

Problem Set 1

1. The country of Shangri-La has only two inhabitants, Mr. High and Mr. Low. Mr. High's nominal income is twice as large as Mr. Low's. The personal price index of Mr. High from 2015 to 2016 is 2 (that is, the price index of the bundle of goods he consumes doubles), and from 2016 to 2017 it is $1/2$. The personal price index of Mr. Low from 2015 to 2016 is 5, and from 2016 to 2017 it is $1/5$. Which of the following statements are true:
 - a. The price index of Mr. High from 2015 to 2017 is 1.
 - b. The price index of Shangri-La from 2015 to 2016 is 3.
 - c. The price index of Shangri-La from 2015 to 2017 is 3.
2. The country of Eden produces just two goods, apples and snake-skin handbags. In 2014 the prices of apples and handbags were 10 and 24, respectively. In 2015, the prices increased to 12 and 25. The quantities produced of the two goods were unchanged in both 2014 and 2015, at 100 and 20. From this information, we can conclude that:
 - a. The nominal GDP in 2014 is 1,480.
 - b. The real GDP is unchanged between 2014 and 2015.
 - c. The nominal GDP growth rate between 2014 and 2015 is 14.9%.
3. If the IBEX stock market index was 9500 in 2009 and it is 10450 on the same day in 2014, then its compound annual growth rate (CAGR) is
4. The following are the 2016 GDP per capita in current US\$ and purchasing power parity (PPP) of the US, Iceland, and Singapore (taken from <http://data.worldbank.org>). Based on this information, which of the following statements are correct?

	GDP per capita (current US\$)	GDP per capita (PPP)
US	57,466.79	57,466.79
Iceland	59,976.94	51,398.93
Singapore	52,960.71	87,855.58

- Using the PPP measure of GDP per capita reflects the real purchasing power of the country.
- According to both measures, Iceland has the highest GDP per capita among the three countries.
- Let SG\$ X be the amount of Singapore dollars that can be bought for 1 US\$ at the current market exchange rate. Then SG\$ X would buy much more goods and services in Singapore than 1 US\$ would do in the US.
- GDP per capita at the current exchange rate gives a better comparison between the countries than the PPP measure of GDP per capita.

- Eden, a country, produces just two output goods: apples and snakeskin handbags. The quantities produced and the prices of the two goods in 2016 and 2017 (in \$) are given below. Based on this information, which of the following statements is correct?

	Apples		Handbags	
	Price	Quantity	Price	Quantity
2016	10	100	24	20
2017	11	124	25	10

- Nominal GDP in 2016 was \$1,614.
- Real GDP grew between 2016 and 2017.
- Nominal GDP growth rate between 2016 and 2017 was 9.1%.
- Nominal GDP in 2017 was \$1,480

6. A decision-maker's preferences over the set $A = \{a, b, c\}$ are represented by the payoff function u for which $u(a) = 0$, $u(b) = 1$, and $u(c) = 4$. Are they also represented by the function v for which $v(a) = -1$, $v(b) = 0$, and $v(c) = 2$? How about the function w for which $w(a) = w(b) = 0$ and $w(c) = 8$?