

Name: _____ Date: _____

Calculating the CPI and a Percentage Change in Price

Formulas to Know:

To calculate the CPI:

$$\text{(Price of the market basket/Price of market basket in base year)*100=CPI}$$

To calculate a percentage change: (in prices or CPI)

$$\text{New-old/old*100}$$

	Year 1	Year 2	Year 3
Gallon of water	1.00	1.10	1.12
Watt of electricity	.50	.45	.50
Orange	.25	.32	.40
Movie ticket	5.00	5.25	5.25
Price of basket			
CPI, Base Year 1			

What was the rate of inflation from year 1 to year 2? _____

What was the rate of inflation from year 2 to year 3? _____

What was the rate of inflation from year 1 to year 3? _____

What was the percentage change in the price of electricity from year 1 to year 2? _____

What was the percentage change in the price of water from year 1 to year 3? _____

	1991	1992	1993
pencil	\$.15	\$.20	\$.30
chips	\$.50	\$.55	\$.65
milk	\$1.00	\$1.00	\$1.10
gallon of gas	\$1.25	\$1.30	\$1.00
Price of basket			
CPI, 1992 base year			

What was the rate of inflation from 1991 to 1992? _____

What was the rate of inflation from 1992-1993? _____

What was the rate of inflation from 1991 to 1993? _____

What was the percentage change in the price of gas from 1991-1992? _____

What was the percentage change in the price of milk from 1992-1993? _____

	2007	2008	2009
t-shirts	10.00	10.20	10.20
cigarettes	5.00	5.33	5.65
gasoline	3.00	3.15	3.30
tires	7.00	7.50	7.75
Price of basket			
CPI, Base Year 2007			

What was the rate of inflation from 2007-2008? _____

What was the rate of inflation from 2008-2009? _____

What was the rate of inflation from 2007-2009? _____

What was the percentage change in the price of cigarettes from 2007 to 2008? _____

How to use the CPI or a GDP deflator:

1. Determine the nominal price.
2. Determine the CPI or GDP deflator for the current year.
3. Apply this equation: $\text{nominal price}/\text{deflator} \times 100 = \text{real price}$
4. For example, If the price of movie tickets in 2011 is \$10 and the CPI is 125, then

$10/125 \times 100 = 8.33$ or the real price of a movie ticket is \$8.33

Problem 1: Egg Prices: Are they really too high today?

Year	Price per dozen	CPI	Real prices
1960	.59	29.6	
1970	.64	38.8	
1980	.84	82.4	
1990	1.01	130.7	
2000	.91	172.2	
2003	1.19	183.3	
2008	1.23	216.0	

Problem 2: Is Obama making more income for his presidency than his predecessors?

President	Salary	CPI	Real Wage
Hoover	\$75,000	13.0	
JFK	\$100,000	30.6	
Nixon	\$200,000	41.8	
Obama	\$400,000	216.0	