

Economics 152
Solution to Problem Set 2

PART 1 (10 points)

The following is a list of figures for a given year in billions (bn) of dollars.

(1)	Net Private Domestic Investment	\$ 32
(2)	Personal Taxes	39
(3)	Transfer Payments	19
(4)	Indirect Business Taxes	8
(5)	Corporate Income Taxes	11
(6)	Personal Consumption Expenditures	217
(7)	Consumption of Fixed Capital	7
(8)	U.S. Exports	15
(9)	Government Purchases	51
(10)	Net Foreign Factor Income Earned in the U.S.	0
(11)	Undistributed Corporate Profits	10
(12)	Social Security Contributions	4
(13)	U.S. Imports	17

Using the above data, compute the following:

(a) Gross Domestic Product (GDP)

Answer: \$ 305 bn

(b) Net Domestic Product (NDP)

Answer: \$ 298 bn

(c) National Income (NI)

Answer: \$ 290 bn

(d) Personal Income (PI)

Answer: \$ 284 bn

(e) Disposable Personal Income (DPI)

Answer: \$ 245 bn

PART 2 (6 points)

Consider a hypothetical four-stage production process, leading to the production of the final product – wooden furniture.

Stage of Production	Sales of Value of Materials or Product	Value-Added
1. Lumberjack cuts trees	\$ 150	\$ 150
2. Carpenter: makes furniture	\$ 225	\$ 75
3. Wholesale agent: buys the furniture from the carpenter	\$ 250	\$ 25
4. Retail agent: buys the furniture From the wholesale agent and Sells it to the final buyer	\$ 280	\$ 30
	\$ 905	\$ 280

(a) Calculate the total sales value of production

Answer: \$ 905

(b) Calculate the value-added at each stage of production and the total value added. Which measure (total sales value or total value added) would you use to compute GDP? Briefly explain your answer.

Answer: The value-added at each stage of production and the total value added are shown above. We would use total value added to compute GDP. When we work with value added we work with only intermediary transactions and thus avoid falling into the trap of “multiple counting”.

PART 3 (4 points)

The following table shows nominal GDP figures for 3 years and the price indices for each of the 3 years. (This is a one-commodity model and the GDP figures are hypothetical and in billions of dollars).

Year	Nominal GDP	Price Index	Real GDP
1994	\$ 104	121	\$ <u>85.95</u>
1995	56	91	\$ <u>61.53</u>
1996	91	100	\$ <u>91</u>

(a) Use the price indices to compute the real GDP in each year. You may round your answers to the nearest billion dollars. Write the answers in the table.

(b) Which of the 3 years is the base year?

Answer: Year 1996.