Homework #3 - Due February 23

1. Mankiw, Chapter 7, Q. 2.

2. Mankiw, Chapter 7, Q. 5.

3. Mankiw, Chapter 7, Q. 8. (Use the model of the real interest rate developed in Chapter 3.)

4. The following data are from the US economy for the 1980s. GDP is measured in trillions of dollars per year and $M_1$ is a measure of the money stock measured in trillions of dollars.

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<tbody>
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<td></td>
<td>2.7</td>
<td>3.0</td>
<td>3.1</td>
<td>3.4</td>
<td>3.8</td>
<td>4.0</td>
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<tr>
<td>$M_1$</td>
<td>0.41</td>
<td>0.44</td>
<td>0.47</td>
<td>0.52</td>
<td>0.55</td>
<td>0.62</td>
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a. Calculate the value of the propensity to hold money, $k$, for each year.
b. What units is $k$ measured in?
c. Draw a graph of $k$ against time. Was $k$ constant for this period.

5. What is meant by “the neutrality of money”? How is this phrase related to the classical dichotomy.

6. What is the quantity theory of money and how is it related to the theory of aggregate demand?

7. Why does the aggregate demand curve slope down? What is held constant at every point on the aggregate demand curve.

8. A model of aggregate demand and supply.

**Supply:** Suppose the production function in an economy is:

(1) \[ Y = 3L^{\frac{1}{3}} \]

$Y$ is aggregate output and $L$ is labor employed. The labor supply curve is:

(2) \[ L^s = \frac{w}{P} \]

where $w$ denotes the nominal wage and $P$ is the price level.

a. Determine the labor demand curve.
b. Find the equilibrium real wage.
c. Determine the aggregate supply curve.

**Demand:** Use the quantity theory to determine the aggregate demand function. Assume that $k = 2$ and $M = 600$.

d. Determine the equilibrium price level in this economy.
e. Determine the equilibrium nominal wage.

9. Based on the quantity theory and the Fisher relation, what is the effect of money growth on nominal interest rates?