

# Chapter 2

This is Macroeconomics  
review for and Microeconomics  
the exam

## The Basics: Part 2 Supply and Demand

1. this chapter is about how the **supply and demand model** is used to explain how markets, such as the healthcare or car market, determine prices (P) and quantity (Q)
2. consists of three elements
  - A. **quantity demanded (Qd)**- describing the behavior of consumers (those who demanded/buy) in the market)
  - B. **quantity supplied (Qs)**- describing the behavior of firms/businesses (those who supply/produce) in the market)
  - C. **market equilibrium (Me)**- connecting quantity demanded and quantity supplied, the point where consumers and firms agree on the price and quantity in the market

## **Introduction (cont.)**

1. **classical economics-** the belief that economies will self-correct over time and that governments should not get involved
2. if an economy is expanding (growing) or contracting (shrinking) and no financial actions are taken by the Federal Reserve or Congress, the economy will eventually return to its typical equilibrium by itself
  - A. this happens because in most situations, if an economy is in expansion/has high inflation (high prices), workers' wages will increase which will decrease how much companies have to spend
3. if an economy is in contraction/in recession, workers' wages will decrease which will increase how much companies have to spend

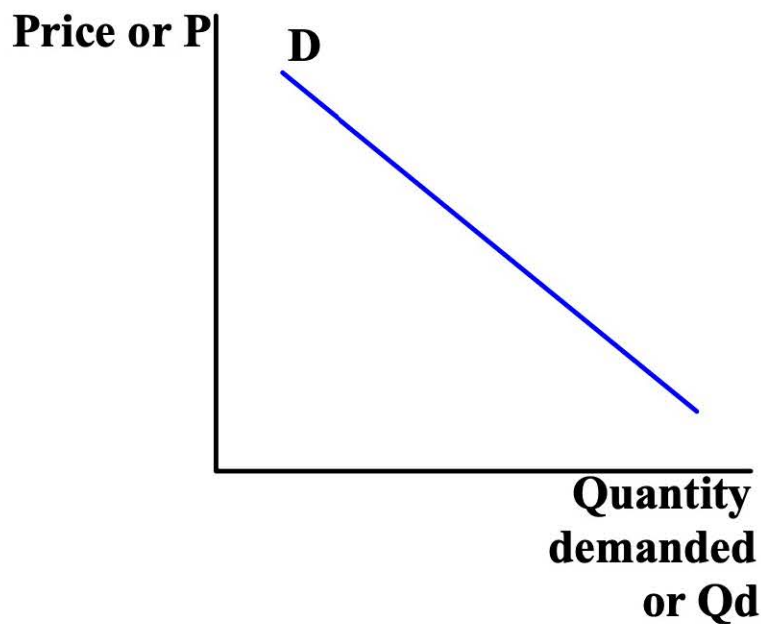
## Demand

1. **demand (D)** is a relationship between two economic variables (factors): 1) the **price (P)** of a particular good and 2) the **quantity demanded (Qd)** of a particular good (how much consumers are willing to buy at a specific price)
2. the **law of demand** states that the higher the price of a good is in a market, the lower the quantity demanded of the good by consumers, and the lower the price of a good, the higher the quantity demanded

(P) Price	Quantity Demanded (Qd)
\$140	18
\$160	14
\$180	11
\$200	9
\$220	7
\$240	5
\$260	3
\$280	2
\$300	1

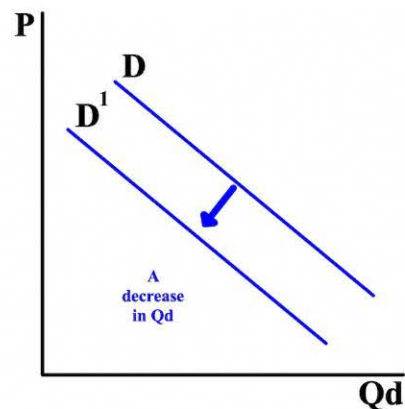
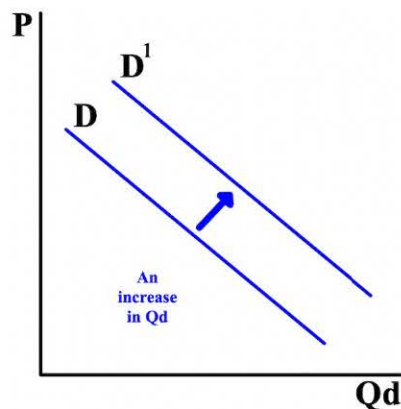
## The Demand Curve

1. the graph is a **demand curve**
  - A. it represents the law of demand graphically
2. the market demand curve slopes downward left to right and shows the **market quantity** (the quantity demanded of goods and services at any given price)



## Shifts (Moves) in Demand

1. the quantity demanded ( $Q_d$ ) of a good or service that people buy is affected by the item's price ( $P$ ), consumers' tastes and preferences, the number of consumers in the market, the price of similar goods, consumers' incomes, and consumers' expectations of the future **market price** (the price of something that is sold in a market)
2. an increase in quantity demanded **shifts** (moves) the demand curve up/to the right (left graph)
3. a decrease in quantity demanded shifts the demand curve down/to the left (rightt graph)



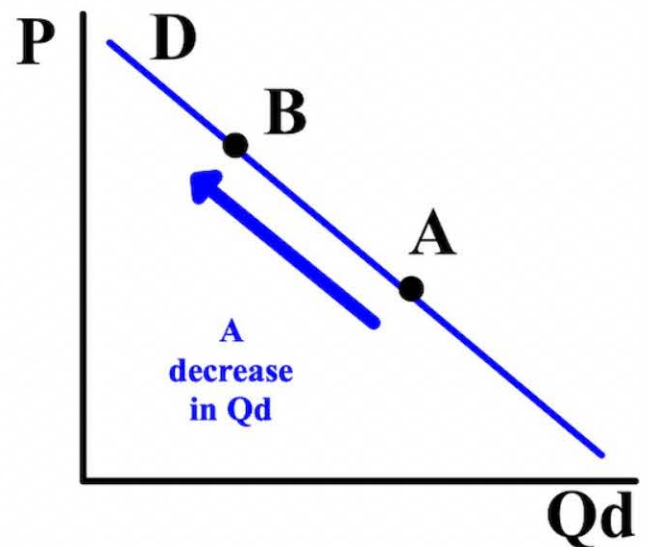
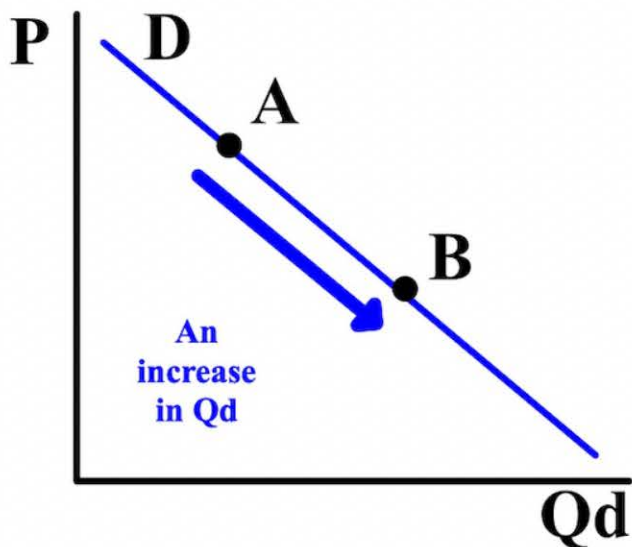
### **Shifts (Moves) in Demand (cont.)**

1. goods for which quantity demanded (Qd) increases when income rises and decreases when income falls are called **normal goods**
2. the quantity demanded for **inferior goods** may decline when income increases
3. the prices (P) of closely related goods are also a factor
  - A. a **substitute** is a good that provides some of the same uses or enjoyment as another good, like buying an electric bike instead of a motorcycle
4. but, a sharp increase in the cost of bicycle helmets, a good closely related to bicycles, will decrease the quantity demanded for bicycles, especially if there is a law requiring helmets
  - A. a good that tends to be consumed together with another good is called a **complementary good** and it plays a factor in how much another good made is wanted



## Movement Along vs. Shifts of the Demand Curve

1. when graphing demand (D) curves, it is very important to distinguish shifts of the demand curve from movements along the demand curve
2. a **movement along** the demand curve occurs when the quantity demanded (Qd) changes as a result of a change in the price (P) of the good or service



## **Supply**

1. **supply (S)** is a relationship between two economic variables (factors): 1) the **price (P)** of a particular good and 2) the quantity supplied (Qs) of a particular good (how much firms are willing to sell at a specific price)
2. the **law of supply** states that the higher the price of a good is in a market, the higher the quantity supplied of the good by sellers, and the lower the price of a good, the lower the quantity supplied
3. when the price for a product increases, suppliers will attempt to maximize their profits by increasing the quantity supplied for sale before quantity demand starts to fall
4. when the price for a product decreases, suppliers will attempt to minimize their losses by producing less

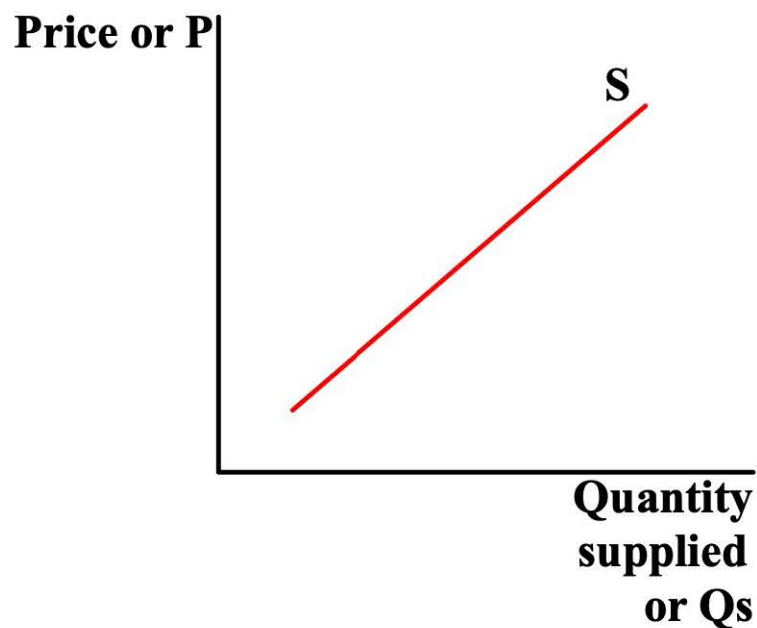


## The Supply Curve

1. the graph is a **supply curve**

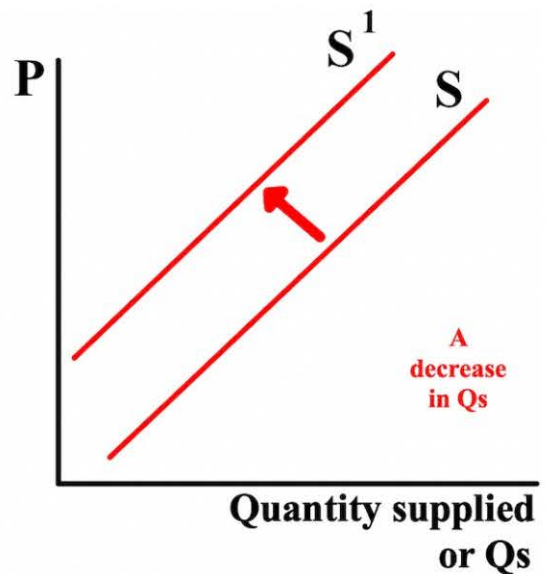
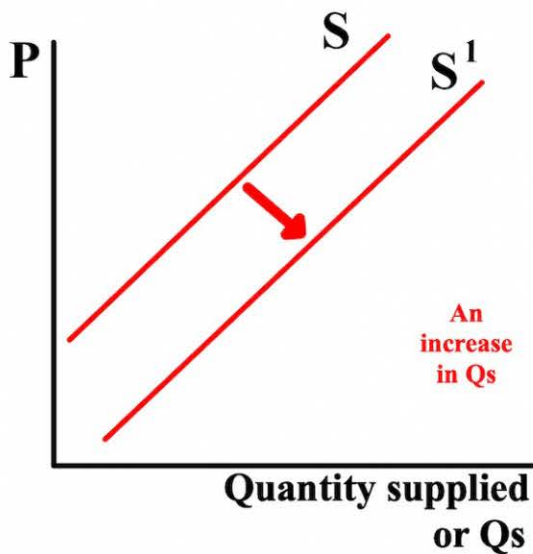
A. it represents the law of supply graphically

2. the market demand curve slopes upward left to right and shows the **market quantity** (the quantity supplied of goods and services at any given price)



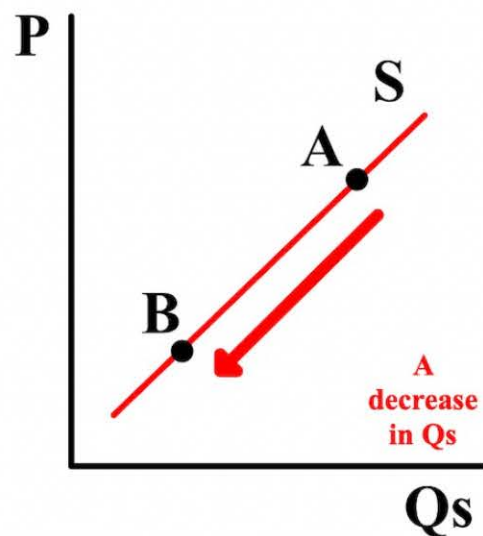
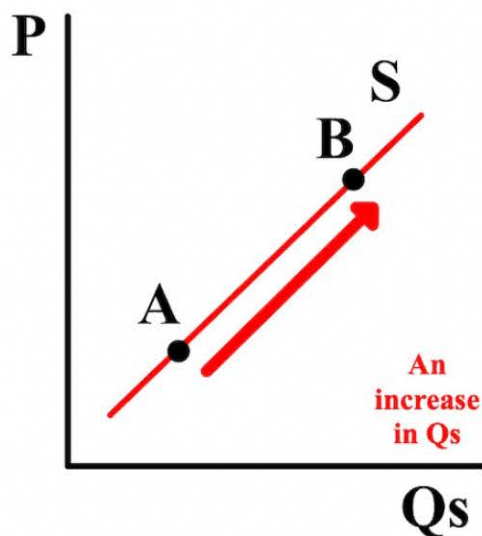
## Shifts in Supply

1. the quantity supplied ( $Q_s$ ) of a good or service that firms/businesses produce is affected by the price ( $P$ ) and availability of inputs/resources used in production, the number of firms in the market, technology, government taxes and subsidies, and regulations, and the expectations of future prices and profit



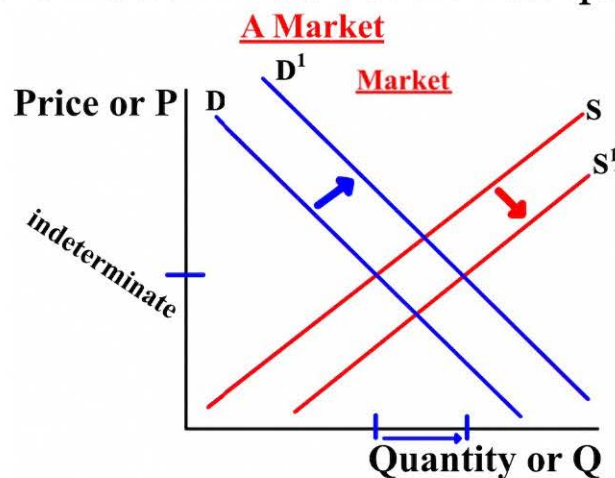
## Movement Along versus Shifts of the Supply Curve

1. when graphing demand (S) curves, it is very important to distinguish shifts of the supply curve from movements along the demand curve
2. just like with the demand curve, a **movement along** the supply curve occurs when the quantity demanded ( $Q_d$ ) changes as a result of a change in the price ( $P$ ) of the good or service



## Double Shifts- Supply and Demand

1. double-shifts occur when both demand and supply shift at the same time
  - A. when this happens, both demand and supply can increase or decrease or one can increase while the other decreases
  - B. when this happens, of the new quantity (Q) or price (P), one of them can be determined but the other will be indeterminate
    1. the only way to know is to graph the double-shift
  - C. below, the new price is indeterminate but the new quantity can be determined



## Finding the Market Price

1. looking at the bicycle price (P) of \$160 below, the quantity demanded (Qd) by consumers (14 bicycles) is greater than the quantity supplied (Qs) by firms (4 bicycles); there is a shortage of 10 bicycles (14-4)

A. a **shortage**, or **excess demand**, is a situation in which the quantity demanded is greater than the quantity supplied

<u>Price</u>	<u>Quantity Supplied</u>	<u>Price</u>	<u>Quantity Demanded</u>
\$160	4	\$160	14
\$180	7	\$180	11
\$200	9	\$200	9
\$220	11	\$220	7
\$240	13	\$240	5
\$260	15	\$260	3
\$280	16	\$280	2
\$300	17	\$300	1

**Finding the Market Price (cont.)**

1. looking at the bicycle price (P) of \$260 below, the quantity demanded (Qd) by consumers (3 bicycles) is less than the quantity supplied (Qs) by firms (15 bicycles); there is a surplus of 12 bicycles (15-3)

A. a **surplus**, or **excess supply**, is a situation in which the quantity supplied is greater than the quantity demanded

<u>Price</u>	<u>Quantity Supplied</u>	<u>Price</u>	<u>Quantity Demanded</u>
\$160	4	\$160	14
\$180	7	\$180	11
\$200	9	\$200	9
\$220	11	\$220	7
\$240	13	\$240	5
<b>\$260</b>	<b>15</b>	<b>\$260</b>	<b>3</b>
\$280	16	\$280	2
\$300	17	\$300	1

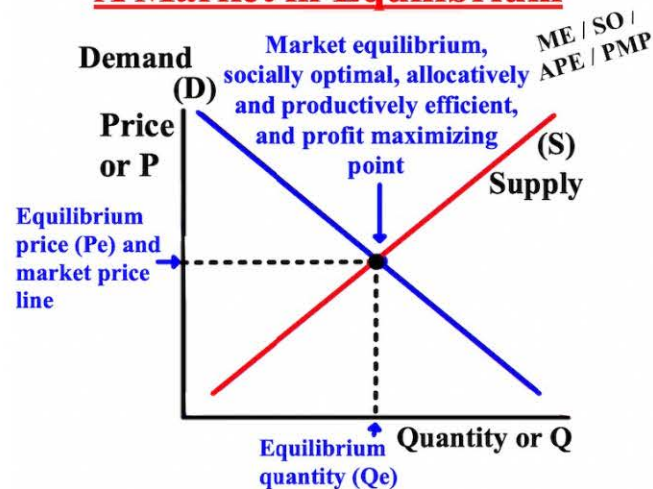
*graph a market in short-run equilibrium; label Me/SO/APE/PMP, Pe, and Qe*



## Finding the Equilibrium with a Supply and Demand Diagram

1. the equilibrium price ( $P_e$ ) is the price at equilibrium (the price where supply (S) and demand (D) meet)
2. the equilibrium quantity ( $Q_e$ ) is the quantity at equilibrium (the quantity where supply (S) and demand (D) meet)
3. often in our class, a market supply (S) and demand (D) diagram will not have any numerical data; unless you are told to include numbers, don't

### A Market in Equilibrium





## **Interference With Market Prices**

1. in free market economies, demand (D) and supply (S) usually determine the price (P) and quantity supplied (Qs) without government control, called freely determined prices
2. in socialist and communist countries, governments attempt to make the decisions and to control market prices, referred to as **price controls**

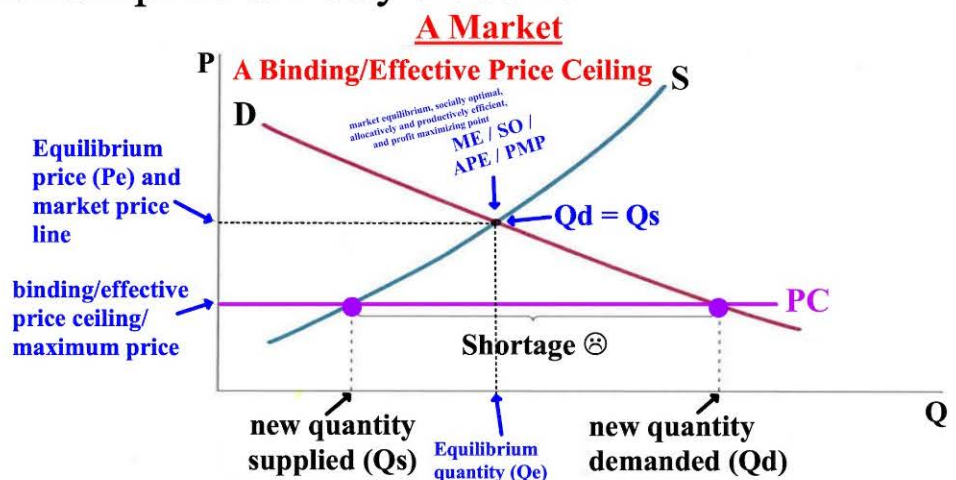
## Price Ceilings and Price Floors

1. there are two types of government price (P) controls
  - A. controls can stipulate a **price ceiling**, or a maximum price at which a good can be bought and sold, like price controls on rental apartments
    - i. if the government sets a price ceiling, the product will be cheaper and more consumers will be able to purchase it, resulting in a shortage of the good in the market
  - B. controls can also stipulate a **price floor**, or a minimum price at which a good can be bought and sold, like workers' wages
    - i. if the government sets a price floor, the product will be more expensive and fewer consumers will be able to purchase it, resulting in a surplus of the good in the market

*graph a binding price floor  
and a binding price ceiling;  
label new and old Qd and  
Qs*

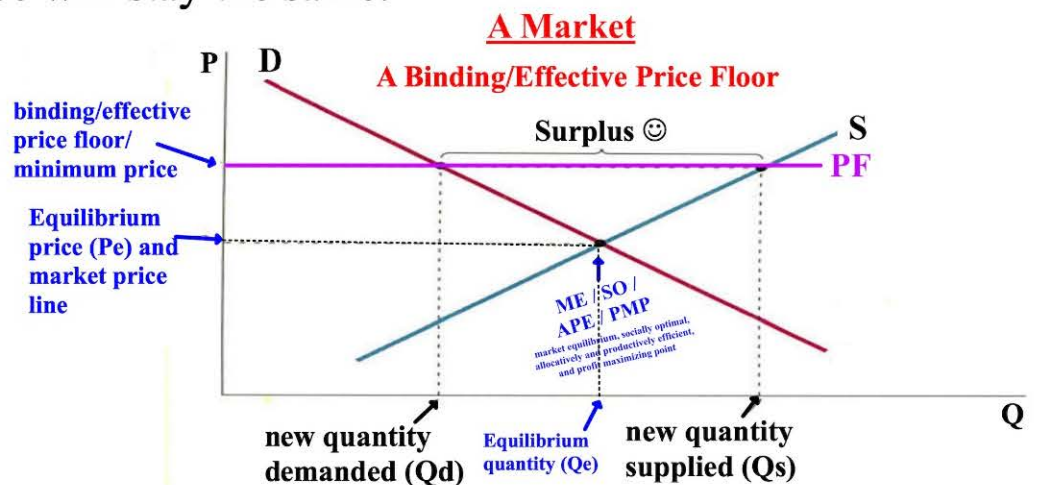
## Shortages and Problems Resulting from Price Ceilings (cont.)

1. if a price ceiling is set below the equilibrium price ( $P_e$ ), the price ceiling is **binding** (also referred to as mandatory or effective) since the equilibrium price ( $P_e$ ) and market equilibrium ( $M_e$ ) can't be reached
2. if the price ceiling is set above the equilibrium price and market equilibrium, then the price ceiling doesn't matter since the price ceiling is above the equilibrium price and market equilibrium; the price ceiling is not binding and the equilibrium price will stay the same



## Surpluses and Problems Resulting from Price Floors (cont.)

1. if a price floor is set above the equilibrium price ( $P_e$ ), the price floor is **binding** (also referred to as mandatory or effective) since the equilibrium price ( $P_e$ ) and market equilibrium ( $Me$ ) can't be reached
2. if the price floor is set below the equilibrium price and market equilibrium, then the price floor doesn't matter since the price floor is below the equilibrium price and market equilibrium; the price floor is not binding and the equilibrium price will stay the same.



### **Macro/Micro Do-Now**

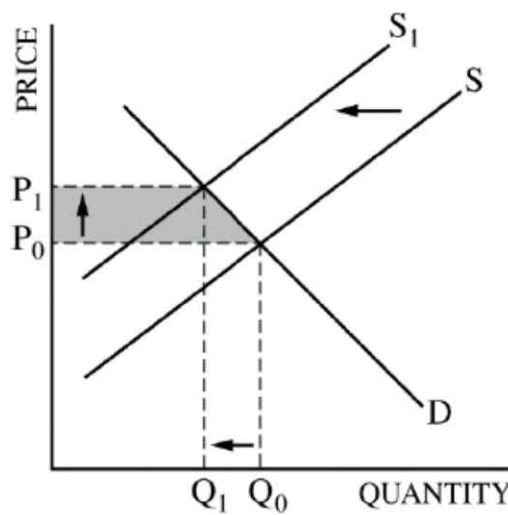
#### **Please do this:**

**1.** (b) Bananas are an input for muffins.

- (i) Draw a correctly labeled graph of the market for muffins indicating the equilibrium price and quantity, labeled  $P_0$  and  $Q_0$ , respectively.
- (ii) On the graph drawn in part (b)(i), show the impact of an increase in the price of bananas on the muffin market, labeling the new equilibrium price and quantity  $P_1$  and  $Q_1$ , respectively.

## Macro/Micro Do-Now

1.  
points:



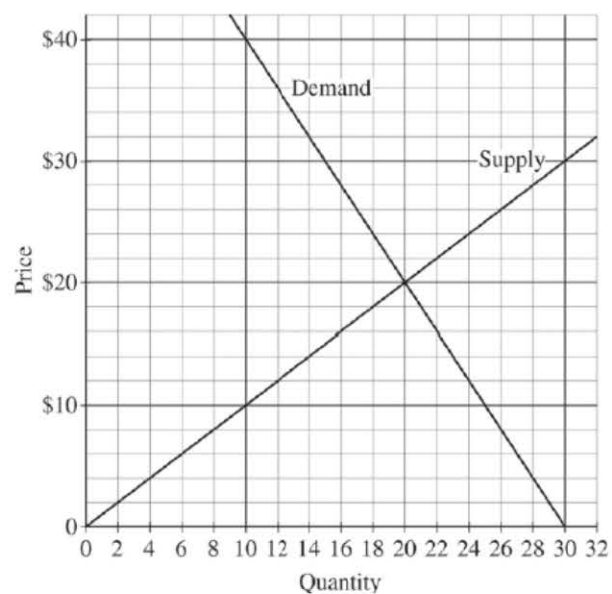
- One point is earned for drawing a correctly labeled graph and for showing the equilibrium price and quantity, labeled  $P_0$  and  $Q_0$ , respectively.
- One point is earned for shifting the supply curve to the left and for showing the new equilibrium price and quantity, labeled  $P_1$  and  $Q_1$ , respectively.

## Macro/Micro Do-Now

**Please do this:**

**2.**

The graph below shows the market for widgets. The government is considering intervening in this market.



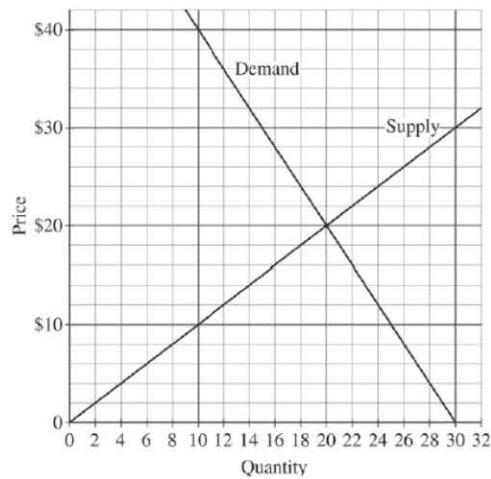
- Calculate the total producer surplus at the market equilibrium price and quantity. Show your work.
- If the government imposes a price floor at \$16, is there a shortage, a surplus, or neither? Explain.
- If instead the government imposes a price ceiling at \$12, is there a shortage, a surplus, or neither? Explain.



2.

## Macro/Micro Do-Now

The graph below shows the market for widgets. The government is considering intervening in this market.



- (a) Calculate the total producer surplus at the market equilibrium price and quantity. Show your work.
- (b) If the government imposes a price floor at \$16, is there a shortage, a surplus, or neither? Explain.
- (c) If instead the government imposes a price ceiling at \$12, is there a shortage, a surplus, or neither? Explain.
- (b) 1 point:
- One point is earned for stating that imposing a price floor at \$16 is ineffective and will not create a surplus or a shortage in the market because it is set below the equilibrium price, or because it is not binding.
- (c) 1 point:
- One point is earned for stating that imposing a price ceiling at \$12 will create a shortage because quantity demanded is greater than quantity supplied, or because the price ceiling is binding.

### Macro/Micro Do-Now

#### **Please do this:**

- 3.** The markets for bananas, muffins, and coffee are interrelated, and each market is perfectly competitive.
- (a) In the market for bananas, the equilibrium price is \$1.00 per pound, and the equilibrium quantity is 1,000 pounds per week. Suppose the government imposes a price floor on bananas at \$1.20 per pound, causing the quantity supplied to increase to 1,500 pounds per week.
- (i) Would the price floor result in a shortage, a surplus, or neither? Explain.

### **Macro/Micro Do-Now**

**3.**

- One point is earned for stating that the quantity supplied exceeds the quantity demanded at the price floor or the price floor would result in a surplus because the price floor is binding or effective.