Homework 9

1. The Bureau of Labor Statistics announced that in April 2010, of all adult Americans, 139,455,000 were employed, 15,260,000 were unemployed, and 82,614,000 were not in the labor force. Use this information to calculate:
   a. the adult population
   b. the labor force
   c. the labor-force participation rate
   d. the unemployment rate

2. Economists use labor-market data to evaluate how well an economy is using its most valuable resource—its people. Two closely watched statistics are the unemployment rate and the employment-population ratio. Explain what happens to each of these in the following scenarios. In your opinion, which statistic is the more meaningful gauge of how well the economy is doing?
   a. An auto company goes bankrupt and lays off its workers, who immediately start looking for new jobs.
   b. After an unsuccessful search, some of the laid-off workers quit looking for new jobs.
   c. Numerous students graduate from college but cannot find work.
   d. Numerous students graduate from college and immediately begin new jobs.
   e. A stock market boom induces newly enriched 60-year-old workers to take early retirement.
   f. Advances in healthcare prolong the life of many retirees.

3. Consider an economy with two labor markets—one for manufacturing workers and one for service workers. Suppose initially that neither is unionized.
   a. If manufacturing workers formed a union, what impact on the wages and employment in manufacturing would you predict?
   b. How would these changes in the manufacturing labor market affect the supply of labor in the market for service workers? What would happen to the equilibrium wage and employment in this labor market?

4. Suppose that Congress passes a law requiring employers to provide employees some benefit (such as healthcare) that raises the cost of an employee by $4 per hour.
   a. What effect does this employer mandate have on the demand for labor? (In answering this and the following questions, be quantitative when you can.)
   b. If employees place a value on this benefit exactly equal to its cost, what effect does this employer mandate have on the supply of labor?
   c. If the wage is free to balance supply and demand, how does this law affect the wage and the level of employment? Are employers better or worse off? Are employees better or worse off?
   d. Suppose that, before the mandate, the wage in this market was $3 above the minimum wage. In this case, how does the employer mandate affect the wage, the level of employment, and the level of unemployment?
e. Now suppose that workers do not value the mandated benefit at all. How does this alternative assumption change your answers to parts (b) and (c)?

5. Happy Bank starts with $200 in bank capital. It then takes in $800 in deposits. It keeps 12.5 percent (1/8th) of deposits in reserve. It uses the rest of its assets to make bank loans.
   a. Show the balance sheet of Happy Bank.
   b. What is Happy Bank's leverage ratio?
   c. Suppose that 10 percent of the borrowers from Happy Bank default and these bank loans become worthless. Show the bank's new balance sheet.
   d. By what percentage do the bank's total assets decline? By what percentage does the bank's capital decline? Which change is larger? Why?

6. Suppose that this year's money supply is $500 billion, nominal GDP is $10 trillion, and real GDP is $5 trillion.
   a. What is the price level? What is the velocity of money?
   b. Suppose that velocity is constant and the economy's output of goods and services rises by 5 percent each year. What will happen to nominal GDP and the price level next year if the Fed keeps the money supply constant?
   c. What money supply should the Fed set next year if it wants to keep the price level stable?
   d. What money supply should the Fed set next year if it wants inflation of 10 percent?

7. It is sometimes suggested that the Federal Reserve should try to achieve zero inflation. If we assume that velocity is constant, does this zero-inflation goal require that the rate of money growth equal zero? If yes, explain why. If no, explain what the rate of money growth should equal.

8. If the tax rate is 40 percent, compute the before-tax real interest rate and the after-tax real interest rate in each of the following cases.
   a. The nominal interest rate is 10 percent, and the inflation rate is 5 percent.
   b. The nominal interest rate is 6 percent, and the inflation rate is 2 percent.
   c. The nominal interest rate is 4 percent, and the inflation rate is 1 percent.

9. Suppose that people expect inflation to equal 3 percent, but in fact, prices rise by 5 percent. Describe how this unexpectedly high inflation rate would help or hurt the following:
   a. the government
   b. a homeowner with a fixed-rate mortgage
   c. a union worker in the second year of a labor contract
   d. a college that has invested some of its endowment in government bonds