101b Practice Midterm, Spring 2008

1. Definitions--One Sentence on Each:

1. What is the *flexible-price short-run model*?
2. What is the *sticky-price short-run model?*
3. What is the *Phillips Curve*?
4. What is the *monetary policy reaction function?*
5. What is a *financial crisis?*
6. What is the *IS Curve?*

2. Sticky-Price Model:

Suppose that we have the following sticky-price income-expenditure model of the economy:

> Y = C+I+G+NX (national income identity)
> $C = C_0 + 0.8(1\text{-}t)Y$ (consumption function)
> T = tY (taxes)
> NX = GX - IM (net exports)
> IM = 0.1 x Y (imports)
> t=0.25 (tax rate)

And suppose that I, G, and GX are determined outside this model.

> (1) Solve, algebraically, for Y as a function of the outside variables I, G, GX, and C_0.
> (2) What is the value of the *multiplier* in this model? By how much does a \$1 increase in I, G, or GX increase Y?
> (3) Suppose that the sum C_0 + I + G + NX increases by \$200 billion. By how much does equilibrium real GDP Y change?
> (4) Suppose that the tax rate were to go up from 25 to 62.5 percent. What then would the value of the multiplier be?

3. The IS Curve:

Suppose that the sticky-price model has:

$$Y = C + I + G + NX$$

$$C = C_0 + C_y(1 - t)Y = \$3000 + 0.5(1 - .4)Y$$

$$I = I_0 - I_r r = \$1200 - \$100r$$

$$GX = X_f Y^f + X_\varepsilon \varepsilon = 0.1Y^f + \$4\varepsilon$$

$$IM = IM_y Y = .2Y$$

$$NX = GX - IM$$

$$\varepsilon = 100 + 10(r^f - r)$$

Then:

(1) Derive real GDP as a function of all the unspecified variables in the economy.
(2) Suppose that the foreign interest rate r^f is 5%, that total foreign income Y^f is \$10000, and that government spending G is \$3000. Derive the IS Curve for the economy: real GDP as a function of the exchange rate.
(3) Suppose that the Federal Reserve thinks that potential output Y* is \$7000. At what level should it try to set the interest rate r?

4. Monetary Policy (1/6 of exam):

On November 1 the Federal Reserve issued this: press release:

> The Federal Open Market Committee decided today to raise its target for the federal funds rate by 25 basis points to 4 percent. Elevated energy prices and hurricane-related disruptions in economic activity have temporarily depressed output and employment. However, monetary policy accommodation, coupled with robust underlying growth in productivity, is providing ongoing support to economic activity that will likely be augmented by planned rebuilding in the hurricane-affected areas. The cumulative rise in energy and other costs has the potential to add to inflation pressures; however, core inflation has been relatively low in recent months and longer-term inflation expectations remain contained. The Committee perceives that, with appropriate monetary policy action, the upside and downside risks to the attainment of both sustainable growth and price stability should be kept roughly equal. With underlying inflation expected to be contained, the Committee believes that policy accommodation can be removed at a pace that is likely to be measured. Nonetheless, the Committee will respond to changes in economic prospects as needed to fulfill its obligation to maintain price stability.

Using the tools and models of this course, explain what the Federal Reserve thinks that it is doing.