

# 3

## Demand



Dave Anderson

## LEARNING OBJECTIVES

1. Interpret a demand schedule
2. Work with models of individual and market demand
3. Identify influences that shift the demand curve
4. Explain the importance of consumer surplus

# THE DEMAND SCHEDULE PART I

- A **demand schedule** is a table that indicates the quantity of a good or service that would be demanded in a given period at various prices.
- Demand schedules show the relationship between the price of a good or service and the quantity demanded.



# THE DEMAND SCHEDULE PART II

- Demand schedules show how much a consumer is willing to pay for a certain number of goods, not the consumer's preferred price (which would be \$0).
- *Individual demand schedules* can be added together to form a *market demand schedule*.

Price per Latte	Quantity Demanded by Aaron	Quantity Demanded by Brian	Quantity Demanded by Cienna	Quantity Demanded in the Market
\$7	0	0	1	1
6	1	0	1	2
5	1	1	1	3
4	2	1	1	4
3	2	1	2	5
2	3	1	2	6
1	3	2	2	7
0	3	2	2	7

# MARGINAL UTILITY

- **Utility** refers to the satisfaction or happiness that individuals feel.
- It is difficult to measure utility and to compare the utility of different people.
- **Marginal utility** is the utility received from consuming one more unit of a good.
- Individuals are able to compare the marginal utility that they receive from each unit of each good.
- Individuals seek to maximize utility when making consumption decisions.

# DIMINISHING MARGINAL UTILITY

- Imagine drinking lattes. The first latte gives much more satisfaction than the third latte would.
- This decrease in the marginal utility received from a good as more of it is consumed is known as **diminishing marginal utility**.
- In some cases, the second unit of a good can bring more satisfaction than the first, but, regardless of this, marginal utility eventually diminishes for all goods.



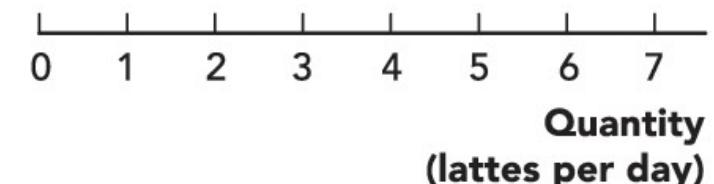
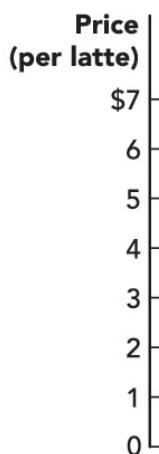
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# MARGINAL UTILITY AND DEMAND

- The value of marginal utility is the basis for consumers' willingness to pay for each unit.
- Someone who gets \$5 worth of satisfaction from the first unit is willing to pay up to \$5 for that unit.
- If the second unit gives \$4 worth of satisfaction, then the consumer is willing to buy 2 units when the price is \$4.

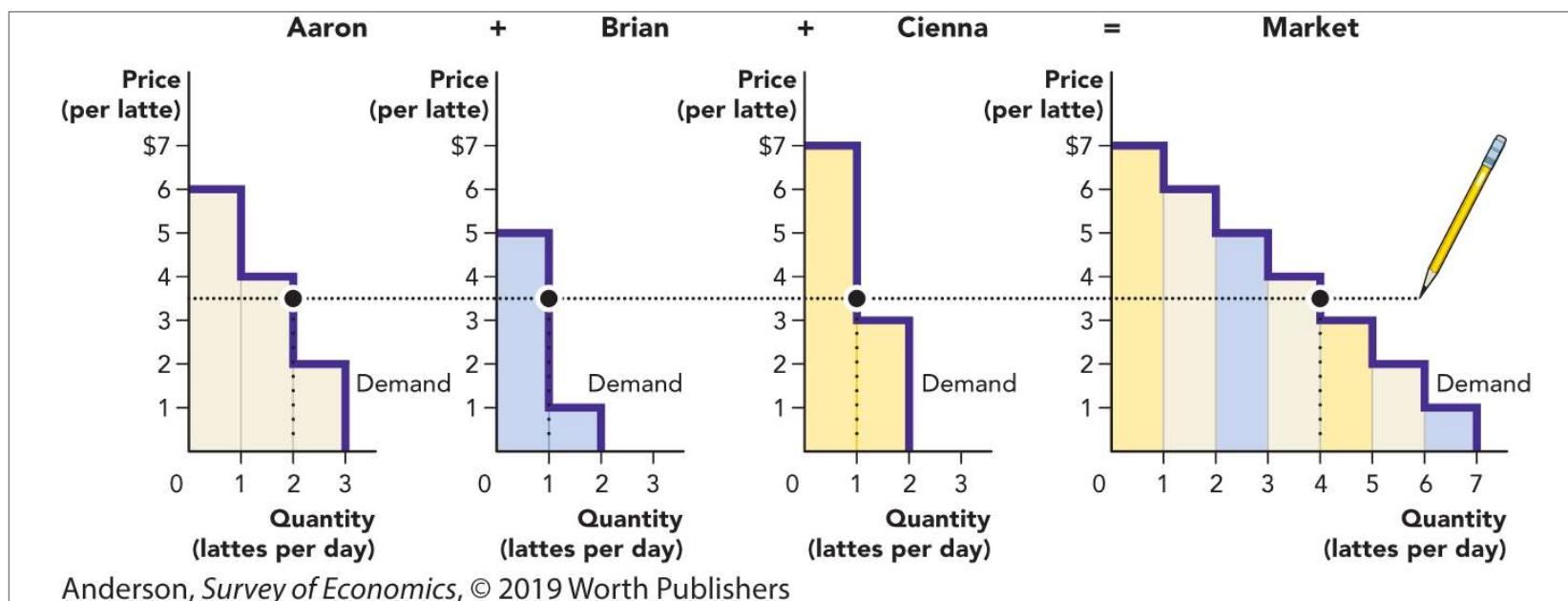
# THE DEMAND GRAPH

- A **demand curve** illustrates the relationship between the price of a good and the quantity demanded.
- A demand curve is a graphical representation of a demand schedule.
- Demand graphs measure price (per unit) on the vertical axis and measure quantity on the horizontal axis.



# INDIVIDUAL AND MARKET DEMAND CURVES

- Like with demand schedules, there are *individual demand curves*, which are combined to form the *market demand curve*.
- To find the quantity demanded at a price of \$3.50, draw a horizontal line at a height of \$3.50 across the graph. The quantity demanded is found where the line and the demand curve intersect.

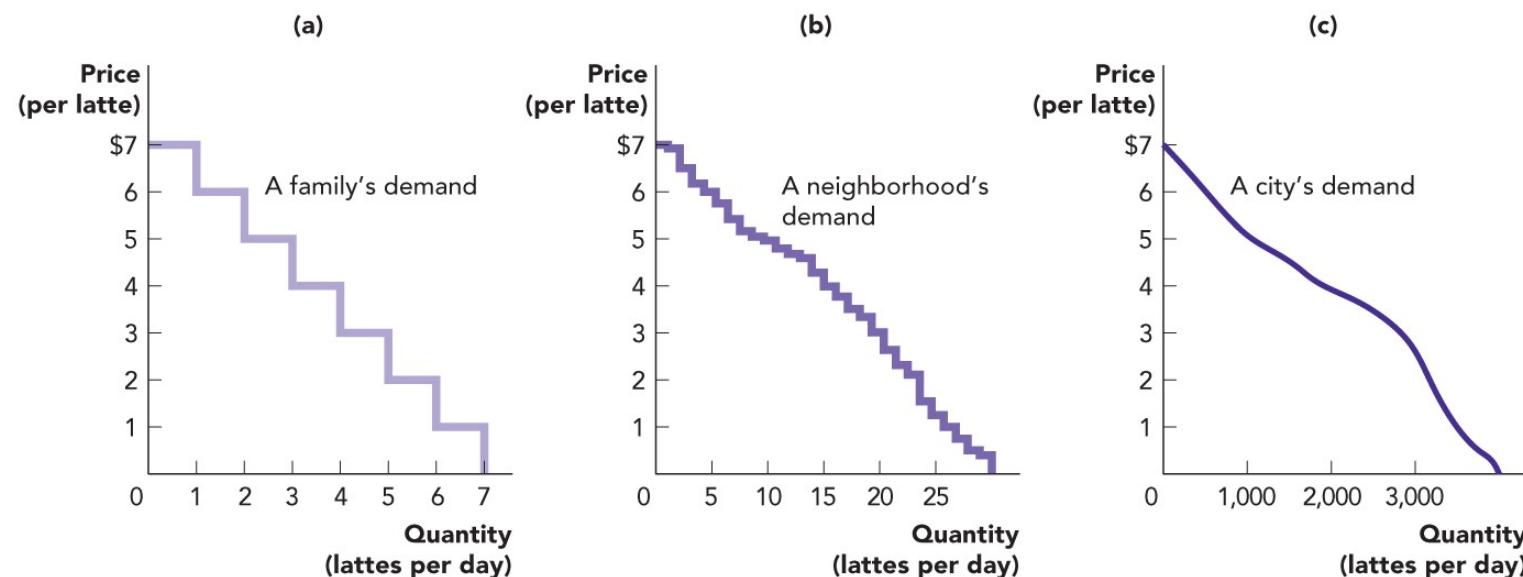


# THE LAW OF DEMAND

- Demand curves tend to be downward sloping, which results from diminishing marginal utility.
- When the price rises above the marginal utility provided by a unit of a good, consumers no longer demand that unit, so demand decreases.
- The **law of demand** states that when other influences remain unchanged, consumers will demand more of a good or service at lower prices than at higher prices.

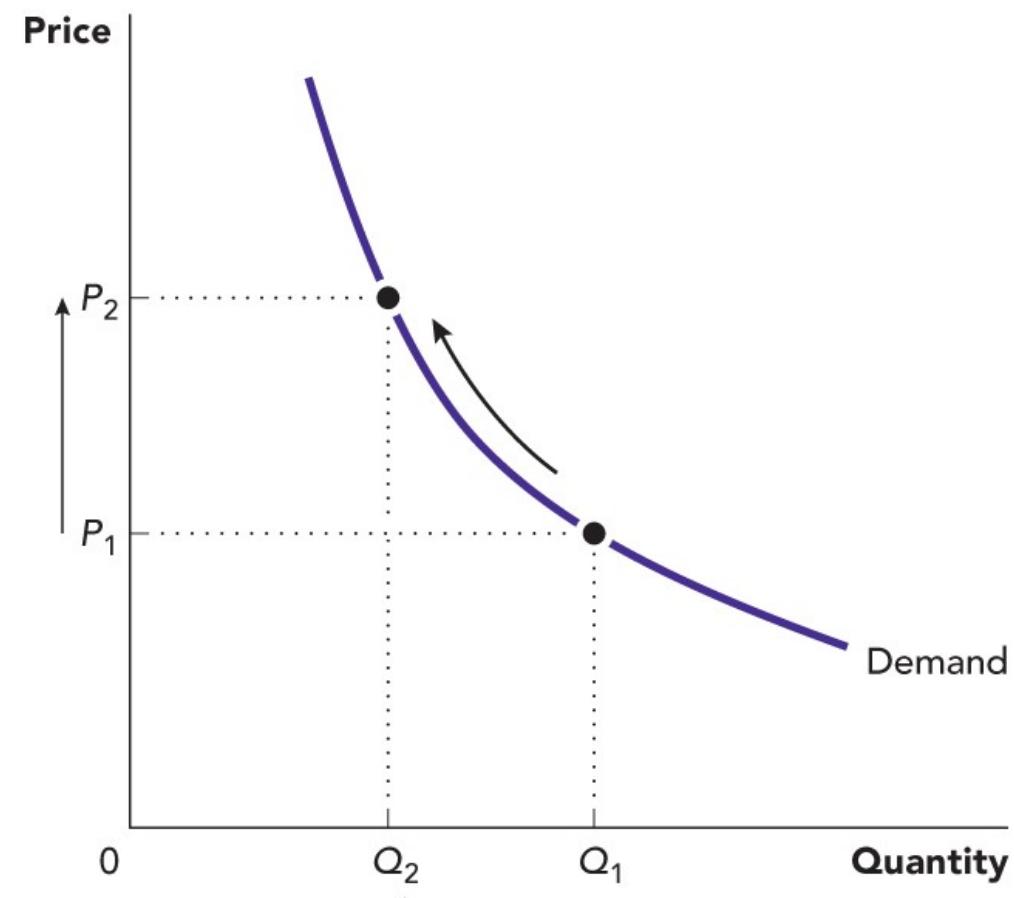
# SMOOTH DEMAND CURVES

- Demand curves have a jagged appearance because the horizontal portions, which represent each unit, are long enough to be clearly seen.
- When the quantities being demanded are large enough, the horizontal portions are not clearly seen, and demand curves appear to be smooth.



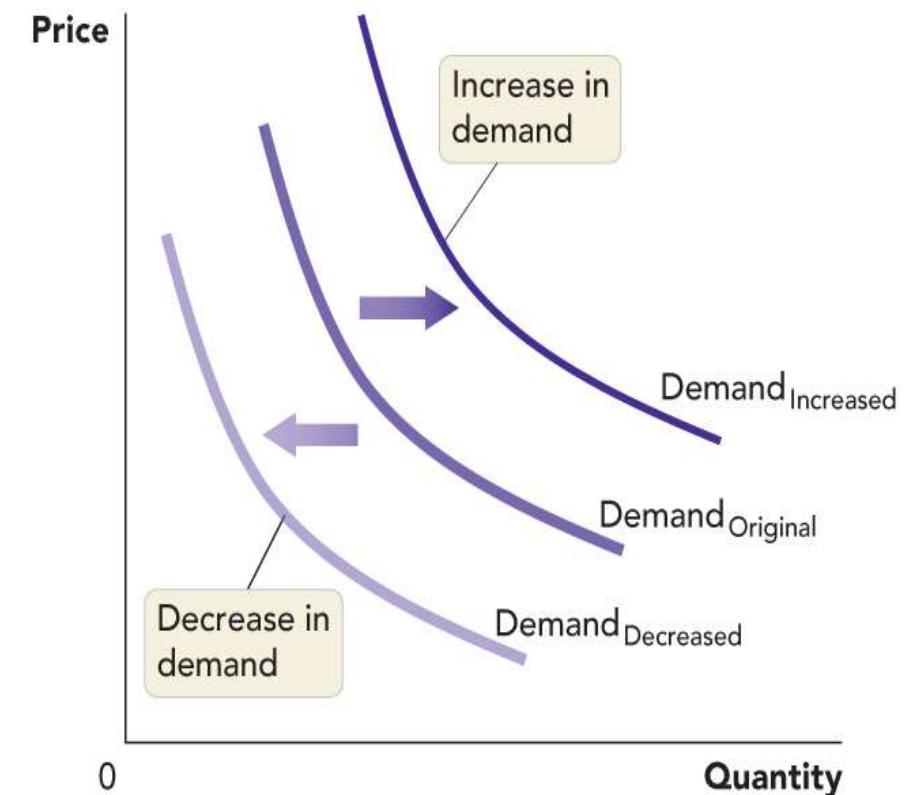
# MOVEMENTS ALONG THE DEMAND CURVE

- A change in quantity demanded that results from a price change is shown by a **movement along the demand curve**.
- The curve itself does not change, but because the price has changed, the quantity demanded also changes to a different point on the graph.



# CHANGES IN DEMAND

- A **change in demand** is a shift in the entire demand curve, indicating a change in the quantity demanded at each price.
- This happens when something changes that isn't the price. For example, knowledge that smoking causes cancer decreases the number of cigarettes demanded at each price. This is shown by shifting the curve to the left.



# CHANGES IN DEMAND VERSUS MOVEMENTS ALONG THE DEMAND CURVE

- It is important not to confuse a movement along the demand curve with a change in demand.
- A change in the quantity demanded that is brought about by a price change is not a change in demand.
- It takes a change in something that is not already measured on the axes of the graph to shift the demand curve.

# DEMAND SHIFTERS

- Both individual and market demand curves shift due to changes in:
  - tastes
  - expectations
  - income
  - the prices of related goods
- Market demand curves also shift when there is a change in:
  - the number of consumers

## TASTES

- The basis for the demand curve is marginal utility, or what makes consumers happy.
- What makes consumers happy changes over time. When this happens, marginal utility changes, so the demand curve also shifts.
- Advertising, research findings, media coverage, unjust legislation, and fads all have powerful effects on tastes and preferences.
- Firms such as Starbucks spend millions of dollars on advertising in order to influence consumers' tastes.



Richard Levine/Alamy

# EXPECTATIONS

- Changing expectations about the future affect demand curves in the present.
- If you begin to expect the price of a good to increase in the future, you will buy more of the good now, before the price increases.



# INCOME

- With more income, consumers are willing to pay more for the things they enjoy.
- Goods that consumers buy more of when their incomes increase, such as diamond jewelry, are *normal goods*.
- Some goods, such as costume jewelry, are purchased less as consumer incomes increase.
- These are known as *inferior goods*.



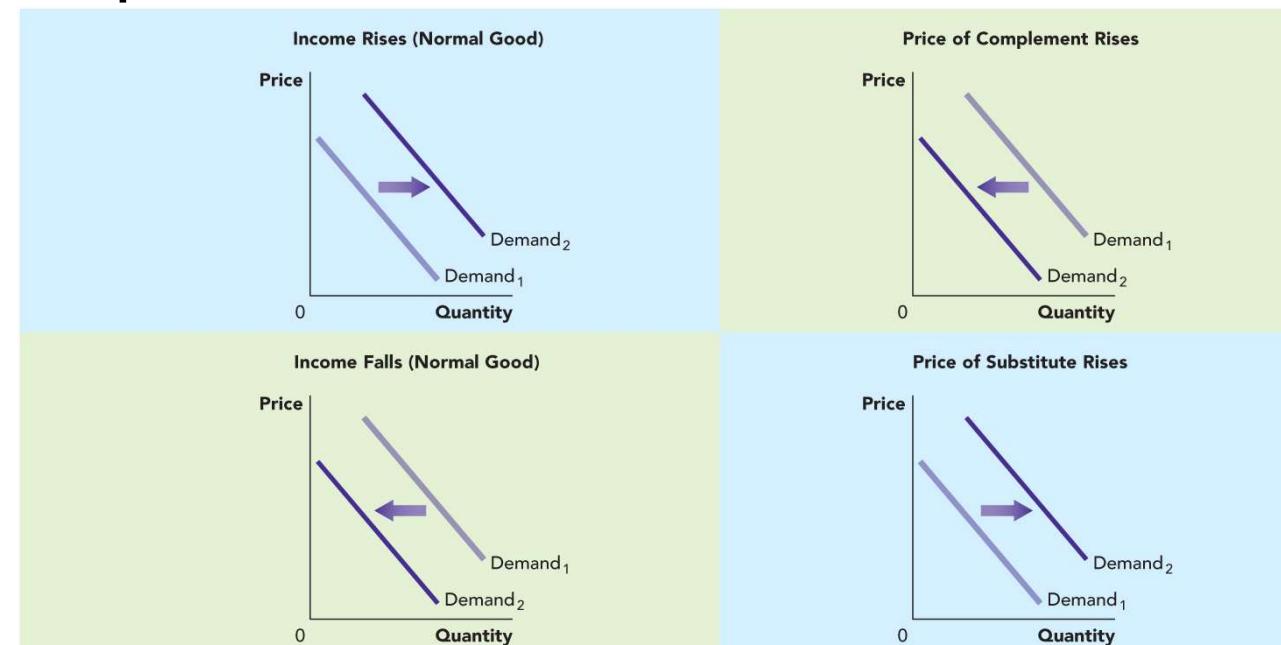
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# SUBSTITUTES IN CONSUMPTION

- The demand for one good is often influenced by the prices of other goods.
- Two goods are **substitutes in consumption** if an increase in the price of one good causes an increase in the demand of the other good.
- For example, if the price of oranges increases, people will buy fewer oranges and more apples.
- If the price of limes decreases, consumers will buy more limes and fewer lemons.

# COMPLEMENTS IN CONSUMPTION

- Whenever a decrease in the price of one good causes an increase in the demand for another good, the two goods are considered **complements in consumption**.
- For example, when the price of milk decreases, more milk is purchased and more cereal is purchased because cereal and milk are complements in consumption.



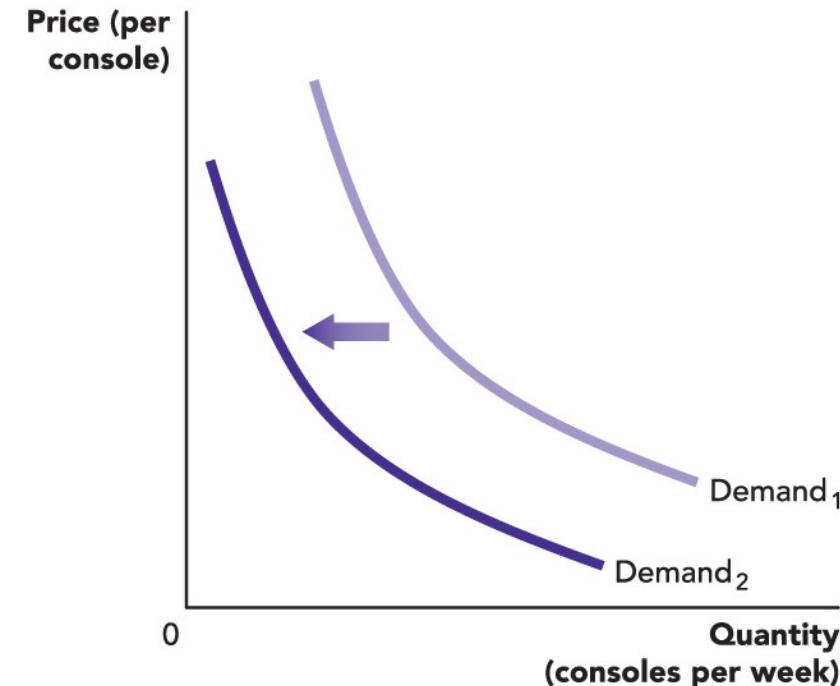
# THE NUMBER OF CONSUMERS

- The factors discussed so far affect both individual and market demand.
- When the number of individuals in the market increases, the market demand also increases.
- When a consumer enters a market that previously had 2 consumers, the original 2 consumers' demand does not change, but the market demand increases because it now includes the third consumer.

## LEARN BY DOING: PRACTICE QUESTION 1

Which of these changes could cause the shift shown here?

- I. A new console is released, making this console less desirable.
- II. Due to effective advertising, the number of people looking to buy the console increases.
- III. A recession causes many consumers' incomes to fall.
  - a) I and II only
  - b) II and III only
  - c) I and III only
  - d) I, II, and III

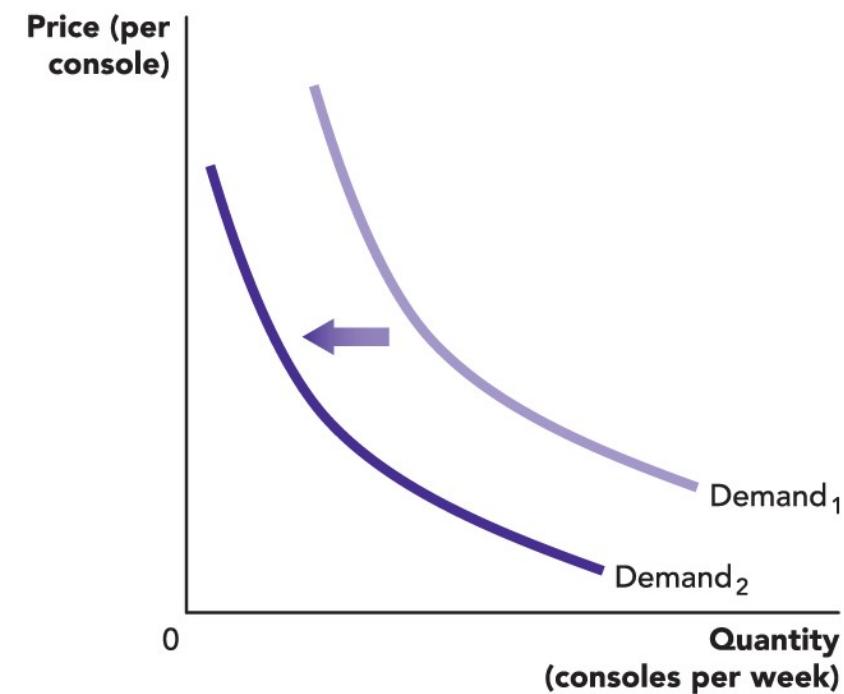


# LEARN BY DOING: PRACTICE QUESTION 1

## (Answer)

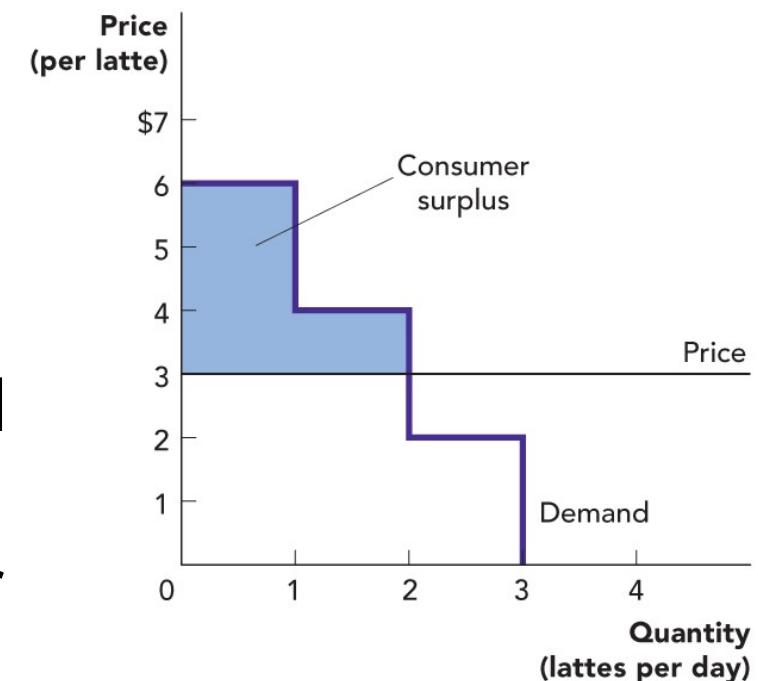
Which of these changes could cause the shift shown here? A new console is released, making this console less desirable.

- I. Due to effective advertising, the number of people looking to buy the console increases.
  - II. A recession causes many consumers' incomes to fall.
- a) I and II only
  - b) II and III only
  - c) **I and III only (correct answer)**
  - d) I, II, and III



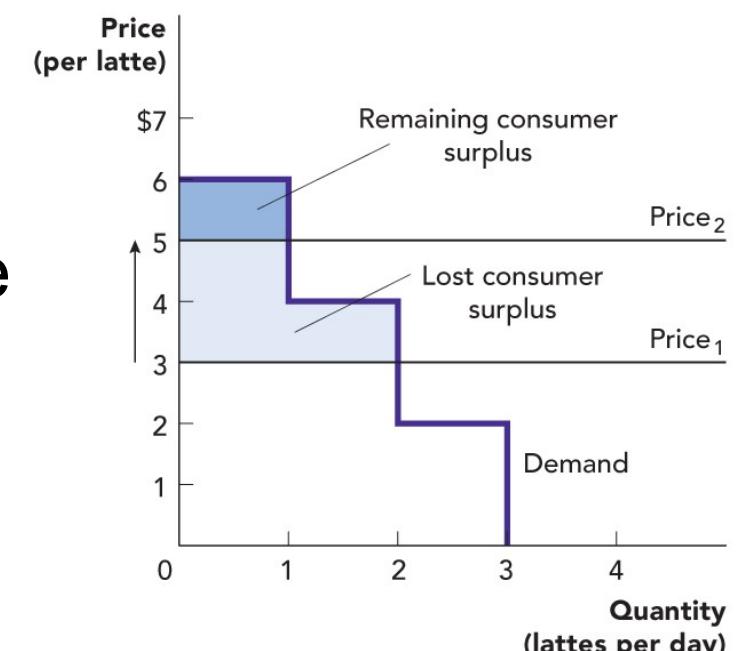
# INDIVIDUAL CONSUMER SURPLUS

- When you shop, you look for goods that are worth more to you than the price you have to pay for them.
- The difference between the most a consumer is willing to pay for a good and the actual amount the consumer pays is called **consumer surplus**.
- The graph shows that Aaron gets  $\$6 - \$3 = \$3$  of consumer surplus from the first latte and  $\$4 - \$3 = \$1$  of consumer surplus from the second latte, so his total consumer surplus is  $\$4$ .



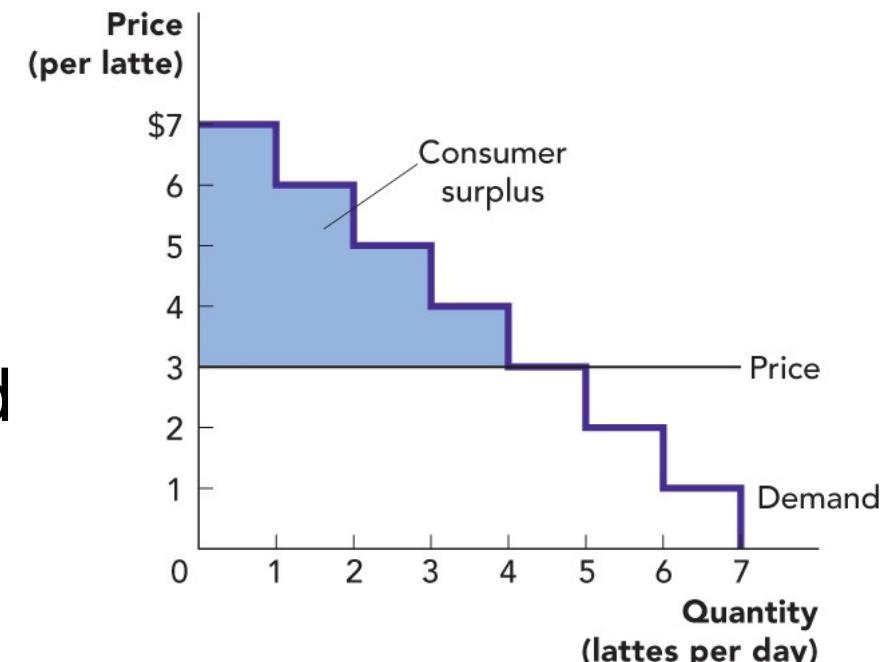
# CONSUMER SURPLUS AFTER A PRICE CHANGE

- A price increase reduces consumer surplus for two reasons:
  - The consumer surplus for each good is reduced by the amount of the price increase.
  - Consumers buy less after a price increase.
- The graph shows that when the price per latte rises from \$3 to \$5, Aaron buys only one latte. His consumer surplus from the one latte is  $\$6 - \$5 = \$1$ , a \$3 decrease in total consumer surplus.
- Similarly, a price decrease increases consumer surplus.



# MARKET CONSUMER SURPLUS

- Total consumer surplus in the market is found the same way that it is found for the individual.
- In the graph, the fifth latte provides no consumer surplus because the price and the amount the consumer is willing to pay are the same.
- The total consumer surplus is found by adding the consumer surplus for each of the purchased lattes.
- $\$4 + \$3 + \$2 + \$1 + \$0 = \$10$



# STEPS TO SOLVING PROBLEMS INVOLVING DEMAND

- These three steps will help you analyze the effects of a potential influence on demand:
  - **STEP 1:** Determine whether the influence shifts the demand curve.
  - **STEP 2:** If the demand curve shifts, determine the direction of the shift.
  - **STEP 3:** Draw a graph and illustrate the demand curve before the change. Then, if demand will shift, draw a new demand curve on the same graph to reflect the change.

## STEP 1: DETERMINE WHETHER THE INFLUENCE SHIFTS THE DEMAND CURVE

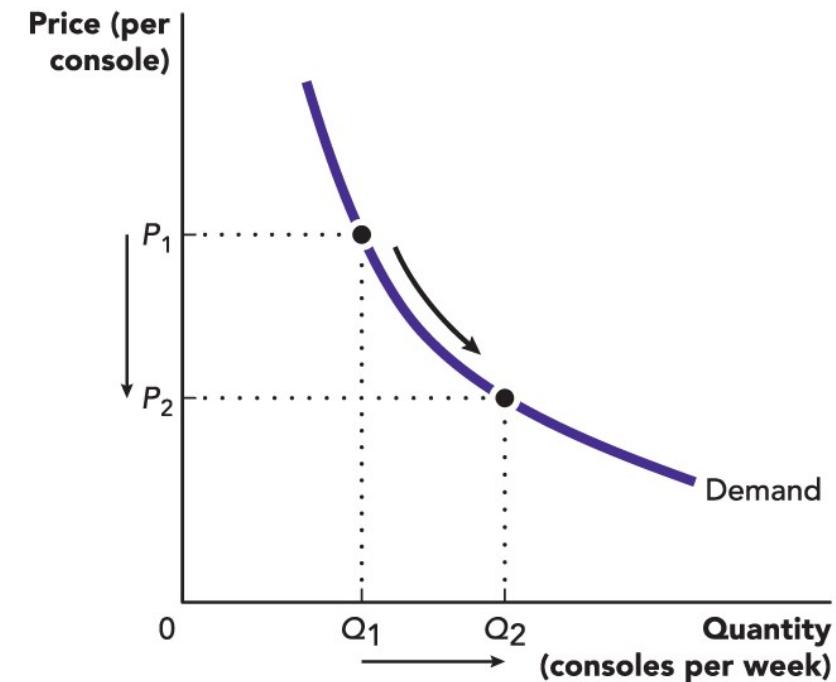
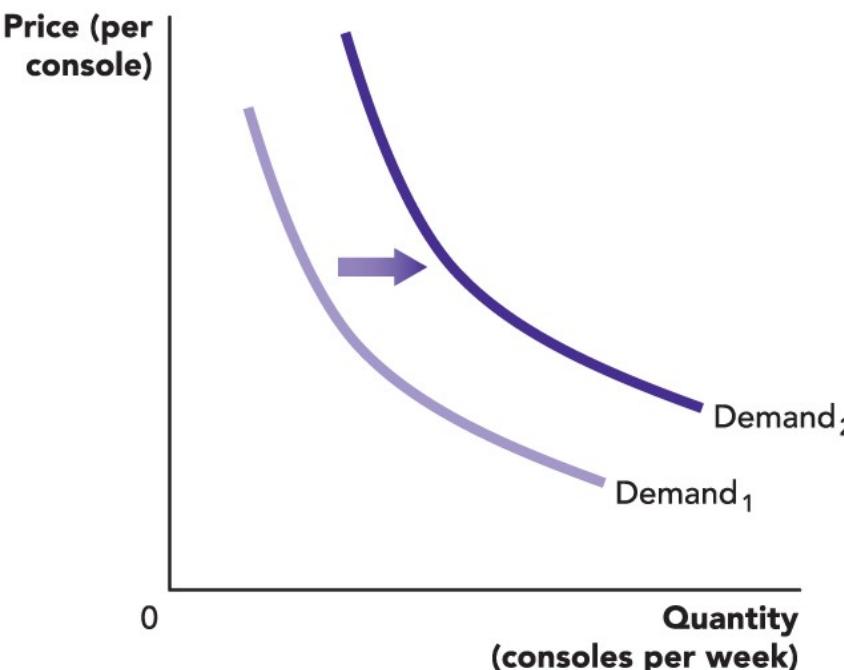
- A change in the price of a good does *not* shift the demand curve for that good.
- The demand curve is based on the value of marginal utility.
- If the change affects the highest price consumers are willing to pay for each unit of a good, the demand curve will shift.
- The market demand curve also shifts when the number of consumers changes.

## STEP 2: DETERMINE THE DIRECTION OF THE SHIFT

- If consumers are willing to pay more for each unit or if the number of consumers increases, then demand increases, and the demand curve shifts right.
- If the price consumers are willing to pay decreases or if the number of consumers decreases, then demand decreases, and the demand curve shifts left.
- An increase in price causes movement up the curve, while a decrease in price causes movement down the curve.

## STEP 3: DRAW THE GRAPH SHOWING THE SHIFT

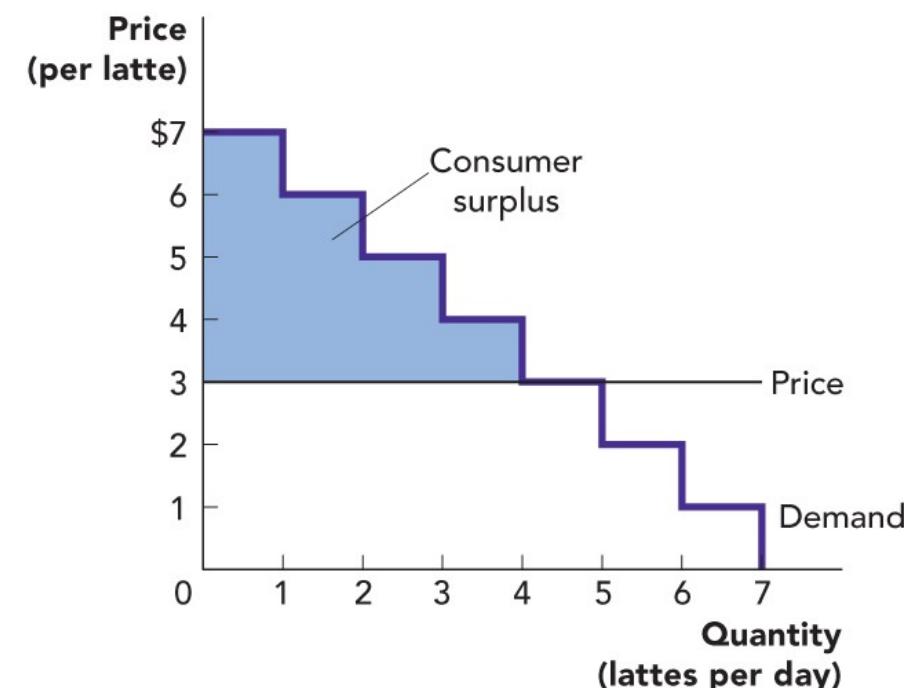
- In many cases, you will not have enough information to draw an exact demand curve.
- Simply draw a downward-sloping line, then draw the shift or the movement on the same graph.



## LEARN BY DOING: PRACTICE QUESTION 2

Suppose that the price per latte decreases from \$3 to \$2.  
What is the change in consumer surplus?

- a) \$0
- b) \$5
- c) \$10
- d) \$15



# LEARN BY DOING: PRACTICE QUESTION 2

## (Answer)

Suppose that the price per latte decreases from \$3 to \$2.  
What is the change in consumer surplus?

- a) \$0
- b) \$5 (**correct answer**)
- c) \$10
- d) \$15

