Prep Questions for Exam #3
ECON 3133
Dr. Keen

1. *Forward-Looking Theory of Consumption*: Suppose the government unexpectedly decides to temporarily raise taxes for this year only. If taxpayers base their consumption decisions on their permanent income, how much will they change their level of consumption (relative to the tax increase)? Briefly explain. Next, discuss how your answer would change for those taxpayers that are liquidity constrained?

2. *Consumption and the Interest Rate*: Let the following equations describe a simple economy without a foreign sector:

$$Y = C + I + G$$
$$C = 40 + 0.95\times(1 - t)\times Y - 2{,}000\times R$$
$$I = 740 - 8{,}000\times R$$
$$M^S = (Y - 20{,}000\times R)\times P$$

where Y is output, C is consumption, I is investment, G is government spending, t is the proportional income tax rate, R is the interest rate, M^S is the money supply, and P is the price level. Furthermore, money supply is 8,100, government spending is 460, the proportional income tax rate is 20%, and the price level is 3.

   a. Briefly describe the substitution and income effects from an increase in the interest rate on consumption. Which effect dominates in this problem? Briefly explain. You may assume that the expected inflation rate equals zero.
   b. Calculate the equilibrium values of output and the interest rate.

3. *The Optimal Capital Stock*: Suppose the nominal interest rate is 5%, the depreciation rate is 10%, the relative price of capital is 60, and the marginal product capital is given by the equation $MP_K = 200 - 4\times K$ where K is the capital stock. If rental income is taxed at the rate of 25% and there are no subsidies for the production of capital, what is the rental price of capital and the optimal level of the capital stock (K*)? Use an optimal capital demand/supply graph to support your answer.

4. *The Optimal Capital Stock*: The real wage rate in the United States is much higher than in China. How does this difference impact the size of the optimal capital stock in the United States to that in China? For simplicity, assume the level of GDP and the rental rate of capital are identical in both countries. Use an optimal capital demand/supply graph to support your answer.

5. *Anticipated Tax Changes*: Suppose firms expect the government to institute investment subsidies next period. How will that change impact the expected price of capital goods next period, the rental rate of capital this period, and the optimal capital stock this period? Briefly explain. Use an optimal capital demand/supply graph to support your answer.

6. *Inventories*: Answer parts a – c below.

    a. Briefly describe the two types of inventories. What fraction of total inventories does each type comprise?
    b. Suppose there is a planned increase in pipeline inventories, what does this indicate about future output? Briefly explain.
    c. Suppose there is an unplanned increase in buffer stock inventories, what does this indicate about future output? Briefly explain.

7. *A Bank's Balance Sheet*: Show how each of the following would initially affect the assets and liabilities of a bank. Indicate the particular type of assets or liabilities that change.

    a. The Federal Reserve sells $100,000 in bonds to a bank.
    b. A bank makes a $20,000 loan to a business.
    c. A consumer withdraws $100 from his/her checking account.

8. *Reserves/Money*: Use the information below to calculate the answers to parts a – e.

Borrowed reserves	$25
Currency-to-deposit ratio	0.25
Excess reserves	$70
Nonborrowed reserves	$1,445
Required reserves ratio	0.10

    a. Total reserves.
    b. Required reserves.
    c. Checking deposits.
    d. Currency.
    e. M1.

9. *The Money Multiplier*: Suppose the currency-to-deposit ratio is 0.20, the excess reserves-to-deposit ratio is 0.10, and the required reserves ratio is 0.10.

    a. If the Federal Reserve buys $6 million in bonds, how much does the money supply change?
    b. If the Federal Reserve wants the money supply to decline by $27 million, how much should it decrease the monetary base?

10. *Federal Funds Rate/Discount Rate*: Briefly describe what the Federal Funds Rate and the Discount Rate are. Does the Federal Reserve direct set or just simply target these rates?

11. *The Fed's Policy Tools*: Name and briefly describe the four main policy tools of the Federal Reserve.

12. *The Taylor Rule*: Suppose the Federal Reserve targets the unemployment rate gap as opposed to the output gap. Use Okun's Law and the Taylor Rule to derive the relationship between the nominal interest rate and the unemployment rate. Does the nominal interest rate target rise or fall when the unemployment rate increases?