

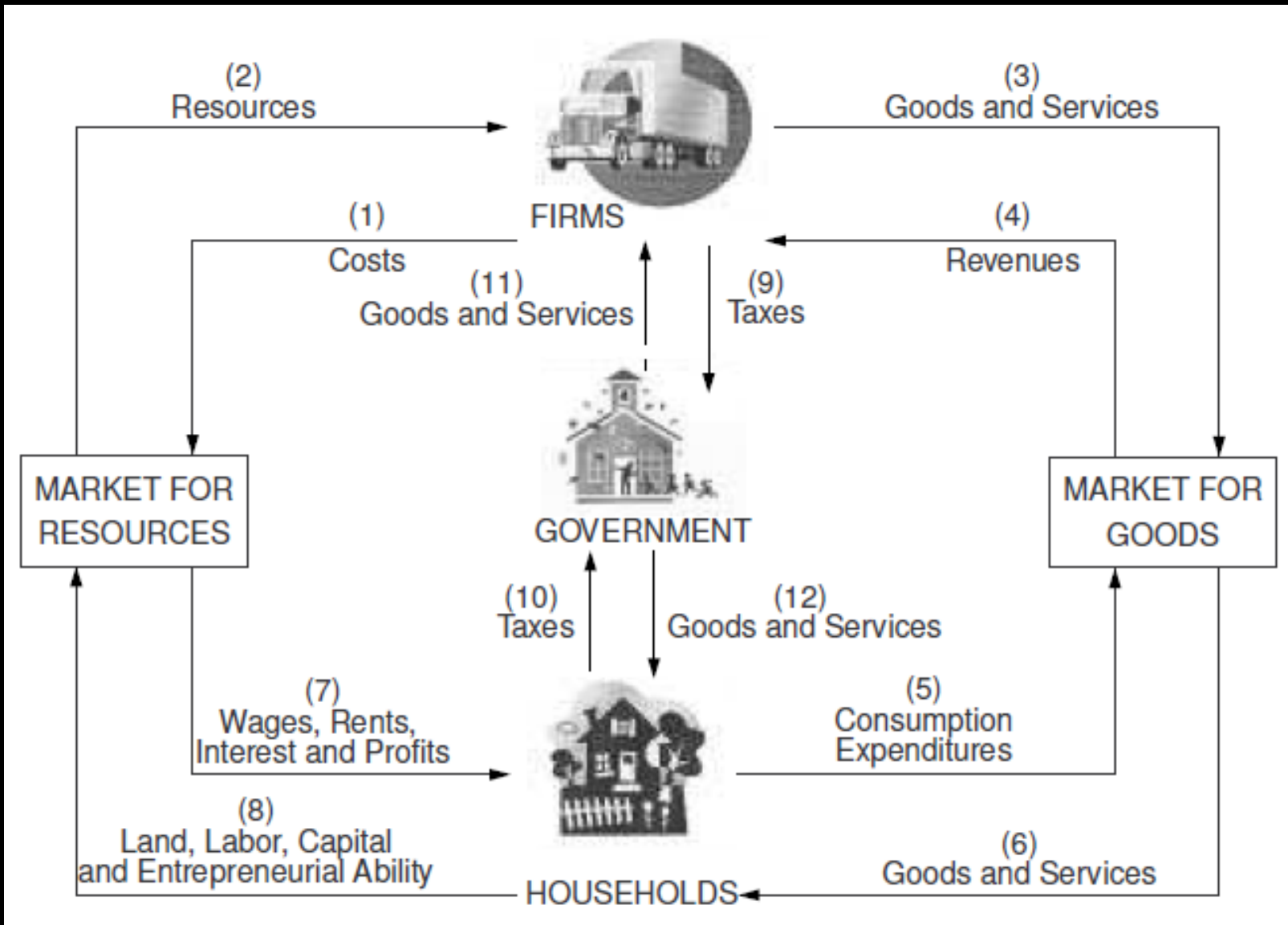
Unit

4

Factor Markets

Lessons 1 - 5

Figure 43.1, The Circular Flow of Resources, Households, Governments



Factor, or Resource, Markets

- The economic concepts are similar to those for product markets.
- The demand for a factor of production is derived from the demand for the good or service produced from this resource.
- A firm tries to hire additional units of a resource up to the point where the resource's **marginal revenue product** (MRP) is equal to its **marginal resource cost** (MRC).

Factor, or Resource, Markets

- In hiring labor, a perfectly competitive firm will do best if it hires up to the point where $MRP = \text{the wage rate}$.
 - Wages are the marginal resource cost of labor.
- If you want a high wage:
 - Make something people will pay a lot for.
 - Work for a highly productive firm.
 - Be in relatively short supply.
 - Invest in your human capital.

Factor, or Resource, Markets

- Real wages depend on productivity.
- Productivity depends on real or physical capital, human capital, labor quality and technology.

The Demand for a Resource: Perfect Competition in the Sale of the Product

(1) Units of Resource	(2) Total Product	(3) Marginal Physical Product (MPP) or $\Delta(2) / \Delta(1)$	(4) Product Price	(5) Total Revenue or (2) x (4)	(6) Marginal Revenue Product (MRP) or $\Delta(5) / \Delta(1)$
0	0		\$2	\$0	
1	7	7	2	14	\$14
2	13	6	2	26	12
3	18	5	2	36	10
4	22	4	2	44	8
5	25	3	2	50	6
6	27	2	2	54	4
7	28	1	2	56	2

The Demand for a Resource: Imperfect Competition in the Sale of the Product

(1) Units of Resource	(2) Total Product	(3) Marginal Physical Product (MPP) or $\Delta(2) / \Delta(1)$	(4) Product Price	(5) Total Revenue or (2) x (4)	(6) Marginal Revenue Product (MRP) or $\Delta(5) / \Delta(1)$
0	0		\$2.80	\$0	
1	7	7	2.60	18.20	\$18.20
2	13	6	2.40	31.20	13.00
3	18	5	2.20	39.60	8.40
4	22	4	2.00	44.00	4.40
5	25	3	1.85	46.25	2.25
6	27	2	1.75	47.25	1.00
7	28	1	1.65	46.20	-1.05

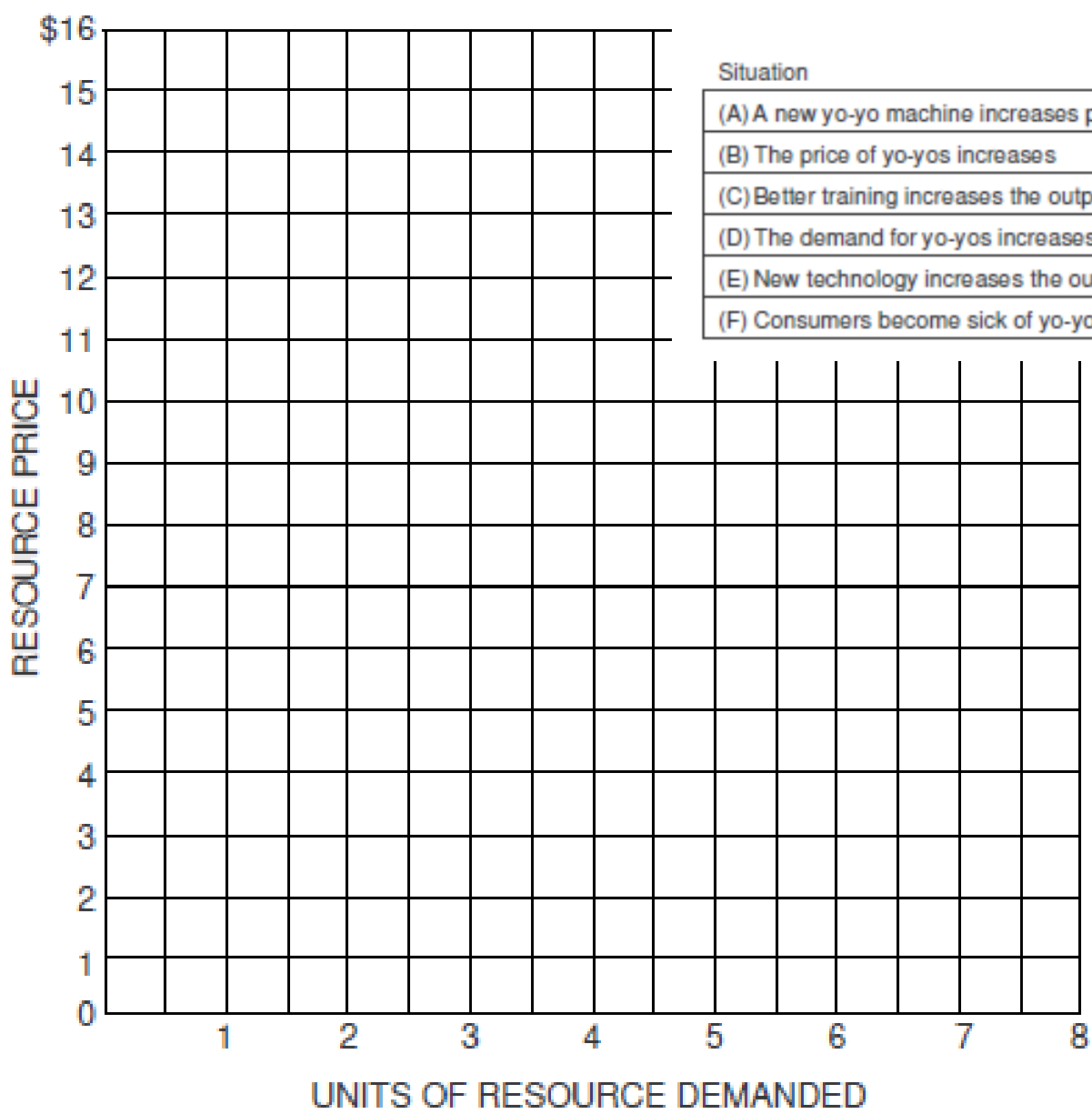
Figure 44.2, How Many Workers to Hire per Day for \$2 Yo-Yos

Number of Workers Hired (inputs)	Level of Output (number of yo-yos produced per day) (Q)	Marginal Physical Product (MPP)	Price at Which Yo-yos Can Be Sold	Total Revenue (P x Q)	Marginal Revenue Product (MPP x MR)
0	0	—	\$2.00	\$0	—
1	20	20	2.00	40 = 2 x 20	\$40
2	50		2.00		
3	70		2.00		
4	85		2.00		
5	95		2.00		
6	100		2.00		

Figure 45.1, Data for a Yo-Yo Manufacturer

Units of Resource	Total Product	Marginal Physical Product (MPP)	Price at Which Yo-Yos Can Be Sold	Total Revenue (P x Q)	Marginal Revenue Product (MPP x MR)
0	0	—	\$2.00	\$0	—
1	8	8	2.00	16	\$16
2	14	6	2.00	28	12
3	19		2.00		
4	23		2.00		
5	26		2.00		
6	28		2.00		
7	29		2.00		

Figure 45.2, Price and Quantity for a Resource



Situation	Marginal Physical Product	Price	Demand for labor (inc. / dec.)
(A) A new yo-yo machine increases productivity of labor			
(B) The price of yo-yos increases			
(C) Better training increases the output of yo-yo labor			
(D) The demand for yo-yos increases			
(E) New technology increases the output of yo-yo labor			
(F) Consumers become sick of yo-yos			

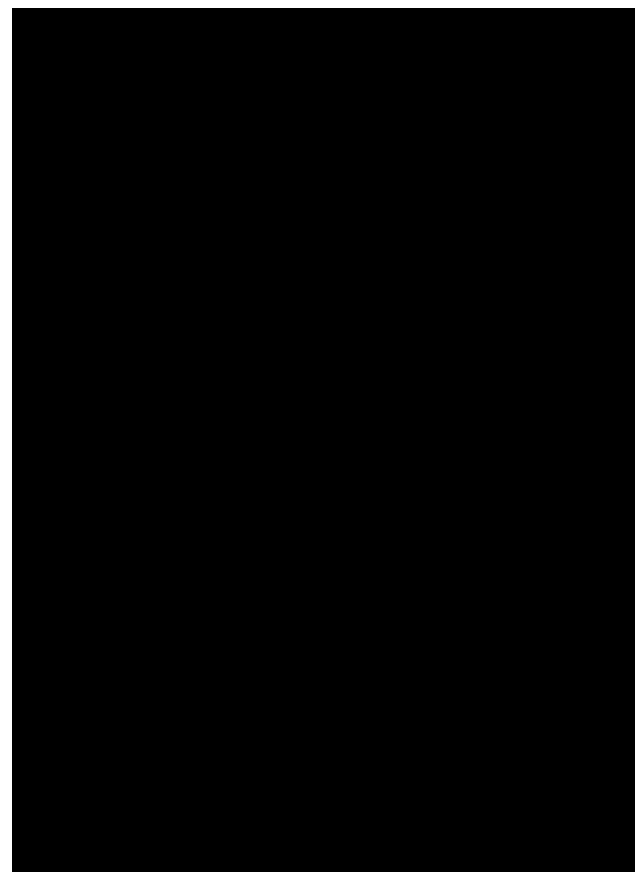
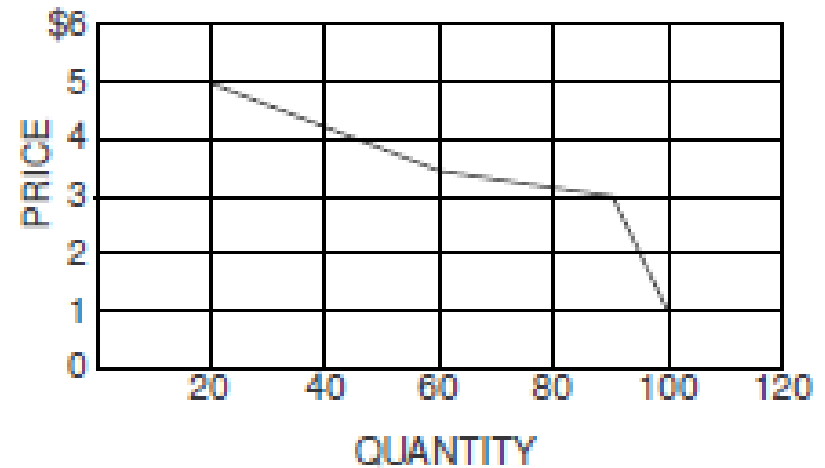


Figure 46.2, How Many Workers to Hire per Day for Varying Prices of Yo-Yos



Figure 46.1

Daily Price and Demand for Yo-Yos



Number of Workers Hired (inputs)	Level of Output (number of yo-yos produced per day) (Q)	Marginal Physical Product (MPP)	Price at Which Yo-yos Can Be Sold	Total Revenue (P x Q)	Marginal Revenue Product (change in TR from previous level)
0	0	—	\$0.00	\$0	—
1	20	20	5.00	\$100 = \$5 x 20	\$100
2	50		4.00		
3	70		3.50		
4	85		3.00		
5	95		2.00		
6	100		1.00		

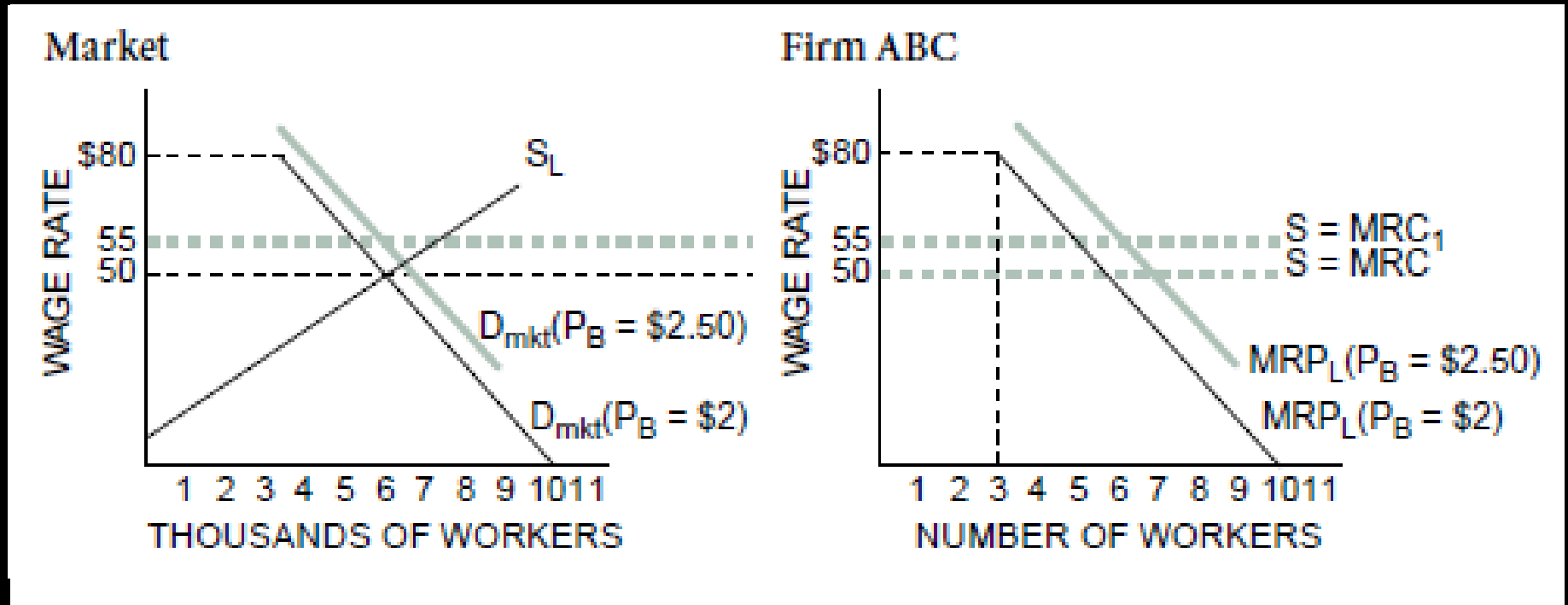
Figure 47.1, Labor Demand for the Perfectly Competitive Firm

Employment Number of Workers (L)	Total Output Per Day (Q)	Marginal Physical Product (MPP) ($\Delta Q / \Delta L$)	Marginal Revenue Product (MPP \times P)	
			$P_B = \$2.00$	$P_B = \$2.50$
0	0		—	—
1	10	10	\$20.00	
2	30	20	40.00	
3	70	40		100.00
4	105		70.00	
5	135	30	60.00	
6	160	25		62.50
7	180		40.00	50.00
8	195	15		
9	205	10	20.00	
10	205			0
11	195	-10		

Figure 47.2, The Labor Market

Wage	P = \$2.00			P = \$2.50			
	Number of Workers Demanded By Firm ABC ($P_D = \$2$)	Number of Workers Demanded In the Market ($P_D = \$2$)	Number of Workers Supplied	Wage	Number of Workers Demanded By Firm ABC ($P_D = \$2.50$)	Number of Workers Demanded In the Market ($P_D = \$2.50$)	Number of Workers Supplied
\$20	9	9,000	3,000	\$25.00	9	9,000	3,500
30	8	8,000	4,000	37.50	8	8,000	4,750
40	7	7,000	5,000	50.00	7	7,000	6,000
50	6	6,000	6,000	55.00	6.5	6,500	6,500
60	5	5,000	7,000	62.50	6	6,000	7,250
70	4	4,000	8,000	75.00	5	5,000	8,500
80	3	3,000	9,000	87.50	4	4,000	9,750
				100.00	3	3,000	11,000

Figure 47.3, Market & Firm Demand for Labor

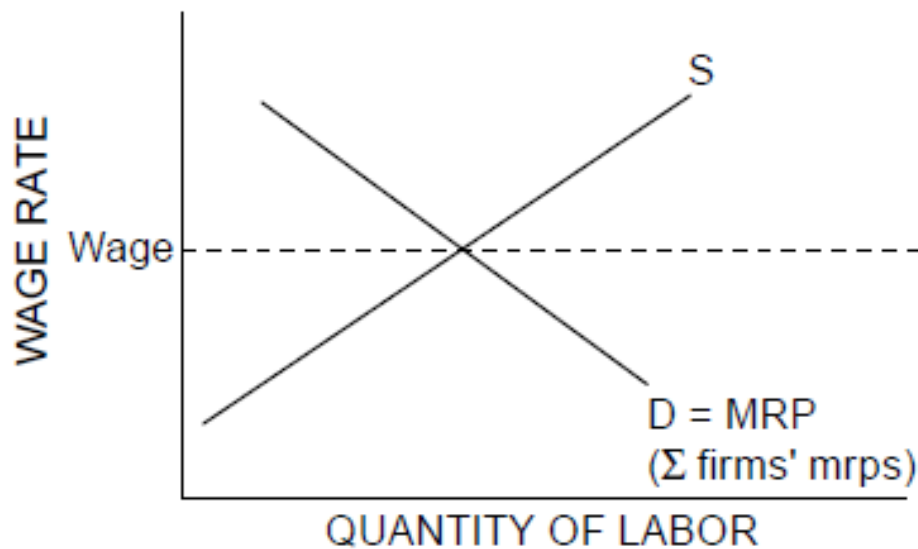


Imperfect Competition

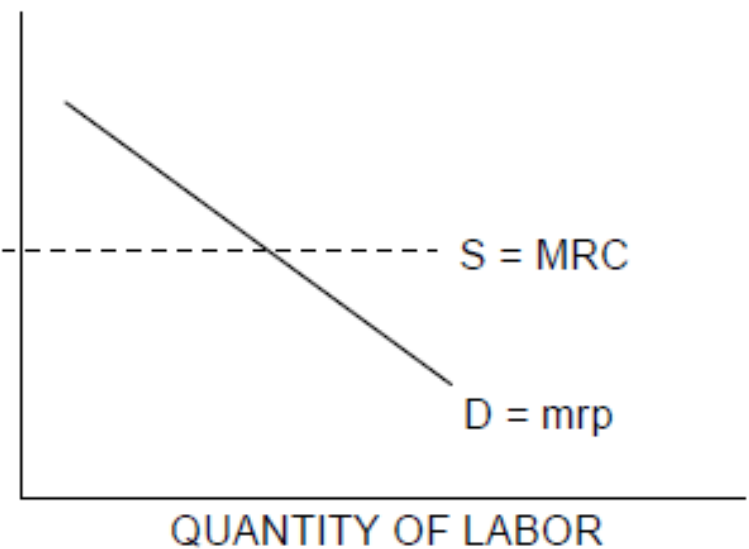
- A **monopsony** is a market form in which only one buyer faces many sellers. It is an example of imperfect competition, similar to a monopoly, in which only one seller faces many buyers.
- As the only purchaser of a good or service, the **monopsonist** may dictate terms to its suppliers in the same manner that a monopolist controls the market for its buyers.

The Supply and Demand for Labor in a Competitive Labor Market

Market



Firm



The Wage Rate and Level of Employment in a Monopsonistic Labor Market

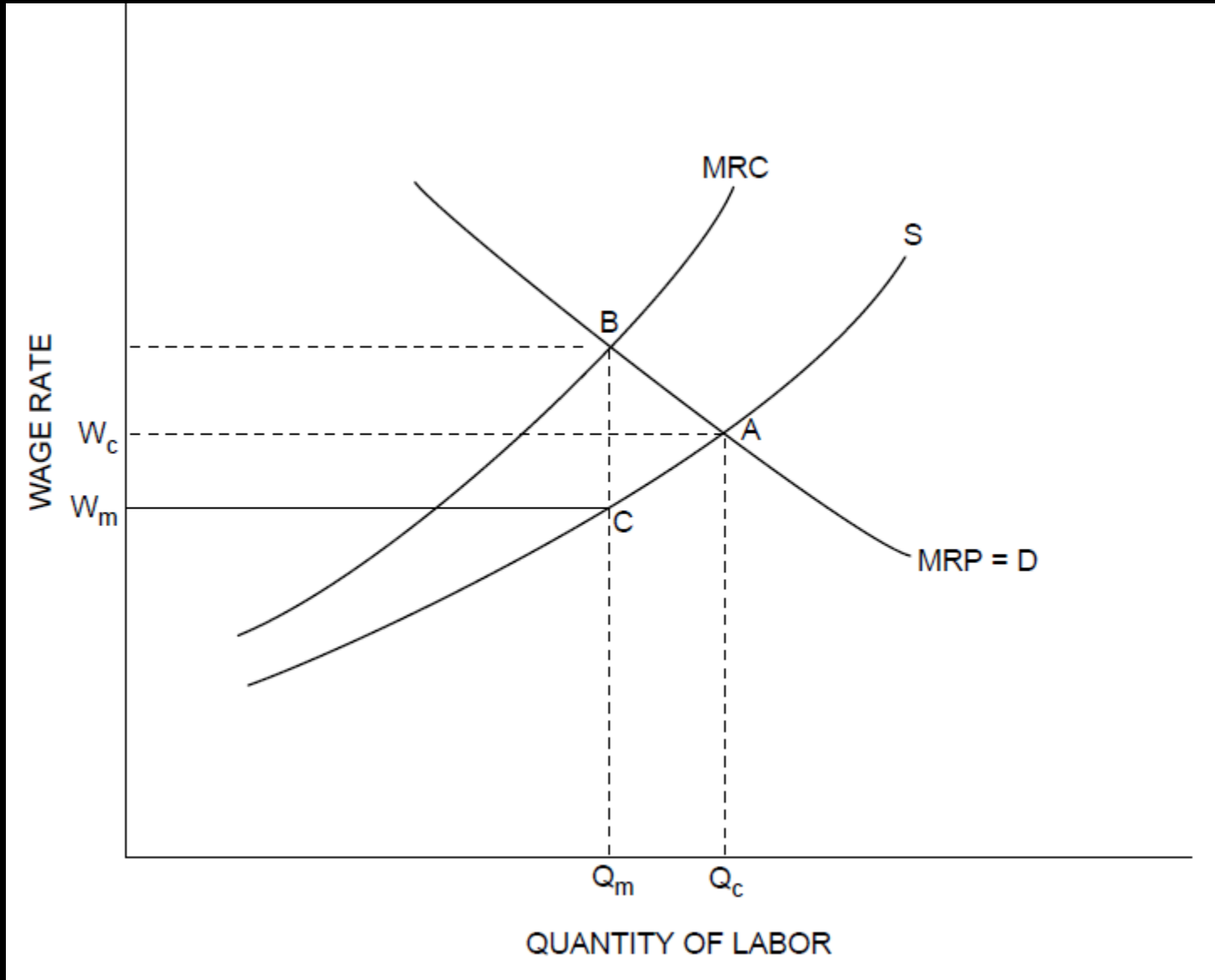
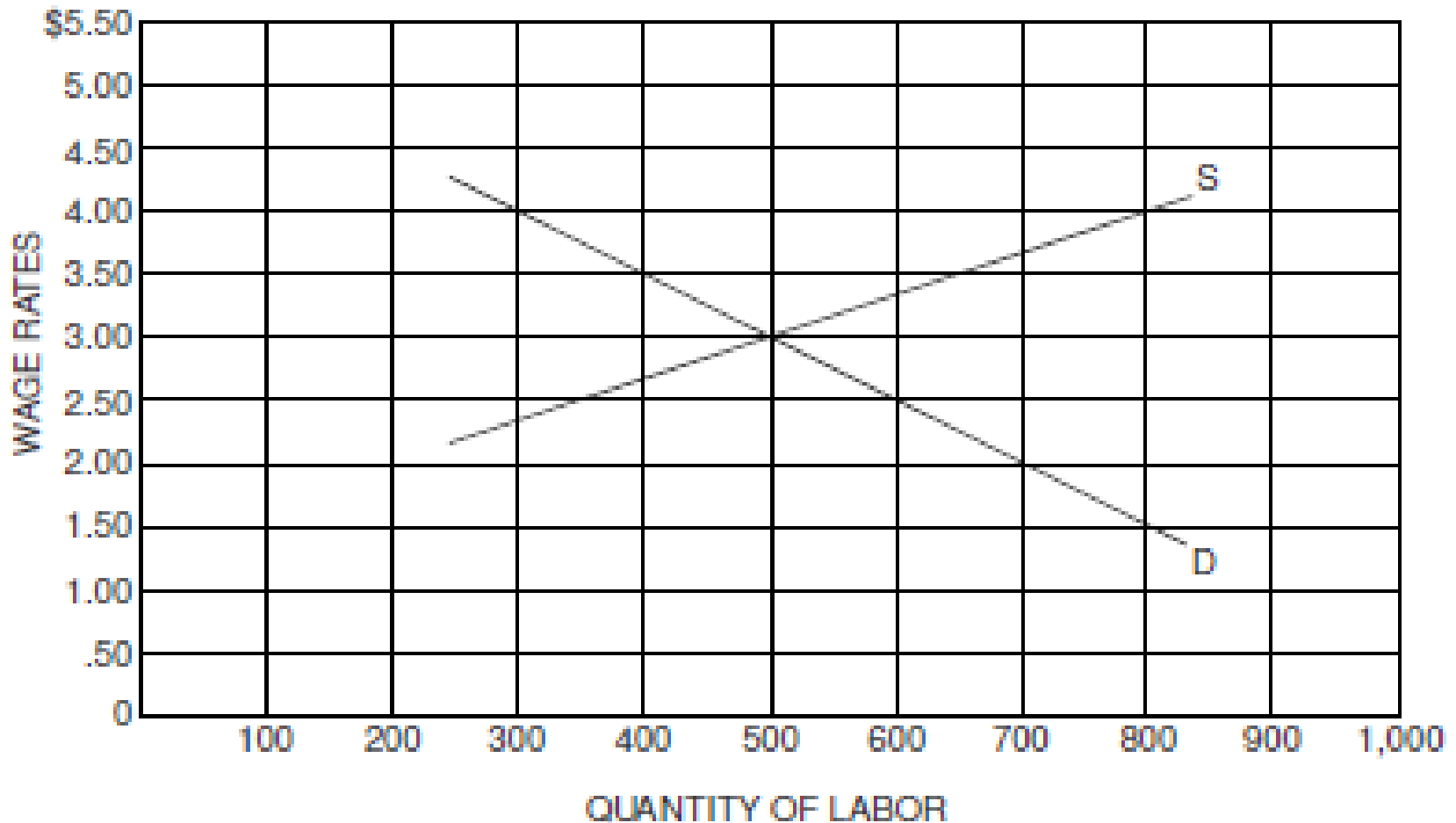


Figure 48.1, How Wages Are Determined in Competitive Labor Markets

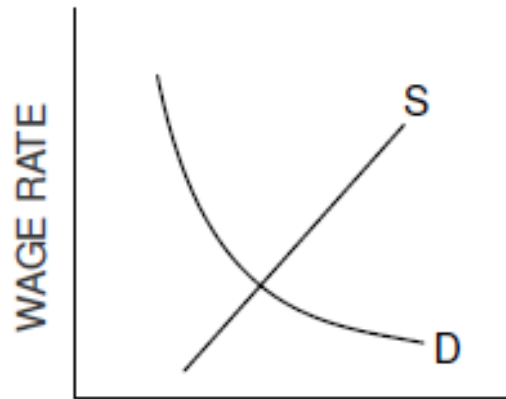


The Effects of Unions on Wages and Employment in Competitive and Monopsonistic Labor Markets

SCENARIO 1: The union is successful in requiring that new teachers pass a state competency test to be employed.

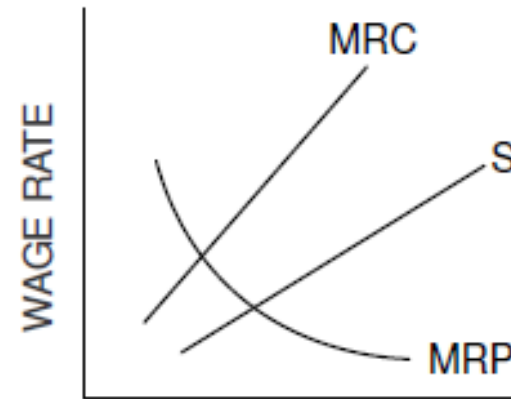
* Figure 49.1
Competency Test Required

Competitive



Wage Rate _____
Employment _____

Monopsonistic



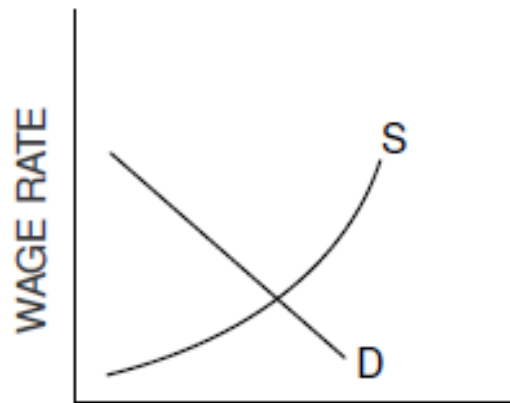
Wage Rate _____
Employment _____

The Effects of Unions on Wages and Employment in Competitive and Monopsonistic Labor Markets

SCENARIO 2: The labor union conducts a successful national advertising campaign urging people to buy union-made goods.

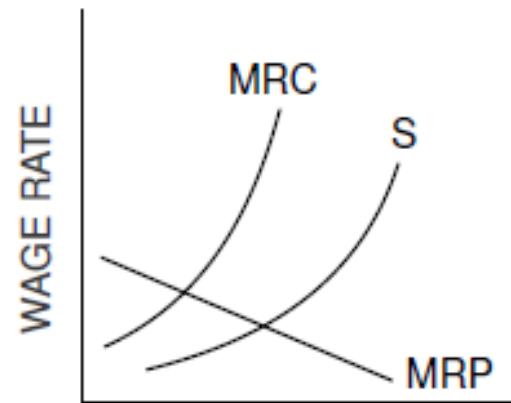
* Figure 49.2
National Advertising Campaign

Competitive



Wage Rate _____
Employment _____

Monopsonistic



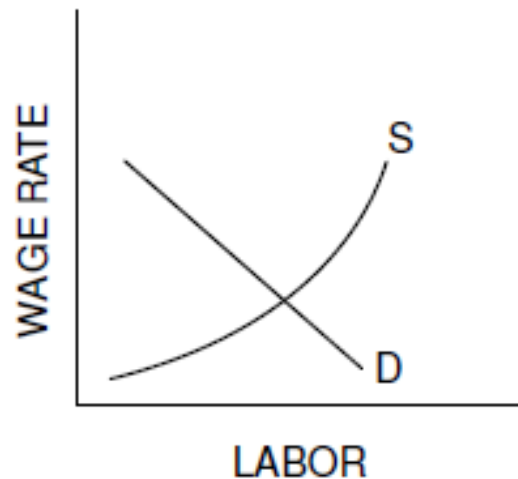
Wage Rate _____
Employment _____

The Effects of Unions on Wages and Employment in Competitive and Monopsonistic Labor Markets

SCENARIO 3: The labor union educates workers in new methods of production, which leads to increased productivity.

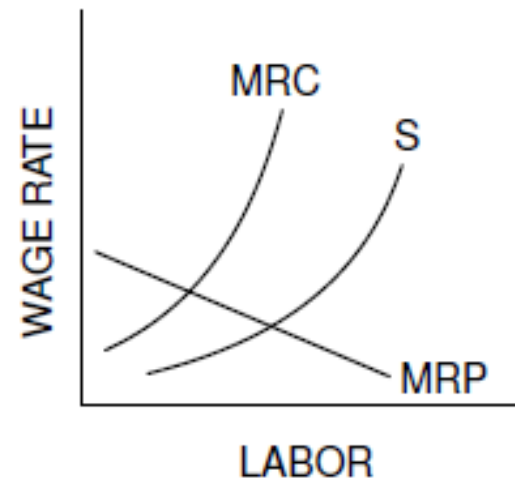
* Figure 49.3
Increased Productivity

Competitive



Wage Rate _____
Employment _____

Monopsonistic



Wage Rate _____
Employment _____

The Effects of Unions on Wages and Employment in Competitive and Monopsonistic Labor Markets

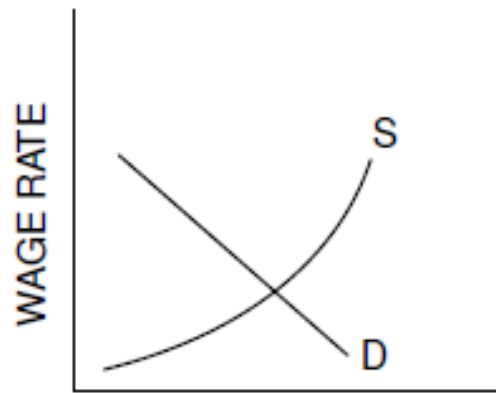
SCENARIO 4: The labor union promotes national legislation to increase quotas and/or tariffs on foreign competitors.



Figure 49.4

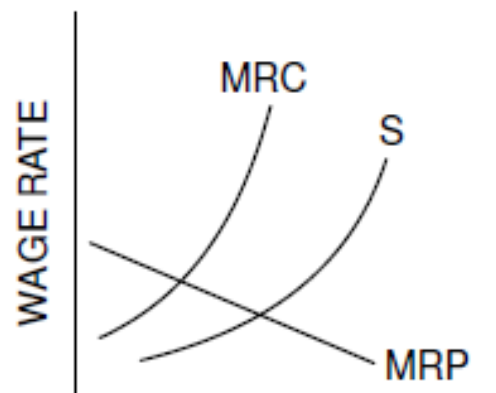
Quotas/Tariffs on Foreign Competition

Competitive



Wage Rate _____
Employment _____

Monopsonistic



Wage Rate _____
Employment _____

The Effects of Unions on Wages and Employment in Competitive and Monopsonistic Labor Markets

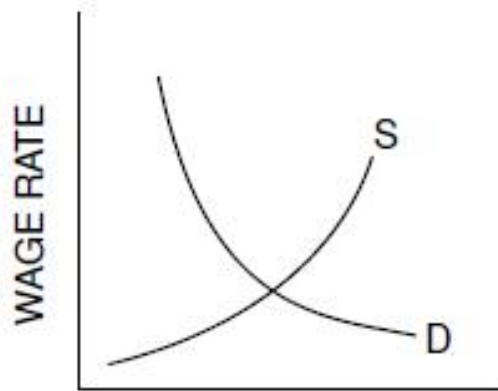
SCENARIO 5: The labor union bargains for and wins an increase in the wage rate above the equilibrium wage rate.



Figure 49.5

Wage Increase Above Equilibrium Rate

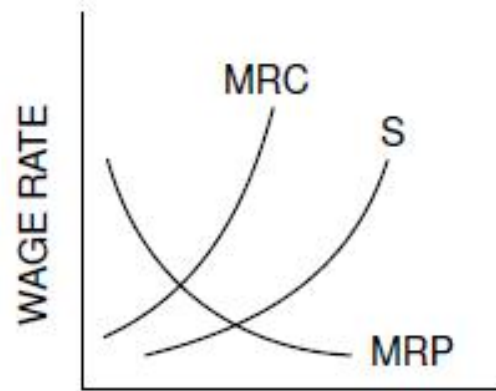
Competitive



LABOR

Wage Rate _____
Employment _____

Monopsonistic



LABOR

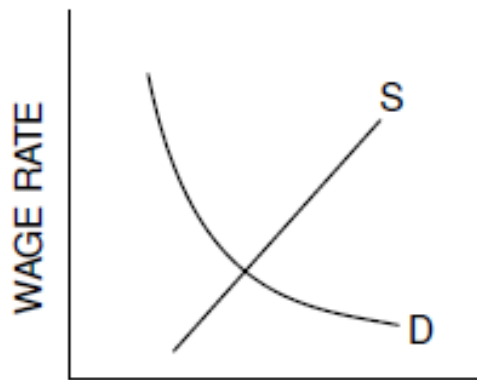
Wage Rate _____
Employment _____

The Effects of Unions on Wages and Employment in Competitive and Monopsonistic Labor Markets

SCENARIO 6: The labor union signs an agreement with employers that forces employers to hire only union members who have gone through the union's apprenticeship program.

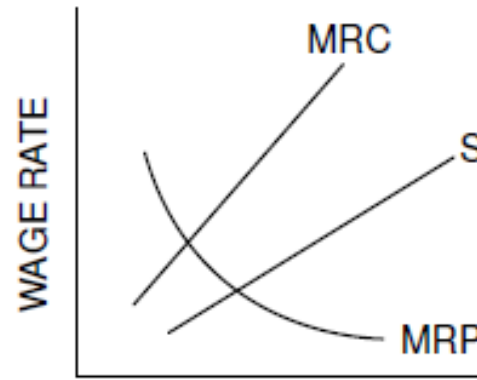
* Figure 49.6
Only Union Members Hired

Competitive



Wage Rate _____
Employment _____

Monopsonistic



Wage Rate _____
Employment _____

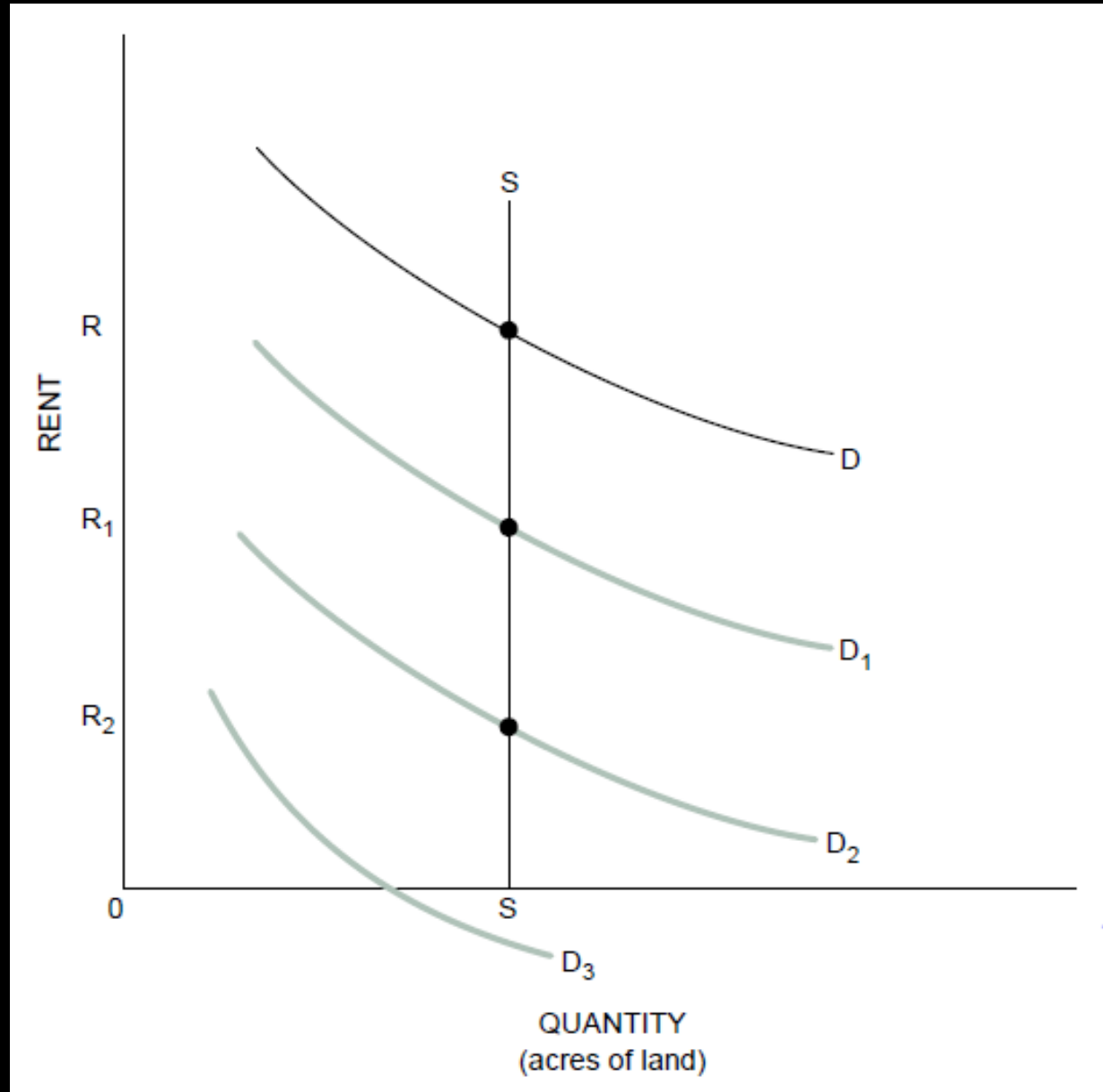
The Effects of Unions on Wages and Employment in Competitive and Monopsonistic Labor Markets

1. Which of the union goals has the most favorable impact on existing employment?
2. Which of the union goals is most restrictive in the number of people who might want to enter the labor market?
3. Which union goal seems to have an effect similar to a minimum wage?

The Effects of Unions on Wages and Employment in Competitive and Monopsonistic Labor Markets

4. Which union goal has the largest positive effect on the wage rate and the number of laborers employed?
5. “Unions can increase wage levels and employment.” To what extent is this claim true?

The Determination of Economic Rent



The Unique Aspect of Economic Rent

- The determination of rent, like wages, occurs within a context of supply and demand factors and institutional circumstances.
- Rent is usually accorded special treatment because of the inelasticity of the supply of land and other natural resources.
- When the supply of a factor is perfectly inelastic, the price paid b to that factor cannot provide an incentive to produce more, meaning that such a factor is a **surplus** or **economic rent**.

The Unique Aspect of Economic Rent

- ***Fixed supply***
- ***Economic surplus*** is what one are willing to give up for a benefit minus what he must give up for it. Understandably, an economic activity takes place if the economic surplus of the activity is positive. Economic activities with negative economic surpluses wipe themselves.

The Unique Aspect of Economic Rent

Agricultural land near a large city was selling for \$3,000 an acre last year. Now a subdivision is being developed on this land, and it is selling for \$50,000 an acre.

- Why did the price rise so dramatically?
- Do you think it is fair that the owners of this land reaped such a large and sudden return for no effort on their part?

The Unique Aspect of Economic Rent

A professional basketball player earns \$850,000 a year. The next-best alternative for this player might be as a high school coach for \$40,000 a year.

- Should \$810,000 of his current salary be considered wages or rent (an economic surplus)?
- If a large part of the wages and salaries of many highly paid athletes, entertainers and others is considered as economic-surplus payments (not necessary to attract people into a particular line of work), does this suggest that such incomes should be taxed heavily?

The Story of Economic Rent: What Do Land, Athletics and Government Have in Common?



Figure 50.1

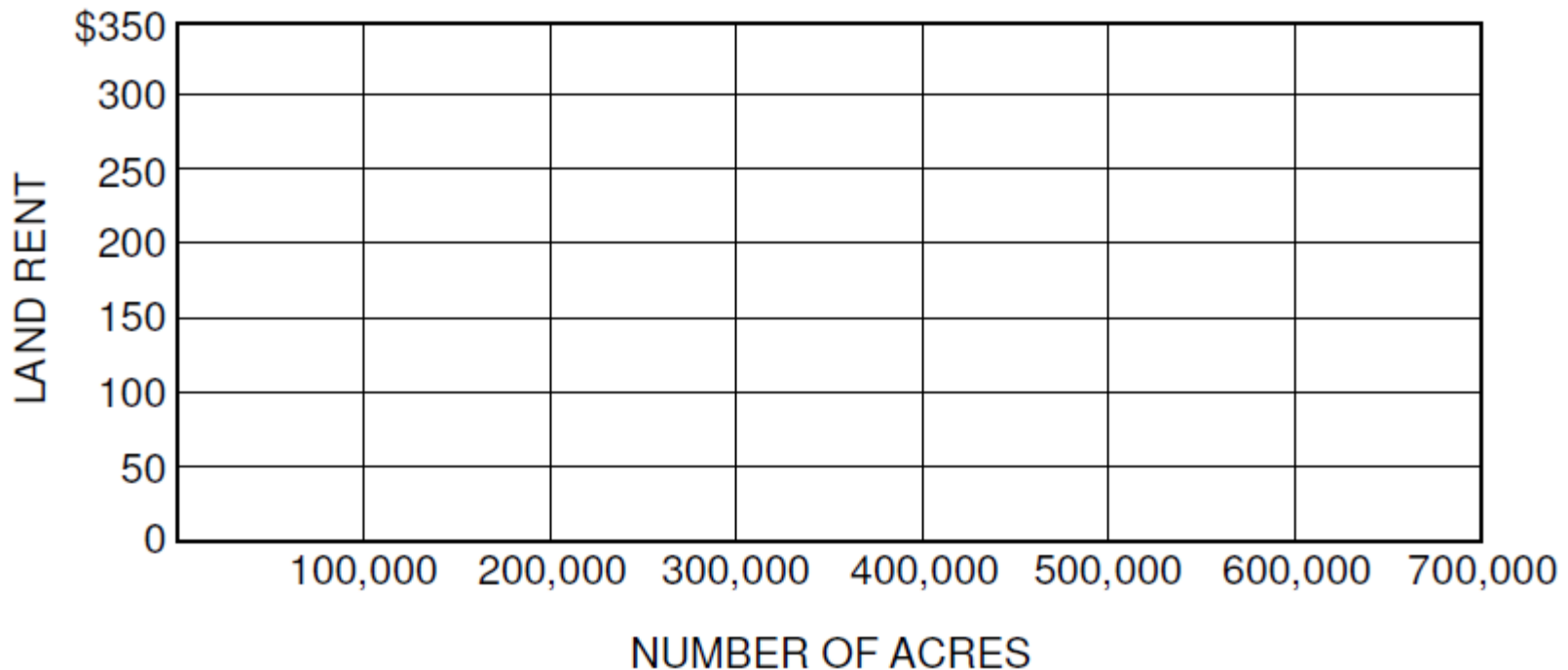
Demand for Land at Varying Prices

Pure Land Rent Per Acre	Acres of Land Demanded
\$350	100,000
300	200,000
250	300,000
200	400,000
150	500,000
100	600,000
50	700,000



Figure 50.2

Plotting Demand Curves for Land



Activity 51

Figure 51.1
Firm Operating in a Competitive Product Market

Labor Input (workers per day)	Total Physical Product (units per day)	Marginal Physical Product (units per day)	Marginal Revenue Product (\$ per worker)
0	0		
1	22		
2	40		
3	56		
4	70		
5	82		
6	92		
7	100		
8	106		