Econ 102 Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Summer 2013

Answers to Quiz #3

Please write all answers neatly and legibly.

1. (2 points) Chris purchases a house in 2013 that was built in 1953. He paid $500,000 for this house and the real estate agent he used in the transaction received 10% of the sales price as payment for her services. In addition, Chris purchased $6000 worth of groceries during 2013 including $500 worth of cheese produces in Wisconsin, $200 worth of peanuts grown in Virginia, $400 worth of wine produced in France, and $100 worth of Russian caviar. Assume all other grocery purchases were of products manufactured in the U.S. What was the impact of Chris’ activities on U.S. GDP in 2013? Be specific in your analysis and provide a numeric figure for this impact.

Answer:

Chris’ contribution to U.S. GDP in 2013 = $50,000 for real estate agent service + $6000 for groceries - $400 for French wine - $100 for Russian caviar = $55,500

1. (2 points) The CPI in 2013 is 100% larger than the CPI in 2012 in Moravia. If Joe’s nominal salary in 2013 is $50,000, what must his nominal salary in 2012 be in order for him to have the same purchasing power? Assume the base year is 2013. Show how you found your answer for full credit.

Answer:

First let’s organize the data:

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Nominal | Real | CPI |
| 2012 |  | $50,000 | 50 |
| 2013 | $50,000 | $50,000 | 100 |

Then, we will use the formula:

Real salary in 2012 = [(Nominal Salary in 2012)/(Price Index)] \* (Scale Factor)

$50,000 = [(Nominal Salary in 2012)/(50)]\*100

Nominal Salary in 2012 = $25,000

1. Myland has a population of 50,000 people age 16 or older. 28,000 of these people work full-time; 2000 people work for at least twenty hours a week without pay; 2000 work part-time but wished they worked full-time; 2000 work part-time but do not like their jobs; 6000 are not working but are available to work and actively seeking work; and 2000 people are discouraged workers. The rest of the population is not in the labor force.
   1. (2 points) Given this information, what is the unemployment rate in Myland? Show how you found your answer for full credit.

Answer: [(Unemployed)/(Employed + Unemployed)](100%) = [(6000)/(34000 + 6000)]\*100 = 15%

* 1. (2 points) Suppose the government changes how they calculate the unemployment rate: the government decides to count discouraged workers as unemployed workers. Recalculate the unemployment rate given this change. Show your work. Round your answer to the nearest percent.

Answer:

[(Unemployed)/(Employed + Unemployed)] \* 100% = (8000/42000) \* 100 = 19%

1. (2 points) Myland’s aggregate production function is given by the equation Y = 10K1/2L1/2. Given this information, fill in the following table. Describe what happens to labor productivity when Myland employs more labor while holding capital constant.

|  |  |  |  |
| --- | --- | --- | --- |
| Units of Capital, K | Units of Labor, L | Real GDP, Y | Labor Productivity |
| 100 | 0 |  | ---- |
| 100 | 1 |  |  |
| 100 | 4 |  |  |
| 100 | 9 |  |  |
| 100 | 16 |  |  |
| 100 | 25 |  |  |

Answer:

|  |  |  |  |
| --- | --- | --- | --- |
| Units of Capital, K | Units of Labor, L | Real GDP, Y | Labor Productivity |
| 100 | 0 | 0 | ---- |
| 100 | 1 | 100 | 100 units of output/unit of labor |
| 100 | 4 | 200 | 50 |
| 100 | 9 | 300 | 33.3 |
| 100 | 16 | 400 | 25 |
| 100 | 25 | 500 | 20 |

As you hire more and more units of labor with a fixed amount of capital the labor productivity decreases. As you hire additional units of labor, each unit of labor has less capital to work with and is therefore less productive.