Homework 1

1. Categorize each of the following transactions into one of four components of GDP: (household) consumption, investment, government consumption, and net export.
   a) Huawei sells a laptop to the army.
   b) Huawei sells a laptop to Taobao.
   c) Huawei sells a laptop to a Shanghai resident.
   d) Huawei sells a laptop to the government of UK.
   e) Huawei produces a laptop but fails to sell it this year (hopefully sell it next year).

2. A farmer grows a ton of wheat and sell it to a miller for 500 RMB. The miller uses the wheat (the only input) to produce flour and sells the flour to a baker for 1000 RMB. The baker uses the flour to make bread. Consumers buy these bread for 3000 RMB.
   a) What is the value-added in each stage of the production of bread?
   b) If the farmer, miller, baker, and the consumers constitute an economy, what is the GDP for this economy?

3. In the twin-tree economy, the production and consumption of apples and oranges are as follows,

Year	Apple		Orange	
	Production	Consumption	Production	Consumption
2016	25	20	15	12
2015	20	15	10	8

Note that the differences between "Production" and "Consumption" are exported. And the market prices for apples and oranges are:

Year	Apple	Orange
2016	6	3
2015	5	2

   (1) Compute the real GDP growth of the economy using prices in 2015. And compute the real GDP growth using prices in 2016.
   (2) Compute the CPI for 2016 using 2015 as the base year (let the CPI of 2015 be 100).
   (3) Compute the GDP deflator for 2016, using the 2015 price (let the GDP deflator of 2015 be 100).

4. Find the Chinese GDP data and construct a table that lists the shares of consumption, investment, government consumption, and net export in 1980, 1990, 2000, 2010, and 2022. (Note: the website for the National Bureau of Statistics: http://www.stats.gov.cn/)

5. 根据 2021 年《中国统计年鉴》（见 Canvas）表 3-3 的数据，
   a) 构造以 2015 为基期的实际 GDP 数据（1978-2020），和名义 GDP 一起画出来。
   b) 构造 GDP 平减因子（Deflator）数据，并依据该数据比较 2020 年和 1978 年价格水平。