Practice Problems Chapters 8 and 9

1) Using the AD-AS framework, suppose the economy is initially in long-run equilibrium. For each of the shocks listed below, explain the short-run effects on output and the price level.
   (a) A stock market crash reduces consumers' wealth.
   (b) Businesses decide to expand inventories.
   (c) The government cuts defense spending.
   (d) Foreign countries buy more U.S. goods.

2) Using the AD-AS framework, suppose the economy is initially in long-run equilibrium. For each of the shocks listed below, explain the long-run effects on output and the price level.
   (a) Labor supply decreases.
   (b) Government spending falls.
   (c) Productivity increases.

3) Identify changes in three variables that would cause the *FE* line to shift to the right.

4) Draw a saving—investment diagram to show how each of the following changes shifts the *IS* curve.
   (a) Future income rises.
   (b) The future marginal productivity of capital increases.
   (c) Government purchases decrease temporarily.
   (d) The effective corporate tax rate increases.

5) If the money supply is increased, which curve shifts in the *IS—LM* model? What direction does it shift? What is the intuition behind this shift?

6) Desired consumption is $C^d$ = 100 + 0.8$Y$ - 500$r$ - 0.5$G$, and desired investment is $I^d$ = 100 - 500$r$. Real money demand is $M^d/P$ = $Y$ - 2000$i$. Other variables are $\pi^e$ = 0.05, $G$ = 200, $\overline{Y}$ or full employment output= 1000, and $M$ = 2100.
   (a) Find the equilibrium values of the real interest rate, consumption, investment, and the price level.
   (b) Suppose the money supply increases to 2800. Find the equilibrium values of the real interest rate, consumpti investment, and the price level. (Assume that the expected inflation rate is unchanged.)

7) Using the IS-LM framework, for each of the following changes, what happens to the real interest rate and output in the very short run, before the price level has adjusted to restore general equilibrium?
   (a) Wealth declines.
   (b) Money supply declines.
   (c) The future marginal productivity of capital declines.
   (d) Expected inflation rises.
   (e) Future income rises.

8) Suppose the Federal Reserve's short-run response to any change in the economy is to change the money supply to maintain the existing real interest rate. What would happen to money supply if there were a reduction in government purchases? Given the Fed's policy, what would happen in the very short run (before general equilibrium is restored) to output and the real interest rate? What must happen to the LM curve and the price level to restore general equilibrium?

1) (a) Output declines and the price level is unchanged.
   (b) Output rises and the price level is unchanged.
   (c) Output declines and the price level is unchanged.
   (d) Output rises and the price level is unchanged.
2) (a) Output declines and the price level rises.
   (b) Output is unchanged and the price level falls.
   (c) Output rises and the price level falls.
3) An increase in productivity, an increase in the supply of capital, or an increase in the supply of labor would increase the full-employment level of output, as illustrated by a rightward shift in the *FE* line.
4) (a) *IS* shifts up and to the right.
   (b) *IS* shifts up and to the right.
   (c) *IS* shifts down and to the left.
   (d) *IS* shifts down and to the left.
5) An increase in the money supply shifts the *LM* curve down and to the right. Because the nominal money supply has risen, real money supply is higher. To get an increase in real money demand to restore equilibrium in the asset market, either income must rise or the real interest rate must fall, which can be seen as a shift of the *LM* curve down and to the right.
6) (a) Use the equation $Y = C^d + I^d + G = 300 + 0.8Y - 1000r$, so $0.2\,Y = 300 - 1000r$, so $Y = 1500 - 5000r$. This is the *IS* curve. Because full-employment output equals 1000, then $1000 = 1500 - 5000r$, so $r = 500/5000 = 0.10$. Plug this into the consumption and investment functions to get $C = 750$ and $I = 50$.

   To find the price level, use the equation $M/P = L$ and plug the values in to get $2100/P = 1000 - 2000(0.1 + 0.05) = 700$, so P
   *3.*

   (b) The increase in the money supply to 2800 does not change anything except the price level. The new equation is 2800
   700, so $P = 4$.
7) (a) The *IS* curve shifts down and to the left, so *r* falls and *Y* falls.
   (b) The *LM* curve shifts up and to the left, so *r* rises and *Y* falls.
   (c) The *IS* curve shifts down and to the left, so *r* falls and *Y* falls.
   (d) The *LM* curve shifts down and to the right, so *r* falls and *Y* rises.
   (e) The *IS* curve shifts up and to the right, so *r* rises and *Y* rises.
8) The decrease in *G* shifts the *IS* curve down and to the left. The Fed's policy decreases the money supply and shifts the *LM* curve up and to the left, so the real interest rate doesn't change. But output declines in the very short run. To restore general equilibrium, the price level must decline to shift the *LM* curve down and to the right. If the Fed wanted to keep the price level from changing so much, its correct policy would have been to increase the money supply, not decrease it.