Chapter 6

① - Using the expenditure approach

$= C + I + G + X - M$

$= 5000 + 1000 + 1000 + (500 - 700)$

$= 6800$

- Using the income approach

= Compensation of employees + profit + depreciation

$= 5,300 + 900 + 600$

$= 6,800$

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⑥ Real Growth from 2010 - 2011 = 13,792 - 13,406 = 386 billions

$$\%\ \text{Real Growth}_{2010-2011} = \frac{13,792 - 13,406}{13,406} \times 100 = 2.88\%$$

Per Capita Real GDP 2010 = $\frac{13,406\ (\text{billions})}{310.2\ (\text{millions})} = 43,217.28$

Per Capita Real GDP 2011 = $\frac{13,792}{313.2} = 44,035.76$

$$\text{Growth in Per Capita Real GDP}_{2010-2011} = \frac{44,035.76 - 43,217.28}{43,217.28} \times 100$$

$= 1.89\%$

17a

	2009		2010		2011		
Product	Quantity	Price	Quantity	Price	Quantity	Price	Nominal Value of Final Product in 2011
Oranges (1/2 as final product)	90	0.9	100	1	100	1.25	125
Bicycles	20	85	25	90	30	95	2850
Magazines	175	3.5	150	3.5	150	3.25	487.5
Paper (2/3 as final product)	450	0.6	400	0.5	420	0.5	210
Orange juice	40	3.5	50	4	60	4.5	270
Hats	70	10	80	12.5	100	15	1500
				Nominal GDP 2011 = 5442.5			

Sum nominal value of final product

17b

Using 2009 as base year

	2009			2010			2011		
Product	Quantity	Price (2009)	Real Value of Final Product	Quantity	Price (2009)	Real Value of Final Product	Quantity	Price (2009)	Real Value of Final Product
Oranges (1/2 as final product)	90	0.9	81	100	0.9	90	100	0.9	90
Bicycles	20	85	1700	25	85	2125	30	85	2550
Magazines	175	3.5	612.5	150	3.5	525	150	3.5	525
Paper (2/3 as final product)	450	0.6	270	400	0.6	240	420	0.6	252
Orange juice	40	3.5	140	50	3.5	175	60	3.5	210
Hats	70	10	700	80	10	800	100	10	1000
	Real GDP 2009 = 3503.5			Real GDP 2010 = 3955			Real GDP 2011 = 4627		

Sum real value of final product

Real GDP Growth 2009-2010 = ((3955-3503.5)/3503.5)*100 = 12.9%

Real GDP Growth 2010-2011 = ((4627-3955)/3955)*100 = 17%

17 c

Using 2010 as base year

	2009			2010			2011		
Product	Quantity	Price (2010)	Real Value of Final Product	Quantity	Price (2010)	Real Value of Final Product	Quantity	Price (2010)	Real Value of Final Product
Oranges (1/2 as final product)	90	1	90	100	1	100	100	1	100
Bicycles	20	90	1800	25	90	2250	30	90	2700
Magazines	175	3.5	612.5	150	3.5	525	150	3.5	525
Paper (2/3 as final product)	450	0.5	225	400	0.5	200	420	0.5	210
Orange juice	40	4	160	50	4	200	60	4	240
Hats	70	12.5	875	80	12.5	1000	100	12.5	1250
	Real GDP 2009 = 3762.5			Real GDP 2010 = 4275			Real GDP 2011 = 5025		

Real GDP Growth 2009-2010 = ((4275-3762.5)/3762.5)*100 = 13.6%

Real GDP Growth 2010-2011 = ((5025-4275)/4275)*100 = 17.5%

(18)

Quarter	Nominal GDP	Real GDP	GDP Deflator	Percent increase in price level
2008q1	14,373.9	13,366.9	107.534	
2008q2	14,497.8	13,415.3	108.069	0.50
2008q3	14,546.7	13,324.6	109.172	1.02
2008q4	14,347.3	13,141.9	109.172	0.00
2009q1	14,178.0	12,925.4	109.691	0.48
2009q2	14,151.2	12,901.5	109.686	0.00
2009q3	14,242.1	12,973.0	109.783	0.09
2009q4	14,453.8	13,149.5	109.919	0.12

GDP Deflator is actually a type of price index.

* Therefore, percent increase in price level can be calculated from percentage change in GDP Deflator.

$$= \left(\frac{\text{GDP Deflator}_{t} - \text{GDP Deflator}_{t-1}}{\text{GDP Deflator}_{t-1}} \right) \times 100$$

7

Good	Quantity Consumed	2008 Prices	Value for 2008 Price	2009 Prices	Value for 2009 Price	2010 Prices	Value for 2010 Price
X	100	1.00	100	1.50	150	1.75	175
Y	150	1.50	225	2.00	300	2.00	300
Z	25	3.00	75	3.25	81.25	3.00	75

Total value for 2008 price = 400
Total value for 2009 price = 531.25
Total value for 2010 price = 550

Price Index 2008 = (400/400)*100 = 100
Price Index 2009 = (531.25/400)*100 = 132.8
Price Index 2010 = (550/400)*100 = 137.5

Percentage change in Price Index between 2008-2009 = (132.8-100)/100 = 32.8%
Percentage change in Price Index between 2009-2010 = (137.5-132.8)/132.8 = 3.5%

Yes, there was inflation between 2009-2010

(14.) a. real interest rate = −3%

b. real interest rate = 4%

c real interest rate = 6%

d. real interest rate = 6%

The borrower would be best-off in situation a
(where he/she effectively pays back less than the borrowed amo

The lender would be best-off in situation c & d.
(whe he/she gains most interests)