NIS

PRICE EQUILIBRIUM
11.2A

Lesson 5

Learning Objectives

(1 min)

By the end of the lesson the learners will be able to :

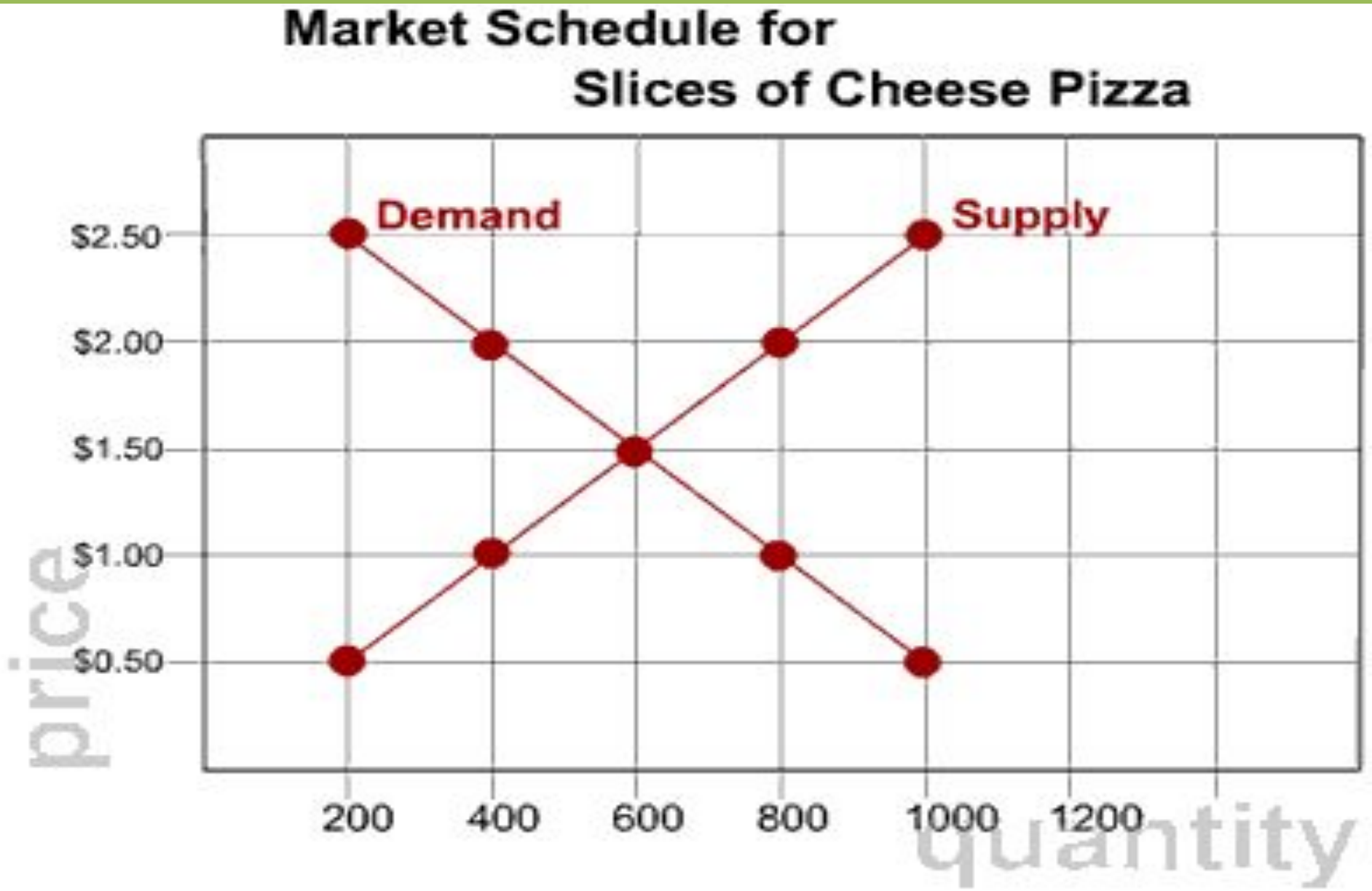
- **Define and understand the terms**
  - **Equilibrium Price**
  - **Change in equilibrium price**
- **Analyse and apply the concept to real world situation .**

(2 min)

Supply and Demand are the two fundamental forces that guide an economy. Many games feature these two forces in either a self-contained or player-driven fashion.

The concept of Supply and Demand came into widespread usage and acceptance due to the writings of Adam Smith, specifically his *The Wealth of Nations*. Smith described the two forces as the driving factors-**Invisible hands** behind any economy, necessary for its survival.

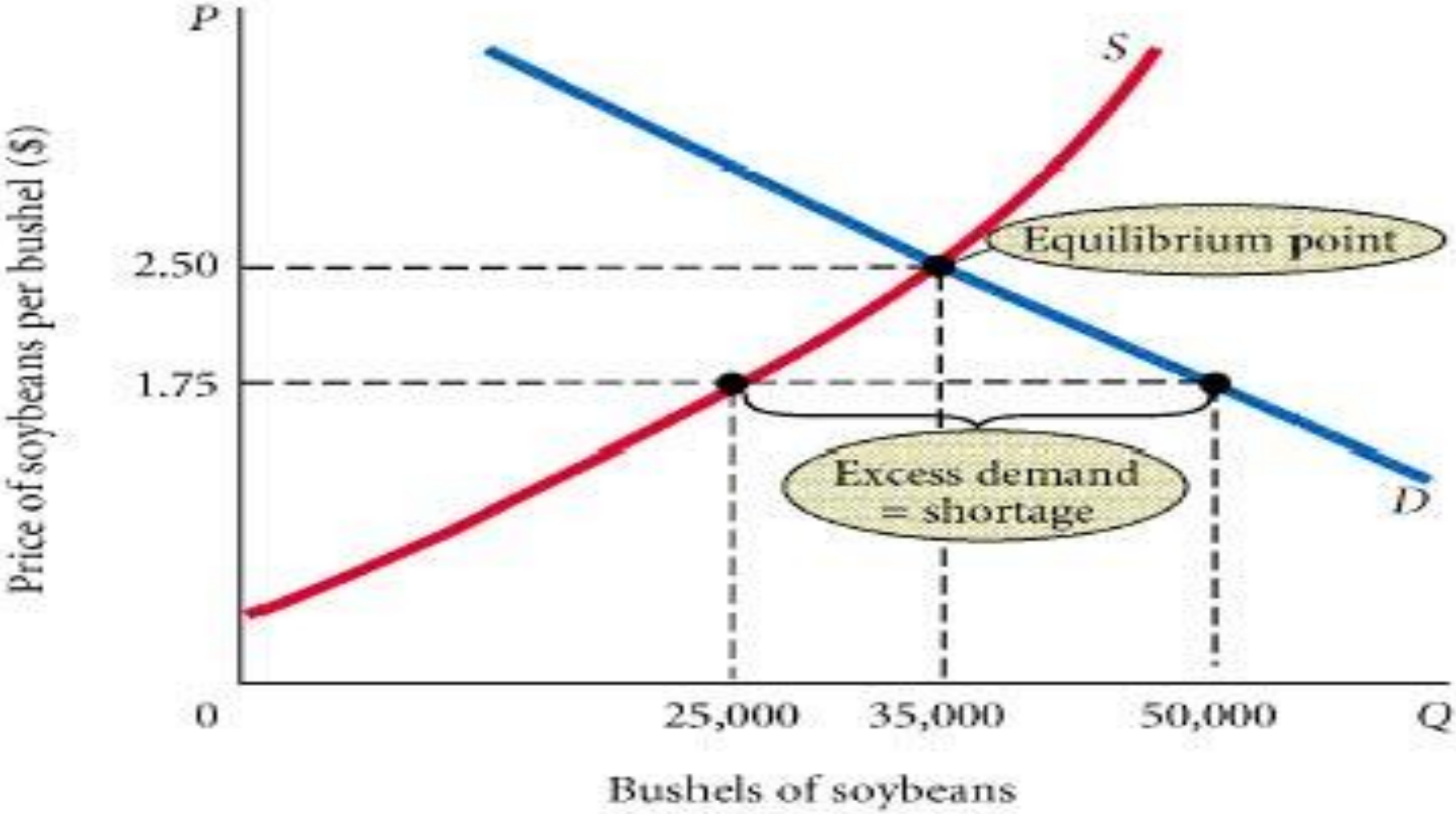
Price Equilibrium



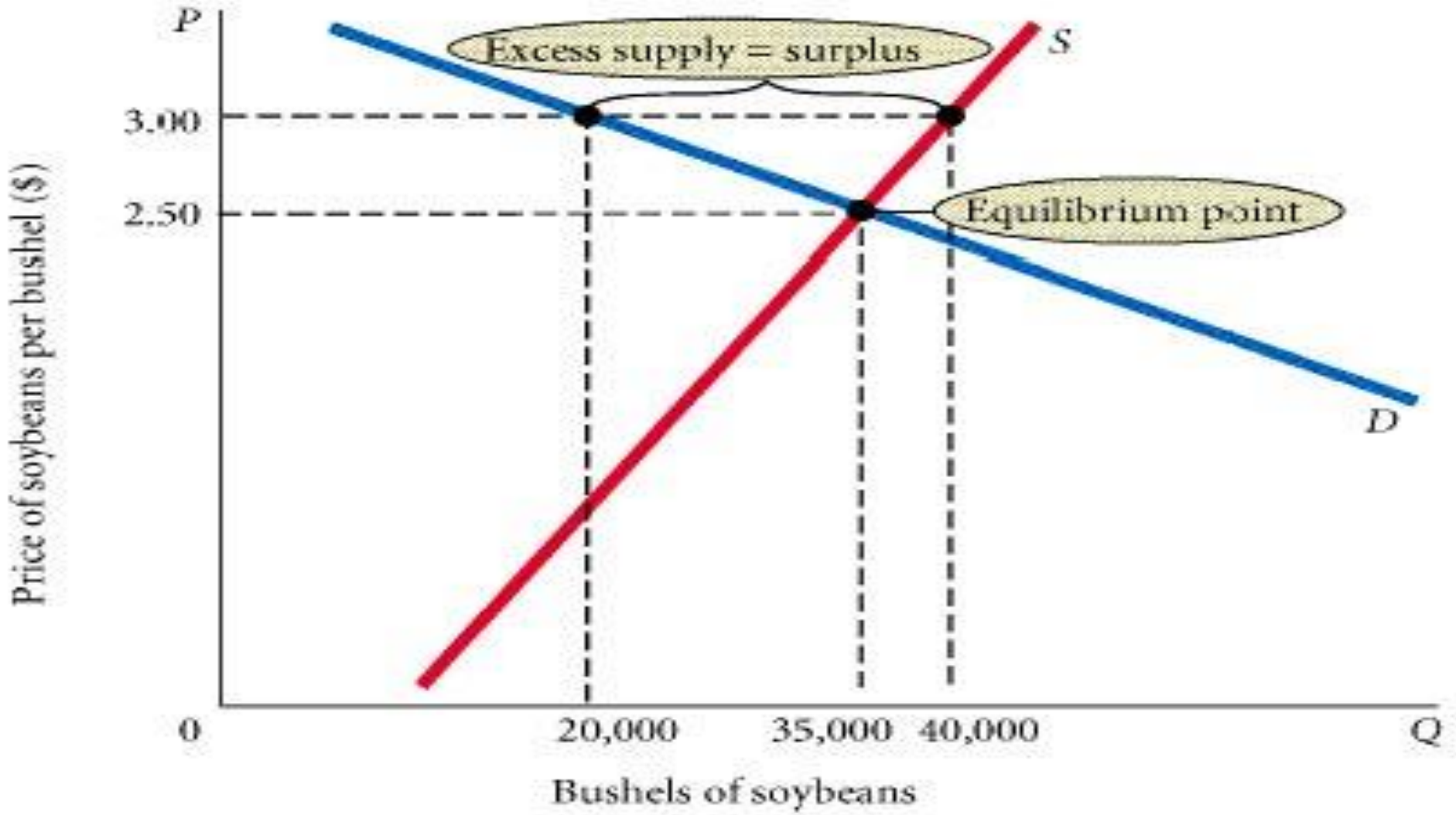
Price Equilibrium

Price Disequilibrium

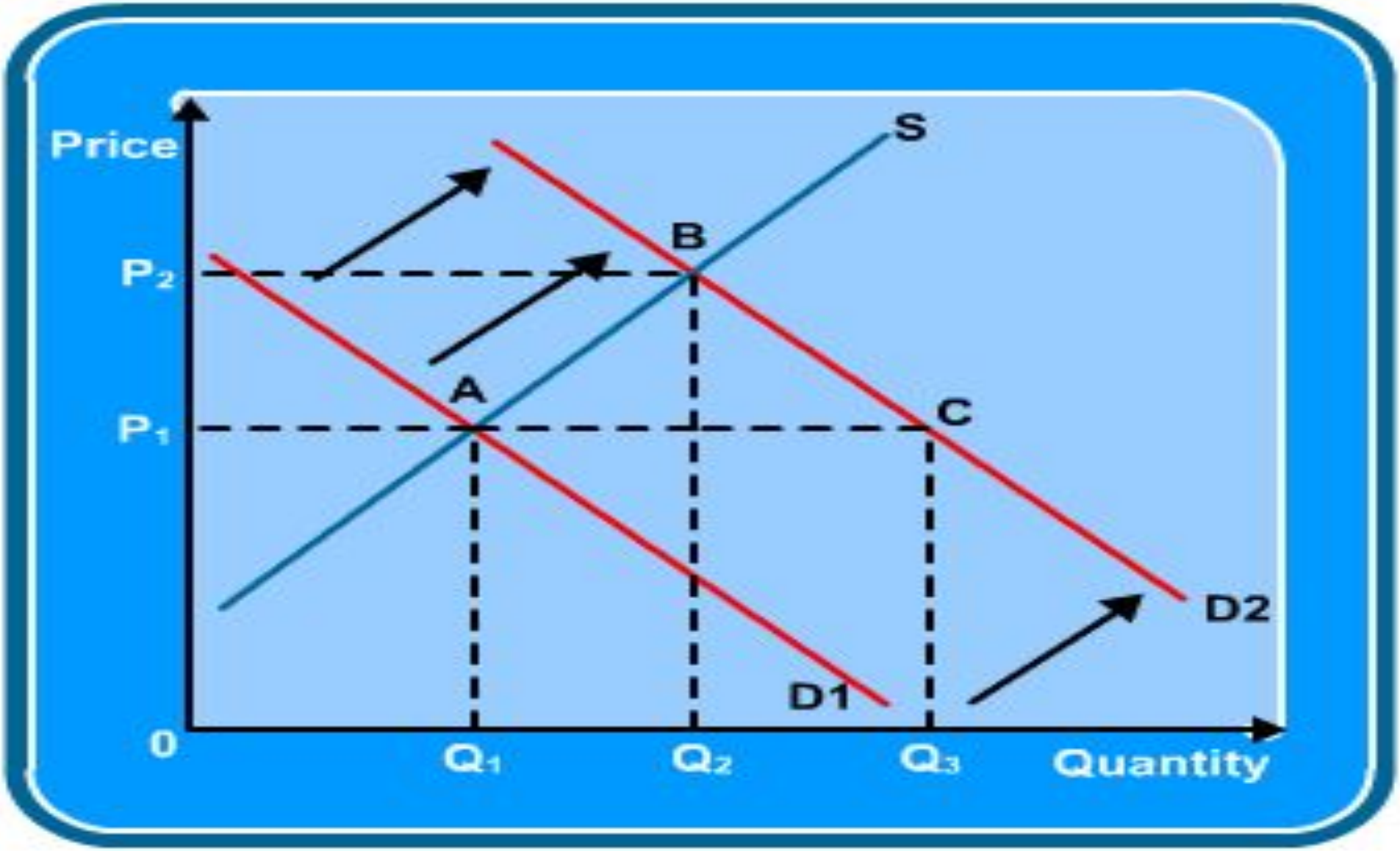
Excess Demand/ Shortage



Excess Supply/Surplus



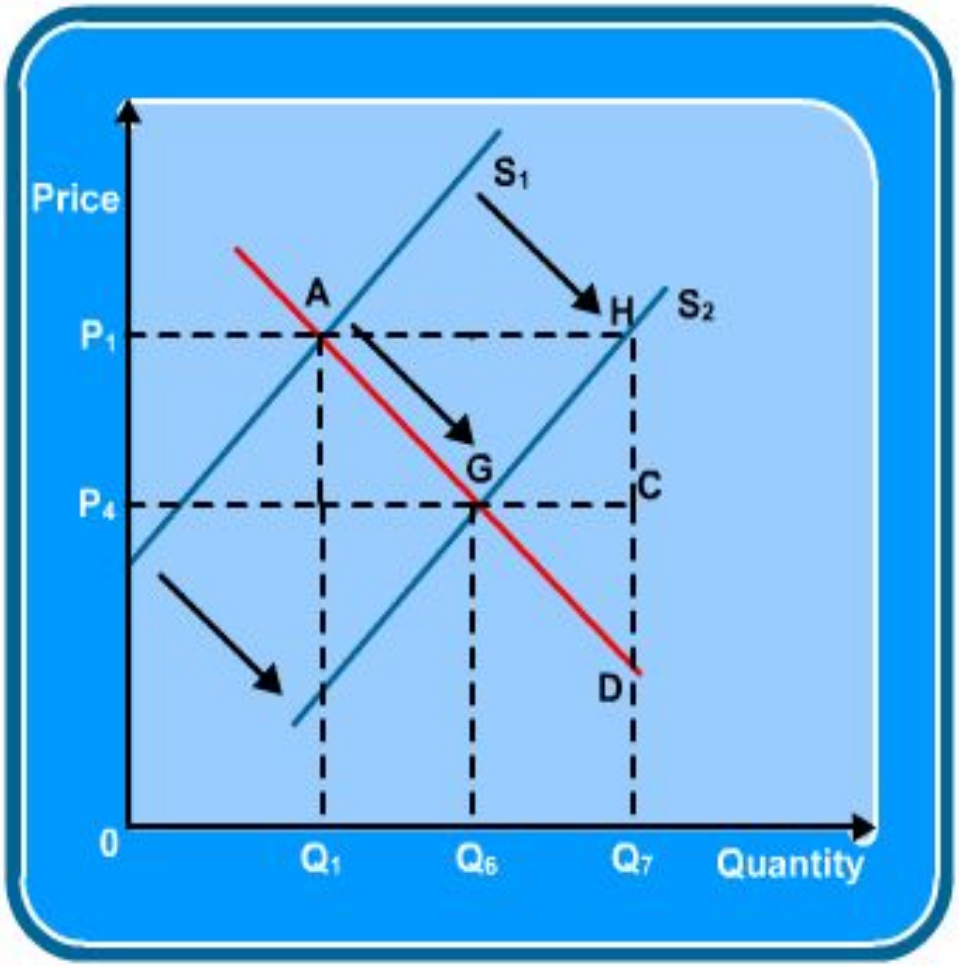
Shifts in supply and demand



The original equilibrium price is P_1, quantity Q_1. We are at a 'state of rest'. Now assume that one of the determinants of demand changes. For instance, there may have been an increase in advertising in the industry. This will shift the demand curve to the right, ceteris paribus (D_2). The price will not stay at P_1 for much longer. We have an **excess demand** situation (A to C). This will cause the price to be bid up, and this will keep going until we reach the new equilibrium price where the new demand curve crosses the supply curve (at point B). Note that there has been a shift in the demand curve, but only a **movement along** the supply curve. None of the determinants of supply have changed.

This process is called the '**price mechanism**'. we can see that the price itself has the most important role. The rising price has acted as a **signal** to possible new firms who might want to join this expanding industry. It acted as an **incentive**, encouraging existing firms to produce more (the movement along the supply curve). It also acted as a sort of **rationing device** in the sense that it put off some existing buyers and helped make sure that demand matched supply.

Supply curve shifts to the right

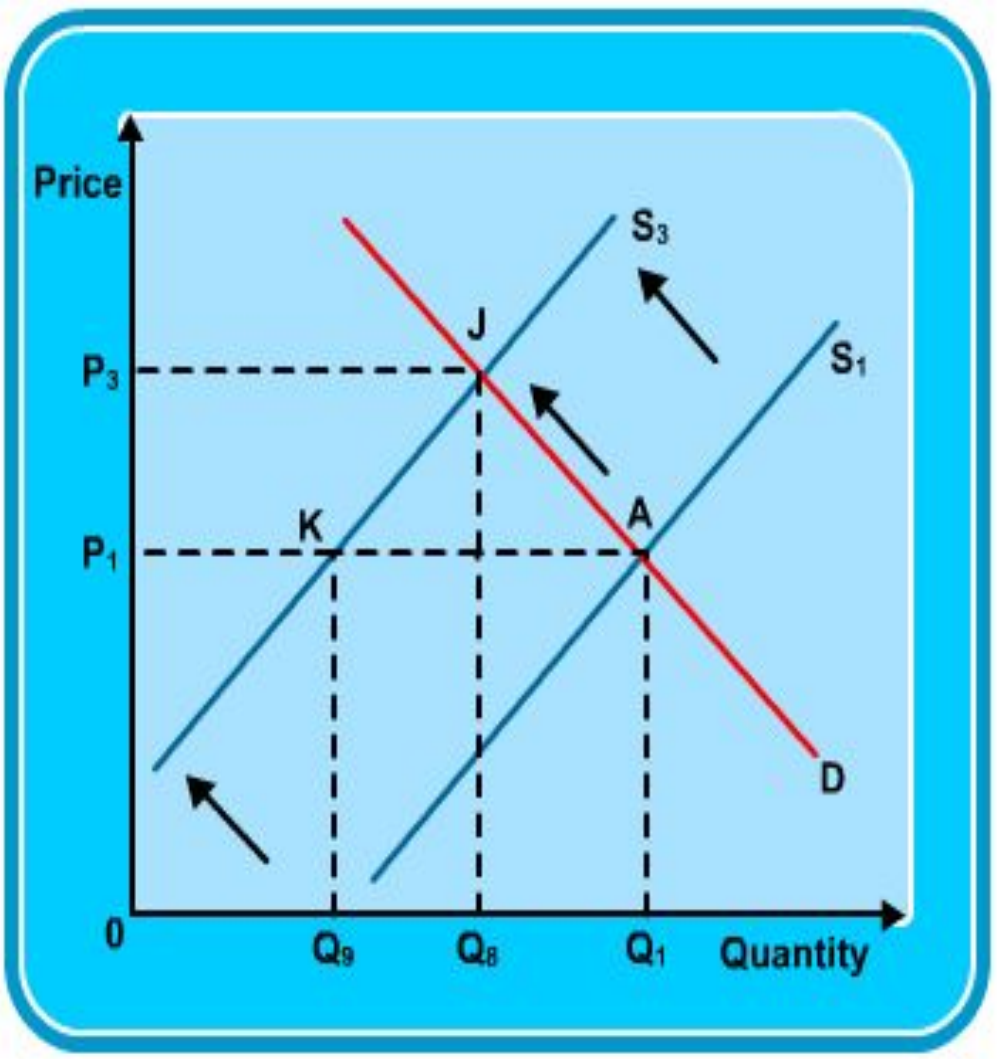


Why might the supply curve shift to the right?

- Fall in wage costs
- Fall in raw material costs
- Improved labour productivity
- Reduced indirect taxes
- Increased subsidies
- Improved technology
- Entry of new firms into the industry

Initial equilibrium: P_1, Q_1 (A)
New equilibrium: P_4, Q_6 (G)

Supply curve shifts to the left

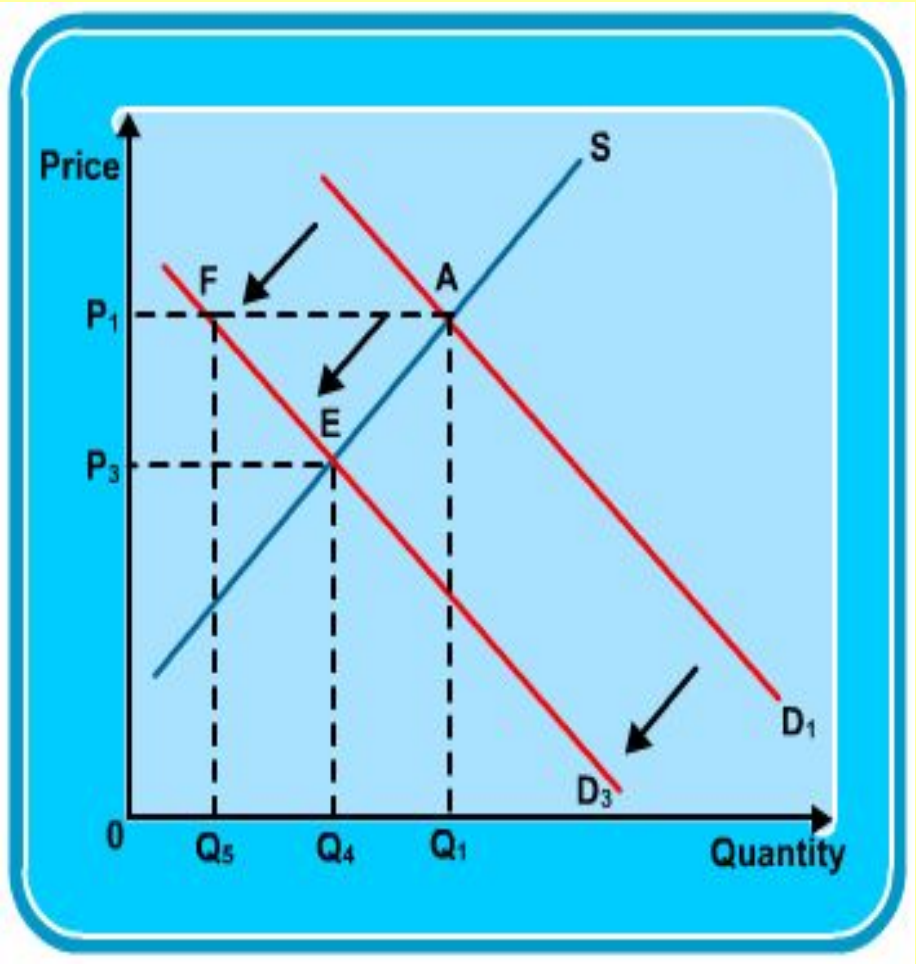


Why might the supply curve shift to the left?

- Rise in wage costs
- Rise in raw material costs
- Reduced labour productivity
- An increase in indirect taxes
- Reduced, or elimination of, subsidies
- The exit of existing firms from the industry

Initial equilibrium: P_1, Q_1 (A)
New equilibrium: P_5, Q_8 (J)

Demand curve shifts to the left

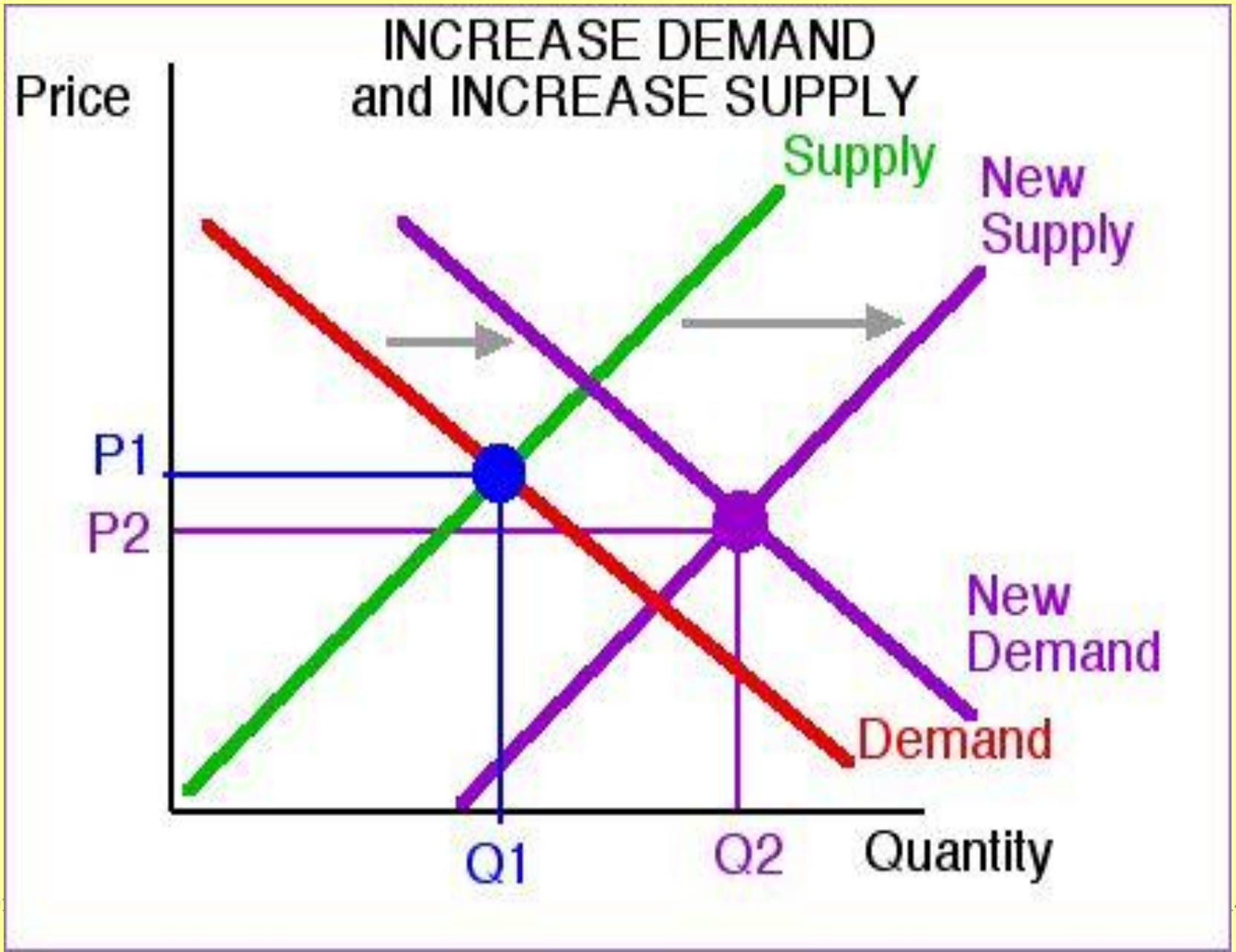


Why might the demand curve shift to the left?

- Fall in real incomes
- Reduced preferences for the good
- Fall in the price of a substitute
- Rise in the price of a complement
- Fall in population numbers
- Reduced advertising and marketing

Initial equilibrium: P_1, Q_1 (A)
New equilibrium: P_3, Q_4 (E)

New Price Equilibrium



In Class Activity

For each of the following scenarios, use a supply and demand diagram to illustrate the effect of the given shock on the equilibrium price and quantity in the specified competitive market. Explain whether there is a shift in the demand curve, the supply curve, or neither.

1. An unexpected temporary heat wave hits the East Coast. Show the effect in the ice cream market in New England.
2. The government introduces a tax on ice cream which is paid by producers. What is the effect in the ice cream market?
3. China and Mexico are major producers of textiles. Workers in Mexico decide to go on strike. Show the effect on the market for Mexican textiles.
4. Show the effect of the situation described in (c) on the market for Chinese textiles.
5. Suppose the government imposes a price cap on bottled water. Show the effect in the bottled water market.

Recap of Today's Lesson

Reflection

NIS

PRICE EQUILIBRIUM FUNCTION 11.2A

Lesson 6

Learning Objectives

(1 min)

By the end of the lesson the learners will be able to :

- **Define and understand the terms**
  - **Equilibrium Price function**
  - **Plot equilibrium price from given demand and supply function**
- **Analyse and apply the concept to real world situation .**

Equilibrium Price Function

Demand Function

$Q_d = a - bP$

Q_d = quantity of a good demanded

P is the price of the good

a = vertical intercept (Max QD)

b = the slope of the demand curve

Supply Function

$Q_s = c + dP$

Q_s = quantity of a good supplied

P = is the price of the good

c = vertical intercept (max supply)

d = the slope of the supply curve

In Class Activity

Consider the market for apple juice. In this market, the supply curve is given by $QS = 10PJ - 5PA$ and the demand curve is given by $QD = 100 - 15PJ + 10PT$, where J denotes apple juice, A denotes apples, and T denotes tea.

- Assume that PA is fixed at \$1 and $PT = 5$. Calculate the equilibrium price and quantity in the apple juice market.
- Suppose that a poor harvest season raises the price of apples to $PA = 2$. Find the new equilibrium price and quantity of apple juice. Draw a graph to illustrate your answer.
- Suppose $PA = 1$ but the price of tea drops to $PT = 3$. Find the new equilibrium price and quantity of apple juice.
- Suppose $PA = 1$, $PT = 5$, and there is a price ceiling on apple juice of $P^* = 5$. What is the excess demand for apple juice as a result? Draw a graph to illustrate your answer.

Recap of Today's Lesson

Reflection