

**Economics 152**  
**Solution to Problem Set 1**

**PART 1 (5 points)**

The following table shows the price of a specific stereo receiver for a five-year period. Using year 3 as the base year, calculate the price index for each year.

<u>Year</u>	<u>Price</u>	<u>Price index</u>
1	\$ 84	46.15
2	\$100	54.94
3	\$182	100.00
4	\$176	96.70
5	\$148	81.31

**PART 2 (10 points)**

The table below gives you hypothetical data on quantities purchased and the price of each item in dollars.

<u>Items</u>	<u>QUANTITIES PURCHASED</u>		<u>PRICE OF EACH ITEM</u>	
	<u>1992</u>	<u>1996</u>	<u>1992</u>	<u>1996</u>
Candy	42	55	1.70	3.00
Shoes	15	18	12.00	16.00
Cassettes	24	32	5.00	6.00
Jeans	9	12	18.00	22.00

**(Assume that 1992 is the base year)**

Based on the above information, answer the following questions.

1. Compute the cost of the “market basket” or Nominal GDP for 1992.

Answer: \$ 533.4

2. Compute the Real GDP for 1992.

Answer: \$ 533.4

3. Calculate the CPI for 1992.

Answer: 100

4. Calculate the GDP deflator for 1992.

Answer: 100

5. Repeat your calculations for all of the above statistics (i.e. Nominal GDP, Real GDP, CPI and the GDP deflator) for 1996. Show your work neatly.

Answers:  $\text{NGDP}^{1996} = \$ 909$

$\text{RGDP}^{1996} = \$ 685.5$

$\text{CPI}^{1996} = 132.73$

$\text{GDP deflator}^{1996} = 132.60$

6. Explain why the CPI overstates inflation.

Answer: The CPI is a fixed weight basket. Consequently it suffers from the following drawbacks:

- (a) It suffers from a substitution bias.
- (b) It does not include new products.
- (c) It does not take into account quality changes.

**PART 3 (5 points)**

Which of the following are included and which are excluded in calculating this year's GDP? Explain in each instance.

- (a) The purchase of a used machine by a firm.

Answer: Not included in GDP, because it is not a part of current production. The machine was counted in the GDP in the year that it was manufactured. In other words, second hand sales are excluded from GDP measurement.

- (b) The services of a plumber in fixing the sink in his own house.

Answer: Not included in GDP because it is not a market transaction.

- (c) Government hiring economists for their policy formulations.

Answer: Is part of GDP, because it is a part of government purchases of goods and services.

- (d) An increase in business inventories.

Answer: Is included as part of business inventories, in gross private domestic investment.

- (e) Unemployment benefits received by a person.

Answer: Not included because it is a transfer payment, not payment for current productive service.