

**HOMEWORK FIVE – due Tuesday November 16th**Name: \_\_\_\_\_ **ANSWERS** \_\_\_\_\_

1. Consider an economy characterized by the following data:

Good	Price in 1992 (Base Year)	Quantity Purchased in 1992	Price in 2000	Quantity Purchased in 2000
A	\$12	100	\$13	90
B	\$12	400	\$13	420
C	\$ 7	300	\$ 8	300
D	\$10	600	\$11	650

a). Assuming that goods A-D are all final goods, complete the following table.

	Year 1992	Year 2000
Nominal GDP	<u>14100</u>	<u>16180</u>
Real GDP	<u>14100</u>	<u>14720</u>

b) What is the GDP deflator?

**The GDP deflator =  $\frac{\text{Nominal GDP}}{\text{Real GDP}} * 100 \rightarrow$  for 1992 the GDP deflator = 100, for 2000 the GDP deflator = 110**

c) What is the total inflation rate from 1992 to 2000?

**10%**

d) What is the average annual rate of inflation from 1992 to 2000?

**10%/8 years = 1.25% per year**

2. According to the US Census Bureau, nominal income for the typical family of four in the United States (median income) was \$24,332 in 1980, \$32,777 in 1985, \$41,451 in 1990, and \$53,350 in 1997. The CPI was 82.4 in 1980, 107.6 in 1985, 130.7 in 1990, and 160.5 in 1997.

a) In purchasing power terms, how did family income compare in each of those 4 years?

**Answers rounded to nearest dollar**

Year	1980	1985	1990	1997
Real Income	<b>29529</b>	<b>3046</b>	<b>31715</b>	<b>33240</b>

**Median real incomes rose each year.**

b) When was (approximately) the base year?

**In the Base year, the CPI = 100, so somewhere between 1980 and 1985.**

c) Do you think this number is correct – taking into consideration what you know about how the CPI (or GDP deflator for that matter) measures price levels?

**No, CPI overstates inflation: NEW GOODS, QUALITY CHANGES, and SUBSTITUTION**

3. From your textbook, Chapter 12 review questions # 8 (pages 392 and 393)

8. a. cyclical—caused by recession  
 b. structural/frictional—geographic mismatch  
 c. seasonal—caused by end of harvest  
 d. structural—mismatch created by technological change

4. From your textbook, Chapter 12 problems and exercises # 1 (page 393)
- Counted in GDP as an increase in inventories; “I”**
  - Counted in GDP; “C”**
  - Not counted.** This is an intermediate good whose value will be included in the value of the restaurant meals.
  - Not counted.** Stock is *not* a final good or service. (The broker’s commission, however, would be counted in GDP, as “C” if a household paid the commission.)
  - Not counted.** The property itself was *not* produced.
  - Not counted.** The commission in this case is paid by a firm, and it uses the real estate broker’s services as an intermediate good, in order to produce its final goods which it will sell to someone else. The value of the firm’s final goods will automatically include the value of all intermediate goods and services—like the broker’s commission.
  - Not counted.** *Not* a transaction for the marketplace.
  - Counted in NX.**
  - Not counted.** Social Security payments are transfer payments, not government purchases.

5. From your textbook, Chapter 12 problems and exercises # 3 (page 393)

**Employed = 4 million. Unemployed = 1 million. Labor Force = 4 million + 1 million = 5 million.  
Unemployment rate = Unemployed / Labor Force = 1 million/5 million = 0.20 or 20%.**

6. From your textbook, Chapter 13 review questions # 10 (page 418)

**Inflation can redistribute purchasing power (a) when it is not correctly anticipated or (b) when there are limits on the future payments that people can negotiate. For example, if inflation is greater than anticipated, it will redistribute purchasing power from those awaiting future payments (e.g., lenders) to those who will make the future payments (e.g., borrowers). The latter will be making payments with dollars that have less purchasing power than either side expected. The same is true if there is an upper limit on the nominal payment that can be made in the future. Inflation then causes a reduction in the purchasing power of that upper limit. When inflation is correctly anticipated, however, and when there are no restrictions on future nominal payments, inflation causes no redistribution of purchasing power.**

7. From your textbook, Chapter 13 problems and exercises # 10 (page 419)

- The CPI in December 2005 =  $((100 \times \$1) + (50 \times \$3))/((100 \times \$1) + (50 \times \$3)) = (\$250/\$250) \times 100 = 100$ .**  
**The CPI in December 2006 =  $((100 \times \$1) + (50 \times \$4))/((100 \times \$1) + (50 \times \$3)) = (\$300/\$250) \times 100 = 120$ .**
- The annual inflation rate for 2006 =  $(120 - 100)/100 = 20\%$ .**
- The answer in b. overstates the actual inflation rate in 2006, since it does not reflect the substitution of fruit for nuts when the price of nuts rose.**

8. From your textbook, Chapter 13 problems and exercises # 12 (page 419)

Year	CPI	Inflation Rate	Nominal Wage	Real Wage
1	37	--	\$5.60	\$15.14
2	48	29.7%	\$7	\$13.26
3	52.8	10%	\$11.26	\$21.33
4	62.83	19%	\$15.70	\$25
5	60	-4.5%	\$15	\$25