Ch. 6: Simple Economic Models of GDP, Prices and Employment

1. According to the equation of exchange, $MV = Py$. What does each term in this equation represent?

2. If the velocity of money is constant, the nominal money supply grows at 5 percent, and inflation is 2 percent, what does the growth rate in real GDP have to be?

3. If velocity is constant, real GDP increases at 5% and the nominal money supply increases at 3%, what must the inflation rate be?

4. Define the following terms and explain how the graph of the production function can be used to illustrate them:
   - average product of labor
   - marginal product of labor
   - Law of diminishing marginal returns
   - productivity

5. Draw a labor demand and labor supply curve and answer the following questions.
   - what is measured on the vertical axis?
   - what is measured on the horizontal axis?
   - on your diagram, indicate the equilibrium level of employment and wages.
   - what occurs in the labor market if the current wage is above the equilibrium wage? below the equilibrium wage?
   - what happens to equilibrium wages and employment if there is an increase in labor supply?
   - what happens to equilibrium wages and employment if there is an increase worker productivity causing an increase in labor demand?

6. Draw a graph representing a "production function" and answer the following questions.
   - what is measured on the vertical axis?
   - what is measured on the horizontal axis?
   - how would an increase in the amount of capital affect the production function?
   - why isn't the graph you drew a straight line?

7. Show how the graph for the labor market and the production function can be linked. Use it to answer the following questions.
   - how will an increase in labor supply affect total production? how will it affect the average product of labor (productivity)?
   - show how an increase in the amount of capital will affect total production and productivity assuming there is no effect on labor demand.

Answers.

1. $M =$nominal money supply; $v =$velocity of money; $P =$price level; $y =$real GDP ($PY =$nominal GDP).
2. 3 percent.
3. -2 percent.
4-7. Refer to your notes and textbook.