

1. Is the following a stock or flow variable?
- | | |
|---------------------------------|---------------------------------------|
| 2.1 Inventories stock | 2.2 Change in Inventories Flow |
| 2.3 Money Supply stock | 2.4 Change in Money Flow |
| 2.5 National Income Flow | 2.6 Expenditure Flow |
| 2.7 Wealth stock | 2.8 Population stock |
| 2.9 Capital Stock | 2.10 Interest Flow |

2. What is the difference between GDP and GNP? When looking at the US and China, which country do you expect to have higher GNP? Why?

GDP or **Gross Domestic Product** is the value of output produced by factor of production located within a country, but **GNP** or **Gross National Product** is the value of total market value of all final goods and services produced by factor of production owned by a country's citizens, regardless of where the output is produced. The U.S. because it has more factories in China.

3. The canned apple has 5 stages of production as follows. Find the value added of each stage and the GDP value of the canned apple.

Stages of Production Value of Sales Value Added

Growing Apple	12	12	GDP = sum of value added $12 + 3 + 3 + 2 + 2 = 22$
Pickling	15	3	
Canning	18	3	
Shipping	20	2	
Retail Sale	22	2	

value of sale value added

4. What is **Transfer Payment**? Why is it not included in GDP?

It is a money that government give to people without any condition. Because it is not the production.

5. Why are we interested in **Real GDP**? Explain with examples. Is there a problem associated with Real GDP?

Because real GDP is adjusted for price change (inflation/deflation). For example, it happens deflation this year, you can use ^{real}GDP to measure what is the real price of the product without inflation. problems are using wrong base year affect to the value of GDP and GDP is not accounted for supply shifts.

6. Suppose 2018 is the base year. What can we say about Real GDP, Nominal GDP, and GDP Deflator of 2018?

Nominal GDP and Real GDP are the same value as they use the same base year, so the value of GDP Deflator is $\frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100 = 100$

7. Explain three limitations of the GDP concept.

- Inequality - Because GDP didn't say about output person.
- External: GDP didn't count the problem from third hand for example pollution.

8. In 2018, Kingdom Asgard made the following transactions. Using the expenditure approach, identify which component of GDP is affected by each transaction, and calculate the 2018 GDP.

- The citizens bought 8 new cars, each worth 50\$. $C = 8 \times 50 = 400$
- The citizens bought 4 new houses, each worth 150\$. $I = 4 \times 150 = 600$
- The citizens grew rice for their own consumption. The rice was worth 500\$. **not include in GDP**
- The firms bought 6 used machines, each worth 50\$. **Not include in GDP (second hand)**
- The firms bought 8 car parts, each worth 25\$. **Not include in GDP (intermediate good)**
- The government bought 4 new computers, each worth 50\$. $G = 4 \times 50 = 200$
- The government paid 1000\$ to the poor as welfare payment. **not include in GDP (transfer payment)**
- The citizens bought 10 imported ships, each worth 100\$. $M = 10 \times 100 = 1000$
- The firms sold 4 planes abroad, each worth 200\$. $X = 4 \times 200 = 800$

$$\text{Total GDP} = C + I + G + X - M = 1000$$

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- The citizens bought 10 imported ships, each worth 100\$.
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9. Suppose that there are three goods in the economy – goods A, B, and C. Calculate Nominal GDP, Real GDP, and GDP Deflator when 2012 is the base year. Also, calculate the annual inflation rate from 2014 to 2015.

Year	Price of A	Quantity of A	Price of B	Quantity of B	Price of C	Quantity of C
2012	1	3	2	3	3	3
2013	3	1	4	2	1	4
2014	2	2	3	4	2	1
2015	4	4	1	1	4	2

Year	Nominal GDP	Real GDP	GDP Deflator
2012	$3 + 6 + 9 = 18$	18	100
2013	15	17	88.24
2014	$4 + 12 + 2 = 18$	13	138.46
2015	25	12	208.3

P same year + Q same year
 $1 + 6 + 9$
 $2 + 8 + 3$
 $4 + 2 + 6$

10. Using the table below, calculate GNP and NNP.

$$\textcircled{10} \quad \text{GNP} = \text{GNP} + \text{NFFI}$$

$$= 8000 + (250 - 300) = 7950$$

$$\text{NNP} = \text{GNP} - \text{depreciate} = 7950 - 900 = 7050$$

$$\textcircled{11} \quad \text{net investment} + \text{Depreciate} = 784 + 168 = 952$$

$$11.2) \quad \text{GDP} = 2203 + 952 + 716.8 + 212.8 - 235.2 = 3840.6$$

$$11.3) \quad \text{GNP} = 3840.6 + (35.2 - 68.8) = 3807$$

$$11.4) \quad \text{NNP} = 3807 - 168 = 3639$$

$$\textcircled{12} \quad * \text{ GDP} = C + I + G + (x - M)$$

$$= 9500 + 3000 + 3200 + (850 - 900)$$

$$= 15650$$

$$\text{NNP} = \text{NI} = \text{Compensation of employees} + \text{Profits}$$

$$= 11500 + 2400 = 13900$$

$$* \text{ GNP} = \text{NNP} + D = 13900 + 1750$$

$$= 15650$$

$$\text{GDP} = \text{GNP} \text{ when } \text{NFFI} = 0$$

↳ No Factor income