HOMEWORK #6

This homework assignment is due at the beginning of lecture on Monday, March 28.

1. Do numerical problem #4 on p. 388 in Chapter 10 of the textbook.

2. (a) Suppose that the discovery of a new technology increases the expected future marginal product of capital, but does not affect current productivity. Explain how and why this new technology shifts the IS curve.

(b) Use the classical IS-LM model to determine the effects of the new technology on current output, the real interest rate, employment, the real wage, consumption, investment, and the price level. To keep things simple, suppose that expected future wages and future income are unaffected by the new technology.

(c) Explain how and why the discovery of the new technology shifts the AD curve.

(d) Use the “misperceptions” version of the AD-AS model to determine the short-run effects of the new technology on current output and the price level (that is, keep the expected price $P^e$ fixed at its value before the discovery of the new technology).

3. This problem studies the effects of temporary shocks to government spending in the classical IS-LM model. Before working this problem, you read carefully the section in Chapter 10 entitled “Fiscal Policy Shocks in the Classical Model” (pp. 366–369). One of the key points of this section is that, in the classical model, shocks to government spending shift not only the desired savings curve but also the labor supply curve. (An increase in government spending makes consumers poorer because it increases their taxes. Consumers compensate for this decrease in wealth by working more at every wage.)

(a) Suppose that shocks to government spending are the only source of fluctuations in the macroeconomy (productivity is assumed to be constant). How well does the classical model with such shocks account for the observed cyclical behavior of each of the following variables: output, employment, the real wage, average labor productivity, consumption, investment, and the price level? That is, for each variable, state whether it is procyclical, acyclical, or countercyclical in the observed U.S. data, and then determine the nature of its cyclicality (i.e., whether it
is procyclical, acyclical, or countercyclical) in the classical model with government spending shocks.

(b) Now consider a classical model with shocks to both productivity and government spending. Suppose that the government would like to use variations in government spending to dampen the business cycles (i.e., reduce the fluctuations in output) caused by productivity shocks. Should government spending vary directly or inversely with productivity? Explain carefully.