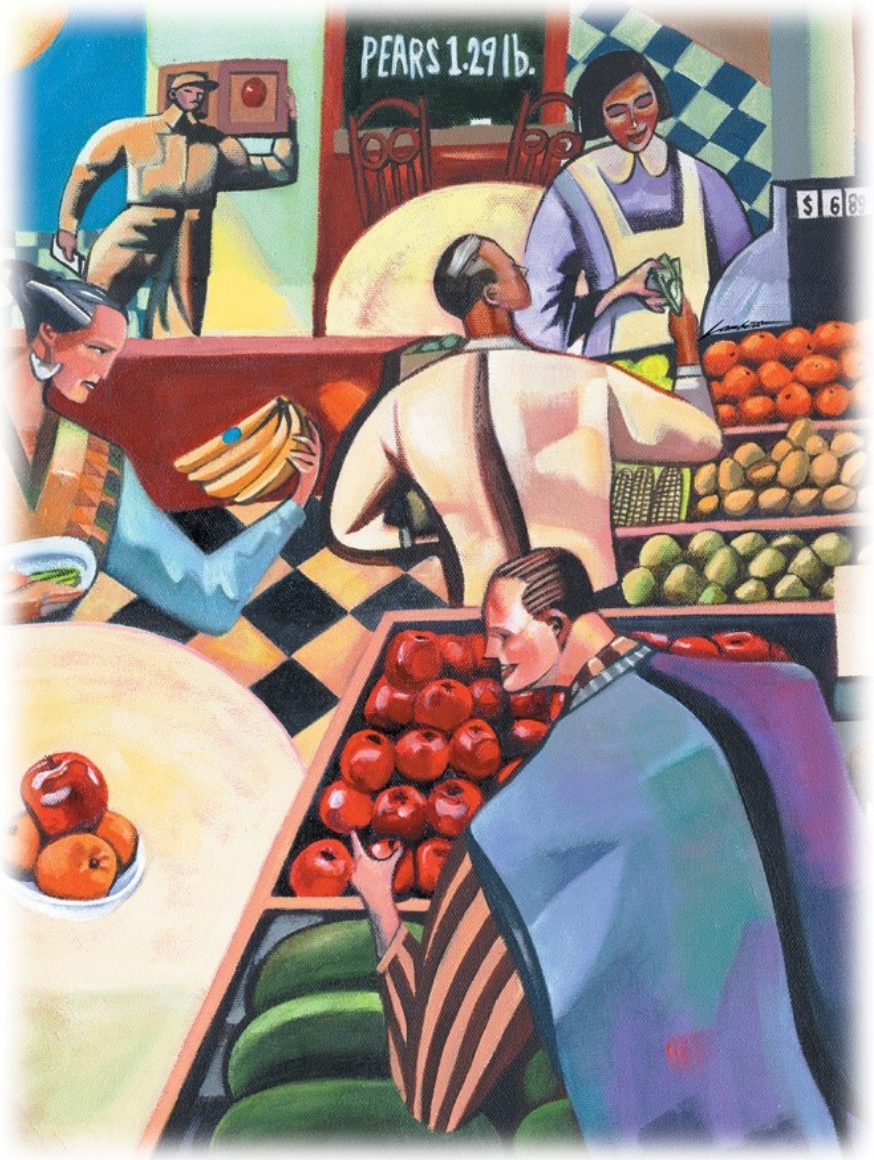


Supply and Demand

How Markets Work?

Learning objectives..

➔Examine what determines the demand for a good in a competitive market.

➔Examine what determines the supply of a good in a competitive market.

➔See how supply and demand together set the price of a good and the quantity sold.

➔Consider the key role of prices in allocating scarce resources.

DEMAND

- *Quantity Demanded* refers to the *amount* (quantity) of a good that *buyers* are *willing* to purchase at alternative *prices* for a given *period*.

Determinants of Demand

- ***What*** factors determine how much ice cream / or which ice cream you will buy?

Product's Own Price
Consumer Income
Prices of Related Goods
Tastes
Consumer Expectations
Population
Advertising

The Demand Function

- An equation representing the demand curve

$$Q_x^d = f(P_x, P_Y, M, H,)$$

  - Q_x^d = quantity demand of good X.
  - P_x = price of good X.
  - P_Y = price of a substitute good Y.
  - M = income.
  - H = any other variable affecting demand

Income

- As income increases, the demand for a normal good will increase.
- As income increases, the demand for an inferior good will decrease.

Prices of Related Goods

- When a fall in the price of one good reduces the demand for another good, the two goods are called substitutes.

- When a fall in the price of one good increases the demand for another good, the two goods are called complements.

The Demand Schedule and the Demand Curve

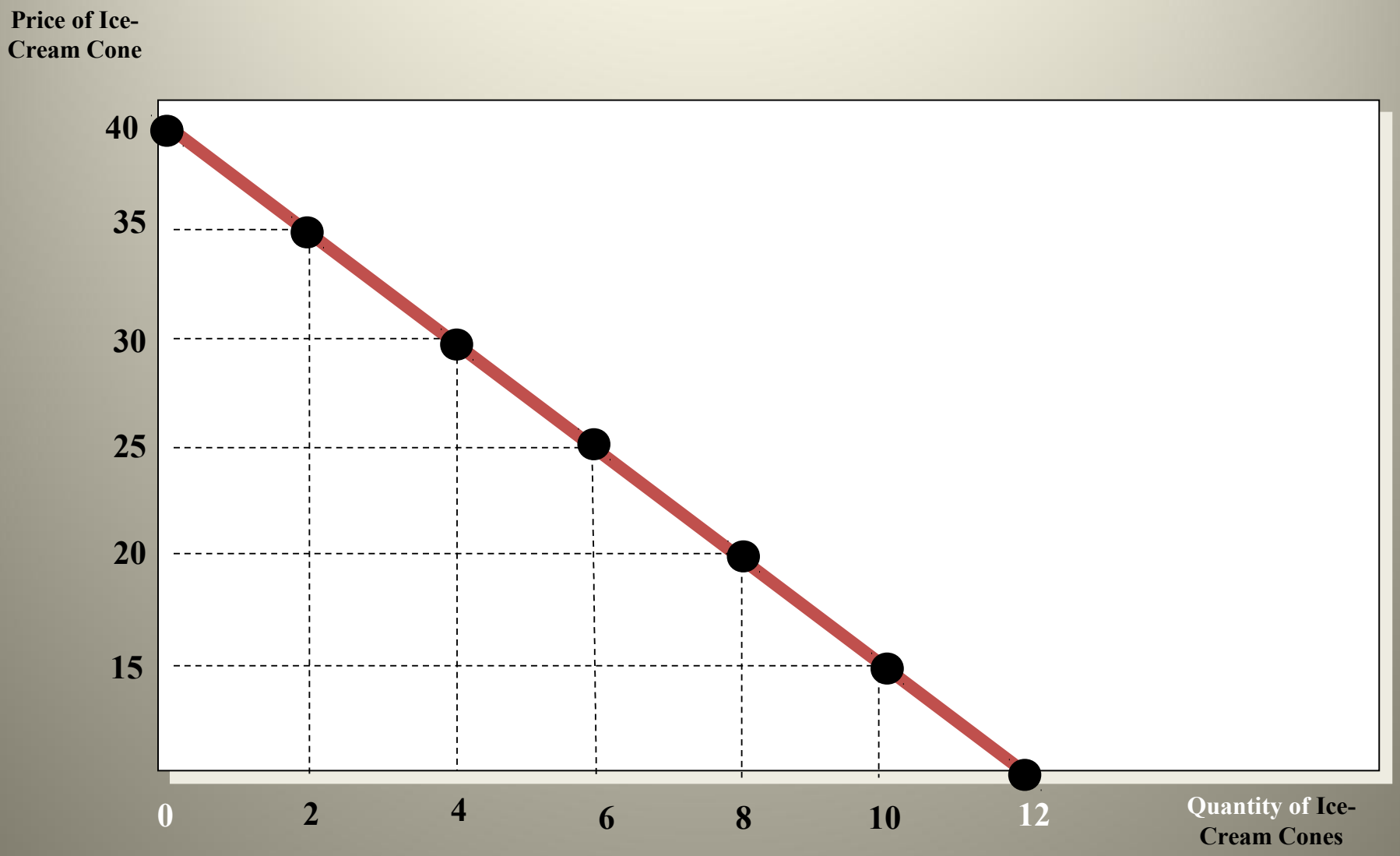
- The demand schedule is a table that shows the relationship between the price of the good and the quantity demanded.

- The demand curve is a graph of the relationship between the price of a good and the quantity demanded.

Table 1-1: Pooja's Demand Schedule

Price of Ice-cream Cone	Quantity of cones Demanded
15	12
20	10
25	8
30	6
35	4
40	2
50	0

Figure 1-1: Pooja's Demand Curve



Market Demand Schedule

- Market demand is the sum of all individual demands at each possible price.
- Graphically, individual demand curves are summed horizontally to obtain the market demand curve.
- Assume the ice cream market has two buyers as follows…

Table 1-2: Market demand as the Sum of Individual Demands

Price of Ice-cream Cone (Rs)	Pooja		Tej		Market
15	12	+	7	=	19
20	10		6		16
25	8		5		13
30	6		4		10
35	4		3		7
40	2		2		4
45	0		1		1

Exceptions to the Law of Demand

- Snob effect / Veblen Effect: luxury goods give snob appeal.
- Inferior goods/ Giffen goods:
- Absolute necessities.
- Irrational Behaviour / Addictions

The linear Demand equation

- $Qd = a - bP$.
- Dependant variable = Qd
- Independent variable = P
- a, b are constants
- b= slope , measures the change in demand due to a change in price.
- a = x-intercept , or the quantity demanded when P=0.

Shifts in the Demand Curve versus Movements Along the Demand Curve

Figure 1-2 a): A Shifts in the Demand Curve

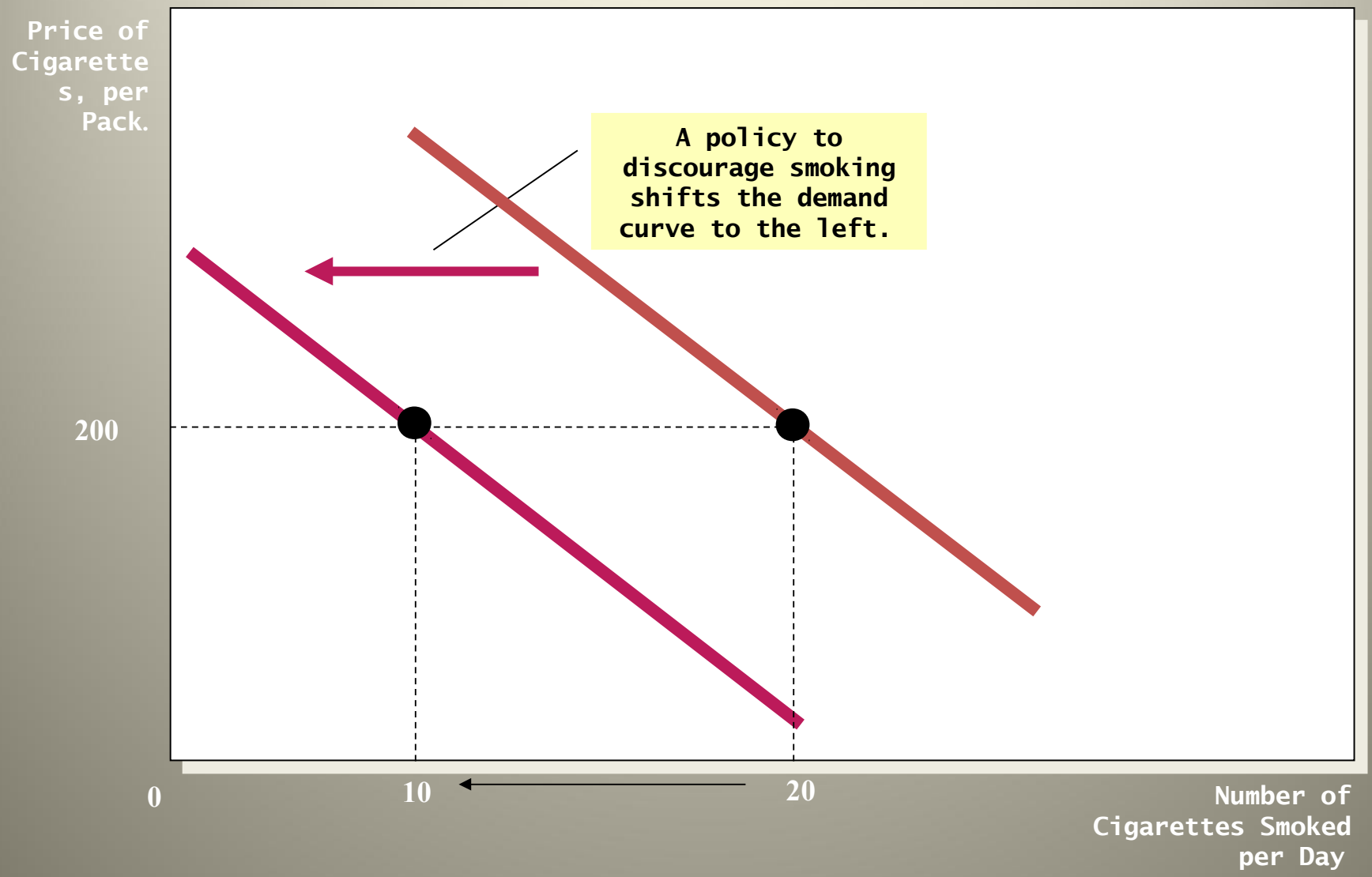
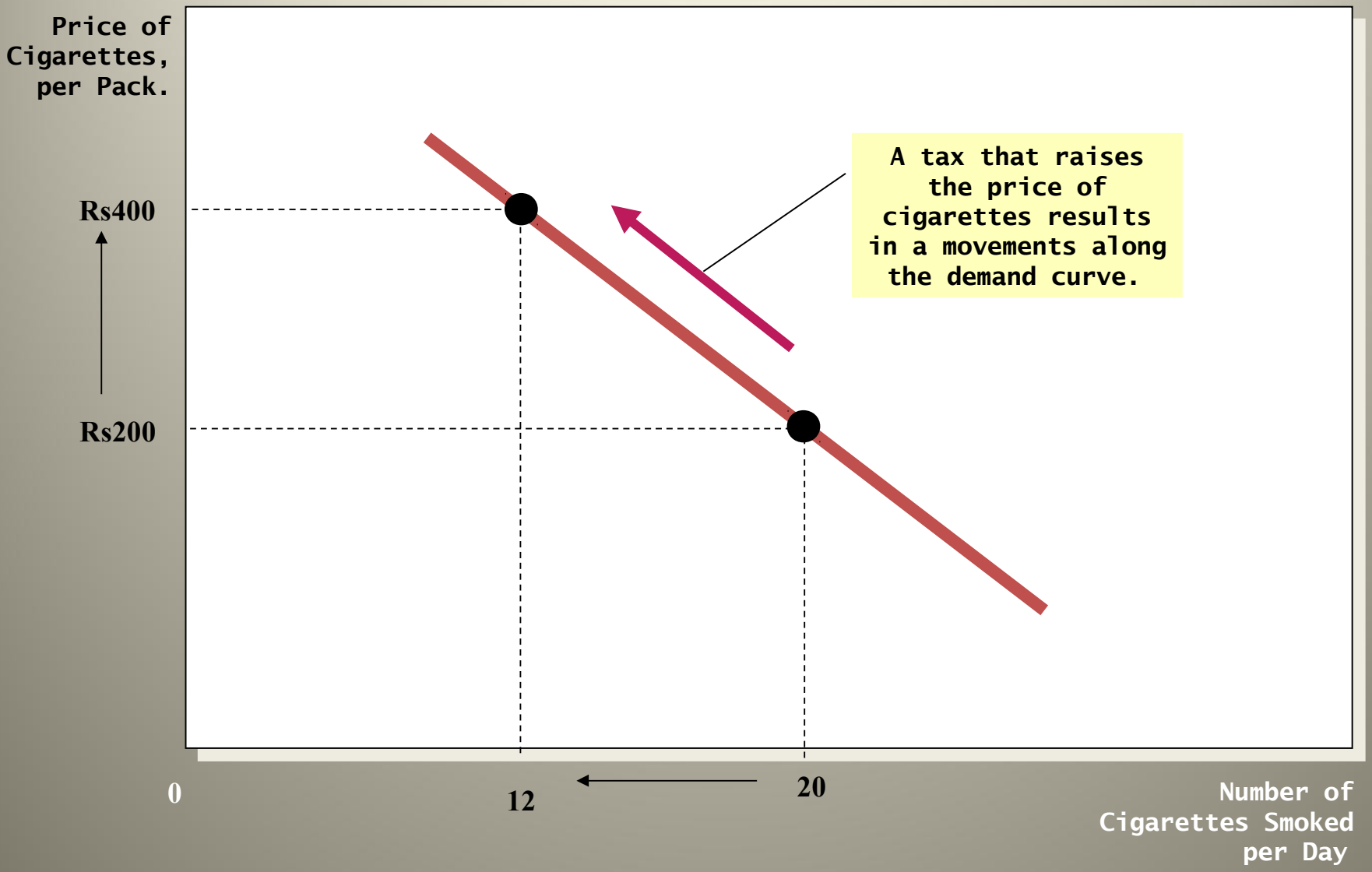


Figure 1-2 b): A Movement Along the Demand Curve



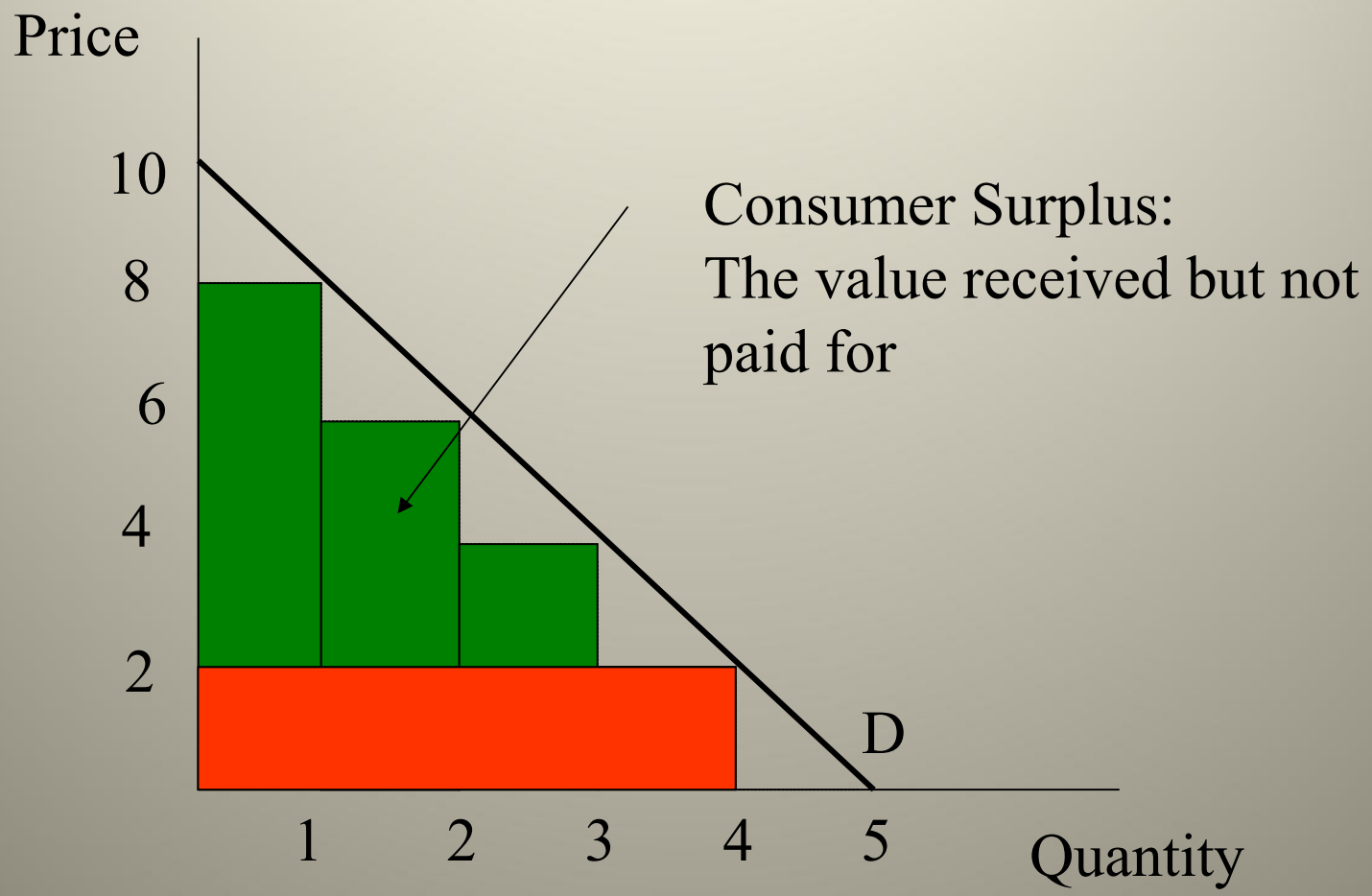
I got a great deal!= Consumer Surplus

- Barbeque Nation offers a lot of bang for the buck!
- The Shopper's stop sale provides good value.
- Total value greatly exceeds total amount paid.
- Consumer surplus is large.

I got a lousy deal!

- That car dealer drives a hard bargain!
- I almost decided not to buy it!
- They tried to squeeze the very last cent from me!
- Total amount paid is close to total value.
- Consumer surplus is low.

Consumer Surplus: The Discrete Case



SUPPLY

- Quantity Supplied refers to the amount (quantity) of a good that sellers are willing to make available for sale at alternative prices for a given period.

Determinants of Supply

- What factors determine how much ice cream you are willing to offer or produce?

Product's Own Price
Prices of Related goods in Production
Input prices
Technology
Expectations
Number of sellers
Taxes and subsidies

The Supply Function

- An equation representing the supply curve:

$$Q_x^S = f(P_x, P_R, W, H,)$$

  - Q_x^S = quantity supplied of good X.
  - P_x = price of good X.
  - P_R = price of a related good
  - W = price of inputs (e.g., wages)
  - H = other variable affecting supply

Price

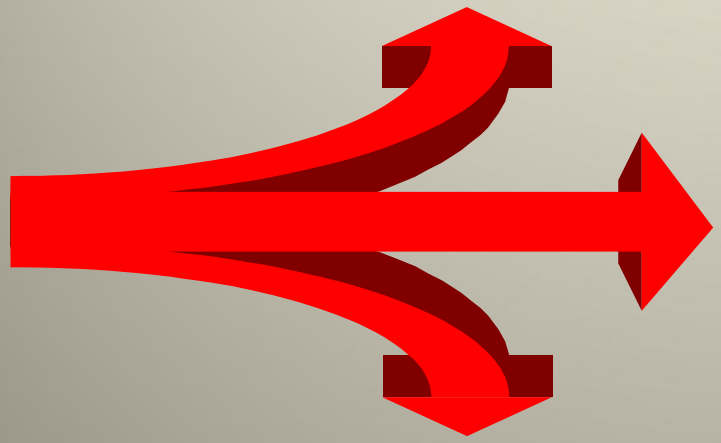
Law of Supply

- The law of supply states that, other things equal, the quantity supplied of a good rises when the price of the good rises.

Table 4-4: Ben's Supply Schedule

Price of Ice-cream Cone (Rs)	Quantity of cones Supplied
15	0
20	0
25	1
30	2
35	3
40	4
45	5

Supply Shifters

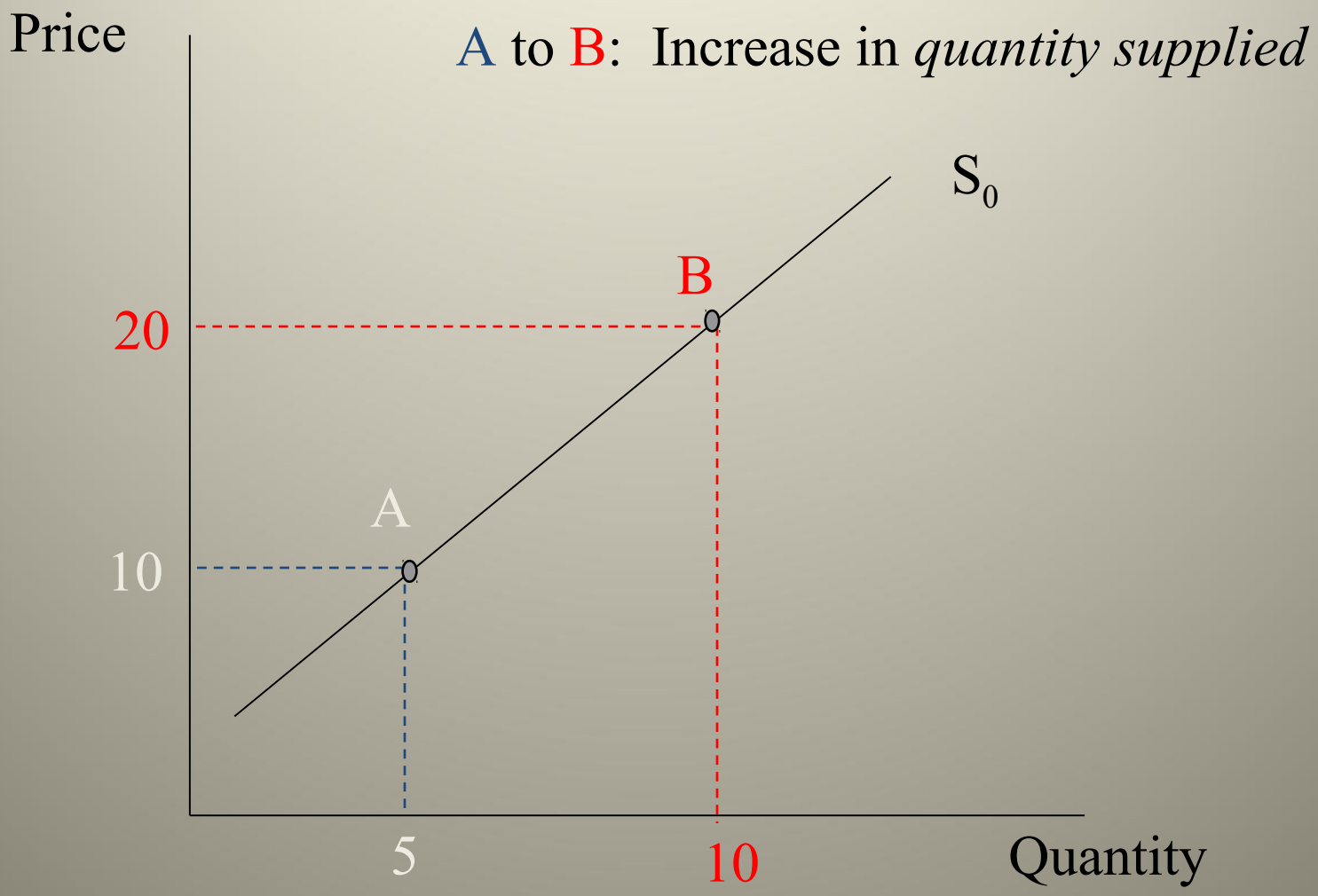


- Input prices
- Technology or government regulations
- Number of firms
- Substitutes in production
- Taxes
- Producer expectations

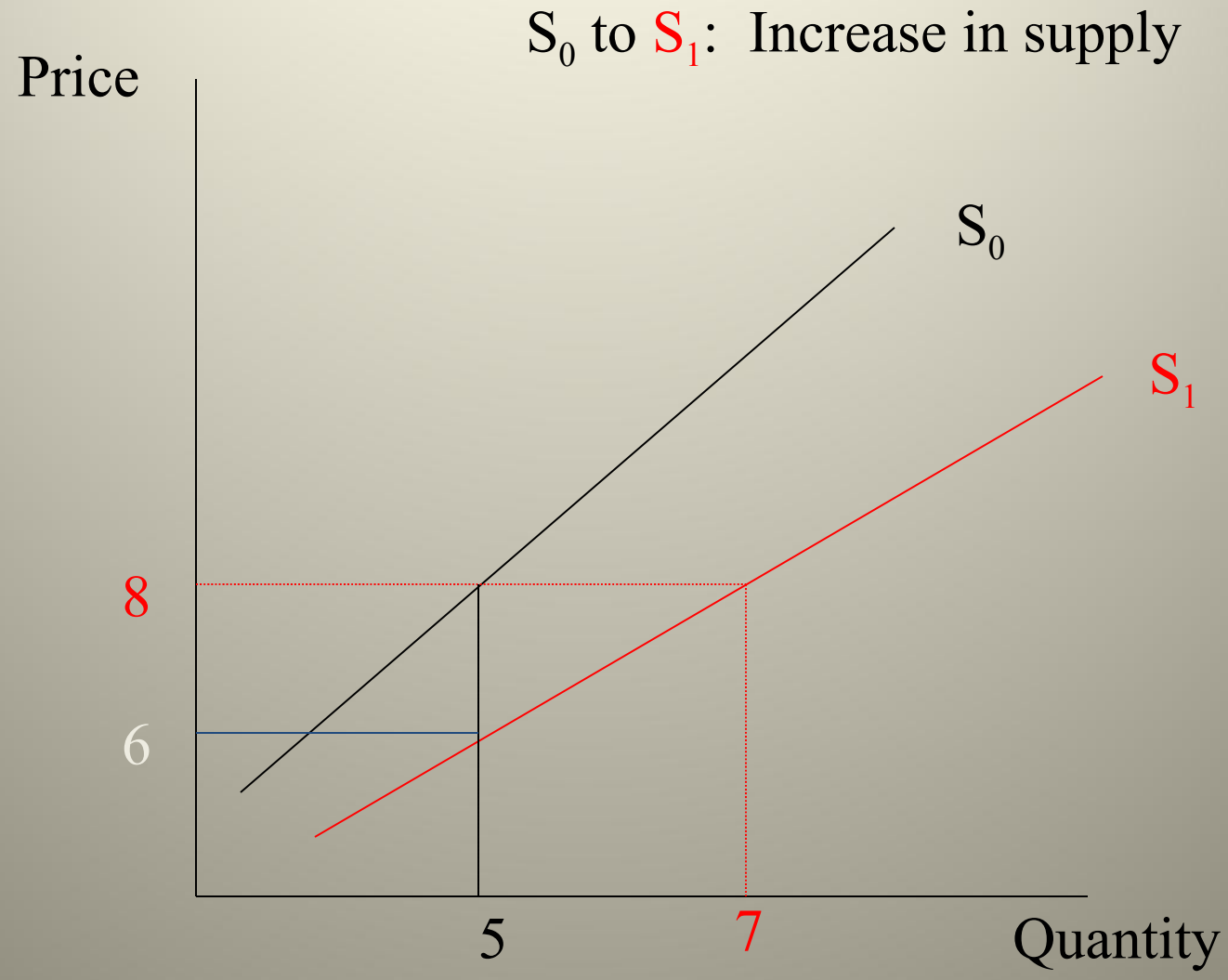
The linear supply equation

- Supply might be represented by a linear supply function such as
- Q(s) = a + bP
- Q(s) represents the supply for a good
- **In-class Activity:** Use the linear supply equation for haircuts in your town,
- Qs=-100+20P to answer the questions that follow:
- Create a schedule showing the supply of haircuts in your town at prices of Rs10, Rs20, Rs30, Rs40, and Rs50.
- Calculate the price-intercept of your supply curve, then use the data from your supply schedule to plot a supply curve for haircuts.

Change in Quantity Supplied



Change in Supply



Market Supply Schedule

- Market supply is the sum of all individual supplies at each possible price.
- Graphically, individual supply curves are summed horizontally to obtain the market demand curve.
- Assume the ice cream market has two suppliers as follows…

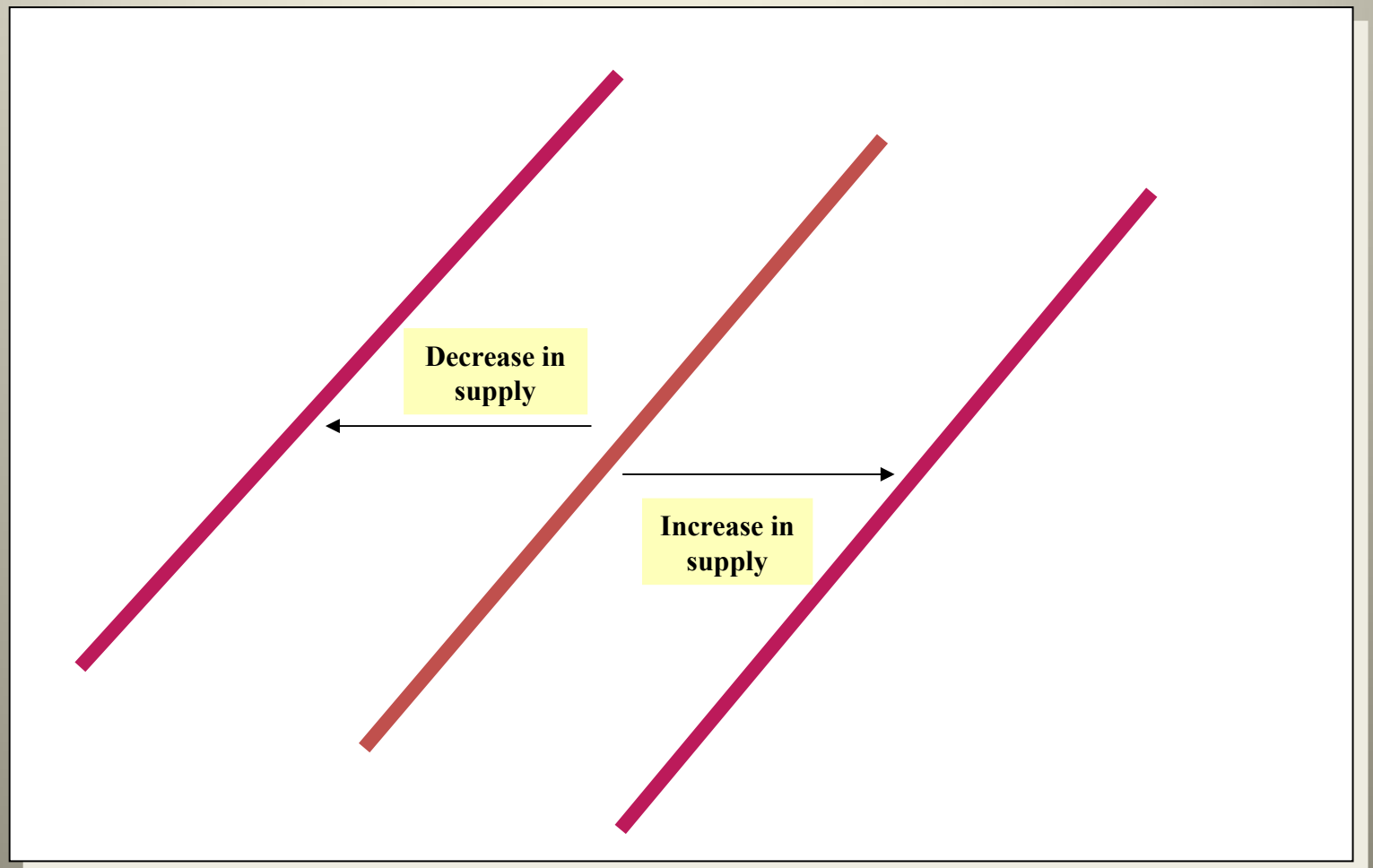
Table 4-5: Market supply as the Sum of Individual Supplies

Price of Ice-cream Cone (Rs)	Ben		Nicholas		Market
15	0	+	0	=	0
20	0		0		0
25	1		0		1
30	2		2		4
35	3		4		7
40	4		6		10
45	5		8		13

Table 4-6: The Determinants of Quantity Supplied

Variable	A Change in This Variable . . .
Price	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

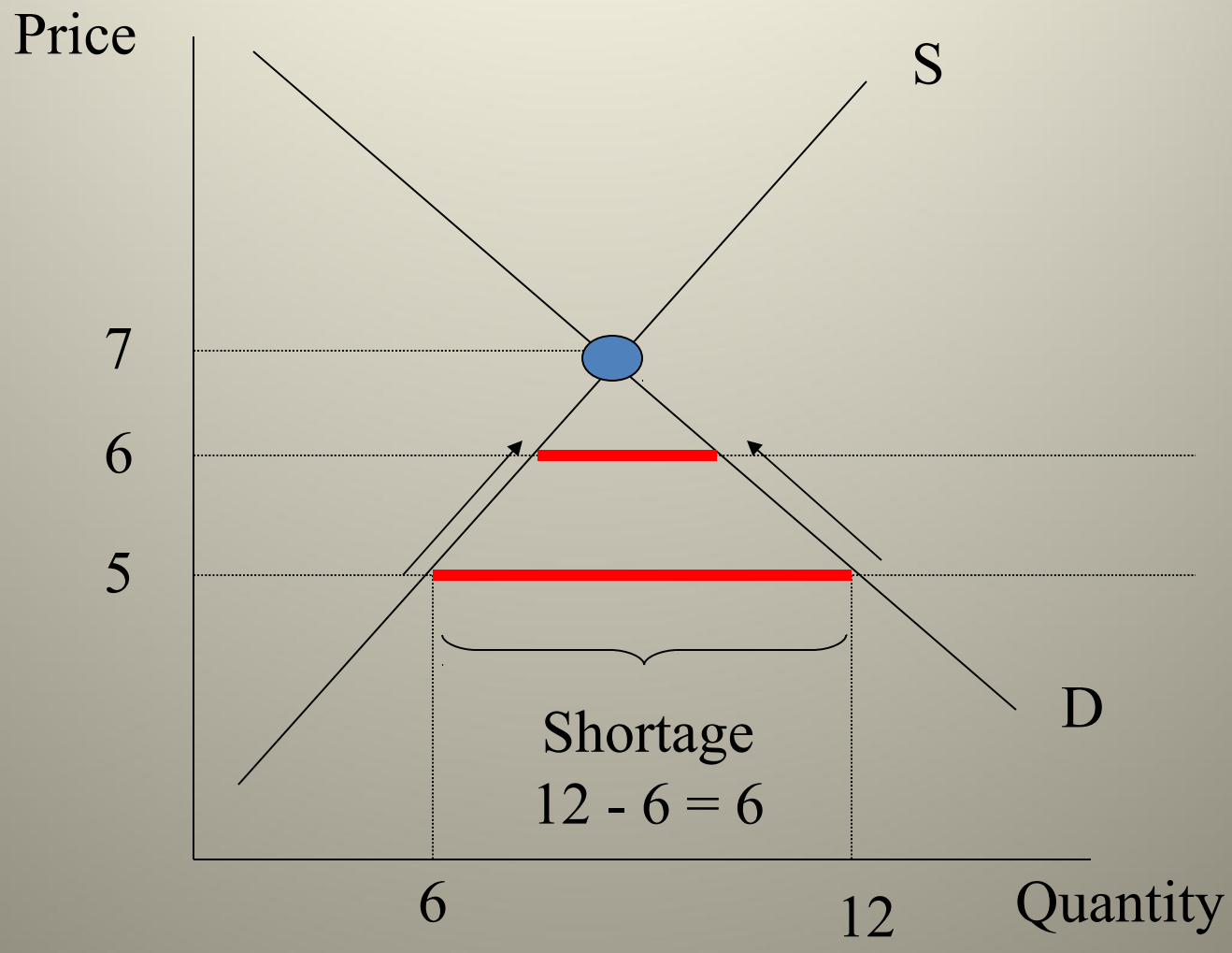
Figure 4-7: Shifts in the Supply Curve



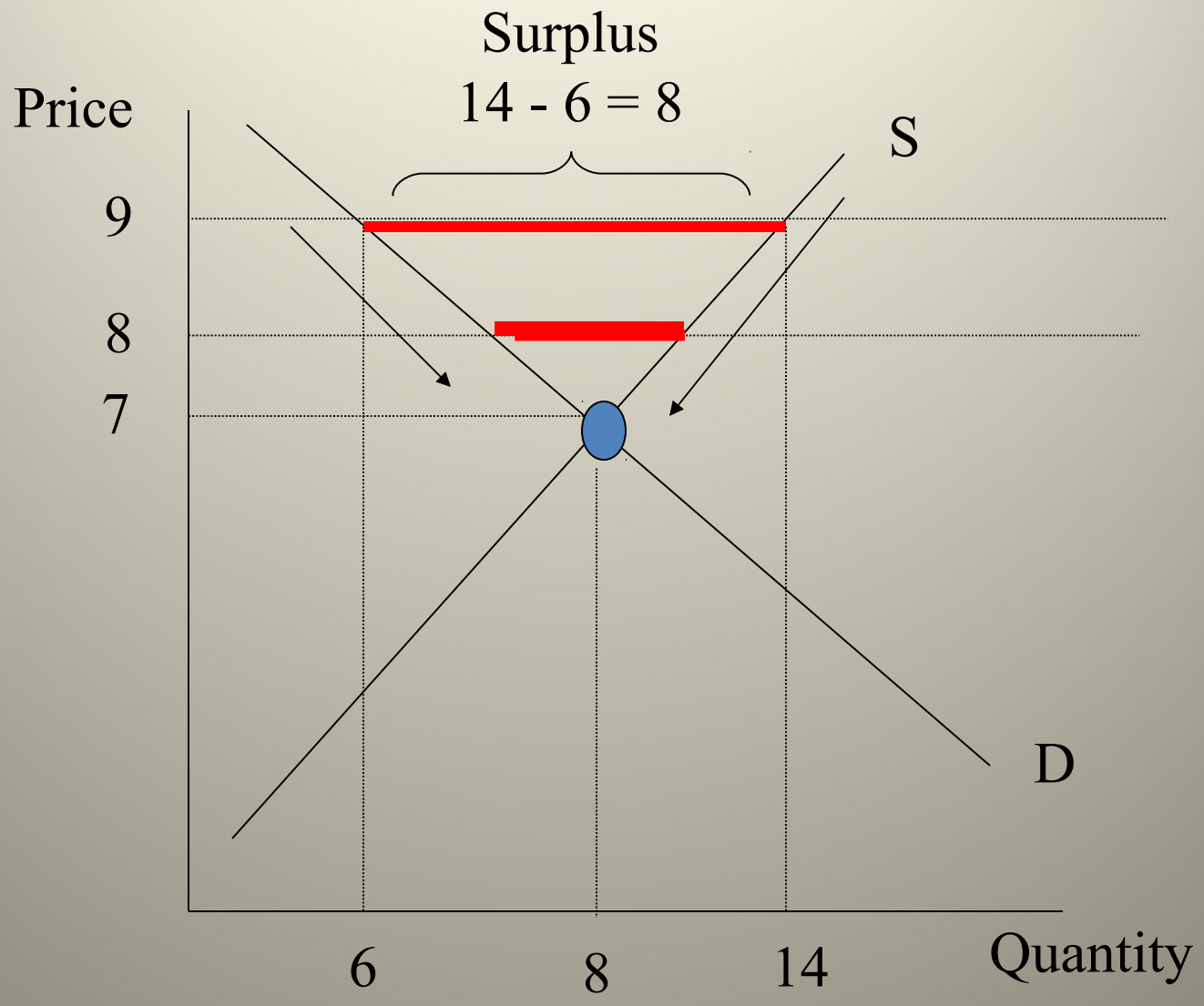
Market Equilibrium

- Balancing supply and demand
  - $Q_x^S = Q_x^d$
- Steady-state

If price is too low…



If price is too high…



Market equilibrium using equations:

- If we are looking at the market for cans of paint, for instance, and we know that the supply equation is as follows:
- $QS = -5 + 2P$ And the demand equation is:
- $QD = 10 - P$

- Find the equilibrium demand, supply, price.