

## ANSWERS TO QUESTIONS FOR DISCUSSION AND PROBLEMS

### QUESTIONS FOR DISCUSSION

1. Americans already enjoy living standards that far exceed world averages. Do we have enough? Should we even try to produce more?

**LO: 2**

**AACSB: Ethics**

**BT: Create**

*The reality of human nature is that needs are culturally conditioned. There is never enough. Just to maintain living standards as population grows will require more output.*

2. Why do we measure output in value terms rather than in physical terms? For that matter why do we bother to measure output at all?

**LO: 1**

**AACSB: Analytic**

**BT: Analyze**

*Our economy produces thousands of different items, ranging from paper clips to sophisticated electronic equipment. Value estimates are a common denominator for measuring all of these different things. In addition, in our complex and decentralized market economy, it is impossible to account for every item of output produced. Sales records are more available for estimates of value than are output numbers across the economy. Measures of output provide benchmarks that show if growth is occurring and at what rate.*

3. Why do people suggest that the United States needs to devote more resources to investment goods? Why not produce just consumption goods?

**LO: 3**

**AACSB: Reflective Thinking**

**BT: Analyze**

*Investment goods are capital goods such as machines and factories that help us produce more output. If we concentrated on only consumption goods, we would be unable to replace our machines as they wore out or to expand our productive capacity by producing more, and more efficient, machines.*

4. The U.S. farm population has shrunk by over 25 million people since 1900. Where did they all go? Why did they move?

**LO: 4**

**AACSB: Analytic**

**BT: Analyze**

*They went to the cities to become factory workers and service workers because there were jobs available for them in those sectors of the economy. There were fewer and fewer jobs in the agricultural sector because of the advances of technology in that sector.*

5. Rich people have over 15 times as much income as poor people. Is that fair? How should output be distributed?

**LO: 5**

**AACSB: Ethics**

**BT: Create**

*Fair is generally considered to be a relative term. On an individual basis, many would consider it 'fair' if they personally received more or if someone else received less. In a market economy, the distribution of output (and therefore income) is determined primarily by the laws of supply and demand. This often results in an unequal distribution. However, in order to make sure that the distribution is not so unequal that we have people literally starving to death in the streets, the government steps in and lessens the degree of inequality through various programs and tax policies. Thus, at some point, fairness does become less subjective and more objective when the inequality causes lives being put at risk, which, once recognized, results in a redistribution of income.*

6. If taxes were more progressive, would total output be affected?

**LO: 5**

**AACSB: Analytic**

**BT: Analyze**

*Taxes create a disincentive to engage in any activity that is being taxed. If taxes were more progressive, people who face the higher taxes would have less incentive to work. As a result, total output would decline.*

7. Why might income inequalities diminish as an economy develops?

**LO: 5**

**AACSB: Analytic**

**BT: Analyze**

*As an economy develops, more jobs become available and thus more people will work and earn incomes. There will also be more capital available and therefore labor productivity – and income of workers – will rise. Although incomes will not likely be equalized, on average there should be, and generally is, less income disparity.*

8. Why is per capita GDP so much higher in the United States than in Mexico?

**LO: 3**

**AACSB: Analytic**

**BT: Analyze**

*Per capita GDP in the U.S. was \$49,000 in 2012, almost five times the world average, and more than three times Mexico's per capita GDP. Thus, the average U.S. worker produces about three times as much, when measured in dollars, as the average Mexican worker. This is largely caused by the higher productivity capabilities of the U.S. workers resulting from more education, better technology and management practices.*

9. Do we need more or less government intervention to decide WHAT, HOW, and FOR WHOM? Give specific examples.

**LO: 4**

**AACSB: Reflective Thinking**

**BT: Create**

*It really depends on the type of goods and services society would like to see provided. Some products such as clean water and clean air are not usually provided well by private markets and more government intervention might be desired. Other products such as computers, food, etc., are usually best provided by markets and less government intervention might be desired.*

10. **POLICY PERSPECTIVES** What can poor nations do to raise their living standards?

**LO: 3**

**AACSB: Reflective Thinking**

**BT: Create**

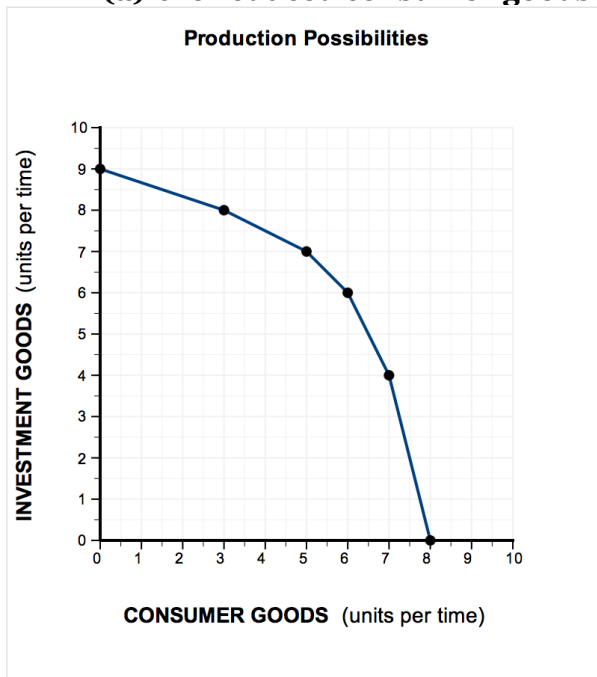
*This is a complicated issue. A few of the things that poor nations can do to raise their living standards include increasing their investment/consumption ratio, investing in human capital, and reducing illiteracy. Many believe that poor nations will need the assistance of the rich nations of the world to achieve this goal.*

## PROBLEMS

1. Draw a production-possibilities curve with consumer goods on one axis and investment goods on the other axis.
  - (a) Identify the opportunity cost of increasing investment from  $I_1$  to  $I_2$ .
  - (b) What will happen to future production possibilities if investment increases now?
  - (c) What will happen to future production possibilities if only consumer goods are produced now?

**Answers:**

**(a) the reduced consumer goods of  $C_1$  to  $C_2$**



- (b) production possibilities will increase, shifting the ppc to the right**  
**(c) production possibilities will decrease, shifting the ppc to the left**

**Explanation:**

(a) The opportunity cost of increasing investment is the loss of consumer goods. Specifically, when investment increases from  $I_1$  to  $I_2$  consumption goods decrease from  $C_1$  to  $C_2$ .

(b) Investment goods include the plant, machinery, and equipment that are produced for use in the business sector. If investment increases it will improve our stock of capital, and will expand our production possibilities, shifting our curve to the right.

(c) Consumer goods include everything consumers buy. If only consumer goods are produced, equipment and factories (for example) will not be replaced and production possibilities will diminish leading to a shift to the left in the curve.

**LO 02-01**

**Topic: What America Produces**

**AACSB: Analytic**

**Blooms: Level 4 Analyze**

2. Suppose the following data describe output in two different years:

Item	Year 1	Year 2
Apples	20,000 @ \$0.25 each	30,000 @ \$0.30 each
Bicycles	700 @ \$800 each	650 @ \$900 each
Movie rentals	10,000 @ \$1.00 each	12,000 @ \$1.50 each

(a) Compute *nominal* GDP in each year.

(b) By what percentage did nominal GDP increase between Year 1 and Year 2?

(c) Now compute *real* GDP in Year 2 by using the prices of Year 1.

(d) By what percentage did real GDP increase between Year 1 and Year 2?

**Answers:**

**(a) Year 1 = \$575,000 Year 2 = \$612,000**

**(b) 6%**

**(c) \$539,000**

**(d) 6%**

**Explanation:**

(a) Nominal GDP is the value of output measured in current prices. In Year 1 nominal GDP is \$575,000 ( $= (20,000 \times \$0.25) + (700 \times \$800) + (10,000 \times \$1.00)$ ). In Year 2 nominal GDP is \$612,000 ( $= (30,000 \times \$0.30) + (650 \times \$900) + (12,000 \times \$1.50)$ ).

(b) Nominal GDP increased from \$575,000 to \$612,000, or 6% ( $= (\$612,000 - \$575,000) / \$575,000$ ).

(c) Real GDP is the value of output measured in constant prices, or in this case the prices of Year 1. Real GDP in Year 2 is \$539,500 ( $= (30,000 \times \$0.25) + (650 \times \$800) + (12,000 \times \$1.00)$ ).

(d) Real GDP decreased from \$575,000 in Year 1 to \$539,500 in Year 2, this is a decrease of 6% ( $= (\$539,500 - \$575,000) / \$575,000$ ).

**LO 02-01**

**Topic: What America Produces**

**AACSB: Analytic**

**Blooms: Level 4 Analyze**

3. GDP per capita in the United States was approximately \$50,000 in 2013. What will it be in the year 2016 if GDP per capita grows each year by
- (a) 0 percent?
  - (b) 2 percent?

**Answers:**

- (a) \$50,000
- (b) \$54,122

**Explanation:**

- (a) GDP per capita will remain the same over time if the GDP per capita growth rate is 0%.
- (b) GDP per capita will increase to \$54,122. GDP per capita will grow four years and can be determined by using the growth function  $\text{GDP per capita} = \$50,000 (1.02)^4$ .

**LO 03-01**

**Topic: What America Produces**

**AACSB: Analytic**

**Blooms: Level 3 Apply**

4. According to Figure 2.4
- (a) Did the quantity of manufactured output increase or decrease between 1900 and 2000?
  - (b) By how much (in percentage terms)?
  - (c) Did the manufacturing share of GDP rise or fall during this time?

**Answers:**

- (a) increase**
- (b) 1082%**
- (c) fall**

**Explanation:**

- (a) Technological advances have made it possible to increase manufacturing output tremendously. According to the figure, in the twentieth century the total output of the U.S. economy increased thirteenfold while the percentage of the total output decreased from 22% to 20%. Clearly quantity of manufactured output increased.
- (b) In 1900 manufacturing was 22% of the total output (total output was 100). In 2000 manufacturing was 20% of a total output that had increased thirteen times (an output base of 1300). Manufacturing increased from 22 ( $= 0.22 \times 100$ ) to 260 ( $= 0.20 \times 1300$ ) or 1082% ( $= (260 - 22) / 22$ ).
- (c) According to the figure, the share fell from 22% to 20% if total output over the last 100 years.

**LO 02-04**

**Topic: The Mix of Output**

**AACSB: Analytic**

**Blooms: Level 4 Analyze**

5. Assume that total output is determined by the formula:

$$\text{number of workers} \times \begin{matrix} \text{productivity} \\ \text{(output per worker)} \end{matrix} = \text{total output}$$

(a) If the workforce is growing by 1 percent a year but productivity doesn't improve, how fast can output increase?

(b) If productivity increases by 3 percent and the number of workers increases by 1 percent a year, how fast will output grow?

**Answer:**

**(a) 1 percent**

**(b) 4 percent**

**Explanation:**

(a) If the workforce is growing by 1% (number of workers = 1.01) and productivity isn't changing (productivity = 1) total output is increasing by 1% (= 1.01 x 1).

(b) If productivity is increasing by 3% (productivity = 1.03) and the number of workers increases by 1% (number of workers = 1.01) total output will grow by 4% (= 1.03 x 1.01).

**LO 02-03**

**Topic: How America Produces**

**AACSB: Analytic**

**Blooms: Level 3 Apply**

6. According to the News Wire on p. 38 by what percentage did productivity increase at Boeing between 1995 and 2010?

**Answer: 45.5%**

**Explanation:**

According to the article, the number of days to build a 737 airliner fell from 22 days to 12 days, a productivity increase of 45.5% (= 10/22).

**LO 02-03**

**Topic: How America Produces**

**AACSB: Analytic**

**Blooms: Level 2 Understand**

7. According to Table 2.4,  
(a) What is the average income in the United States?  
(b) What percentage of the income of people in the highest fifth would have to be taxed away to bring them down to that average?

**Answer:**

**(a) \$69,677**

**(b) 61%**

**Explanation:**

(a) The average income in the U.S. is  $\$69,677 = (\$178,020 + 80,080 + 49,842 + 29,204 + 11,239) / 5$ .

(b) The highest fifth of the U.S. population earn \$178,020 on average. They would need to lose \$108,343 in order to bring them down to the average of \$69,677. This is a 61% loss ( $= \$108,343 / \$178,020$ ).

**LO 02-05**

**Topic: For Whom America Produces**

**AACSB: Analytic**

**Blooms: Level 3 Apply**

8. According to the News Wire on p. 46, what percentage of their income would the highest-decile households in Namibia have to give up to end up with an average income?

**Answer: 54.5%**

**Explanation:**

Suppose the country of Namibia had 10 citizens, so that each represented one decile of the population. If the average income is \$7,910, then the total for all ten citizens is \$79,000. The richest one person is currently earning 64.5% of that total, which is  $0.645 \times \$79,100 = \$51,019.50$ . In order to reduce this person's income to the average,  $\$43,109.50 (= \$51,019.50 - \$7,910)$  would have to be taxed away. This represents  $84.5\% (= \$43,109.50 / \$51,019.50)$  of the income of the richest decile.

**LO 02-05**

**Topic: For Whom America Produces**

**AACSB: Analytic**

**Blooms: Level 5 Evaluate**

9. Complete the following table:

	Before Tax Income	Tax Rate	Tax Paid	After Tax Income
Rich Family	\$500,000	30%	\$150,000	\$350,000
Middle-class Family	\$ 50,000	20%	\$ 10,000	\$ 40,000
Poor Family	\$ 20,000	2%	\$ 400	\$ 19,600

What is the ratio of a rich family's income to a poor family's income?

(a) Before taxes?

(b) After taxes?

(c) Is this tax progressive?

**Answers:****(a) 25:1****(b) 18:1****(c) yes****Explanation:**

(a) The before tax ratio of a rich family to a poor family is 25:1 ( $= \$500,000 / \$20,000$ ).

(b) The after tax ratio of a rich family to a poor family is 18:1 ( $= \$350,000 / 19,600$ ).

(c) A tax system in which tax rates rise as incomes rise is a progressive tax system. In this example higher incomes are taxed at a higher rate.

**LO 02-05****Topic: For Whom America Produces****AACSB: Analytic****Blooms: Level 3 Apply**

10. The United States devotes 0.2 percent of its GDP to development assistance.
- (a) How much money is that? (See Figure 2.1.)
- (b) If the aid share doubled, how much more (than the value determined in part (a)) would that be for each of the 3 billion “extremely poor” people in developing nations?

**Answers:****(a) \$0.03 trillion****(b) \$10****Explanation:**

(a) According to the figure the U.S. has a GDP of \$15.20 trillion which implies development assistance of \$0.03 trillion ( $= \$15.20 \text{ trillion} \times 0.002$ ).

(b) If the aid share doubled, development assistance would increase by an additional \$0.03 trillion ( $= \$15.20 \text{ trillion} \times 0.002$ ). This is approximately \$10 for each of the 3 billion “extremely poor” people in the developing nations.

**LO 02-02****Topic: What America Produces****AACSB: Analytic****Blooms: Level 2 Understand**