

# Demand for Labor

- Value of the Marginal Product (VMP)
  - MPL multiplied by the price of the output it produces
  - Sometimes called marginal revenue product
  - Think of this as the extra revenue generated by the last worker



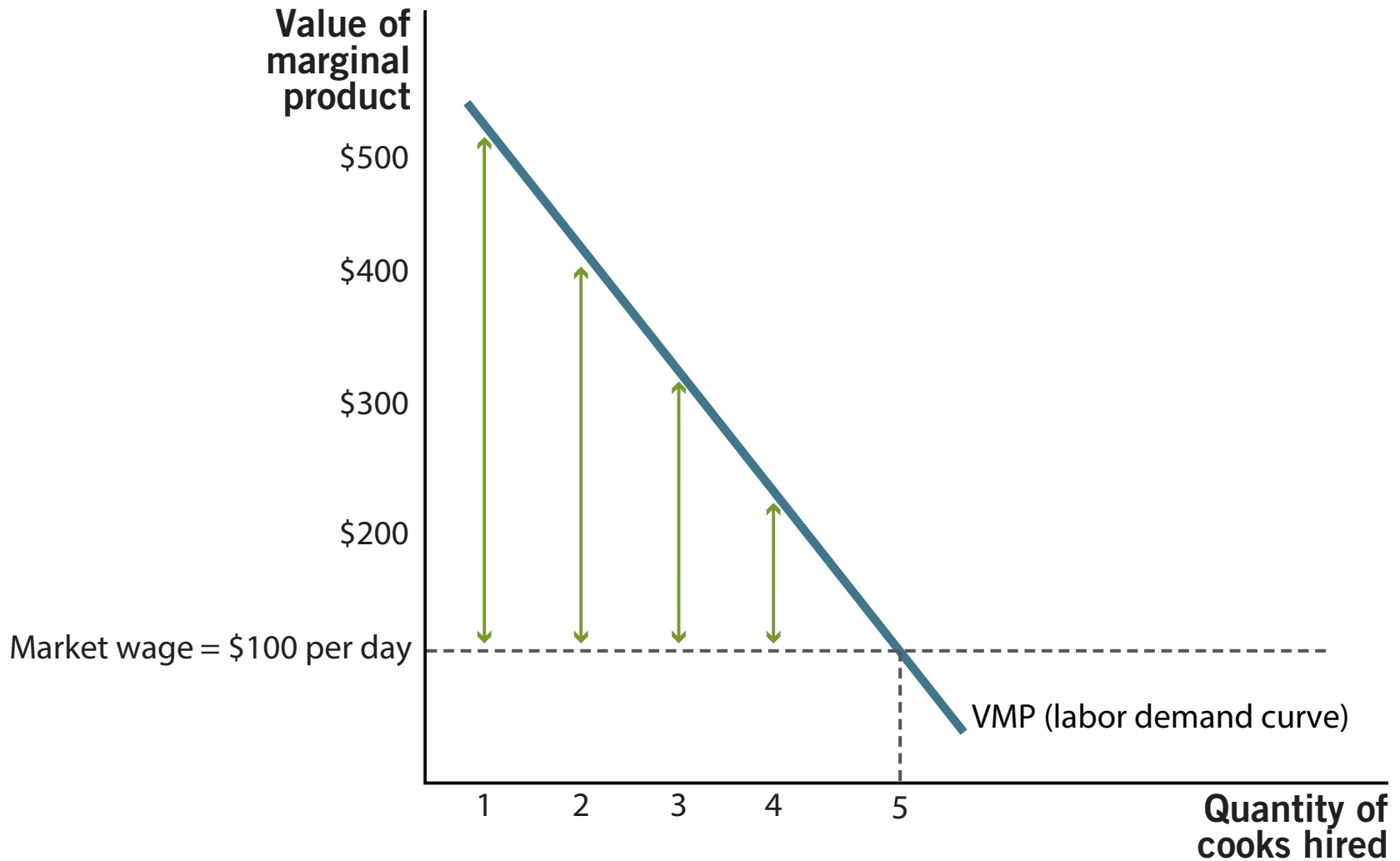
# Deciding How Many Laborers to Hire (assume price of good = \$10)

**TABLE 14.1**

## Deciding How Many Laborers to Hire

| (1)<br>Labor<br>(number of<br>workers) | (2)<br>Output<br>(daily meals<br>produced) | (3)<br>Marginal<br>product of labor | (4)<br>Value of the<br>marginal<br>product of labor | (5)<br>Wage<br>(daily) | (6)<br>Marginal<br>profit                        |
|--|--|-------------------------------------|---|------------------------|--|
| Formula:                               |  | $\Delta$ Output                     | Price $\times$ marginal<br>product of labor         |                        | Value of the marginal<br>product of labor – wage |
| 0                                      | 0  | 50                                  | \$500   | \$100                  | \$400  |
| 1                                      | 50   | 40                                  | 400   | 100                    | 300  |
| 2                                      | 90   | 30                                  | 300   | 100                    | 200  |
| 3                                      | 120  | 20                                  | 200   | 100                    | 100  |
| 4                                      | 140  | 10                                  | 100   | 100                    | 0  |
| 5                                      | 150  | 0                                   | 0   | 100                    | -100   |
| 6                                      | 150  |                                     |   |                        |  |

# Value of the Marginal Product



# Factors That Lead to Income Inequality

- What would it take to equalize wages?
  - All workers would have to have same skills, ability, productivity
  - All jobs must be equally attractive
  - All workers must be perfectly mobile
- Would that be good or bad?
  - If society's income structure is *too* equal, the incentive to work is diminished
  - Free riding would occur

# Inequality of Income

- Income inequality exists when some workers earn more than others.
- Caused by
  - Compensating differentials
  - Discrimination
  - Corruption
  - Differences in marginal product of labor

# Labor-Leisure Trade-off

- If wages rise, what happens?
- People may be willing to work more hours
  - The opportunity cost of leisure is now higher
  - This is called the *substitution effect*—when wages increase, you substitute *in* labor and substitute *out* leisure

# Labor-Leisure Trade-off

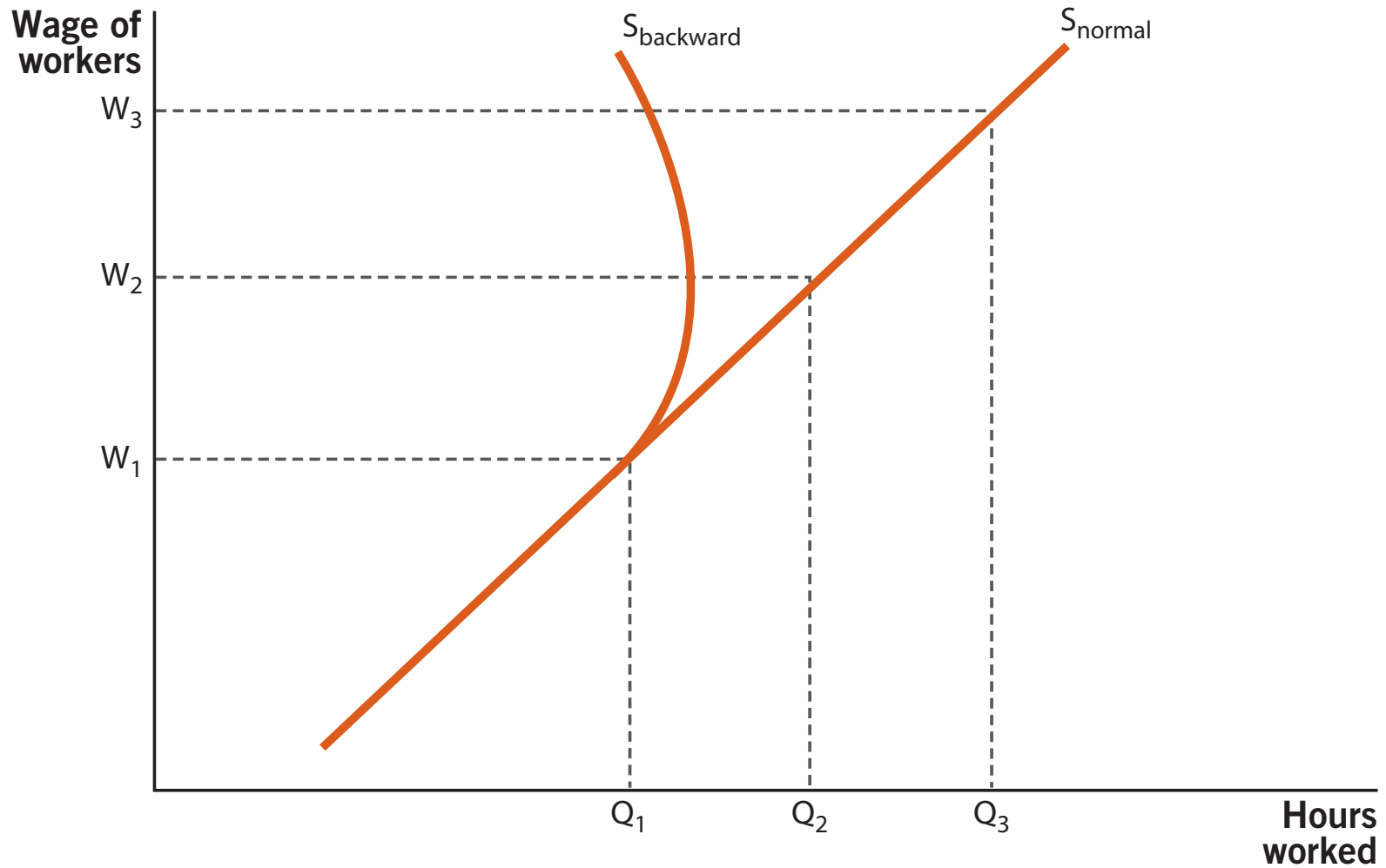
- If wages rise, what happens?
- People may be willing to work less hours
  - Suppose you just need \$1,000 per week to be satisfied. With a pay raise, you could earn this amount working fewer hours, and enjoy more leisure hours
  - This is called the *income effect*. You use your extra income to purchase more leisure (a normal good).

# Labor-Leisure Trade-off

- Do people work more or less when wages increase?
- At lower wages
  - The substitution effect usually dominates.
- At high wage levels
  - The income effect may dominate.



# The Labor Supply Curve



# Measuring Inequality

**TABLE 15.5**

## Inequality in Selected Countries

| <b>Country</b> | <b>Inequality ratio<br/>(richest 20% ÷ poorest 20%)</b> |
|----------------|---|
| Japan          | 4.1   |
| Germany        | 6.3   |
| Canada         | 8.6   |
| United Kingdom | 12.7  |
| United States  | 15.8  |
| Mexico         | 19.3  |
| Brazil         | 37.0  |
| Bolivia        | 85.5  |
| Namibia        | 98.2  |

*Source:* Adapted from United Nations Development Programme, *Human Development Report*, 2009, Table M.

# Difficulties in Measuring Inequality

- Income inequality numbers can be unreliable and misinterpreted
  - Data **reflects pretax income**, rather than disposable income
  - Does **not account for in-kind transfers**, (goods and services given to poor rather than cash)
  - Does not account for **unreported or illegal income**. Black markets may play a larger role in less developed countries, further skewing this.
  - No (monetary) value is placed on goods or services **produced at home**—child-rearing or growing vegetables

# The Lorenz Curve

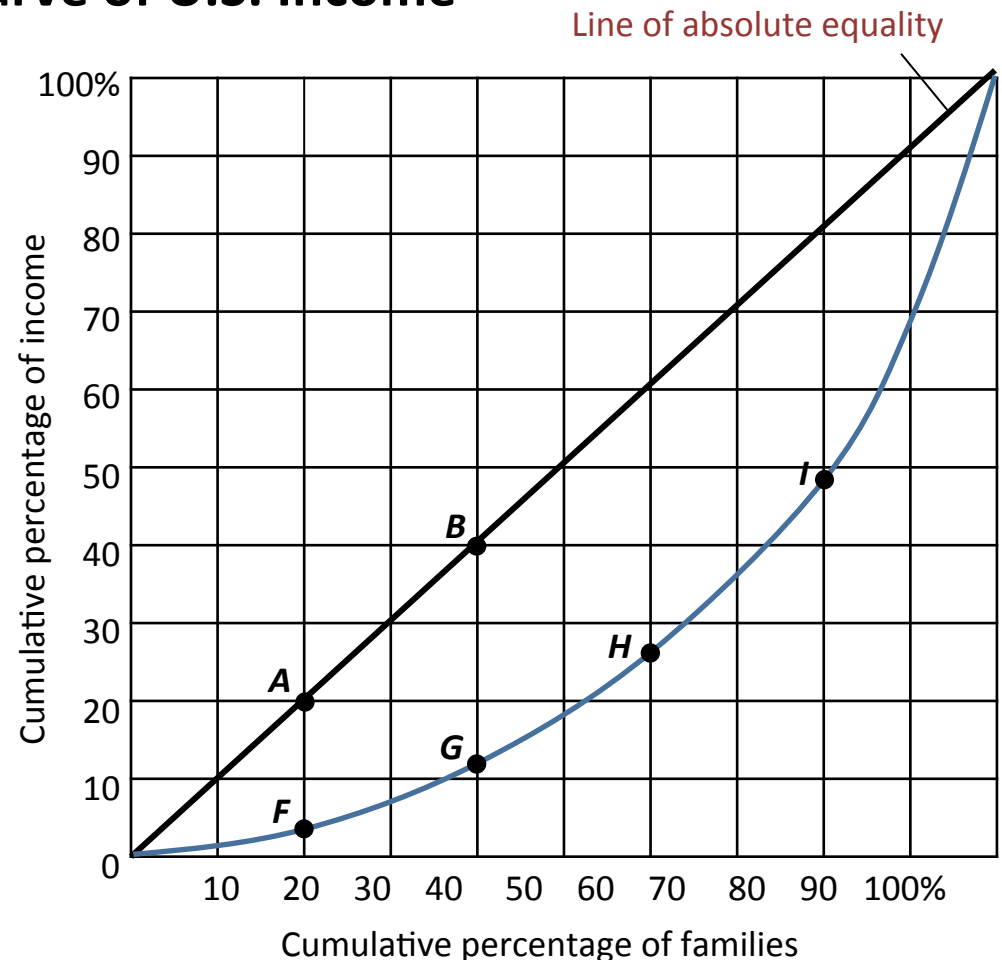
- A **Lorenz curve** is a geometric representation of the share distribution of income among families in a given country at a given time
  - It measures the cumulative percentage of *families* on the horizontal axis, arranged from poorest to richest, and the cumulative percentage of *family income* on the vertical axis
  - Both axes start at zero and end at 100%

# The Lorenz Curve

## A Lorenz Curve of U.S. Income

| Income Quintile | Percentage of Total Family Income | Cumulative Percentage of Total Family Income |
|-----------------|-----------------------------------|--|
| Lowest fifth    | 3.3%                              | 3.3%   |
| Second fifth    | 8.5                               | 11.8   |
| Third fifth     | 14.6                              | 26.4   |
| Fourth fifth    | 23.4                              | 49.8   |
| Highest fifth   | 50.2                              | 100.0  |

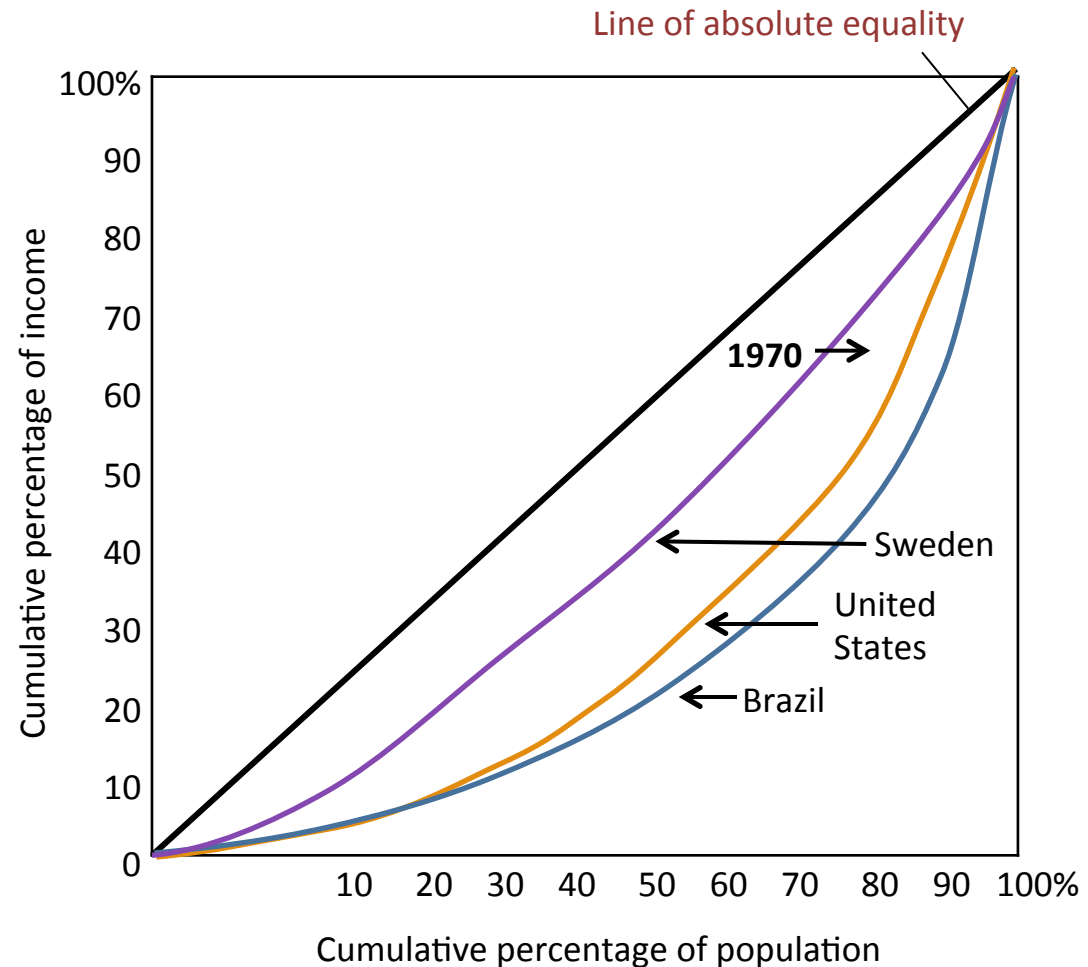
In the graph, we see the U.S. Lorenz curve based on the numbers in the table compared to a Lorenz curve reflecting a perfectly equal distribution of income



# International Dimensions of Income Inequality

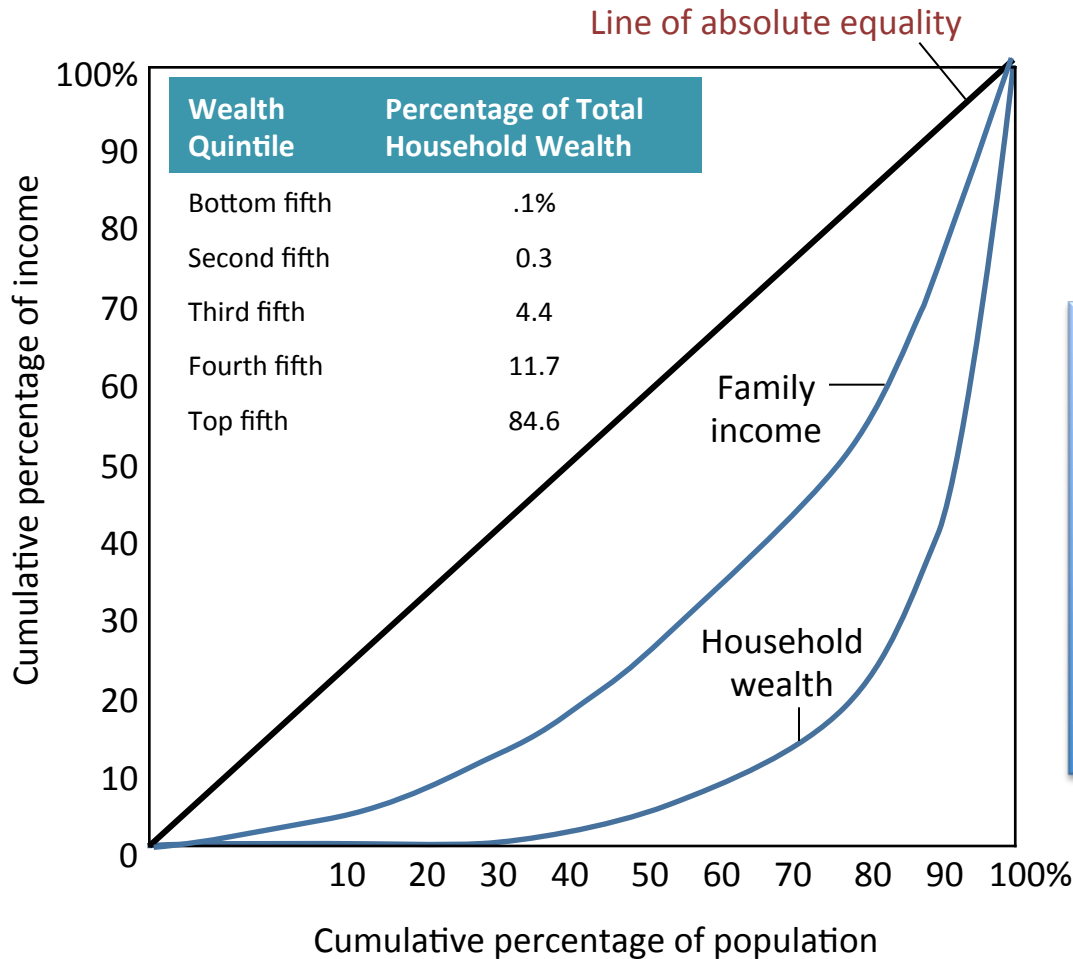
## U.S. Income Distribution Compared to That of Other Countries

Among countries of the world, the U.S. has neither the most equal nor the most unequal distribution of income.



# The Distribution of Wealth

## Wealth Distribution in the U.S. and Wealth Compared to Income



## Wealth Distribution in the U.S. and Wealth Compared to Income

Wealth is much more unequally distributed than income in the United States. The lowest 40% of the population has only .4 percent of the wealth; these people have borrowed nearly as much as they own.

# Poverty

- Poverty rate
  - Percent of population whose income is below the poverty threshold
- Poverty threshold
  - The income level below which a person (or family) is considered impoverished
  - Adjusted each year for inflation
  - Does not include in-kind transfers
  - Does not include geographic cost-of-living differences



# Question

| Number of workers | Total product per hour | Marginal product of labor | Average product of labor |
|-------------------|------------------------|---------------------------|--------------------------|
| 1                 | 20                     |                           |                          |
| 2                 | 38                     |                           |                          |
| 3                 | 52                     |                           |                          |
| 4                 | 62                     |                           |                          |
| 5                 | 70                     |                           |                          |

- A) Fill in the table
- B) If the price of this product is \$3, and wage rate is \$30 per hour, how many workers should this firm?