

Problem 1

Although the CPI and GDP deflator are both used to calculate the inflation rate, they use different approaches.

Some of the differences include;

- a) CPI measures only the prices of goods and services which are bought by customers. Whereas Deflator measures the prices of all goods and services produced.
- b) CPI includes both goods produced domestically and imported goods, but Deflator includes goods which are only produced domestically.
- c) A fixed basket of goods is used in the calculation of CPI which means it assigns fixed weights to the prices of different goods. On the other hand, Deflator assigns changing weights which means basket of goods to change over time as the composition of GDP changes.

Problem 2

a) In 2018,

Gross investment (I) = $250 + 60 = 310$

Personal transfers are not included in GDP

So, GDP in 2018 = $C + I + G + X - M$

$$= 1200 + 310 + 200 + 180 - 160$$

$$= 1,730$$

In 2019,

Gross investment (I) = $300 + 70 = 370$

Personal transfers are not included in GDP

$$\begin{aligned}
 \text{So, GDP in 2018} &= C + I + G + X - M \\
 &= 1240 + 370 + 210 + 190 - 180 \\
 &= 1,830
 \end{aligned}$$

Problem 3

Working age population	24903
Employment	14302
unemployment	13876
Unemployment rate	9%
Labor force	154178
Labor force participation rate	64%
Employment population ratio	58%

Calculations

Unemployment Rate = Total Unemployed population / Total Labor Force in the market * 100

or we can write it as

$$\text{Total Unemployed} / (\text{Employed} + \text{Unemployed}) * 100$$

Let Total Unemployed be equal to x. Solving for x, we get

$$0.09 = x / (140302 + x)$$

$$12627.18 + 0.09x = x$$

$$0.91x = 12627.18$$

$$x = 13876$$

Number of Unemployed = 13876

Total Labor Force = Total Unemployed + Total Employed

$$= 13876 + 140302 = 154178$$

Labor Force Participation Rate

$0.64 = \text{Total Labor Force} / \text{entire Working Age Population}$

$\text{Entire Working Age Population} = 154178 / 0.64 = 240903$

Employment Population Ratio

$= \text{Total Employed} / \text{Working Age Population} * 100$

$= 140302 / 240903 * 100$

$= 58\%$

Problem 4

$\text{Inflation rate for 2018} = (\text{CPI}_{2018} - \text{CPI}_{2017} / \text{CPI}_{2017}) \times 100$

$\text{CPI}_{2018} = (\text{Cost of baskets in 2018} / \text{cost of basket in 2010}) \times 100$

$\text{Cost of basket in 2018} = \text{quantity} \times \text{price 2018}$

$(1000 \times 2.5) + (5000 \times 4) + (150 \times 250)$

$2500 + 20000 + 37500 = 397500$

$\text{CPI}_{2017} = 397500 / 35700 \times 100 = 111.34$

$\text{Inflation rate 2018} = 93.97 - 111.34 / 111.34 \times 100 = -15.60\%$

$\text{CPI 2017} = 111.34$

$\text{CPI 2018} = 93.97$

Inflation is positive in 2017 which means the price level of goods in 2017 has increased compared to 2016

Inflation is negative in 2018 which means the price level of goods declined and became relatively cheaper compared to 2017

