Exercise 2

National Output and National Income

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 Supply 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? China because more population.
GDP is the total G&S produced in a country, doesn't matter if the owner of the G&S are foreigner.
GNP is the total G&S produced by a country's citizen, doesn't matter if they are abroad.

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
Pickling	15	3
Canning	18	3
Shipping	20	2
Retail Sale	22	2

4. What is Transfer Payment? Why is it not included in GDP?
Transfer payment is the money government give to citizen e.g. เบี้ยผู้สูงอายุ
Not included in GDP because it does not produce new G&S

5. Why are we interested in Real GDP? Explain with examples. Is there a problem associated with Real GDP?
Because if we only interest in Nominal we might misunderstand the increasing GDP level as more/better G&S while it's just inflation that only increase in prices of G&S.
e.g. 10 🍎 = 15 ฿, Nominal GDP = 150, previous year 15 🍎 = 7 ฿, Nominal GDP = 105
using previous year as base year, Real GDP = 70
Can give underestimated result, if overestimate inflation

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

Real GDP = Nominal GDP

GDP Deflator = 100

7. Explain three limitations of the GDP concept.

1. increasing GDP does not mean better living standard.
2. does not count in illegal GAS
3. does not count in production for one own consumption

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. GDP = C + I + G + (X-M) = 1500 $

C - The citizens bought 8 new cars, each worth 50$. 400 $

I - The citizens bought 4 new houses, each worth 150$. 600 $

not count - The citizens grew rice for their own consumption. The rice was worth 500$. 0

I - The firms bought 6 used machines, each worth 50$. 300 $

I - The firms bought 8 car parts, each worth 25$. 200 $

G - The government bought 4 new computers, each worth 50$. 200 $

not count - The government paid 1000$ to the poor as welfare payment. 0

M - The citizens bought 10 imported ships, each worth 100$. 1000 $

X - The firms sold 4 planes abroad, each worth 200$. 800 $

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. $\left(\frac{208.3-138.4}{138.4} \times 100\right) = 50.5\%$.

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	18	18	100
2013	15	17	88.2
2014	18	13	138.4
2015	25	12	208.3

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

	Billions of Dollars
GDP	8000
Receipts of factor income from the rest of the world	250
Payments of factor income to the rest of the world	300
Depreciation	900
Indirect taxes minus subsidies	500
Corporate profits minus dividends	500
Social insurance payments	700
Personal interest income received from the government and consumers	300
Transfer payments to persons	1100
Personal taxes	1000

GNP = 8,000+250-300 = 7,950

NNP = 7,950 - 900 = 7,050

11. Using the table below, Calculate the following items.

11.1 Gross domestic investment 784

11.2 GDP, using the expenditure approach 3681.6

11.3 GNP 3,648

11.4 NNP 3,480

11.3 National Income, using the income approach 3,052.3

(Do not worry if NNP and NI differ greatly.)

Table 6.5

Depreciation	168.0
Compensation of employees	1,407.7
Corporate profits	257.6
Dividends	78.4
Exports	212.8
Government purchases	716.8
Imports	235.2
Indirect taxes	593.6
Net interest income	182.2
Net private domestic investment	784.0
Personal consumption expenditures	2,203.2
Personal interest income	112.0
Receipts of factor income from the rest of the world	35.2
Personal taxes	627.2
Proprietor's income	173.9
Payments of factor income to the rest of the world	68.8
Rental income	34.1
Social insurance payments	380.8
Subsidies	44.8
Transfer payments	504.0

12. In a simple economy, suppose that all income is either compensation of employees or profits. Suppose also that there are no indirect taxes. Calculate GDP from the table below. Show that the expenditure approach and the income approach add up to the same figure.

(Hints: (1) NNP + Depreciation = GNP, (2) NFFI = 0, and (3) NI = NNP)

Consumption E	9500
Investment E	3000
Depreciation	1750
Profits I	2400
Exports E	850
Compensation of employees I	11500
Government purchases E	3200
Direct taxes I	1200
Saving I	1600
Imports E	900

Expen app. GDP = 15,650

GNP = 15,650 + 0

NNP = 15,650 − 1,750

NI = 13900

Income app. GDP = 16700