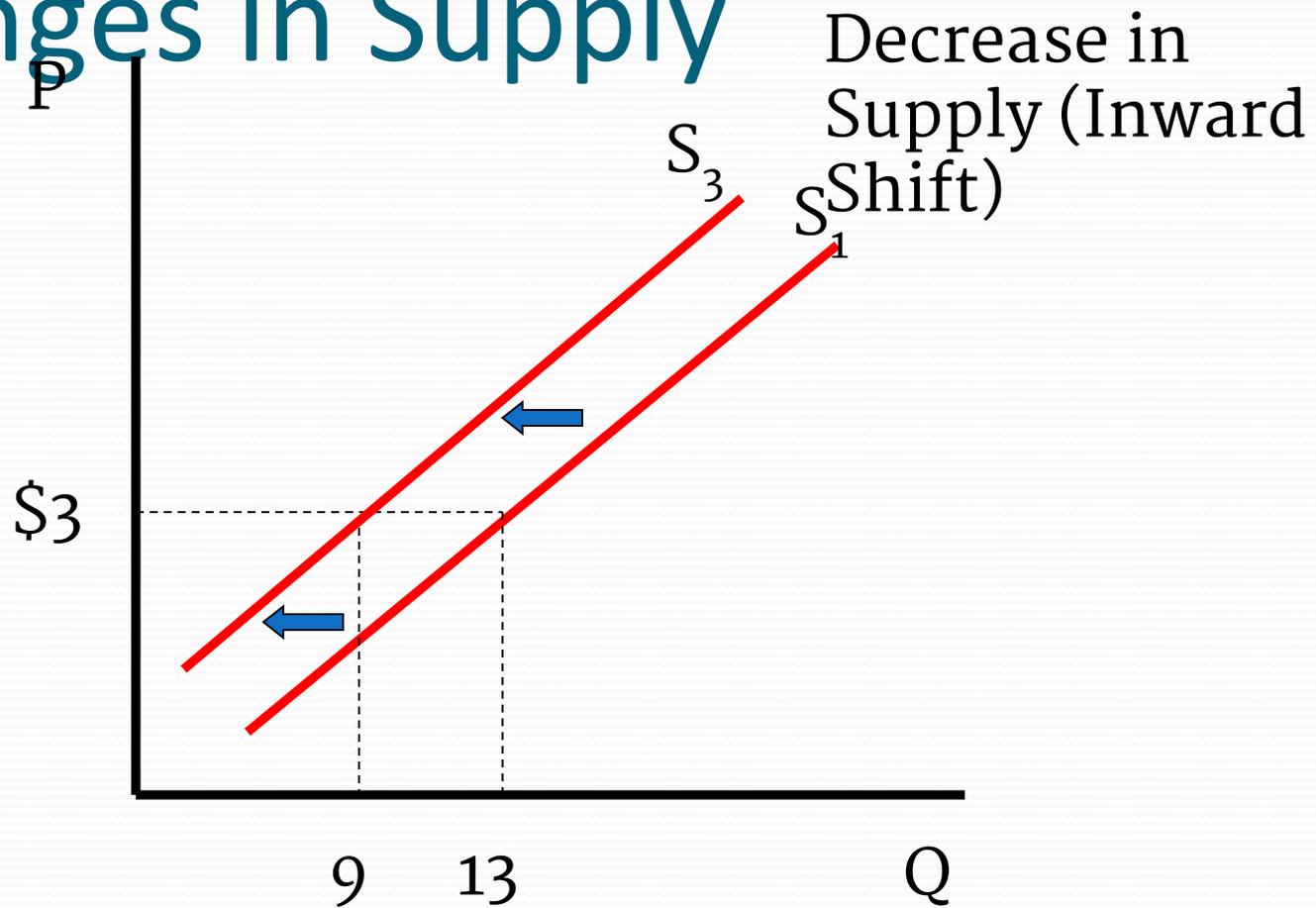
# Changes in Supply

- Supply can change just like demand can. Like demand, the curve shifts right if supply goes up and shifts left if supply goes down.
- Based on Cost: changes in supply are mostly based on the costs of production because businesses want to make as much money as possible. If they can reduce costs, they supply more. Supply always moves in the opposite direction of cost.
  - 1. Changes in costs of resources
  - 2. Changes in productivity
  - 3. New technology
  - 4. Change in govt. policy: More govt. regulation (minimum wage, safety/environmental standards) increases costs, which lowers supply. Less regulation does the opposite.
  - 5. Changes in taxes and subsidies: Taxes increase costs, subsidies lower them
    - Subsidy: payment to an individual or business for a specific action
    - Ex: corn farming
  - 6. Changes in producer expectations

# Changes in Supply

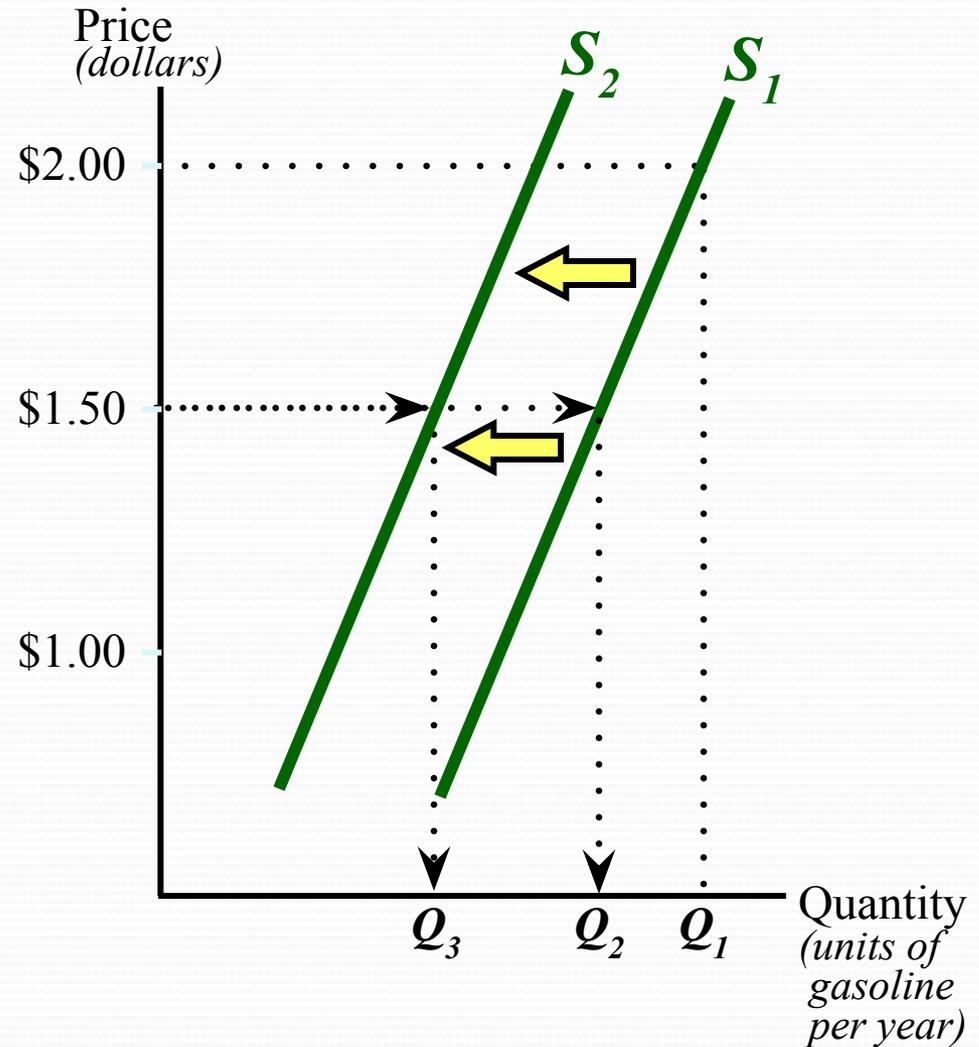


# Changes in Supply



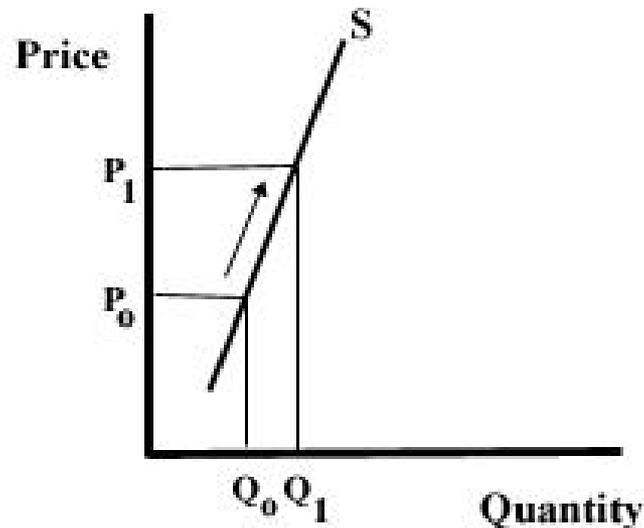
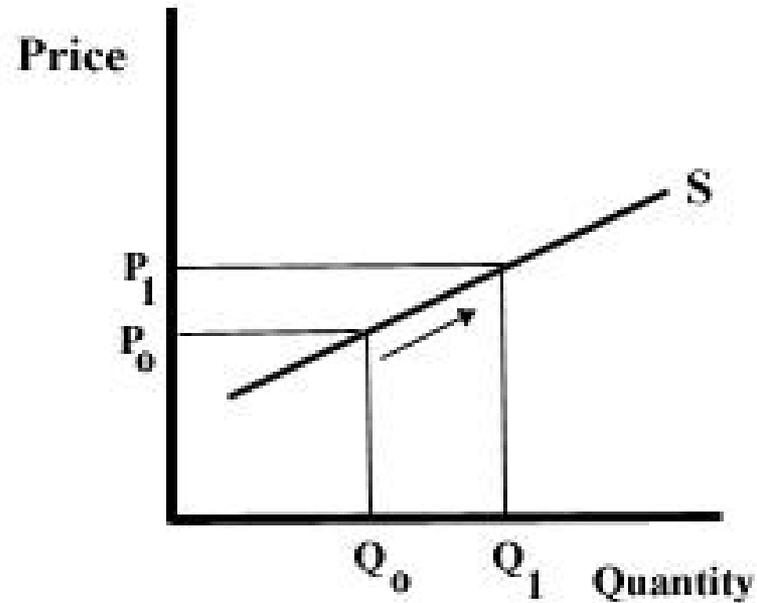
# A Change in Supply

- If the market price for gasoline is \$2.00 a gallon, the supply curve for gasoline  $S_1$  indicates  $Q_1$  units would be supplied.
- If the price fell to \$1.50, the **quantity supplied** would fall to  $Q_2$  units (where  $Q_2 < Q_1$ ).
- If, somehow, the **opportunity costs** for gas manufacturers changed then the **supply** of gas would **change**.
- Consider the case where the cost of crude oil (an input in gasoline production) increases
- The supply of gasoline at all potential market prices would fall. Now at \$1.50,  $Q_3$  units are supplied (where  $Q_3 < Q_2 < Q_1$ ).



# Elasticity of Supply

- How much does a change in price affect the amount supplied?
- Supply Elastic: Producers offer many more goods as prices rise. Ex: goods that require little investment/money to increase production like candy.
- Supply Inelastic: Producers don't change amounts offered very much as price changes. Ex: goods that need a lot of money to increase production like oil.



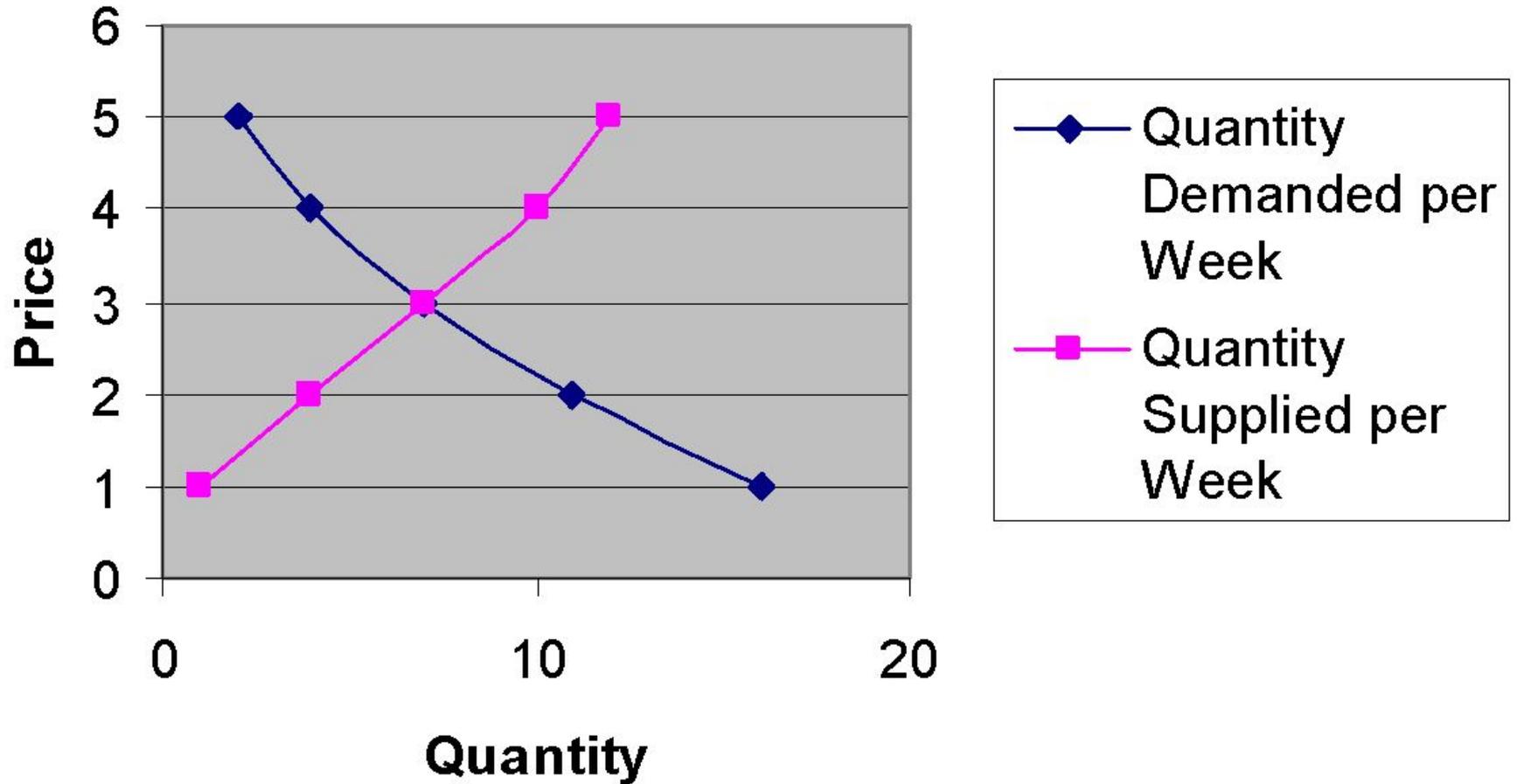
# Supply and Demand at Work

- Markets bring buyers and sellers together.
- The forces of supply and demand work together in markets to establish prices.
- In our economy, prices form the basis of economic decisions.

# Corn Market

Price Per Bushel (in \$)	Quantity Demanded per Week (thousands)	Quantity Supplied per Week (thousands)
5	2	12
4	4	10
3	7	7
2	11	4
1	16	1

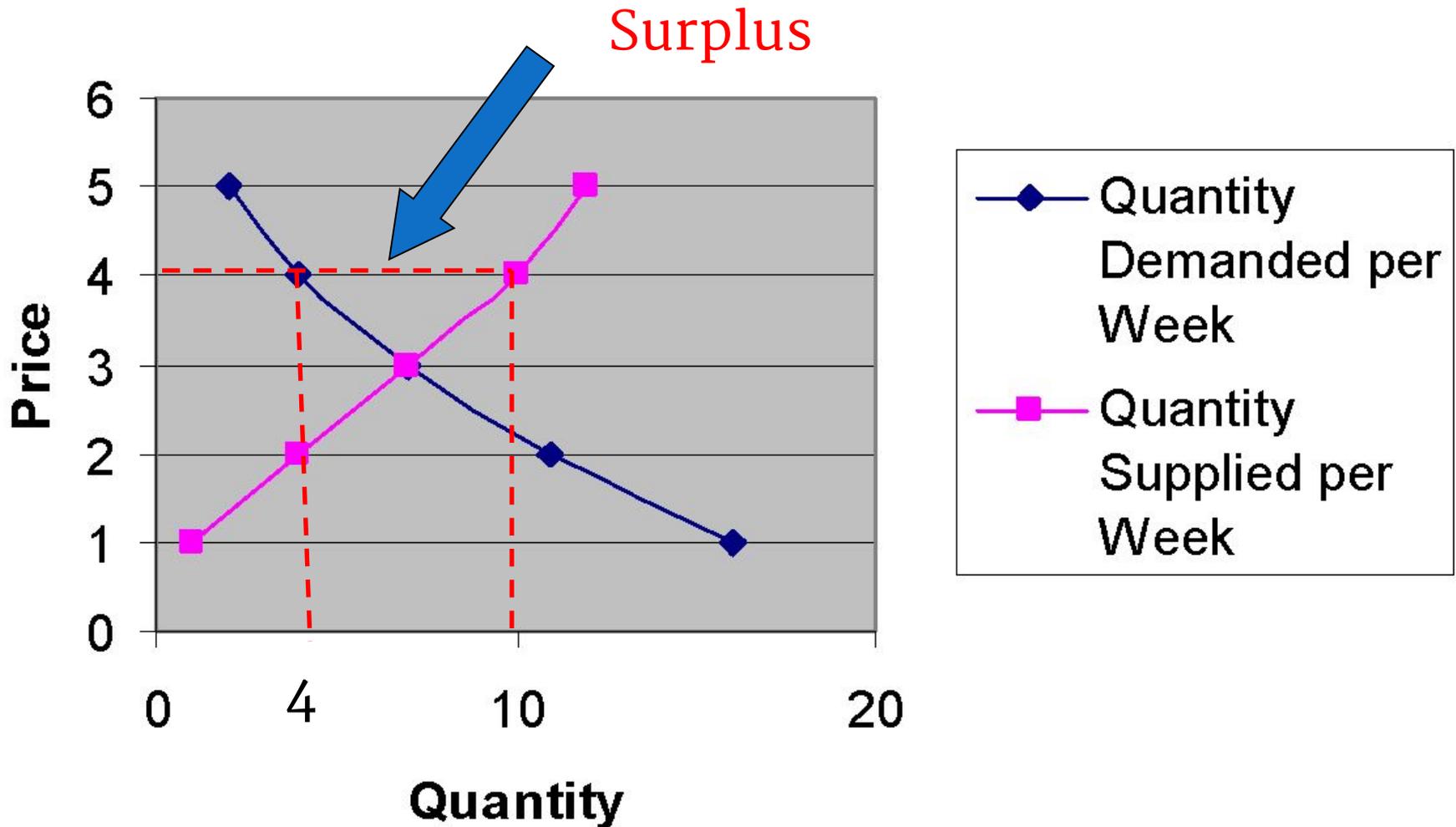
# Market Supply and Demand for Corn



# Market Equilibrium

- A **surplus** is the amount by which the quantity supplied is higher than the quantity demanded.
  1. A surplus signals that the price is too high.
  2. At that price, consumers will not buy all of the product that suppliers are willing to supply.
  3. In a competitive market, a surplus will not last. Sellers will lower their price to sell their goods.

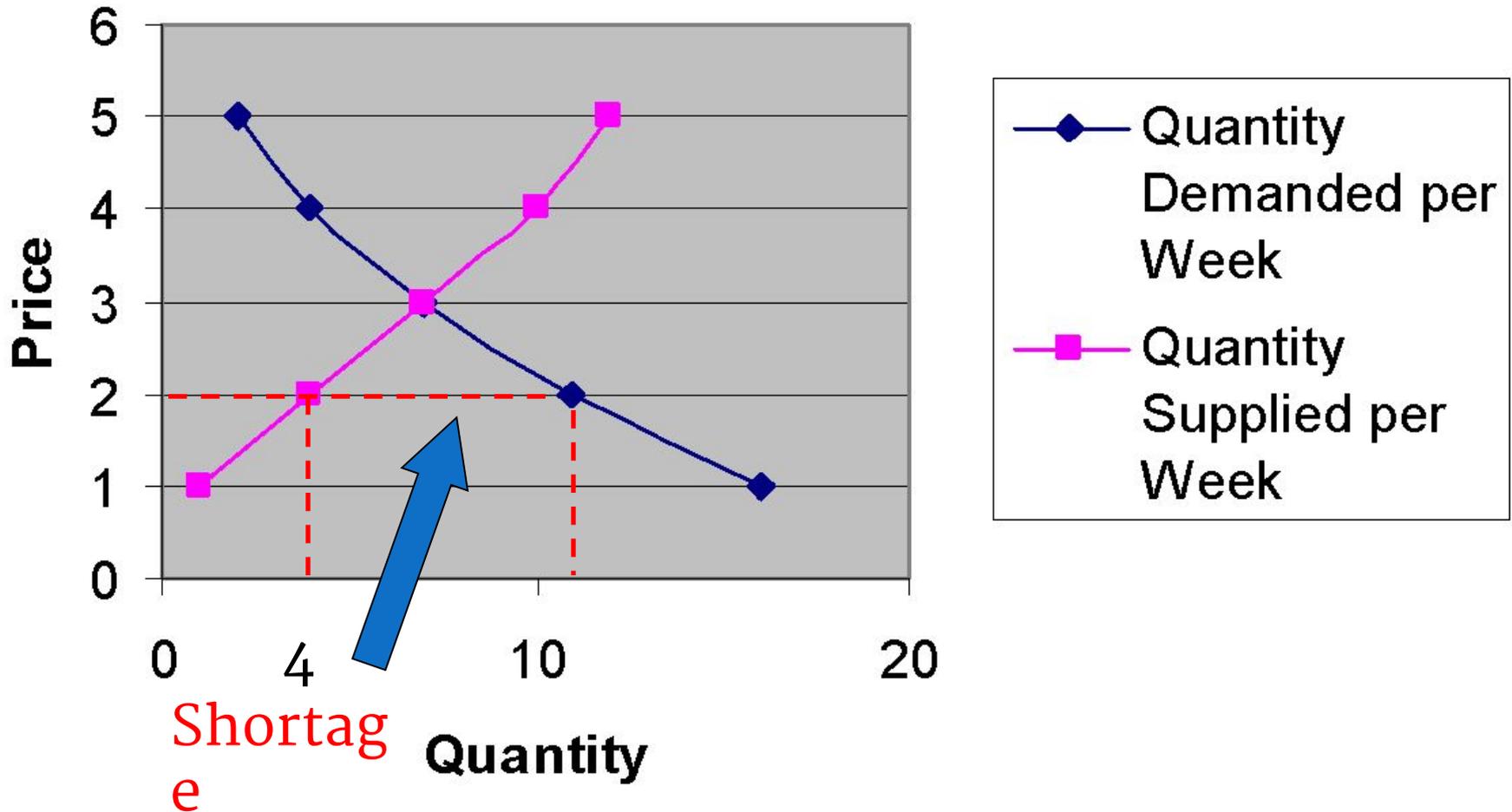
# Market Supply and Demand for Corn



# Market Equilibrium

- A **shortage** is the amount by which the quantity demanded is higher than the quantity supplied
  1. A shortage signals that the price is too low.
  2. At that price, suppliers will not supply all of the product that consumers are willing to buy.
  3. In a competitive market, a shortage will not last. Sellers will raise their price.

# Market Supply and Demand for Corn

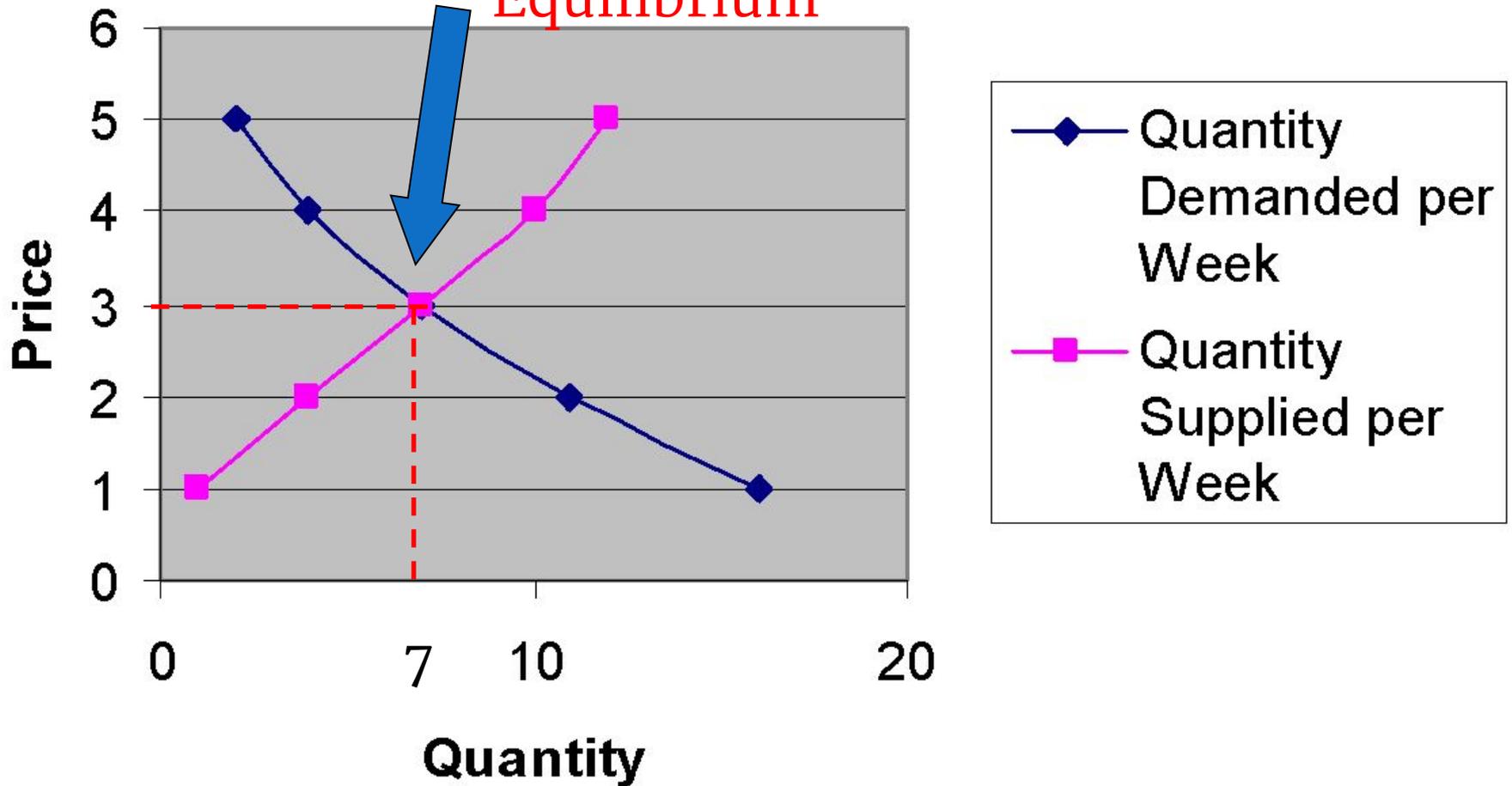


# Market Equilibrium

- When operating without restriction, our market economy eliminates shortages and surpluses.
  1. Over time, a surplus forces the price down and a shortage forces the price up until supply and demand are balanced.
  2. The point where they achieve balance is the **equilibrium price**. At this price, neither a surplus nor a shortage exists.
- Once the market price reaches equilibrium, it tends to stay there until either supply or demand changes.
  1. When that happens, a temporary surplus or shortage occurs until the price adjusts to reach a new equilibrium price.

# Market Supply and Demand for Corn

Market  
Equilibrium



# Price Controls

- The government sometimes regulates prices if they think the market will result in unfair prices.

- Price Ceiling: maximum price that can be charged Ex: rent

- Price Floor: Minimum price than can be paid Ex: minimum wage

**The Federal Hourly Minimum Wage Since Its Inception:**



# Prices as Signals

- Prices are signals that help businesses and consumers make decisions.
  1. WHAT → Producers focus on goods and services that consumers are willing to buy at prices that yield a profit.
  2. HOW → To stay in business, a supplier must find a way to provide a good or service at a price consumers will pay.
  3. FOR WHOM → Some businesses aim their products at a small # of consumers that will pay high prices, others at a large # of consumers that will pay a low price.
- Characteristics of Price system
  1. Prices are a compromise
  2. Prices are flexible.
  3. The price system provides for freedom of choice.
  4. Prices are familiar.