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ECO 211

Microeconomics: An Introduction to Economic Efficiency

YELLOW PAGES – UNIT 4

Unit 4 – Resource Markets

- Ch 12 - Demand for Resources
- Ch 13 - Wage Determination
- Ch 20 - Inequality
- Ch 22 - Immigration

Brief Outline:
- 4 reasons to study the resource markets
- The strength of resource demand depends on two things
- Find the profit maximizing quantity of resources to employ: MRP = MRC
- Find the resource demand curve: MRP
- The first two (of eight) resource market models
  - Pure competition in both the resource and product markets
  - Pure competition in the resource market and imperfect competition in the product market
  - Compare the profit maximizing quantity (where MRP=MRC) with the allocatively efficient quantity: (VMP = MRC or P x MP = MRC)
- Determinants of Resource Demand
  - Changes in Demand for the Product
  - Changes in the Productivity of the Resource
  - Changes in the Prices of Other Resources
    - Substitutes
    - Complements
- Price Elasticity of Resource Demand - Determinants
  - Ease of resource substitutability
  - Elasticity of product demand
  - Ratio of resource cost to total cost

Long Outline:

Significance of Resource Demand

1. Income determination
2. Cost minimization
3. Resource allocation
4. Policy Issues

Marginal Productivity Theory of Resource Demand

Define: Resource Demand

Define: Derived Demand

The strength of the resource demand for resources depends on two factors:
1. The productivity of the resource in helping to create a good or service.
   - a resource that is highly productive in turning out a highly valued commodity will be in great demand

2. The market value or price of the good or service it helps produce.
   - a resource that is used to produce highly valued product will be in great demand

Review:
Total Product (TP)
Marginal Product (MP)
Define MRP

Rule for Employing Resources: MRP =MRC
- to maximize profits employ all where the MRP>MRC, up to where MRP=MRC
- this is just benefit cost analysis: MB = MC
  - what is the marginal benefit to the firm of hiring one more worker? = MRP
  - what is the marginal cost of hiring one more worker? = MRC

How to find the resource demand curve:
- Review: Demand is a schedule that shows the various quantities that will be hired at various wage rates
- Firms will hire the profit maximizing quantity
- So, all we have to do is find the profit maximizing quantities of labor at different wage rates

Value of the Marginal Product (VMP = Product Price x MP)
- The value of marginal product is the value to society of a firm hiring one more unit of a factor of production.
- This is the MSB of hiring another workeer
- The value of marginal product equals the price of a unit of output multiplied by the marginal product of the factor of production. P x MP = VMP

_____

NOT IN THE TEXTBOOK:
Rule for finding the allocatively efficient quantity to hire: VMP = MRC   or   PxMP=MRC

- **So, what quantity of a resource should be hired to maximize society's satisfaction? (allocative efficiency)**
  - The quantity where MSB = MSC
  - VMP = MSB
  - MRC = MSC
  - So the best <u>quantity of a resource to hire</u> for society is where: **VMP = MRC** or PxMP = MRC
  - This is similar to the product market where P=MSB and MC=MSC, so the <u>best quantity of a product to produce</u> for society was where: P=MC
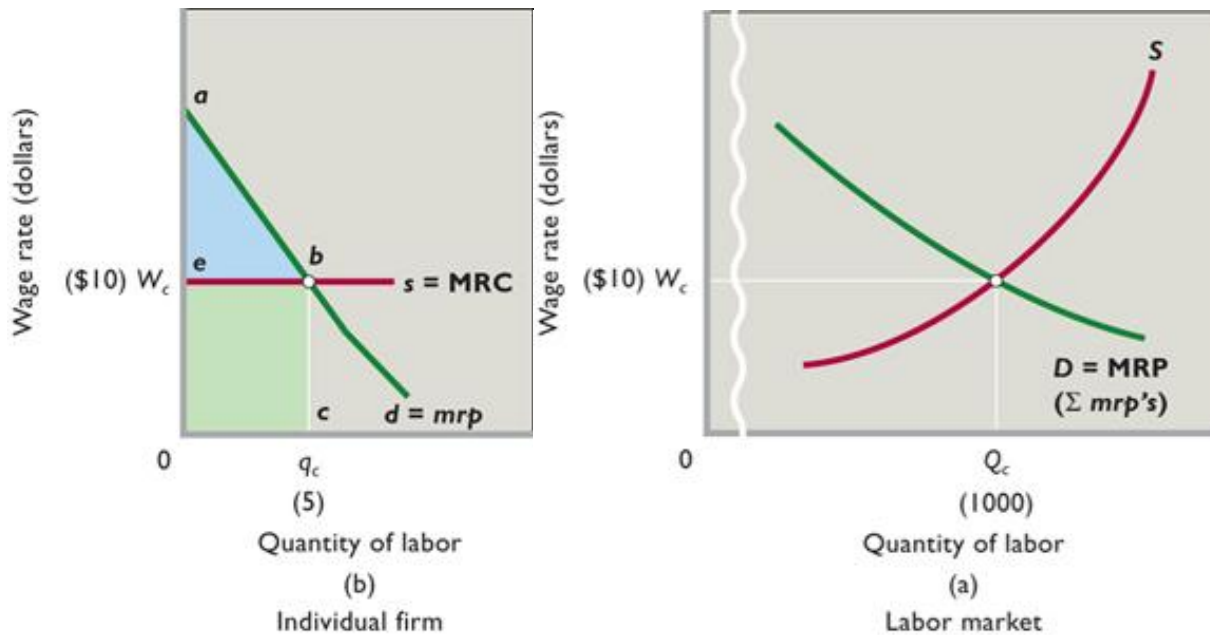
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Competitive Model:

Assume perfect competition in the product market
- product price is constant because each firm produces such a small fraction of the total market supply of the product (chapter 8)
- means they can sell all they want without having to lower the price
- therefore in the product market: P=MR

Assume: perfect competition in the labor market
- wage (resource price) is constant because each firm hires such a small fraction of the total market supply of workers
- means they can hire all they want without having to offer higher wages
- therefore in the competitive labor market: W=MRC

MRP is the Resource Demand Curve
MRP also equals VMP if the product market is competitive
So Qc is the profit maximizing quantity to hire AND the allocatively efficient quantity to hire.

Imperfect Product Market and Resource Demand:

Assume imperfect competition in the product market (monpoly, oligopoly, monopolistic competition)
- downward sloping product demand curve
- means they must lower their price to sell more
- therefore in the product market $P > MR$

Assume: perfect competition in the labor market
- wage (resource price) is constant because each firm hires such a small fraction of the total market supply of workers
- means they can hire all they want without having to offer higher wages
- therefore in the competitive labor market: $W = MRC$
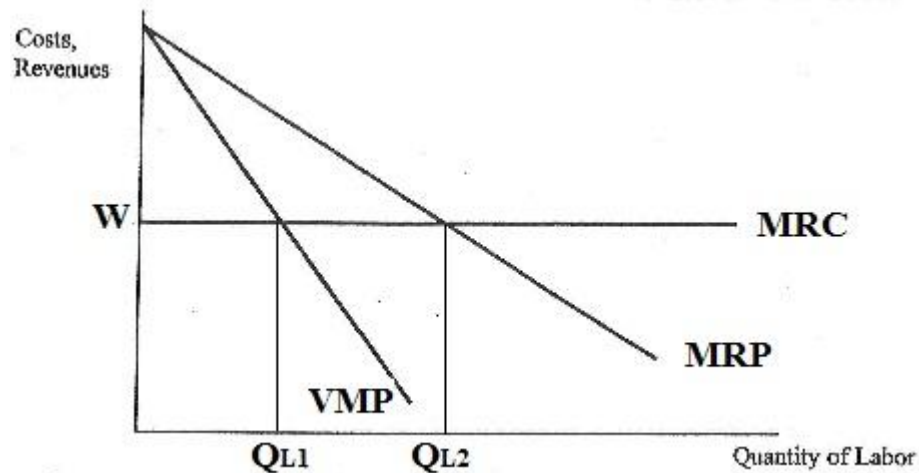
- Q_{L1} is the quantity hired if the product market is imperfect
- Q_{L2} is the quantity hired by a perfectly competitive producer
- **We know a monopoly will maximize profits by producing less output than a competitive producer, here we see that they will also hire fewer workers**

Market Demand for a Resource: horizontal summation

Determinants of Resource Demand
- Changes in Demand for the Product
- Changes in the Productivity of the Resource
- Changes in the Prices of Other Resources
  - Substitutes
  - Complements

- Changes in Demand for the Product
  - Other things equal, an increase in the demand for a product will increase the demand for a resource used in its production, whereas a decrease in product demand will decrease the demand for that resource.
  - Pe, Pog, I, Npot, T

- Changes in the Productivity of the Resource
    - Other things equal, an increase in the productivity of a resource will increase the demand for the resource and a decrease in productivity will reduce the demand for the resource.
    - Productivity depends on:
        - Quantity of other resources used by the labor
            - The greater the amount of capital and land resources used with, say, labor, the greater will be labor's marginal productivity and, thus, labor demand.
        - Quality of the Labor
            - Improvements in the quality of the variable resource, such as labor, will increase its marginal productivity and therefore its demand.
        - Technological Advance (Quality of Capital used by labor)
            - The better the *quality* of capital, the greater the productivity of labor used with it and therefore its demand.
- Changes in the Prices of Other Resources

    - Substitutes (Warning: this can be confusing.)
        - A <u>decrease</u> in the price of one resources may INCREASE (output effect) ***or*** DECREASE (substitution effect) demand for its substitute
        - **Substitution Effect** (a decrease in the price of one resource will decrease the demand for its substitute)
            - The decline in the price of machinery prompts the firm to substitute machinery for labor. This allows the firm to produce its output at lower cost. So at the fixed wage rate, smaller quantities of labor are now employed. This **substitution effect** decreases the demand for labor.
        - **Output Effect** (decrease price of one resource increases the demand for its substitute)
            - Because the price of machinery has fallen, the costs of producing various outputs must also decline. With lower costs, the firm finds it profitable to produce and sell a greater output. The greater output increases the demand for all resources, including labor. So this **output effect**. increases the demand for labor.

    - Complements
        - If resources are complements, then they must be used together (like one worker per machine)
        - an increase in the quantity of one of them used in the production process requires an increase in the amount used of the other as well, and vice versa.
        - So if the price of a machine goes down the firm wull buy more machines and this will increase the demand for labor needed to run the machines

- Summary of Changes in Resource Demand<u>: the demand for labor will increase</u> (the labor demand curve will shift rightward) <u>when</u>:
    - The demand for (and therefore the price of) the product produced by that labor *increases*.
    - The productivity (MP) of labor *increases*.
    - The price of a substitute input *decreases,* provided the output effect exceeds the substitution effect.
    - The price of a substitute input *increases,* provided the substitution effect exceeds the output effect.
    - The price of a complementary input *decreases*.

Price Elasticity of Resource Demand
- Review Elasticity
- Define

$$E_{rd} = \frac{\text{percentage change in resource quantity demanded}}{\text{percentage change in resource price}}$$

- Determinants
  - Ease of resource substitutability
    - If there are many substitute resources, demand for the resource is MORE ELASTIC
  - Elasticity of product demand
    - If demand for the product id more elastic, then demand for the resource is MORE ELASTIC
  - Ratio of resource cost to total cost
    - If the resource cost is a large fraction of the total costs then demand for the resource is MORE ELASTIC

Marginal Productivity Theory of Income Distribution

Q Resource	TP	MPP	Product Price	TR	MRP	Wage	TC	MRC	VMP (PxMP)
0	0	--	$2.00	$0	--.	$24	0	---	—
1	21	21	$2	$42	$42	24	$24	$24	$42
2	38	17	2	$76	$34	24	48	24	34
3	51	13	2	$102	$26	24	72	24	26
4	60	9	2	$120	$18	24	96	24	18
5	65	5	2	$130	$10	24	120	24	10
6	66	1	2	$132	$2	24	144	24	2

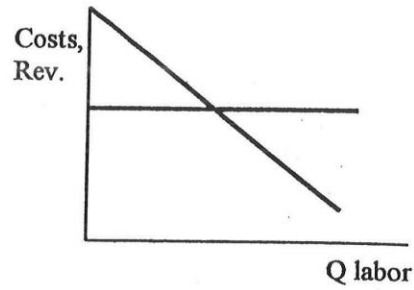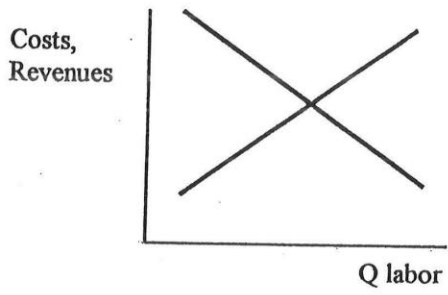**Plot: MRP = P x MP** (Plot MRP at the midpoints), **W = MRC.**
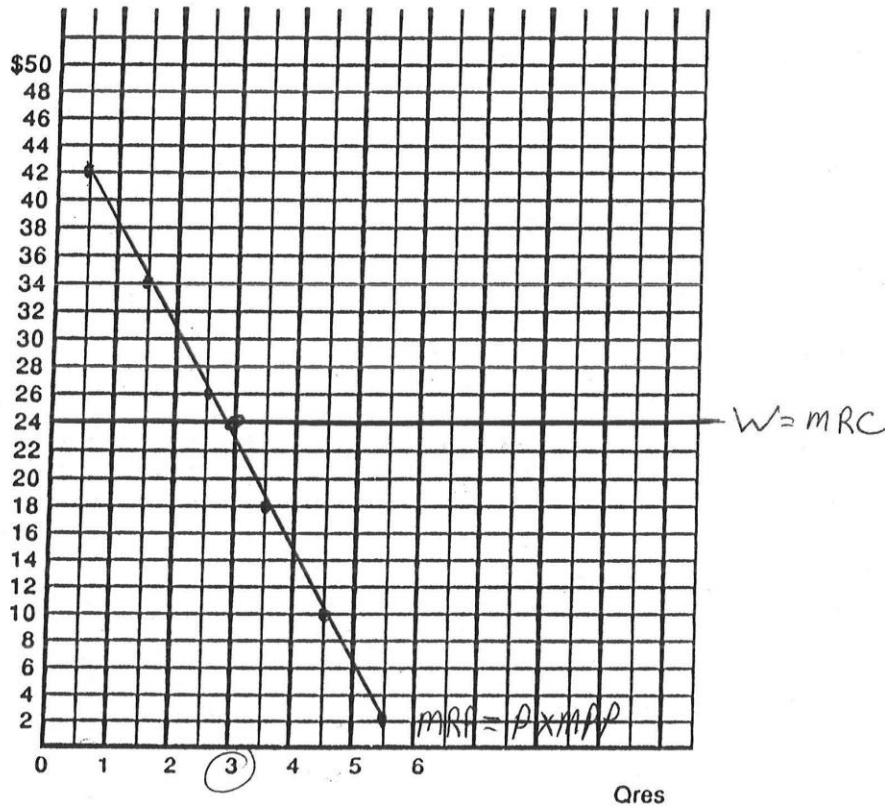
What quantity will be employed (the profit profit maximizing quantity to hire)? **3**

What is the wage rate? **$ 24**

What is the allocatively efficient quantity to employ? **3**

8

LABOR MARKETS

TYPE OF MARKET: *Competitive*

Costs,
Revenues

Q labor

_____

Costs,
Rev.

Q labor

_____

Explanation / Characteristics / Examples

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Profit Maximizing Quantity: _____

Allocative Efficient Quantity: _____

Q Resource	TP	MP	Product Price	TR	MRF	Wage	TC	MRC	VMP (P x MP)
0	0	--	$2.80		--	$24	--		
1	21		$2.60						
2	38		$2.40						
3	51		$2.20						
4	60.		$2.00						
5	65		$1.80						
6	66		$1.60						

Plot: MRP, PxMP
(Plot MRP at the midpoints)

W = MRC
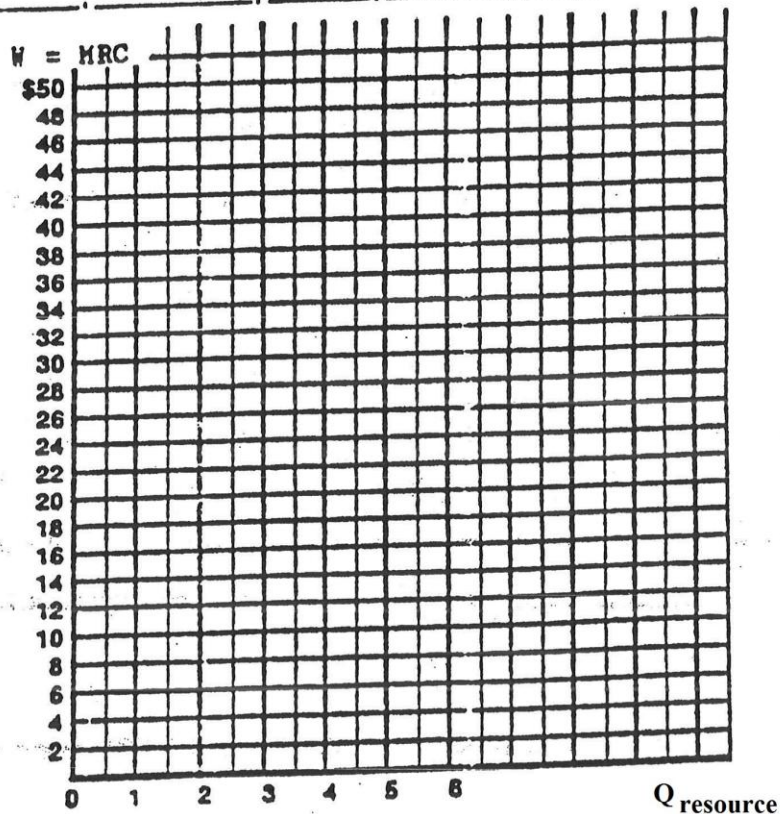
What quantity will be employed (the profit profit maximizing quantity to hire)? _____

What is the wage rate? _____

What is the allocatively efficient quantity to employ? _____
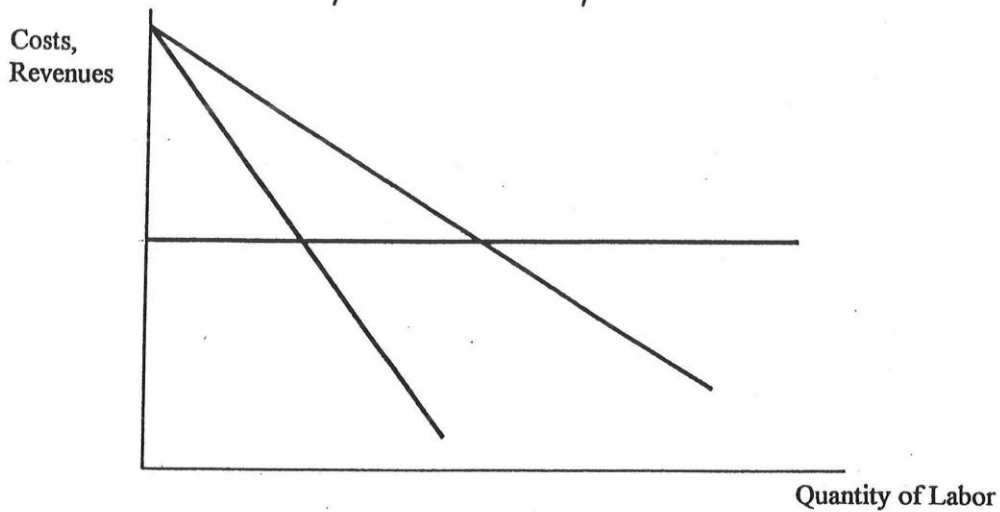
LABOR MARKETS

TYPE OF MARKET: _Imperfect Competition in Product Market_

Costs,
Revenues

Quantity of Labor

Explanation / Characteristics / Examples

_____

_____

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Profit Maximizing Quantity: _____

Allocative Efficient Quantity: _____

Competitive model:

Assume perfect competition in the product market
- product price is constant because each firm produces such a small fraction of the total market supply of the product (chapter 8)
- means they can sell all they want without having to lower the price
- therefore in the product market: P=MR

Assume: perfect competition in the labor market
- wage (resource price) is constant because each firm hires such a small fraction of the total market supply of workers
- means they can hire all they want without having to offer higher wages
- therefore in the labor market: W=MRC

Complete the following table, where L is the units of labor, TP_L is the total product of labor, MP_L is the marginal product of labor, P is product price, TR is total revenue, and MRP_L is the marginal revenue product of labor. Wage rate = $10.

L	TP$_L$	MP$_L$	P	TR	MRP$_L$	MRC$_L$	VMP$_L$
0	0		$2.00	$_____			
1	10	_____	2.00	_____	$_____	$_____	$_____
2	19	_____	2.00	_____	_____	_____	_____
3	27	_____	2.00	_____	_____	_____	_____
4	34	_____	2.00	_____	_____	_____	_____
5	40	_____	2.00	_____	_____	_____	_____
6	45	_____	2.00	_____	_____	_____	_____
7	49	_____	2.00	_____	_____	_____	_____
8	52	_____	2.00	_____	_____	_____	_____
9	54	_____	2.00	_____	_____	_____	_____
10	55	_____	2.00	_____	_____	_____	_____

(a) In what type of market is the firm selling its product? How do you know?
(b) How many workers will this firm employ?
(c) Why does the MRP schedule decrease as labor increases?
(d) Complete the following table to find the resource demand curve. Which curve is the resource demand curve? _____

If the Wage rate Is:	Quantity of workers employed
$16	_____
14	_____
12	_____
10	_____
8	_____
6	_____

Finding the Resource Demand Curve:
Imperfect Product Market and Resource Demand

Assume imperfect competition in the product market (monopoly, oligopoly, monopolistic competition)
- downward sloping product demand curve
- means they must lower their price to sell more
- therefore in the product market $P > MR$

Assume: perfect competition in the labor market
- wage (resource price) is constant because each firm hires such a small fraction of the total market supply of workers
- means they can hire all they want without having to offer higher wages
- therefore in the labor market: $W = MRC$

15. Complete the following table, where L is the units of labor, TP_L is the total product of labor, MP_L is the marginal product of labor, P is product price, TR is total revenue, and MRP_L is the marginal revenue product of labor. Wage rate = $10.

L	TP$_L$	MP$_L$	P	TR	MRP$_L$	MRC$_L$	VMP$_L$
0	0		$2.00	$_____			
1	10	_____	1.90	_____	$_____	$_____	$_____
2	19	_____	1.80	_____	_____	_____	_____
3	27	_____	1.70	_____	_____	_____	_____
4	34	_____	1.60	_____	_____	_____	_____
5	40	_____	1.50	_____	_____	_____	_____
6	45	_____	1.40	_____	_____	_____	_____
7	49	_____	1.30	_____	_____	_____	_____
8	52	_____	1.20	_____	_____	_____	_____
9	54	_____	1.10	_____	_____	_____	_____
10	55	_____	1.00	_____	_____	_____	_____

(a) In what type of market is the firm selling its product? How do you know?

(b) **How many workers will this firm employ? How many workers would be employed if the product market were competitive (where does VMP = MRC)?**

(c) Why does the MRP schedule decrease as labor increases?

(d) Complete the following table to find the resource demand curve. Which curve is the resource demand curve? _____

IF the Wage rate is:	Quantity of workers employed	Quantity of workers employed if product market was competitive
$16	_____	_____
14	_____	_____
12	_____	_____
10	_____	_____
8	_____	_____
6	_____	_____

13

1. A profit-maximizing firm employs resources to the point where:
A. MRC = MP.
B. Resource price equals product price.
C. MRP = MRC.
D. MP = product price.

Answer the question on the basis of the following information: Harry owns a barber shop and charges $6 per haircut. By hiring one barber at $10 per hour the shop can provide 24 haircuts per 8-hour day. By hiring a second barber at the same wage rate the shop can now provide a total of 42 haircuts per day.

2. Refer to the above information. The MP of the second barber is:
A. $240.
B. $108.
C. 18 haircuts.
D. 42 haircuts.

3. Refer to the above information. The MRP of the second barber is:
A. 18 haircuts.
B. $108.
C. 42 haircuts.
D. $126.

4. Refer to the above information. Harry should:
A. hire the second barber because he will add $28 to profits.
B. hire the second barber because he will add $108 to profits.
C. not hire the second barber because he is less productive than the first barber.
D. not hire the second barber because he will diminish profits.

5. The general rule for hiring any input (say, labor) in the profit-maximizing amount is MRC = MRP. This rule takes the special form W = MRP (where W is the wage rate) when the:
A. labor supply curve is upsloping.
B. supply of labor is inelastic.
C. firm is hiring labor under purely competitive conditions.
D. firm is hiring labor under imperfectly competitive conditions.

Answer the question on the basis of the following information for Manfred's Shoe Shine Parlor. Assume Manfred hires labor, its only variable input, under purely competitive conditions. Shoe shines are also sold competitively.

Units of Labor	Total Product	Marginal Product	Total Revenue
0	0		
1	14	14	$42
2		10	
3	30		90
4	35		
5	39		117
6			126
7	44	2	132

6. Refer to the above data. How many units of output are produced when 2 workers are employed?
A. 4
B. 16
C. 24
D. 10

7. Refer to the above data. What is the marginal product of the sixth worker?
A. 2 units
B. 3 units
C. 4 units
D. 5 units

8. Refer to the above data. At what price does each shoe shine sell?
A. $1
B. $2
C. $3
D. $2.50

9. Refer to the above data. If the wage rate is $11, how many workers will Manfred hire to maximize profits?
A. 1
B. 2
C. 3
D. 5

10. Refer to the above data. If the wage rate is $11 and Manfred's only fixed input is capital, the total cost of which is $30, then what will be his economic profit?
A. $62
B. $42
C. $28
D. $32

A firm's labor input, total output of labor, and product price schedules are given below. Labor is the only variable input.

Units of Labor	Total Output Per Day	Price of Good
2	10	$10
3	14	9
4	19	8
5	23	7
6	27	6
7	31	5

11. Refer to the above table and information. What is the marginal revenue product of the fifth worker?
A. $6
B. $7
C. $8
D. $9

12. Refer to the above table and information. How many workers will the firm hire if the wage rate is $8 per day?
A. 3
B. 4
C. 5
D. 6

1. Refer to the above graph. A move from *b* to *a* along labor demand curve D_1 would result from:
A. a decrease in the price of a substitute resource, assuming that the substitution effect exceeds the output effect.
B. an increase in the wage rate.
C. a decrease in the wage rate.
D. an increase in the demand for the product that this labor is helping to produce.

2. Refer to the above graph. Each of the three labor demand curves shown slopes downward because of the:
A. law of diminishing marginal utility.
B. law of increasing opportunity costs.
C. principal-agent problem.
D. law of diminishing returns.

3. Refer to the above graph. Other things equal, an increase in labor productivity would cause a:
A. move from *a* to *b* on D_1.
B. shift from D_2 to D_3.
C. shift from D_3 to D_2.
D. move from *b* to *a* on D_1.

4. Refer to the above graph. Other things equal, an increase in the price of a complementary resource would cause a:
A. move from *a* to *b* on D_1.
B. shift from D_2 to D_3.
C. shift from D_3 to D_2.
D. move from *b* to *a* on D_1.

5. Refer to the above graph. Other things equal, a decrease in the price of a substitute resource would cause a:
A. move from a to b on D_1.
B. shift from D_2 to D_3 assuming the output effect exceeds the substitution effect.
C. shift from D_3 to D_2 assuming the output effect exceeds the substitution effect.
D. move from b to a on D_1.

6. Refer to the above graph. Other things equal, an increase in the price of substitute resource would cause a:
A. shift from D_2 to D_3 assuming the substitution effect exceeds the output effect.
B. move from a to b on D_1.
C. move from b to a on D_1.
D. shift from D_3 to D_2 assuming the substitution effect exceeds the output effect.

1. The elasticity of resource demand will be greater the:
A. smaller the portion of the product's total costs accounted for by the resource.
B. less the elasticity of demand for the product it is producing.
C. easier it is to substitute other resources in production.
D. less the elasticity of resource supply.

2. The relationship between the elasticity of product demand and the elasticity of demand for labor employed in its production is such that, other things being equal:
A. the more elastic the demand for the product, the less elastic the demand for labor.
B. the more elastic the demand for the product, the more elastic the demand for labor.
C. the elasticity of product demand only affects the elasticity of labor demand when the product market is purely competitive.
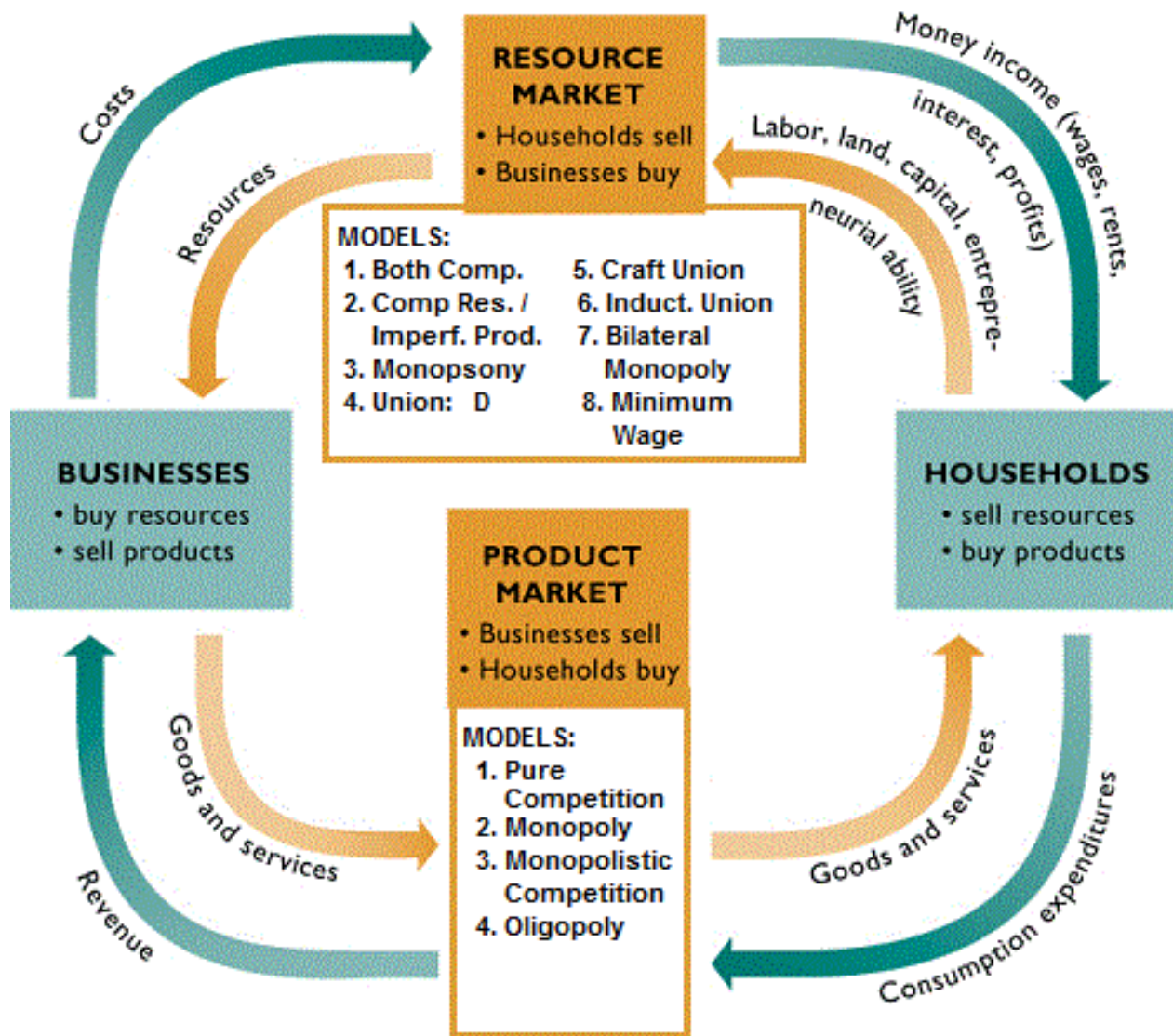D. if product demand is perfectly elastic, labor demand will be perfectly inelastic.

3. Other things equal, the relationship between the relative importance of a given type of labor in a firm's total costs and the elasticity of demand for that labor is such that the:
A. demand for labor will be elastic only if labor accounts for less than 50 percent of total costs.
B. demand for labor will be elastic only if labor accounts for 50 percent or more of total costs.
C. larger the labor cost-total cost ratio, the smaller will be the elasticity of labor demand.
D. larger the labor cost-total cost ratio, the greater will be the elasticity of labor demand.

4. Other things equal, if wage rates increase by 20 percent, the greatest decline in employment will occur when labor costs are a:
A. large proportion of total costs and product demand is elastic.
B. small proportion of total costs and product demand is elastic.
C. large proportion of total costs and product demand is inelastic.
D. small proportion of total costs and product demand is inelastic.

5. If a 10 percent wage increase in a particular labor market results in a 5 percent decline in employment in that market, labor demand is:
A. unit-elastic.
B. elastic.
C. inelastic.
D. perfectly elastic.

Eight Labor Market Models

RESOURCE MARKET
- Households sell
- Businesses buy

MODELS:
1. Both Comp.
2. Comp Res. / Imperf. Prod.
3. Monopsony
4. Union: D
5. Craft Union
6. Induct. Union
7. Bilateral Monopoly
8. Minimum Wage

BUSINESSES
- buy resources
- sell products

HOUSEHOLDS
- sell resources
- buy products

PRODUCT MARKET
- Businesses sell
- Households buy

MODELS:
1. Pure Competition
2. Monopoly
3. Monopolistic Competition
4. Oligopoly

Costs

Resources

Money income (wages, rents, interest, profits)

Labor, land, capital, entrepreneurial ability

Goods and services

Revenue

Goods and services

Consumption expenditures

Unit 3: Four Product Market Models

1. **Pure Competition**
2. **Monopoly**
3. **Monopolistic Competition**
4. **Oligopoly**

Unit 4: Eight Resource Market Models

1. **Competitive Resource Market and Competitive Product Market**
2. **Competitive Resource Market and Imperfect Product Market**
3. **Monopsony**
4. **Union: Demand Enhancement**
5. **Inclusive or Craft union**
6. **Exclusive or Industrial Union**
7. **Bilateral Monopoly**
8. **Minimum Wage**

General Level of Wages
- Role of productivity
- Real wages and productivity
    - Plentiful capital
    - Abundant natural resources
    - Advanced technology
    - Labor quality
    - Other factors
        - Management
        - Business, social, and political environment
        - Size of domestic market = mass production
        - Free-trade aggreements
- Long-run trend of real wages

Purely Competitive Labor Market and Purely Competitive Product Market
- Characteristics
- Market demand for labor (MRP)
- Supply of labor (MRC)
- Labor market equilibrium (MRP = MRC)
- Key graph

Purely Competitive Labor Market and Purely Imperfectly Competitive Product Market
- Characteristics
- Market demand for labor (MRP)
- Supply of labor (MRC)
- Labor market equilibrium (MRP = MRC)
- How does the profit maximizing quantity compare with the competitive quantity (alloc. Efficient)? VMP = MRC

Monopsony Model
- Characteristics
- Upsloping labor supply curve (MRC)
- MRC is higher than the wage rate (MRC is above the labor D curve)
- Equilibrium wage and employment (MRP = MRC)
- How does the profit maximizing quantity compare with the competitive quantity (alloc. Efficient)? VMP = MRC
- Examples of Monopsony Power

Three Union Models
- Demand-Enhancement Model
- Exclusive or Craft union Model
- Inclusive or Industrial Union Model

- Wage increases and job loss
- How does the profit maximizing quantity compare with the competitive quantity (alloc. Efficient)?

Bilateral Monopoly Model
- Indeterminate outcome
- Desirability: How does the profit maximizing quantity compare with the competitive quantity (alloc. Efficient)? VMP = MRC

Minimum Wage Controversy
- Case against the minimum wage
- Case for the minimum wage
- Evidence and conclusions

Wage Differentials – Why do wages differ?:
- Different MRPs
- Noncompeting Groups
    - Ability
    - Education and training
    - Compensating differences
- Market imperfections
    - Lack of job information
    - Geographic immobility
    - Unions and government restraints
    - Discrimination

Pay for Performance
- The Principal-Agent problem
- Principal
- agent
- Shirking – ways to reduce (incentive pay plans):
    - Piece rates
    - Commissions or royalties
    - Bonuses, stock options, and profit sharing
    - Efficiency wages
- Negative side effects

Are CEOs Overpaid?
- No
- Yes

Resource Markets: Monopsony

Assumptions: imperfect competition in the resource market
perfect competition in the product market

Q Resource	TP	MPP	Product Price	TR	MRP	Wage	MRC / TVC	PxMPP / MRC	PxMPP
0	0	--	$2.00	0	--	$18	--	—	0
1	21	21	2	#42	#42	20	$20	20	#42
2	38	17	2	76	34	22	44	24	34
3	51	13	2	102	26	24	72	28	26
4	60	9	2	120	18	26	104	32	18
5	65	5	2	130	10	28	140	36	10
6	66	1	2	132	2	30	180	40	2

Plot: MRP = PxMPP, W, MRC

(Plot MRP and MRC at the midpoints.)
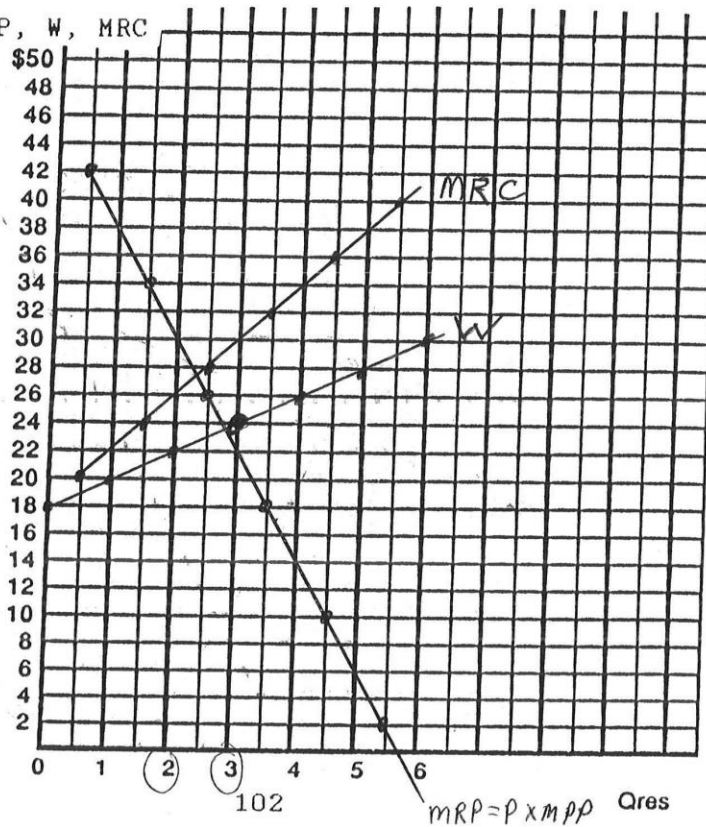
What quantity will be employed (the profit profit maximizing quantity to hire)? __2__
What is the wage rate? __$ 22__
What is the allocatively efficient quantity to employ? __3__

LABOR MARKETS

TYPE OF MARKET: *Monopsony*

Costs,
Revenues

Quantity of Labor

Explanation / Characteristics / Examples

_____

_____

_____

_____

_____

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_____

Profit Maximizing Quantity: _____

Allocative Efficient Quantity: _____

1. The labor market for teachers in a small, isolated community that has one school district would be best described as a(n):
A. Natural monopoly
B. Bilateral monopoly
C. Monopsony
D. Oligopsony

2. For a monopsonist in the labor market, the marginal resource cost of labor is:
A. Higher than the wage rate or price of labor
B. Less than the wage rate or price of labor
C. Equal to the wage rate or price of labor
D. Inversely related to the wage rate or price of labor

3. Professional sports leagues, like the NFL and the NBA, are good examples of monopsony because:
A. They are dominant providers of sports entertainment
B. They are the only employers of professional athletes in their respective sports
C. They are large corporations owned be small groups
D. They operate large facilities and stadiums

Workers	MRP	Wage
5	$12	$5
6	13	6
7	14	7
8	15	8
9	16	9
10	17	10

4. A firm faces the labor productivity and cost schedule in the table above. What is the marginal resource cost of the seventh worker?
A. $11
B. $13
C. $15
D. $17

5. A firm faces the labor productivity and cost schedule in the table above. How many workers will this profit-maximizing firm employ?
A. 6
B. 7
C. 8
D. 9

6. A firm faces the labor productivity and cost schedule in the table above. The wage rate schedule suggests that the firm:
A. Is purely competitive in the labor market
B. Is purely competitive in the product market
C. Has some monopoly power in the product market
D. Is not purely competitive in the labor market

W, MRC, S_L, MRP, 0, A, B, C, D, L, Quantity of Labor
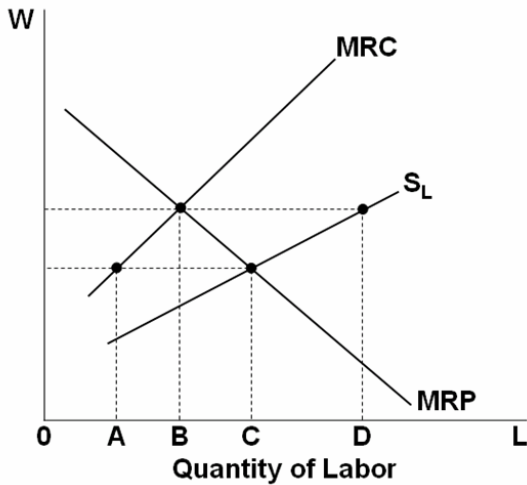
7. The profit-maximizing level of employment by the monopsonist in the labor market shown above will be:
A. *A*
B. *B*
C. *C*
D. *D*

MRC, W_0, W_1, Supply, W_2, W_3, Wage Rate, Demand, 0, Q_3, Q_1, Q_2, Employment
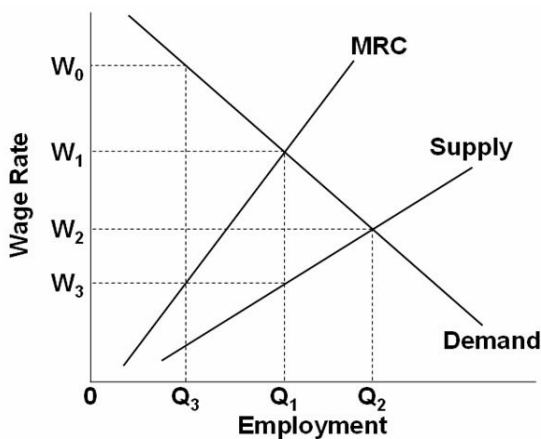
8. Refer to the above graph. Under purely competitive conditions in this labor market, the equilibrium wage rate will be:
A. W_1 and Q_1 workers will be hired
B. **W_2 and Q_2 workers will be hired**
C. W_2 and Q_1 workers will be hired
D. W_3 and Q_1 workers will be hired

9. Refer to the above graph. Under a monopsony in this labor market, the equilibrium wage rate will be:
A. W_1 and Q_1 workers will be hired
B. W_2 and Q_2 workers will be hired
C. W_2 and Q_1 workers will be hired
D. **W_3 and Q_1 workers will be hired**

10. Refer to the above graph. Comparing a monopsony against a purely competitive labor market, the difference in the equilibrium wage rate will be:

A. $W_0 - W_1$

B. $W_1 - W_2$

C. $W_2 - W_3$

D. $W_1 - W_3$

11. Compared to a purely competitive firm, a monopsonist will pay:

A. A higher wage rate to its workers

B. Lower wages but hire more workers than the purely competitive firm

C**. Lower wage rates and hire fewer workers than the purely competitive firm**

D. Lower wages while hiring the same quantity of workers as the purely competitive firm

LABOR MARKETS

TYPE OF MARKET: *Union Model - Increasing Demand*

Costs,
Revenues

Quantity of Labor

Explanation / Characteristics / Examples

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Profit Maximizing Quantity: _____

Allocative Efficient Quantity: _____

28

TYPE OF MARKET: *Union Model - Industrial Union*
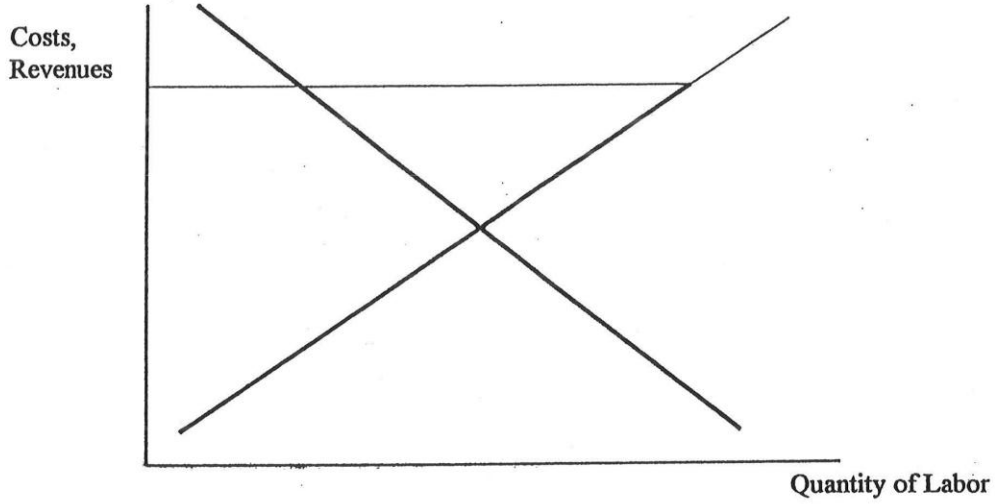
Costs,
Revenues

Quantity of Labor

Explanation / Characteristics / Examples

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Profit Maximizing Quantity: _____

Allocative Efficient Quantity: _____

LABOR MARKETS

TYPE OF MARKET: *Union Model – Bilateral Monopsony*
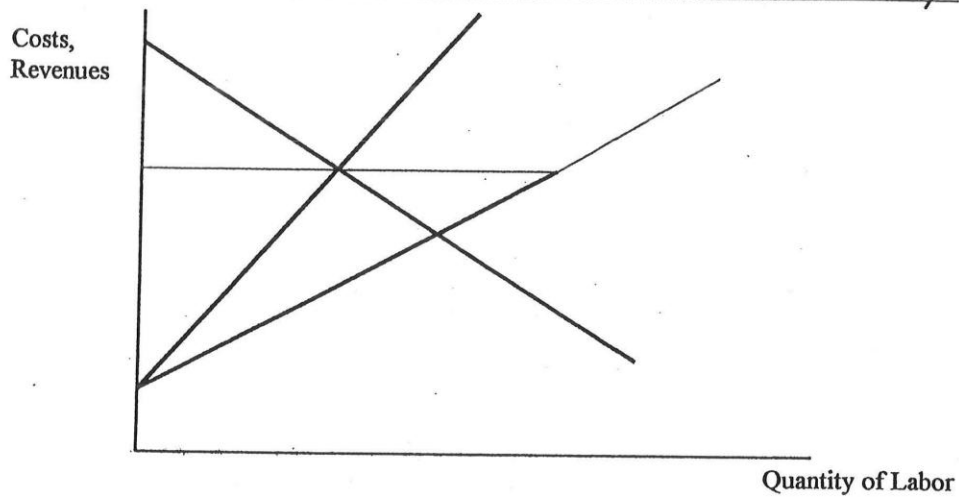
Costs,
Revenues

Quantity of Labor

Explanation / Characteristics / Examples

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Profit Maximizing Quantity: _____

Allocative Efficient Quantity: _____

12. Exclusive unionism has the economic effect of:
A. Strengthening the bargaining position of an industrial union
B. Weakening the bargaining position of a craft union
C. Decreasing the supply of labor
D. Increasing the demand for labor

13. When the monopsony model is combined with the inclusive union model the result is a case of:
A. Occupational licensing
B. Noncompeting groups
C. Bilateral monopoly
D. Institutional immobilities
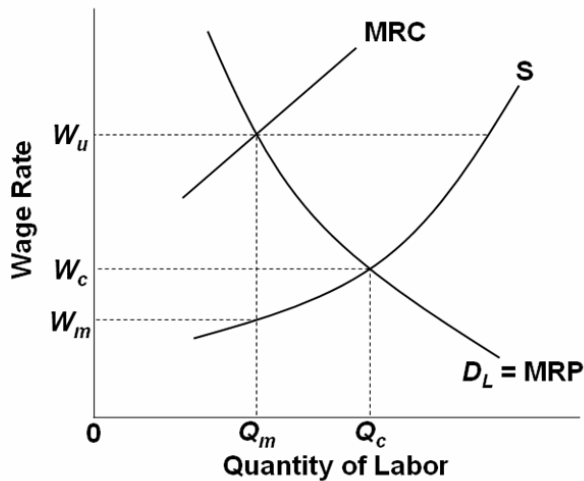
14. Refer to the above graph. A monopsonist will set the wage at:
A. W_c
B. W_u
C. W_m
D. Cannot be determined

15. Refer to the above graph. An inclusive union or an industrial union will set the wage rate at:
A. W_c
B. W_u
C. W_m
D. Cannot be determined

16. Refer to the above graph. If a monopsonist bargains with an inclusive union, as shown, the wage rate will be:
A. W_c
B. W_u
C. W_m
D. Indeterminate in the graph

17. A bilateral monopoly is a situation where a firm is:
A. A monopoly in its product market and is a monopsony in its labor market
B. The only employer of a resource and is acquiring that resource from a single supplier
C. One of only two firms that produce a particular product
D. The only buyer of a resource and also the only seller of a product

Facebook post by Robert Reich, Secretary of Labor under President Bill Clinton, 1993-1997, and currently Chancellor's Professor of Public Policy at the Goldman School of Public Policy at the University of California, Berkeley.

Here are my candidates for biggest tax lies told by regressives. Watch out for them especially today.

1. The rich pay a higher percentage of their income in taxes than everyone else. Not true if you include Social Security taxes (which now comprise 40 percent of federal revenues), sales taxes, and property taxes. If you also count how much of their income is treated as capital gains, they pay a smaller percentage.

2. U.S. corporate taxes are higher than in most other advanced nations. Untrue if you include corporate tax deductions and credits. And if you consider how much money they shelter abroad, many big U.S. companies pay no taxes at all.

3. High tax rates on the top slow growth. Untrue. Between 1946 and 1981, the top rate was over 70 percent, and the economy had an average annual growth rate faster than it's been since. Other nations with higher top tax rates have grown faster than the U.S. since the 1980s.

4. A "flat tax" would be fairer. In fact, it would raise the rates for lower-income people and lower them on higher-income taxpayers.

5. Lower taxes on the top trickle down in the form of more and better jobs for everyone else. In fact, after George W. Bush's cuts in 2001 and 2003, we had fewer jobs and lower real wages than before. Go all the way back to Reagan's tax cut, and you'll see the real median wage has stagnated or declined.

Do you have others to add?

What is the "truth?

Facts about Income Inequality
- Distribution by Income Category
- Distribution by Quintiles (Fifths)
  - Lorenze Curve
  - Gini Ratio
- Income Mobility: The Time Dimension
  - individual and family income mobility over time is significant; for many people, "low income" and "high income" are not permanent conditions.
  - Also, the longer the time period considered, the more equal the distribution of income becomes.
- Effect of Government Redistibution
  - The income data in Table 20.1 and Figure 20.1 include wages, salaries, dividends, and interest.
  - They also include all cash transfer payments such as Social Security, unemployment compensation benefits, and welfare assistance to needy families.
  - BUT: The data are before-tax data and therefore
    - They do not take into account the effects of personal income and payroll (Social Security) taxes that are levied directly on income receivers.
    - Nor do they include government **noncash transfers, (**also called in-kind transfers)
      - for example, Medicare, Medicaid, housing subsidies, subsidized school lunches, and food stamps.
      - Such transfers are "incomelike," since they enable recipients to "purchase" goods and services.
  - The impact of taxes and transfers on U. S. income distribution

Causes of Income Inequality
- Ability
- Education and Training
- Discrimination
- Preferences and Risks
- Unequal Distribution of Wealth
- Market Power
- Luck, Connections, and Misfortune

Global Perspective

Income Inequality over Time
- Rising Income Inequality since 1970
- Causes of Growing Income Inequality
  - Greater demand for highly skilled workers
  - Demographic changes
  - International trade, immigration, and the decline of Unionism

Equality vs. Efficiency
- The Case for Equality: Maximizing Total Utility = The President Obama Example (fig. 20.3)

(a) Anderson's marginal utility from income

(b) Brooks's marginal utility from income
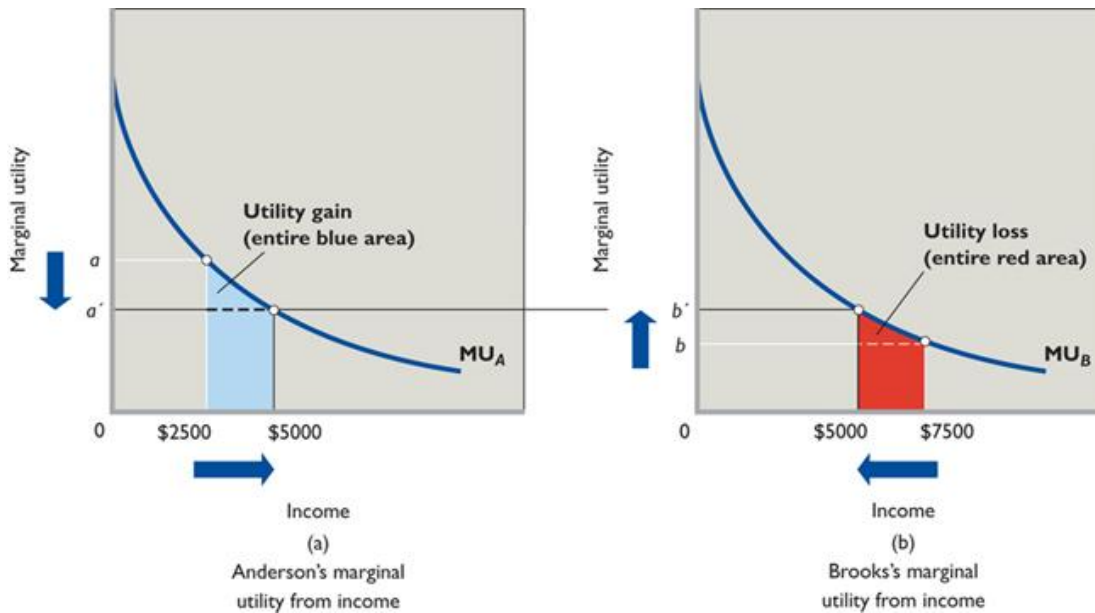
- The Case for Income Inequality: Incentives and Efficiency
- The Equality-Efficiency Trade-off

Occupational Discrimination – The Crowding Model
- The Model (figure 20.7)

(a) Occupation X

(b) Occupation Y
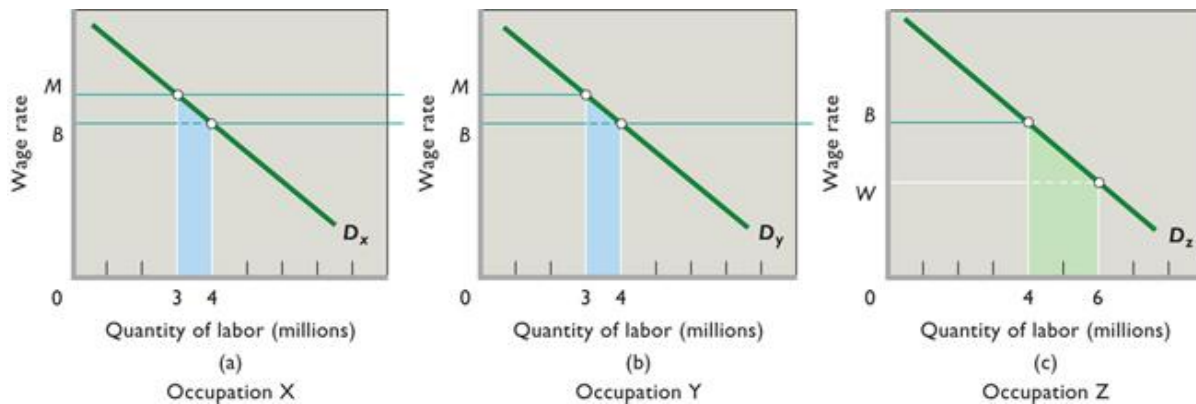
(c) Occupation Z

- Effects of Crowding
  - The result is a loss of output for society. To see why, recall again that labor demand reflects labor's marginal revenue product, which is labor's contribution to domestic output. Thus, the blue areas for occupations X and Y in Figure 20.7 show the decrease in domestic output—the market value of the marginal output—caused by subtracting 1 million women from each of these occupations. Similarly, the green area for occupation Z shows the increase in domestic output caused by moving 2 million women into occupation Z. Although society would gain the added output represented by the green area in occupation Z, it would lose the output represented by the sum of the two blue areas in occupations X and Y. That output loss exceeds the output gain, producing a net output loss for society.
- Eliminating Occupational Segregation

1. The Utility Maximizing Distribution of Income (figure 20.3) = the President Obama Example

(a) Anderson's marginal utility from income

(b) Brooks's marginal utility from income
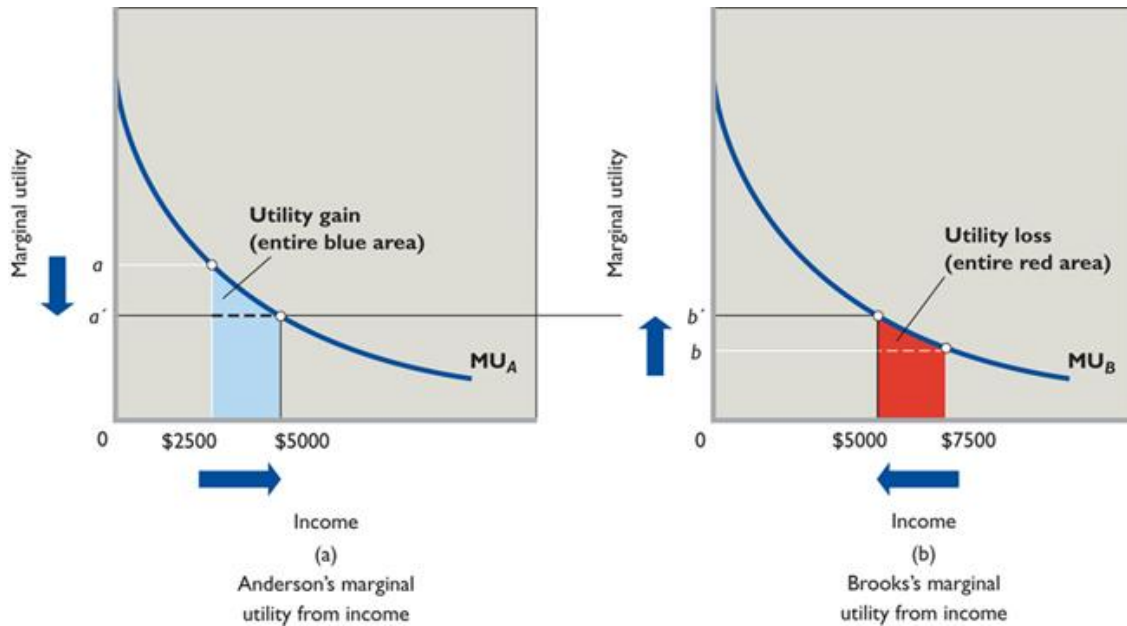
Assumptions:
- assume that the money incomes of two individuals, Anderson and Brooks, are subject to diminishing marginal utility.
- In any time period, income receivers spend the first dollars received on the products they value most—products whose marginal utility is high.
- The identical diminishing-marginal-utility-from-income curves (MU_A and MU_B in the figure) reflect the assumption that Anderson and Brooks have the same capacity to derive utility from income.
- income is initially unequally distributed (say, $2500 to Anderson and $7500 to Brooks), therefore, the marginal utility derived from the last dollar will be greater for Anderson than for Brooks,

Conclusions:
- The basic argument for an equal distribution of income is that income equality maximizes total consumer satisfaction (utility) from any particular level of output and income.
- If a single dollar of income is shifted from Brooks to Anderson—that is, toward greater equality—then Anderson's utility increases by a and Brooks's utility decreases by b. The combined utility then increases by a minus b (Anderson's large gain minus Brooks's small loss).
- The area under the MU curve and to the left of the individual's particular level of income represents the total utility of that income. Therefore, as a result of the transfer of the $2500, Anderson has gained utility represented by the blue area below curve MU_A, and Brooks has lost utility represented by the red area below curve MU_B.
- The blue area is obviously greater than the red area, so i the income distribution is initially unequal, then distributing income more equally can increase the combined utility of the two individuals.

Criticisms: Incentive and Efficienvy

- Although the logic of the argument for equality is sound, critics attack its fundamental assumption that there is some fixed amount of output produced and therefore income to be distributed.
- Critics of income equality argue that the way in which income is distributed is an important determinant of the amount of output or income that is produced and is available for distribution.

2. The Occupational Segregation Model of Discrimination

(a) Occupation X

(b) Occupation Y
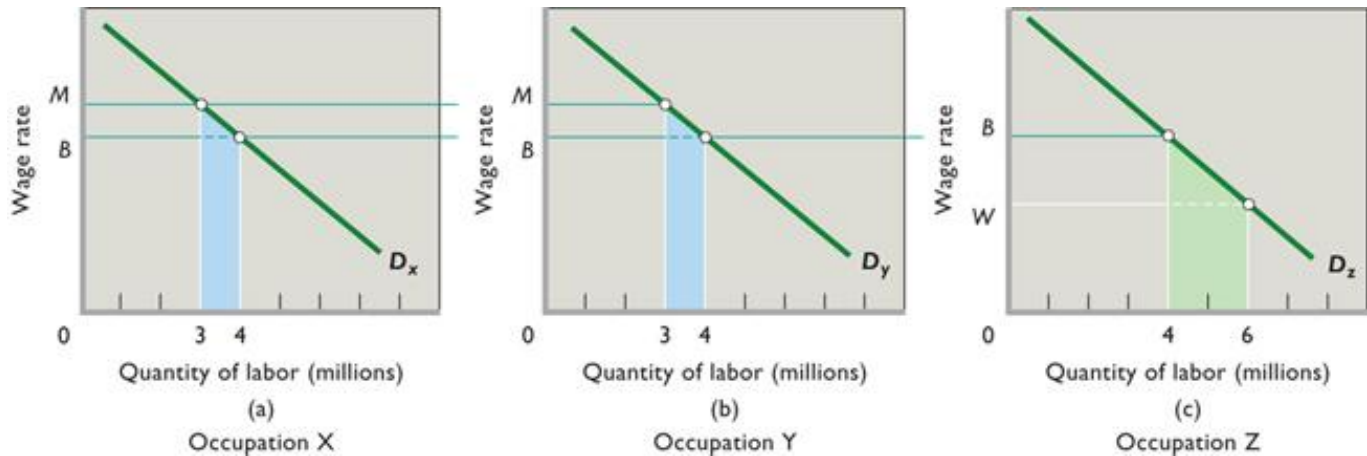
(c) Occupation Z

Assumptions:
- the labor force is comprised of 6 million men and 6 million women workers
- the economy has 3 occupations, X, Y, and Z, each having identical demand curves for labor;
- men and women workers are homogeneous with respect to their labor-market capabilities
- women are discriminated against by being excluded from occupations X and Y and are confined to Z
- aside from discrimination, the economy is competitive.
- There are no barriers to mobility between X and Y for men

Conclusions:
- Men would distribute themselves equally in occupations X andY and earn high incomes, M
- Women will be crowed into occupation Z and earn low income, W
- The result is a loss of output for society (less is being produced with the same number of workers
    - To see why, recall again that labor demand reflects labor's marginal revenue product, which is labor's contribution to domestic output.
    - Thus, the blue areas for occupations X and Y in Figure 20.7 show the decrease in domestic output—the market value of the marginal output—caused by subtracting 1 million women from each of these occupations.
    - Similarly, the green area for occupation Z shows the increase in domestic output caused by moving 2 million women into occupation Z.
    - Although society would gain the added output represented by the green area in occupation Z, it would lose the output represented by the sum of the two blue areas in occupations X and Y. **That output loss exceeds the output gain, producing a net output loss for society.**
- If we discrimination disappears, women, attracted by higher wage rates, shift from occupation Z to X and
    - 1 million women move into X and another 1 million move into Y. Now there are 4 million workers in Z, and occupational segregation is eliminated.
    - The new, nondiscriminatory equilibrium clearly benefits women, who now receive higher wages; it hurts men, who now receive lower wages..
    - Society also gains. The elimination of occupational segregation reverses the net output loss discussed above

1. In the quintile distribution of income, the term "quintile" represents:
A. 5 percent of the income receivers.
B. 10 percent of the income receivers.
C. 20 percent of the income receivers.
D. 25 percent of the income receivers.

2. The lowest quintile of households in the income distribution receives about:
A. 2.2 percent of the total income.
B. 3.4 percent of the total income.
C. 8.5 percent of the total income.
D. 10 percent of the total income.

3. The Lorenz curve:
A. plots graphically the poverty rate over time.
B. is located closer to the diagonal today than it was in 1970.
C. plots graphically the distribution of income.
D. is located farther from the diagonal when income is defined to include the value of noncash transfers.

4. The Gini ratio:
A. measures the relative extent of poverty in a nation.
B. compares the income of persons, households, or households at the 90th percentile of the income distribution to the income at the 10th percentile.
C. is a numerical measure of the overall dispersion of income in a nation.
D. is found by dividing the entire area below and to the right of the diagonal in the Lorenz diagram by the area between the diagonal and Lorenz curve.
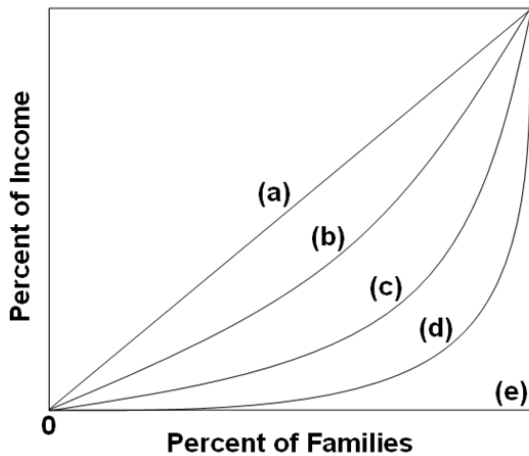
5. Refer to the above diagram where curves (a) through (e) are for five different countries. Of the countries listed below, income is most unequally distributed in country:
A. a.
B. b.
C. c.
D. d.

6. Which of the following Gini ratios indicates the highest degree of income inequality?
**A. 0.78**
B. 0.65
C. 0.29
D. 0.42

7. Income mobility:
A. makes lifetime income inequality among income receivers in the United States less than income inequality in any single year.
B. is less in the United States than in most developing nations.
C. refers to the movement of wage earners from one job to another.
D. reduces the total percentage of households in the lowest quintile of the income distribution over time.

8. Housing subsidies for low-income households:
A. represent a cash transfer.
B. are a part of the U.S. social insurance programs.
C. represent a noncash transfer.
D. conflict with the leaky-bucket analogy.
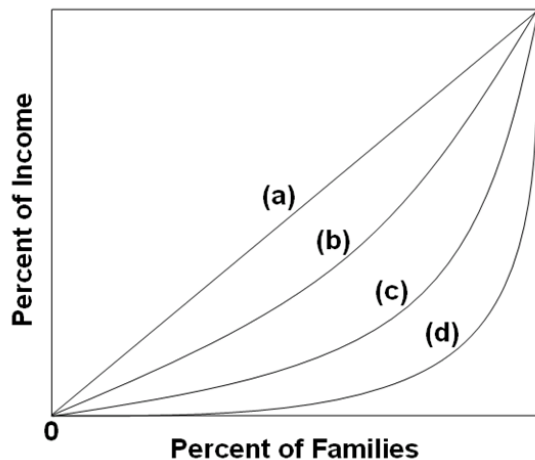
9. Refer to the above diagram. If line *c* represents the distribution of income in 1970 in the United States, we would expect the distribution of income for 2008 to be more like:
A. line *a*.
B. line *b*.
C. line *c*.
D. line *d*.

10. Each of the following contributes to income inequality *except*:
A. differences in ability and training.
B. differences in job tastes.
C. differences in wealth ownership.
D. government transfers.

11. Income:

A. is a stock concept.

B. consists of accumulated assets.

**C. is a flow concept.**

D. consists of wages only.

12. Which is *correct*?

A. Wealth is less equally distributed than income and therefore increases income inequality.

B. Wealth is more equally distributed than income and therefore increases income inequality.

C. Wealth is less equally distributed than income and therefore decreases income inequality.

D. Wealth is more equally distributed than income and therefore decreases income inequality.
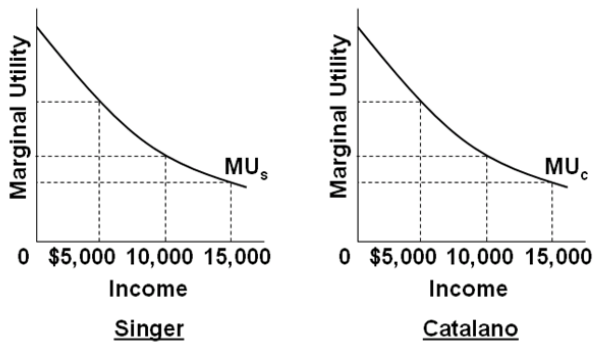
1. Refer to the above diagrams that show identical marginal utility from income curves for Singer and Catalano. The marginal utility from income curves are drawn on the assumption that:
A. Singer buys more inferior goods than does Catalano.
B. Singer and Catalano have identical capacities to enjoy income.
C. Catalano has a greater capacity to enjoy income than does Singer.
D. Singer has a greater capacity to enjoy income than does Catalano.

2. Refer to the above diagrams that show identical marginal utility from income curves for Singer and Catalano. If a given income of $20,000 is initially distributed so that Singer receives $15,000 and Catalano $5,000, the marginal utility:
A. of the last dollar of income will be greater for Catalano than for Singer.
B. derived from the last dollar will not be comparable between the two income receivers.
C. of the last dollar of income will be the same for both Singer and Catalano.
D. of the last dollar of income will be greater for Singer than for Catalano.

3. Refer to the above diagrams that show identical marginal utility from income curves for Singer and Catalano. If a given income of $20,000 is initially distributed so that Singer receives $15,000 and Catalano $5,000:
A. no judgment can be made as to the effect of a redistribution of income on total utility.
B. this initial distribution of income is maximizing the combined total utility of the two consumers.
C. the combined total utility of the two consumers can be increased by redistributing income from Catalano to Singer.
D. the combined total utility of the two consumers can be increased by redistributing income from Singer to Catalano.

4. Refer to the above diagrams that show identical marginal utility from income curves for Singer and Catalano. If this initial distribution of $15,000 to Singer and $5,000 to Catalano is altered in favor of greater equality, it may be argued that:
A. the combined total utility of the two consumers will decline because Catalano has a greater capacity to derive utility from income than does Singer.
B. incentives to produce will be weakened and total income will decrease.
C. incentives to produce will be enhanced and total income will increase.
D. the combined total utility of the two consumers will decline because Singer has a greater capacity to derive utility from income than does Catalano.

5. The equality-efficiency tradeoff refers to:

A. the conflict between risk averters and risk takers.

B. the willingness of Congress to abandon existing welfare programs in favor of a comprehensive plan to increase education and training for low-income persons.

C. possible conflicts between the goals of economic efficiency and greater income equality.

D. the difference between the goals of income equality and equality of economic opportunity.

1. A particular woman is denied on-the-job training because women on average are more likely to drop out of the workforce than men. This illustrates:
A. occupational segregation.
B. the crowding model.
C. the taste-for-discrimination model.
D. statistical discrimination.

Assumptions: (1) the labor force is comprised of 9 million men and 9 million women workers; (2) the economy has 3 occupations, X, Y, and Z, each having identical demand curves for labor; (3) men and women workers are homogeneous with respect to their labor-market capabilities; (4) women are discriminated against by being excluded from occupations X and Y and are confined to Z; and (5) aside from discrimination, the economy is competitive.

2. Refer to the above diagram and list of assumptions. Under these circumstances 9 million women will be employed in occupation Z:
A. 5 million men in X, and 4 million men in Y.
B. 3 million men in XD, and 6 million men in Y.
C. 6 million men in X, and 3 million men in Y.
D. and 4.5 million men each in occupations X and Y.

3. Refer to the above diagram and list of assumptions. With women confined to occupation Z and men free to choose occupations, how will this affect the wages paid?
A. Men and women will both be paid $5.
B. Men will be paid $5 and women $4.
C. Men will be paid $6.50 and women $3.
D. Women and men will both be paid $6.50.

4. Refer to the above diagram and list of assumptions. If discrimination is ended:
A. men will leave occupations X and Y and enter occupation Z.
B. 4 million women will leave occupation Z, with 2 million entering occupation X and 2 million entering occupation Y.
C. 3 million women will leave occupation Z, with 1.5 million entering occupation X and 1.5 million entering occupation Y.
D. 3 million women will leave occupation Z, all of whom will enter industry X.

5. Refer to the above diagram and list of assumptions. If discrimination is ended, women:
A. and men will both receive a wage rate of $4.
B. and men will both receive a wage rate of $5.
C. and men will both receive a wage rate of $6.
D. will receive a wage rate of $4 and men will receive a wage rate of $5.

6. Refer to the above diagram and list of assumptions. The elimination of gender discrimination:
A. may either increase or reduce real domestic output, depending on what happens to the level of wages.
B. will increase real domestic output.
C. will have no effect on real domestic output.
D. will reduce real domestic output.

7. Discrimination creates a:
A. redistribution of a larger domestic output.
B. larger domestic output but no redistribution.
C. smaller domestic output but no redistribution.
D. redistribution of a smaller domestic output.
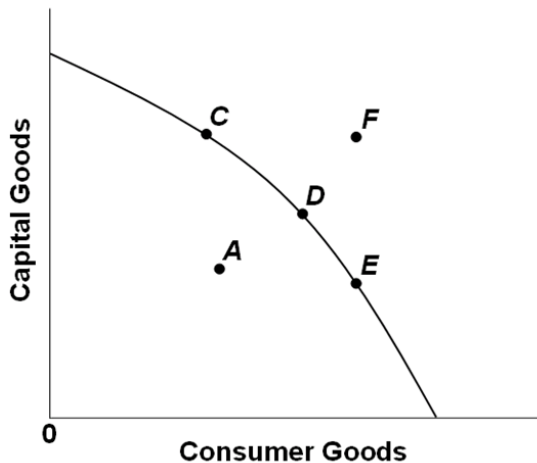
8. In the above diagram, economic discrimination is best represented by point:
A. A.
B. C rather than D or E.
C. E rather than D or C.
D. F.

Economic Immigrants

Number of Immigants
- Legal Immigrants
  - Numbers and trend
  - By category of admission
  - By country of origin
- Illegal Immigrants

The Decision to Migrate

The Economic Effects of Immigration
The fact that economic immigration to the United States is sizeable and continuous affirms that in general the economic benefits of immigration to the immigrants exceed their costs.

- Personal Gain for those who Migrate

- Impact on Wage Rates, Efficiency, and Output (Figure 22.3)
  - Wage rates rise in source country and fall in destination country
  - Efficiency gains from immigration: **same number of workers produces a greater total output**
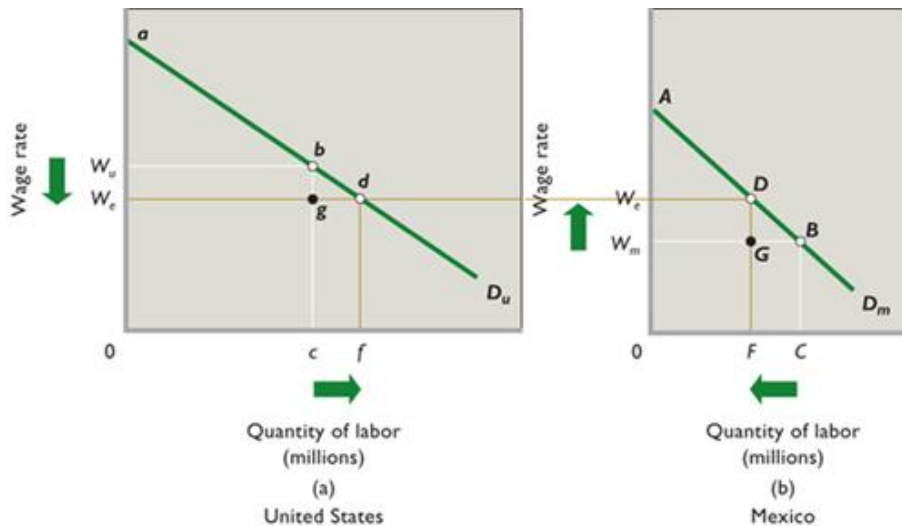
- Income Shares
  - Brain drain
  - Although wages decrease in destination country and increase in source country we cannot say what will happen to total income – depends on the elasticities of labor demand
    - Destination country: wage decrease
      - If elastic: the wage decrease in the destination country will INCREASE total income
      - If inelastic: the wage decrease in the destination country will DECREASE total income
    - Source country: wage increase

- If elastic: the wage increase in the destination country will DECREASE total income
- If inelastic: the wage increase in the destination country will INCREASE total income
  - o Business income increases in destination country and decreases in source country

- Complications and Modifications
  - o Costs of migration
  - o Remittances and backflows
  - o Complementary vs. substitute resources
  - o Expansion of capital in destination country
  - o Full employment vs. unemployment

- Fiscal Impacts
  - o What effects do immigrants have on tax revenues and government spending in the United States?

- Research Findings:
  - o All economists agree that U.S. immigration increases U.S. domestic output and income and that highly educated immigrants and successful entrepreneurs add to the vitality of American enterprise.
  - o But in light of the complications just discussed, no single generalization is possible as to the impact of immigration on the wages of native-born U.S. workers.
    - The best evidence indicates that immigration reduces the wages of native-born workers who have low educations, and also may reduce the salaries of some highly trained native-born workers.
    - The overall effect of immigration on the average American wage is much less clear. Scholarly estimates on that effect range from minus 3 percent to plus 2 percent.

The Illegal Immigration Debate

- Employment Effects
    - PRO-immigration: Illegal immigrants take jobs that Americans do not want
    - ANTI-immigration: Illegal immigrants take jobs from Americans
    - Generally, illegal immigration causes some substitution of illegal workers for domestic workers, but the amount of displacement is less than the total employment of the illegal workers. Illegal immigration—as with legal immigration—increases total employment in the United States

- Wage Effects
    - the overall effect of illegal immigration on the average wage rate in the economy is either a smaller decline or even positive
    - Illegal immigration has very little effect on the average level of wages in the United States. That average wage level depends mainly on the nation's overall level of labor productivity, which illegal immigration does not appreciably affect.

- Price Effects
    - In industries where illegal immigrants are heavily used—for example, construction, agriculture, landscaping, home cleaning, restaurant meals, and lodging—the presence of illegal workers may have a discernable downward price effect.
    - Lower prices raise the standard of living of all Americans and their families.

- Fiscal Impacts on State and Local Governments
    - One major and very legitimate concern about illegal immigration is the negative fiscal impact it has on local and state governments.

- Other Concerns
    - undermines general respect for the law
    - unfair to the thousands of people enduring the expense and long waits associated with the process for legally gaining the right to live and work in the United States.
    - some observers see national defense as the greatest long-term risk from porous borders

Optimal Immigration
- From a strictly economic perspective, immigration should be expanded until its marginal benefit equals its marginal cost.
- The MB = MC conceptual framework explicitly recognizes that there can be too few immigrants, just as there can be too many.

1. A Simple Immigration Model

Quantity of labor
(millions)
(a)
United States

Quantity of labor
(millions)
(b)
Mexico
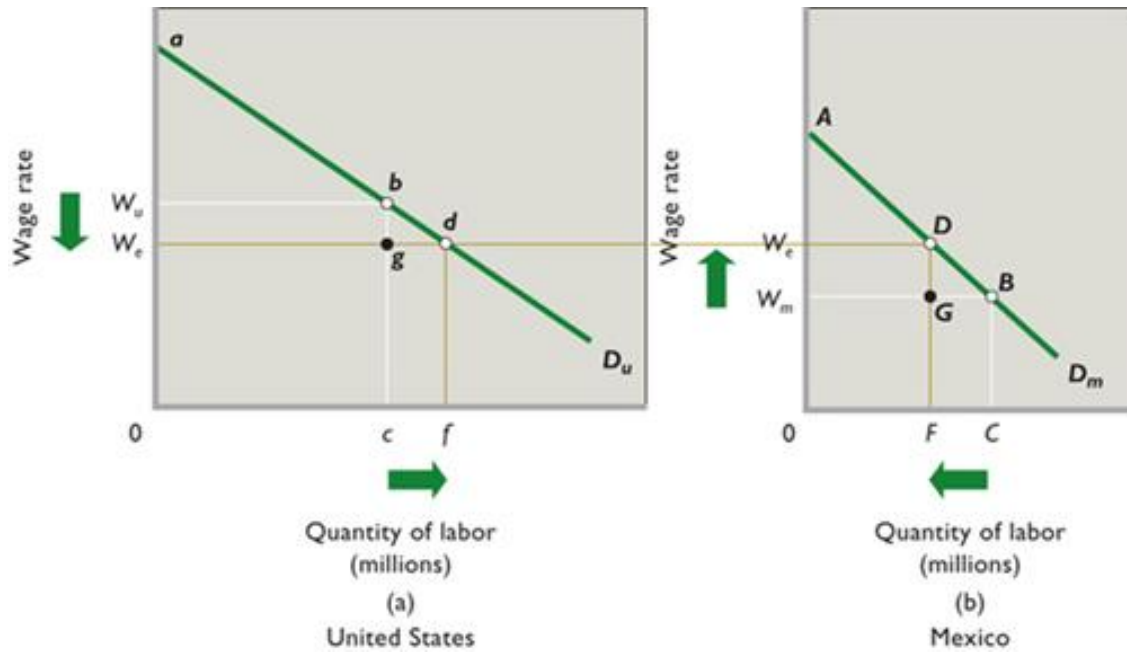
Assumptions:

- D_u is the demand for labor in the United States; D_m is the demand for labor in Mexico. The demand for labor presumably is greater in the United States because it has more capital, advanced technology, and better infrastructure that enhance the productivity of labor.
- before-migration labor forces of the United States and Mexico are c and C, respectively;
- that neither country is experiencing substantial long-term unemployment;
- and that labor quality in the two countries is the same.
- migration (1) has no cost, (2) occurs solely in response to wage differentials, and (3)is unimpeded by law in both countries,

Conclusions:

- workers will migrate from Mexico to the United States until wage rates in the two countries are equal at W_e.
- At that level, $C- F$ (equals $f - c$) workers will have migrated from Mexico to the United States.
- the U.S. wage level will fall from W_u to W_e,
- IU.S. domestic output (the sum of the marginal revenue products of the entire workforce) will increase from $0abc$ to $0adf$. This domestic output is the total output produced within the borders of the United States and equals U.S. domestic income.
- In Mexico, the wage rate will rise from W_m to W_e,
- Mexican domestic output will decline from $0ABC$ to $0ADF$.
- **Observe that the gain in domestic output *cbdf* in the United States exceeds the loss of domestic output *FDBC* in Mexico. The migration from Mexico to the United States has clearly increased the world's output and income.**

Migration enables the world to produce a larger output with its currently available resources. So labor mobility joins international trade in enhancing the world's standard of living.

2. Impact of Illegal Workers in a Low Wage Labor Market
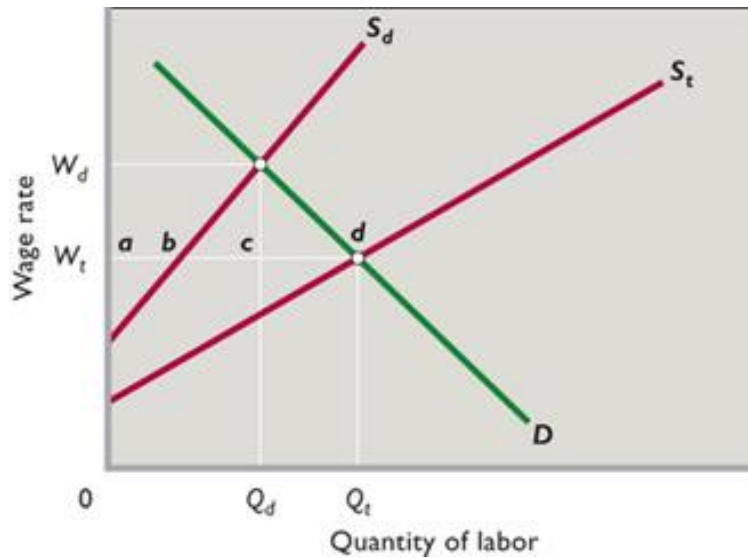
Assumptions:
- Employers in this market are willing and able to ignore minimum wage laws
- S_d represents the supply of domestically-born (and legal immigrant) workers;
- S_t represents the total supply of workers in this labor market (S_d plus illegal immigrants
  - The horizontal distances between S_t and S_d at the various wage rates measure the number of illegal immigrants offering their labor services at those wage rates
- Unless otherwise stated, illegal immigration is *not* effectively blocked by the government.

Conclusions:
- With illegal workers present, as implied by curve S_t, the equilibrium wage and level of employment in this labor market are W_t and Q_t.
- At the low wage of W_t,
  - only *ab* domestic-born workers are willing to work as field hands;
  - the other workers—*bd*—are illegal immigrants.
- Can we therefore conclude from Figure 22.4 that illegal workers have filled field jobs that most U.S.-born workers do not want?
  - The answer is "yes," but only with the proviso: "at wage rate W_t."
  - if the United States cut off the full inflow of illegal workers to this market, the relevant supply curve would be S_d and the wage rate would rise to W_d. Then Q_d domestic-born workers as opposed to *ab* workers would work as field hands.
- Can we therefore conclude from Figure 22.4, that illegal workers reduce the employment of Americans by an amount equal to the employment of illegal workers?
  - illegal immigration causes some substitution of illegal workers for domestic workers, but the amount of displacement is less than the total employment of the illegal workers. Illegal immigration—as with legal immigration—increases total employment in the United States.

Employment Effects:
- Generally, illegal immigration causes some substitution of illegal workers for domestic workers, but the amount of displacement is less than the total employment of the illegal workers. Illegal immigration—as with legal immigration—increases total employment in the United States.

Wage Effects:
- Large flows of illegal workers into specific low-wage labor markets reduce wage rates in those markets.
- the overall effect of illegal immigration on the average wage rate in the economy is either a smaller decline or even positive.
    - As with legal immigrants, some illegal workers are **complementary inputs** to domestic-born workers, not substitutes, and therefore their presence INCREASES employment od domestic workers
    - Only where illegal workers and legal workers are **substitute resources** will the increase in labor supply reduce the wages of other workers. Ironically, studies show that the largest negative impact of illegal immigrants is on the wages of previous immigrants, not on native-born workers.
- Illegal immigration has very little effect on the average level of wages in the United States. That average wage level depends mainly on the nation's overall level of labor productivity, which illegal immigration does not appreciably affect.

Price Effects:
- Because illegal immigrants work at lower pay than would be necessary to attract native-born workers, the prices of goods and services that illegal workers produce are lower than they would be otherwise.

Fiscal Impacts on State and Local governments:
- One major and very legitimate concern about illegal immigration is the negative fiscal impact it has on local and state governments. Cities and states with high concentrations of illegal immigrants bear the main burden
    - Immigrants do, however, pay state sales taxes and taxes on gasoline, and indirectly pay property taxes built into rent.

Other Concerns:
- allowing immigrants to enter the United States unlawfully may undermine general respect for the law
- illegal immigration is highly unfair to the thousands of people enduring the expense and long waits associated with the process for legally gaining the right to live and work in the United States
- some observers see national defense as the greatest long-term risk from porous borders. The flow of illegal entrants into the United States is clearly at odds with the goal of homeland security. Ineffective border enforcement against illegal immigrants allows career criminals and even terrorists to enter the United States undetected.

1. Economic immigrants:
A. are defined as any international migrants that have an impact on the economy.
B. are defined as international migrants motivated by economic gain.
C. only impact the economy if they enter the country legally.
D. include not only people, but also any capital that migrates from another country.

2. According to U.S. Census Bureau data, approximately how many illegal immigrants are estimated to be living continuously in the United States?
A. 5 million
B. 11 million
C. 23 million
D. 30 million

3. *Human capital* refers to:
A. the accumulated knowledge and skills that allow a person to be productive.
B. machinery that requires extensive human interaction to be productive.
C. the accumulated financial assets of people.
D. all of these things.

4. "Beaten paths" from one country to another:
A. discourage migration to that country because of a perception that all of the good jobs have already been taken.
B. discourage migration by increasing the cost of moving.
C. encourage migration by providing employment contacts and job information.
D. are more prevalent the greater the distance between the two countries.
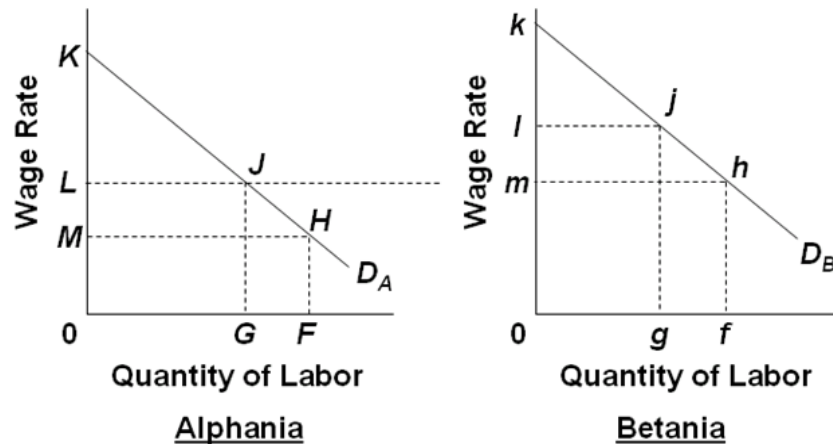
5. "Backflows" occur when:
A. two countries send immigrants to each other in approximately equal numbers.
B. physical capital flows into a country that has lost labor due to migration.
C. immigrants send financial payments back to family in their country of origin.
D. migrants return to their home country.

Alphania　　　　　　　　Betania

Assumptions: (1) The demand for labor in Alphania and Betania are as shown by D_A and D_B, respectively; (2) Alphania's native labor force is F and that of Betania is g; (3) Wage L in Alphania is equal to Wage m in Betania; and (4) full employment exists in both countries.

1. Refer to the above diagram and assumptions. If migration is costless and unimpeded:
A. migration will cause the average level of wages to fall in Alphania.
B. no migration will occur.
C. fg workers will move from Betania to Alphania.
D. *GF* workers will move from Alphania to Betania.

2. Refer to the above diagram and assumptions. If migration is costless and unimpeded, the absolute wage bill will necessarily:
A. increase in Alphania if its labor demand curve is elastic.
B. increase in Betania if its labor demand curve is elastic.
C. decrease in Betania.
D. increase in Betania.

3. Refer to the above diagram and assumptions. If migration is costless and unimpeded, business income will:
A. decrease in Betania, but increase in Alphania.
B. increase in Betania, but decrease in Alphania.
C. decrease in both Alphania and Betania.
D. increase in both Alphania and Betania.

4. Refer to the above diagram and assumptions. If migration is costless and unimpeded, the average level of wages will:
A. decrease in Betania, but remain unchanged in Alphania.
B. increase in Alphania, but remain unchanged in Betania.
C. increase in Alphania and decrease in Betania.
D. increase in Betania and decrease in Alphania.

5. Refer to the above diagram and assumptions. After migration has ceased:
A. world output will have increased by *mljh - MLJH*.
B. Betania's output will have increased and Alphania's output will have decreased, but world output will not have changed.
C. world output will have increased by *gjhf - GJHF*.
D. world output will have decreased by *gjhf - GJHF*.

6. Refer to the above diagram and assumptions. We would expect a flow of remittances from migrants to:
A. decrease the national income loss in Betania.
B. increase the national income gain in Betania.
C. decrease the national income loss in Alphania.
D. decrease the national income gains in both countries.

7. Refer to the above diagram and assumptions. If unemployment, rather than full employment, had initially existed in Alphania:
A. then Betania's loss of output would have been greater.
B. then Betania's gain of output would have been less.
C. its loss of output would have been less.
D. its loss of output would have been greater.

8. "Remittances" occur when:
A. two countries send immigrants to each other in approximately equal numbers.
B. physical capital flows into a country that has lost labor due to migration.
C. immigrants send financial payments back to family in their country of origin.
D. migrants return to their home country.

9. Efficiency gains from migration:
A. will tend to be greater when workers migrate from nations with high unemployment to nations experiencing full employment.
B. imply that all workers, domestic and migrant, are financially better off as a result of migration.
C. will tend to be greater in countries experiencing "brain drain."
D. usually benefit one nation at the expense of another.

10. Worker migration will cause wage rates to equalize across two countries if all of the following conditions are met *except*:
A. migration is motivated strictly by wage differentials.
B. neither nation restricts or interferes with migration.
C. both countries use the same currency.
D. migration has no cost.

11. Which of the following statements is most accurate about the effects of migration?
A. Migration generally benefits the mover, but there is a net efficiency loss to the world.
B. Migration generally benefits everyone in both the origin and destination nation.
C. Migration generally benefits the mover and creates a net efficiency gain for the world.
D. Remittances cause the gains from immigration to be distributed unevenly.

12. Assuming migration is unimpeded and costless, which of the following statements is most accurate about the effect of immigration on wages in both the origin and destination nations?
A. Wages will rise in the origin nation, fall in the destination nation, and overall wage income must rise.
B. Wages will rise in both nations, and overall wage income must rise.
C. Wages will rise in the origin nation and fall in the destination nation, and the wage changes must cancel each other, resulting in no net change in overall wage income.
D. Wages will rise in the origin nation and fall in the destination nation, but the effect on overall wage income depends on the elasticities of labor demand.

13. Scholarly estimates of the effects of immigration on the average American wage range from:
A. minus 5 to minus 2 percent.
B. plus 2 to plus 3 percent.
C. minus 5 to plus 3 percent.
D. minus 3 to plus 2 percent.
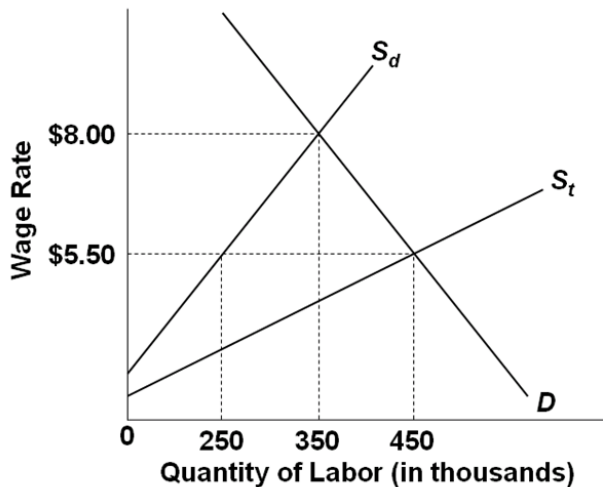
Assumptions: 1) Employers in this market are willing and able to ignore minimum wage laws; 2) S_d represents the supply of domestically-born (and legal immigrant) workers; 3) S_t represents the total supply of workers in this labor market (S_d plus illegal immigrants); and 4) Unless otherwise stated, illegal immigration is *not* effectively blocked by the government.

1. Refer to the above figure. The equilibrium wage and level of employment are, respectively:
A. $5.50 and 250,000
B. $5.50 and 350,000
C. $8 and 350,000
D. $5.50 and 450,000

2. Refer to the above figure. How many domestically-born (and legal immigrant) workers will be hired at equilibrium?
A. 200,000
B. 250,000
C. 350,000
D. 450,000

3. Refer to the above figure. How many illegal immigrant workers will be hired at equilibrium?
A. 200,000
B. 250,000
C. 350,000
D. 450,000

4. Refer to the above figure. If the government effectively prevents illegal immigrants from working in this labor market, the equilibrium wage and level of employment are, respectively:
A. $5.50 and 250,000
B. $5.50 and 350,000
C. $8 and 350,000
D. $5.50 and 450,000

5. Refer to the above figure. Assume initially that government does not effectively block illegal immigration. If the government then finds a way to prevent all illegal immigrants from working in this labor market:

A. 100,000 domestically-born workers will gain employment at the expense of 200,000 illegal immigrants.

B. 200,000 domestically-born workers will gain employment at the expense of 200,000 illegal immigrants.

C. 100,000 domestically-born workers will gain employment at the expense of 250,000 illegal immigrants.

D. 100,000 domestically-born workers will gain employment at the expense of 100,000 illegal immigrants.

6. Effectively removing all illegal immigrants from U.S. labor markets would:

A. reduce wages in the United States.

B. increase employment of domestic-born workers, but by a lesser amount than the number of jobs lost by illegal workers.

C. increase employment of domestic-born workers at a rate of one-for-one with the jobs lost by illegal workers.

D. increase employment of domestic-born workers by an amount greater than the number of jobs lost by illegal workers.

7. Illegal immigration tends to:

A. increase average wages and employment where illegal workers are complements to domestic-born workers.

B. increase average wages and employment where illegal workers are substitutes for domestic-born workers.

C. increase average wages and employment whether illegal workers are complements to or substitutes for domestic-born workers.

D. reduce average wages and employment whether illegal workers are complements to or substitutes for domestic-born workers.

8. Which of the following statements is true about illegal immigration?

A. Illegal immigrants are often willing to work for less pay, keeping costs and prices for consumer goods and services lower.

B. Illegal immigration reduces wages for U.S. workers who are complementary inputs.

C. Illegal immigration tends to reduce wages less for previous immigrants than for native-born workers.

D. All of these.

9. Which of the following statements is true about the effects of illegal immigration in the United States?

A. Illegal immigrant workers displace domestic-born workers on a one-for-one basis.

B. Illegal immigration has a negative fiscal impact that falls most heavily on state and local governments.

C. Illegal immigration negatively impacts wages and the standard of living for all domestic-born workers.

D. All of these are true.
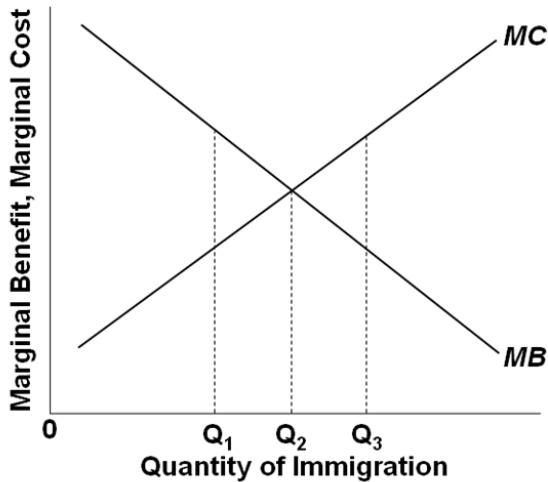
1. Refer to the above figure. The optimal level of immigration in this country:
A. is Q_1.
B. is Q_2.
C. is Q_3.
D. cannot be determined with the information given

2. Refer to the above figure. An increase in the number of highly skilled and educated potential immigrants would:
A. increase MB and increase the optimal quantity of immigrants.
B. reduce MB and reduce the optimal quantity of immigrants.
C. increase MC and increase the optimal quantity of immigrants.
D. reduce MC and reduce the optimal quantity of immigrants.

3. Refer to the above figure. If more criminals are in the mix of potential immigrants, how will this affect the optimal quantity of immigrants?
A. It will increase MC and reduce the optimal quantity.
B. It will increase MC and raise the optimal quantity.
C. It will lower MC and raise the optimal quantity.
D. It will lower MC and reduce the optimal quantity.