1. (SA) Some economists claim that the high growth rate of output per worker in Southeast Asia over the past few decades has been due mainly to the accumulation of capital per worker. If this is true, can these high growth rates be sustained over the long run? Why or why not?

No. If capital accumulation is the primary driving force behind growth, then diminishing returns to capital will eventually cause output growth to grind to a halt. Technological advance can nullify the effects of diminishing returns, and is therefore necessary for sustained growth.

2. (TF) Over the past century, US output per worker and capital per worker have grown at a compounded annual rate of about 2.4%. This implies that the growth rate of technology in the US has essentially contributed nothing to growth in labor productivity.

False. The growth accounting formula shows that, if growth in output per worker is 2.4% (which indeed it was over this period), capital accumulation will contribute only 0.8% (1/3 times 2.4); technology growth would therefore be 1.6%.

3. (SA) In class, we discussed four potential explanations for the slowdown in US growth in the 1970’s. Briefly discuss one of these explanations.

Any of the following will do: 1) Mismeasurement of quality will understate growth. Something happened to worsen this mismeasurement during this period. 2) Changes in preferences for improving the environment. This reduces measured productivity if environmental goods are not properly accounted for. 3) Slowdown in technological advance after fast post-D epression and post-war rates. 4) Oil price increases which hurt productivity in energy intensive industries.

4. (TF) Suppose that the FOMC sells $1 million in government securities to the public. Furthermore, assume that the currency/ deposit ratio is 0.9 and the reserve/ deposit ratio is 0.1. The effect of this open market operation is to increase the money stock (M1) by $1,900,000.

False. The money stock will decrease by $1,900,000.

5. (TF) Robert Lucas has shown that over long periods of time for many different countries, the rate of inflation and the growth rate of money are essentially equal. This evidence supports the quantity theory of money.

True. The quantity theory of money, which assumes that velocity and output are independent of money growth, implies that money growth and inflation should be equal over long periods of time.
6. (SA) Experts in international trade predict that exports in the US will rise over the next few months by $1 billion, leading to an increase in aggregate spending of $4 billion. What is the rationale for this prediction?

The increased production in the short run to meet increased exports generates income for households. They choose to spend some of this income, which leads to an additional round of spending. But this additional spending generates even more income, some of which is spent, and so on. This additional spending ultimately leads to an increase in aggregate income that is larger than the initial increase in exports.

7. (SA) Suppose that a decrease in tax revenues increases current consumption expenditures. What happens to the rate of inflation and output in the short-run and the long-run, according to the model of aggregate fluctuations developed in class?

The decrease in tax revenues increases consumption for any given interest rate and rate of inflation; thus, it causes the aggregate demand curve to shift to the right. In the short-run, inflation remains constant, but firms respond to the increased demand by increasing production. Thus, output rises above its full employment level. Gradually, the rate of inflation rises, since output exceeds its potential level, and output returns to potential.

8. (SA) The government recently announced that the US economy is in a recession, meaning that output is below its full-employment level.

a) Describe how the economy will adjust to its long-run equilibrium if the Fed follows its policy rule of acting to change interest rates when the rate of inflation changes.

Evidently, aggregate demand has fallen, leading to the recession. Gradually, inflation will fall, since output is below its full employment level. As inflation falls, the FED will follow its rule by acting to reduce nominal interest rates more than the rate of inflation, thus causing real interest rates to fall. This in turn leads to an increase in spending (movement down along the AD curve) and an increase in output. Ultimately, as inflation and real interest rates continue to fall, output will return to its full employment level.

b) Suppose the Fed wants to hasten output back to its full-employment level. How might the Fed alter its interest rate rule to achieve this goal? Explain.

If the FED wants to try to bring the economy back to potential quicker, it could reduce nominal interest rates for any given level of inflation; i.e. it could shift its policy rule down. This would cause the real interest rate to fall quickly, thus shifting the aggregate demand curve to the right. Thus, instead of waiting for the declining inflation to bring about more spending, the FED could act to increase spending right away (by shifting the AD curve to the right).