

## Homework 2

1. 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 CPI for 2016 using 2015 as the base year (let the CPI of 2015 be 100).
  - (2) Compute the GDP deflator for 2016, using the 2015 price (let the GDP deflator of 2015 be 100).
  - (3) Compute the GDP deflator for 2015, using the 2016 price (let the GDP deflator of 2016 be 100).
2. Suppose that every year in Shanghai, 2% of married couples get divorced and 3% of single adults get married. Define a steady state, and what would be the steady-state percentage of single people in the adult population?
3. Suppose that an economy has 100 people, divided into 9 groups:

Group	Description	Number of people
1	Have full-time jobs	30
2	Have one part-time job	10
3	Have two part-time jobs	5
4	Would like to work and are looking for jobs	10
5	Would like to work, but have given up looking.	5
6	Running their own business	10
7	Retired	15
8	University students	5
9	Small children	10

- (1) Compute the labor force and the labor force participation rate.
- (2) Compute the unemployment rate.