Solutions for Homework Assignment #2

Chapter 4 (p. 106): Problem 6

Updated Figure 4.2: The Most Recent U.S. Business Cycle
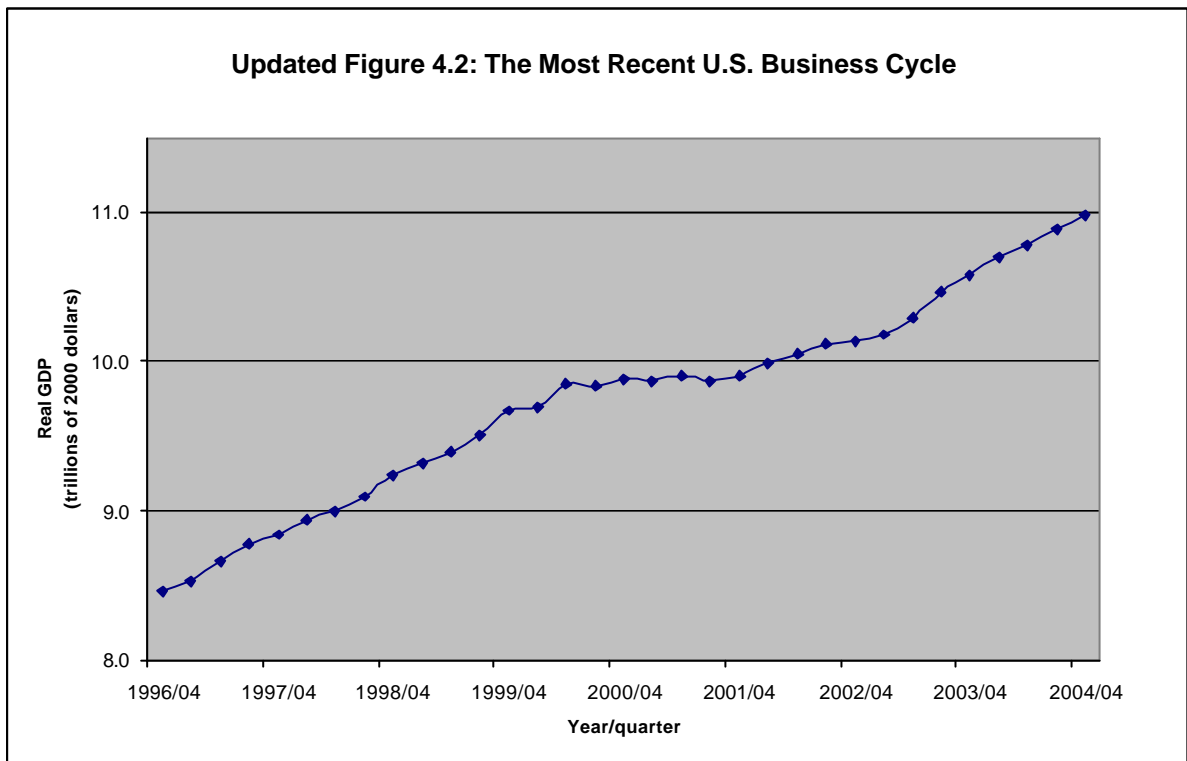
*6. a.   The most recent available data is from the forth quarter of 2004. At the
          present the U.S. economy is in an expansion.
     b.   The present expansion has lasted since the third quarter of 2001.
     c.   In 2004, the growth rate has remained (roughly) the same, i.e. growth did
          neither speed up nor slow down.

Chapter 5 (pp. 125-126): Problems 4,6,10

4.   Wendy's initial capital stock is 20 looms, depreciation is 1 loom per year,
     gross investment is 5 looms, net investment is 4 looms, and the final capital
     stock is 24 looms. Final capital stock equals initial capital stock plus net
     investment. Net investment equals gross investment minus depreciation.

*6. a.   Highland's GDP is $610,000.
          GDP equals the sum of consumption expenditure plus investment plus
          government purchases plus exports minus imports. That is, GDP equals
          $350,000 plus $150,000 plus $130,000 plus $120,000 minus $140,000.
          GDP equals $610,000.

b.	To calculate net domestic product at factor cost, we need data on interest and rent.
Net domestic product at factor cost is the sum of wages paid for labor services, interest paid for the use of capital, rent paid for the use of land, and profit.

c.	Investment is financed by private saving plus government saving plus borrowing from the rest of the world.
Private saving equals $135,000. Government saving equals net taxes ($125,000) minus government purchases ($130,000), which is minus $5,000. Borrowing from the rest of the world equals imports ($140,000) minus exports ($120,000), which is $20,000. Thus, one could say that of the $150,000 investment in Highland last year, only $130,000 was financed by inhabitants of Highland, while $20,000 was financed by the rest of the world.

*10. a.	The growth rate of real GDP in 2004 is 9.016 percent.
The chain-weighted output index method uses the prices of 2003 and 2004 to calculate the growth rate in 2004.

The value of the 2003 quantities at 2003 prices is $25,000. The value of the 2004 quantities at 2003 prices is $27,250. We now compare these values. The increase in the value is $2,250. The percentage increase is ($2,250 ÷ $25,000) × 100, which is 9 percent.

The value of the 2003 quantities at 2004 prices is $31,000. The value of the 2004 quantities at 2004 prices is $33,800. We now compare these values The increase in the value is $2,800. The percentage increase is ($2,800 ÷ $31,000) × 100, which is 9.032 percent.

The chain-weighted output index calculates the growth rate as the average of these two percentage growth rates. That is, the growth rate in 2004 is 9.016 percent.

b.	The GDP deflator in 2004 is 124.02.
The GDP deflator equals nominal GDP in 2004 divided by real GDP in 2004, multiplied by 100.0

Real GDP in 2004 is 9.016 percent higher than real GDP in 2003. Real GDP in 2003 is $25,000, so real GDP in 2004 is $27,254.

The GDP deflator equals ($33,800 ÷ $27,254) × 100 = 124.02.

c.	Real GDP in 2004 using the base-year prices method is $27,250. Real GDP in 2004 using the chain-weighted output index method is $27,254. The base-year prices method measure real GDP growth as being slightly slower than the chain-weighted index measure.

Chapter 6 (p. 147): Problems 2, 10

*2. a.	Unemployment rate is 5.8 percent.
The unemployment rate is the percentage of the labor force that is unemployed. The labor force is the sum of the people unemployed and the people employed. So the number of people who are unemployed is 142,314,000 minus 134,055,000, which is 8,259,000. The unemployment rate equals (the number of people unemployed divided by the labor force) multiplied by 100. That is, (8,259,000/142,314,000) × 100, which is 5.8 percent.

b.	The labor force participation rate is 66.8 percent.

The labor force participation rate is the percentage of the working-age population that is in the labor force. The working-age population is 212,927,000 and the labor force is 142,314,000, so the labor force participation rate equals (142,314,000/212,927,000) × 100, which equals 66.8 percent.

c. The employment-to-population ratio is 63 percent.
The employment-to-population ratio is the percentage of the people of working age who have jobs. The employment-to-population ratio is equal to the number of people employed divided by the working-age population all multiplied by 100. The employment-to-population ratio is (134,055,000/212,927,000) × 100, which is 63 percent.

*10. a. The CPI basket is 10 mangoes and 20 bags of nuts.
b. The CPI in the current year is 135.7.
To calculate the CPI multiply the value of the CPI basket in current year prices by 100 and divide by the base year value of the CPI basket. The value of the CPI basket in current year prices is: ($1.50 × 10) + ($4 × 20) = $95. The value in base year prices is $60 + $10 (provided in the question), which equals $70. So the CPI is ($95/$70) × 100 = 135.7.
c. The inflation rate in the current year is 35.7 percent.
The inflation rate equals the CPI in the current year minus the CPI in the base year expressed as a percentage of the base year CPI. Because the base year CPI is 100, the inflation rate is [(135.7 – 100) / 100] × 100 = 35.7 percent.

Chapter 7 (p. 171): Problem 2

2. a. The strong expansion in the world economy increases Coolland's exports and increases aggregate demand, which increases real GDP and raises the price level. The expectation of huge profits in the future increases investment and increases aggregate demand, which increases real GDP and raises the price level. A cut in government expenditures decreases aggregate demand, which decreases real GDP and lowers the price level.
b. The combined effect of a strong expansion in the world economy, the expectation of huge profits in the future, and a cut in government expenditures might increase of decrease aggregate demand, and so might increase or decreases real GDP and raise or lower the price level. Which of the two will happen depends on the size of the first two effects compared to the third effect. If the combined effect of the expansion in the world economy and the expectation of huge profits is larger than that of the cut in government expenditures, the aggregate demand curve will be shifted outward, causing an increase in real GDP and a rise in the price level. Otherwise the reverse will happen.
c. Coolland's policymakers may be concerned about the net effect on Coolland's economy. If the expansionary events dominate, Coolland's government might want to take further contractionary actions (such as decreasing government purchases even more and/or raising taxes). Coolland's Fed might want to decrease the quantity of money and raise interest rates. If the contractionary events dominate, then Coolland's government may want to undertake expansionary policy (e.g., cut government spending less and/or cut taxes) and Coolland's Fed may want to increase the money supply and lower interest rates.

* denotes graded questions