Economics 100 Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Spring 2015

Answers to Quiz #4

1. GDP Measurement

a. (1 point) I sell my car, a 2005 Chevrolet, for $5,000 in May of 2015. This transaction will cause GDP in 2015 to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Answer: there will be no change in GDP for 2015 from this transaction. The value of the car was included in GDP in 2005. There was no production in 2015 from this transaction.

b. (1 point) This week my stock broker convinced me to purchase $10,000 worth of stock. When she made this purchase for me I was charged a broker commission of $200. This transaction will cause GDP in 2015 to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Answer:

The stock broker provided a productive service to me and this service occurred in a legal market. So, the $200 gets counted as part of GDP in 2015. The $10,000 worth of stock purchased does not represent any production: it simply represents a change in the type of asset I am holding-instead of cash I now have stock. GDP in 2015 increases by $200 from this transaction.

c. (1 point) Susie is a farmer that produces cotton and melons that she sells in a legal market for $38,500. In addition, Susie grows a substantial vegetable garden to feed her family. She estimates that the produce she grows in this garden reduces her grocery bill by $2800 each year. Susie's activity will cause GDP in 2015 to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Answer:

The dollar value ($38,500) of the cotton and melons that Susie grows gets counted in GDP for 2015. The value of the food she produces for home consumption does not get counted in GDP.

d. (1 point) Carter earns $40,000 working as a newspaper reporter and he reports these earnings on his tax return. In addition, he moonlights as a landscaper (lawn and gardening services plus snow removal) and gets cash payments from his customers of $5,000 per year: he does not report these earnings. The impact of Carter's activities on GDP this year can be measured as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Answer:

Carter's $40,000 gets reported on his tax documents and so this gets counted as part of GDP for 2015. The activities he does that are not reported are not part of the legal economy and therefore are not included in GDP.

2. Use the following information to answer this set of questions.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Item | Price in 2012 | Quantity in 2012 | Price in 2013 | Quantity in 2013 | Price in 2014 | Quantity in 2014 |
| Bikes | $100 | 10 | $150 | 10 | $150 | 20 |
| Pencils | $1 | 100 | $1 | 100 | $2 | 50 |
| Telephones | $100 | 20 | $80 | 50 | $60 | 80 |

a. (2 points) What is nominal GDP for 2012, 2013, and 2014? Provide any formula you use and show your work.

Answer:

Nominal GDP in year 1 = (Price of good A in year 1)(Quantity of good A in year 1) + (Price of good B in year 1)(Quantity of good B in year 1) + …+ (Price of good Z in year 1)(Quantity of good Z in year 1)

Nominal GDP in 2012 = ($100 per bike)(10 bikes) + ($1 per pencil)(100 pencils) + ($100 per telephone)(20 telephones) = $1000 + $100 + $2000 = $3100

Nominal GDP in 2013 = ($150 per bike)(10 bikes) + ($1 per pencil)(100 pencils) + ($80 per telephone)(50 telephones) = $1500 + $100 + $4000 = $5600

Nominal GDP in 2014 = ($150 per bike)(20 bikes) + ($2 per pencil)(50 pencils) + ($60 per telephone)(80 telephones) = $3000 + $100 + $4800 = $7900

b. (2 points) What is real GDP for 2012, 2013, and 2014 using 2012 as the base year? Provide any formula you use and show your work.

Answer:

Real GDP in year 1 with base year year n = (Price of good A in year n)(Quantity of good A in year 1) + (Price of good B in year n)(Quantity of good B in year 1) + …. + (Price of good Z in year n)(Quantity of good Z in year 1)

Real GDP in 2012 with base year 2012 = Nominal GDP in 2012 = $3100

Real GDP in 2013 with base year 2012 = ($100 per bike)(10 bikes) + ($1 per pencil)(100 pencils) + ($100 per telephone)(50 telephones) = $1000 + $100 + $5000 = $6100

Real GDP in 2014 with base year 2012 = ($100 per bike)(20 bikes) + ($1 per pencil)(50 pencils) + ($100 per telephone)(80 telephones) = $2000 + $50 + $8000 = $10,500

c. (2 points) Did this economy's level of production increase, decrease, or remain the same over this three year period? Explain your answer fully.

Answer:

Both nominal GDP and real GDP increased from 2012 to 2013 to 2014. Nominal GDP may have increased because prices increased or because the economy actually produced more goods and services. An increase in real GDP must be due to an actual increase in the production of goods and services since real GDP is calculated by using constant prices from the base year.