Macroeconomics—Spring 2017-- Problem Set #2

Short Answer

1. Year | Price Milk | Quantity Milk | Price Honey | Quantity Honey
2013   | $3         | 10            | $5          | 50          
2014   | 3.25       | 14            | 6           | 150         
2015   | 3.50       | 12            | 7           | 140         

Use the table above to answer the following questions. SHOW YOUR WORK.

a. Compute nominal GDP, real GDP, and the GDP deflator for each year using 2013 as the base year.

b. Did economic well-being rise more in 2014 or 2015? Explain.

2. For each of the following, indicate if the person would be classified as employed, unemployed, or not in the labor force
(a) a 70-year-old man who left his job to volunteer at a business for 10 hours a week and is not paid,
(b) a 20-year-old college student who is out of school for the summer and is looking for a job,
(c) a 30-year-old woman with a Ph.D. in history who has not been able to find a teaching position and is driving a cab 30 hours a week, and
(d) a 40-year-old steel worker who isn't working and has given up searching for a job.

3. Refer to the information provided in Scenario 1 below to answer the questions that follow.

SCENARIO 1 The population of the nation of Skovania is 4,000,000, of which 2,000,000 are age 16 or older. Of this 2,000,000, 1,450,000 have jobs and 550,000 do not. There are 450,000 unemployed but actively seeking jobs, and there are 100,000 who have given up the job search in frustration.

Refer to Scenario 1
Answer parts (a) through (e) using the information in Scenario 1.
(a) Calculate the number of unemployed workers.
(b) Calculate the number of discouraged workers.
(c) Calculate the number of workers in the labor force.
(d) Calculate the unemployment rate.
(e) Calculate the labor-force participation rate.

4. Compute how much each of the following items is worth in terms of today's dollars using 238 as the price index for today.
   a. In 1926 the CPI was 17.7 and the price of a movie ticket was $0.25.
   b. In 1932 the CPI was 13.1 and a cook earned $15.00 a week.
   c. In 1943 the CPI was 17.4 and a gallon of gas cost $0.19.
5. In a simple economy, people consume only 2 goods, food and clothing. The market basket of goods used to compute the CPI has 40 units of food and 20 units of clothing. SHOW YOUR WORK.

<table>
<thead>
<tr>
<th></th>
<th>food</th>
<th>clothing</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>$8</td>
<td>$12</td>
</tr>
<tr>
<td>2014</td>
<td>$9</td>
<td>$14</td>
</tr>
<tr>
<td>2015</td>
<td>$10</td>
<td>$18</td>
</tr>
</tbody>
</table>

a. What is the CPI in each year? *(Show your work)*

6. At 3% interest what is the present value of $700 in 12 years?

7. Use the data on U.S. real GDP below to compute real GDP per person for each year. Then use these numbers to compute the percentage increase in real GDP per person from 1987 to 2015.

<table>
<thead>
<tr>
<th>Year</th>
<th>Real GDP</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>$7,451,700 million</td>
<td>243 million</td>
</tr>
<tr>
<td>2015</td>
<td>$16,440,000 million</td>
<td>320.1 million</td>
</tr>
</tbody>
</table>

8. Jay and Joyce meet George, the banker, to work out the details of a mortgage. They all expect that inflation will be 2 percent over the term of the loan, and they agree on a nominal interest rate of 5 percent. As it turns out, the inflation rate is 4 percent over the term of the loan.
a. What was the expected real interest rate?
b. What was the actual real interest rate?
c. Who benefited and who lost because of the unexpected inflation?