

Problem Set 1

Multiple Choice Questions:

1. For an economy as a whole,
 - a. wages must equal profit.
 - b. consumption must equal income.
 - c. income must equal expenditure.**
 - d. consumption must equal saving.

2. Which of the following statements about GDP is correct?
 - a. GDP measures two things at once: the total income of everyone in the economy and the total expenditure on the economy's output of goods and services.
 - b. Money continuously flows from households to firms and then back to households, and GDP measures this flow of money.
 - c. GDP is generally regarded as the best single measure of a society's economic well-being.
 - d. All of the above are correct.**

3. If an economy's GDP rises, then it must be the case that the economy's
 - a. income rises and saving falls.
 - b. income and saving both rises.
 - c. income rises and expenditure falls.
 - d. income and expenditure both rise.**

4. GDP is defined as the
 - a. value of all goods and services produced within a country in a given period of time.
 - b. value of all goods and services produced by the citizens of a country, regardless of where they are living, in a given period of time.
 - c. value of all final goods and services produced within a country in a given period of time.**

d. value of all final goods and services produced by the citizens of a country, regardless of where they are living, in a given period of time.

5. If total spending rises from one year to the next, then

a. the economy must be producing a larger output of goods and services.

b. goods and services must be selling at higher prices.

c. either the economy must be producing a larger output of goods and services, or goods and services must be selling at higher prices, or both.

d. employment or productivity must be rising.

6. Suppose that an economy produces 30,000 units of good A which sells at \$3 a unit and 60,000 units of good B which sells at \$2 per unit. Production of good A contributes

a. $1/2$ times as much to GDP as the production of good B.

b. $3/2$ times as much to GDP as the production of good B.

c. $3/4$ times as much to GDP as the production of good B.

d. $4/3$ times as much to GDP as the production of good B.

7. If a state made a previously-illegal activity, such as gambling or prostitution, legal, then, other things equal, GDP

a. decreases.

b. increases.

c. doesn't change because both legal and illegal production are included in GDP.

d. doesn't change because these activities are never included in GDP.

8. In early 2015 Kristina paid €200,000 for a house built in 2010. She spent €30,000 on new materials to remodel the house. Although Molly lived in the house after she remodeled it, its rental value rose. Which of the following contributed to real GDP in 2015?

a. the price of the house, the cost of remodeling materials, the increase in rental value

b. the price of the house and the cost of remodeling materials, but not the increase in rental value

c. the costs of the remodeling materials and the increase in rent, but not the price of the house

d. None of the above are correct.

9. Household spending on education is included in

a. consumption, although it might be argued that it would fit better in investment.

b. investment, although it might be argued that it would fit better in consumption.

c. government spending, based on the fact that most higher-education students attend publicly-supported colleges and universities.

d. None of the above is correct; in general, household spending on services is not included in any component of GDP.

10. For the purpose of calculating GDP, investment is spending on

a. stocks, bonds, and other financial assets.

b. real estate and financial assets such as stocks and bonds.

c. capital equipment, inventories, and structures, including household purchases of new housing.

d. capital equipment, inventories, and structures, excluding household purchases of new housing.

11. If net exports is a negative number for a particular year, then

a. the value of firms' inventories declined over the course of the year.

b. consumption exceeded the sum of investment and government purchases during the year.

c. the value of goods sold to foreigners exceeded the value of foreign goods purchased during the year.

d. the value of foreign goods purchased exceeded the value of goods sold to foreigners during the year.

12. A Czech citizen buys a tea kettle manufactured in S.Korea by a company that is owned and operated by French citizens. In which of the following components of Czech GDP is this transaction accounted for?

- a. consumption and imports**
- b. consumption but not imports
- c. imports but not consumption
- d. neither consumption nor imports

13. If a U.S. citizen buys a dress made in Nepal by a Nepalese firm, then

- a. U.S. consumption increases, U.S. net exports decrease, and U.S. GDP decreases.
- b. U.S. consumption increases, U.S. net exports decrease, and U.S. GDP is unaffected.**
- c. U.S. consumption decreases, U.S. net exports increase, and U.S. GDP increases.
- d. U.S. consumption decreases, U.S. net exports increase, and U.S. GDP is unaffected.

14. The city of Brno buys a police car manufactured in Germany. In the GDP accounts, this transaction is included in

- a. in consumption and imports.
- b. government expenditures and imports.**
- c. exports, but not consumption.
- d. imports, but not government expenditures.

15. In the economy of Talikastan in 2015, consumption was \$600, exports were \$300, GDP was \$1300, government purchases were \$250, and investment was \$300. What were Talikastan's imports in 2015?

- a. -\$150
- b. -\$200
- c. \$200
- d. \$150**

16. Real GDP will increase

- a. only when prices increase.
- b. only when output increases.**
- c. when prices increase or output increases.
- d. All of the above are correct.

17. Which of the following is correct?

- a. Nominal GDP is always less than real GDP.
- b. Nominal GDP is always greater than real GDP.
- c. Nominal GDP equals real GDP in the base year.**
- d. Nominal GDP equals real GDP in all years but the base year.

18. The GDP deflator is the ratio of

- a. real GDP to nominal GDP multiplied by 100.
- b. real GDP to the inflation rate multiplied by 100.
- c. nominal GDP to real GDP multiplied by 100.**
- d. nominal GDP to the inflation rate multiplied by 100.

Answer the following questions:

1. What components of GDP (if any) would each of the following transactions affect?

Explain.

- a. A family buys a new refrigerator.
Answer: Consumption increases because a refrigerator is a good purchased by a household.
- b. Martin buys a new house.
Answer: Investment increases because a house is an investment good.
- c. Czech Republic repaves D1 Motorway.
Answer: Government purchases increase because the government spent money to provide a good to the public.
- d. Antonio buys a bottle of French wine.

Answer: Consumption increases because the bottle is a good purchased by a household, but net exports decrease because the bottle was imported.

- e. ŠKODA expands its factory in Mlada Boleslav.

Answer: Investment increases because new structures and equipment were built.

2. Why should policymakers care about GDP?

Answer: Although GDP is not a perfect measure of well-being, policymakers should care about it because a larger GDP means that a nation can afford better healthcare, better educational systems, and more of the material necessities of life.

3. Below are some data from the land of Milk and Honey:

YEAR	PRICE OF MILK	QUANTITY OF MILK	PRICE OF HONEY	QUANTITY OF HONEY
2001	\$1	100 qts.	\$2	50 qts.
2002	\$1	200	\$2	100
2003	\$2	200	\$4	100

- Compute nominal GDP, real GDP, and the GDP deflator for each year, using 2001 as the base year.
- Compute the percentage change in nominal GDP, real GDP, and the GDP deflator in 2002 and 2003 from the preceding year. For each year, identify the variable that does not change. Explain in words why your answer makes sense.
- Did economic well-being rise more in 2002 or 2003? Explain.

Answer: a) **Calculating nominal GDP:**

$$2001: (\$1 \text{ per qt. of milk} \times 100 \text{ qts. milk}) + (\$2 \text{ per qt. of honey} \times 50 \text{ qts. honey}) = \$200$$

$$2002: (\$1 \text{ per qt. of milk} \times 200 \text{ qts. milk}) + (\$2 \text{ per qt. of honey} \times 100 \text{ qts. honey}) = \$400$$

$$2003: (\$2 \text{ per qt. of milk} \times 200 \text{ qts. milk}) + (\$4 \text{ per qt. of honey} \times 100 \text{ qts. honey}) = \$800$$

Calculating real GDP (base year 2001):

$$2001: (\$1 \text{ per qt. of milk} \times 100 \text{ qts. milk}) + (\$2 \text{ per qt. of honey} \times 50 \text{ qts. honey}) = \$200$$

$$2002: (\$1 \text{ per qt. of milk} \times 200 \text{ qts. milk}) + (\$2 \text{ per qt. of honey} \times 100 \text{ qts. honey}) = \$400$$

$$2003: (\$1 \text{ per qt. of milk} \times 200 \text{ qts. milk}) + (\$2 \text{ per qt. of honey} \times 100 \text{ qts. honey}) = \$400$$

Calculating the GDP deflator:

$$2001: (\$200/\$200) \times 100 = 100$$

$$2001: (\$400/\$400) \times 100 = 100$$

$$2003.: (\$800/\$400) \times 100 = 200$$

b) **Calculating the percentage change in nominal GDP:**

$$\text{Percentage change in nominal GDP in 2002} = [(\$400 - \$200)/\$200] \times 100 = 100\%.$$

$$\text{Percentage change in nominal GDP in 2003} = [(\$800 - \$400)/\$400] \times 100 = 100\%.$$

Calculating the percentage change in real GDP:

$$\text{Percentage change in real GDP in 2002} = [(\$400 - \$200)/\$200] \times 100 = 100\%.$$

$$\text{Percentage change in real GDP in 2003} = [(\$400 - \$400)/\$400] \times 100 = 0\%.$$

Calculating the percentage change in GDP deflator:

$$\text{Percentage change in the GDP deflator in 2002} = [(100 - 100)/100] \times 100 = 0\%.$$

$$\text{Percentage change in the GDP deflator in 2003} = [(200 - 100)/100] \times 100 = 100\%.$$

Prices did not change from 2001 to 2002. Thus, the percentage change in the GDP deflator is zero. Likewise, output levels did not change from 2002 to 2003. This means that the percentage change in real GDP is zero.

c) Economic well-being rose more in 2002 than in 2003, since real GDP rose in 2002 but not in 2003. In 2002, real GDP rose but prices did not. In 2003, real GDP did not rise but prices did.

4. Over a long period of time, the price of a candy bar rose from CZK 10 to CZK 60. Over the same period, the consumer price index rose from 150 to 300. Adjusted for overall inflation, how much did the price of the candy bar change?

Answer: Because the overall price level doubled, but the price of the candy bar rose sixfold, the real price (the price adjusted for inflation) of the candy bar tripled.

5. List and describe four determinants of productivity.

Answer: The four determinants of productivity are: (1) **physical capital**, which is the stock of equipment and structures that are used to produce goods and services; (2) **human capital**, which consists of the knowledge and skills that workers acquire through education, training, and experience; (3) **natural resources**, which are inputs into production that are provided by nature; and (4) **technological knowledge**, which is society's understanding of the best ways to produce goods and services.

6. How does the rate of population growth influence the level of GDP per person?

Answer: The higher the rate of population growth, the lower is the level of GDP per person because there's less capital per person, hence lower productivity.

7. In the countries of South Asia in 1992, only 56 young women were enrolled in secondary school for every 100 young men. Describe several ways in which greater educational opportunities for young women could lead to faster economic growth in these countries.

Answer: Greater educational opportunities for women could lead to faster economic growth in these developing countries because increased human capital would increase productivity and there would be external effects from greater knowledge in the country. Second, increased educational opportunities for young women may lower the population growth rate because such opportunities raise the opportunity cost of having a child.