

Econ 522: Intermediate Macroeconomics, Fall 2017 – Test # 3

Name: _____

Instructions: This is a closed-book, closed-note exam. You may use a calculator (but not on a phone or on a device capable of connecting to the internet). Do not look at any other students' paper or attempt to communicate with any other students during the exam. Failure to comply with these instructions will result in a grade of zero on this exam.

1. In the Solow growth model with population growth but no technology growth what forces increase and decrease capital and capital per-worker over time?

Increase capital: _____

Decrease capital: _____

Increase capital per-worker: _____

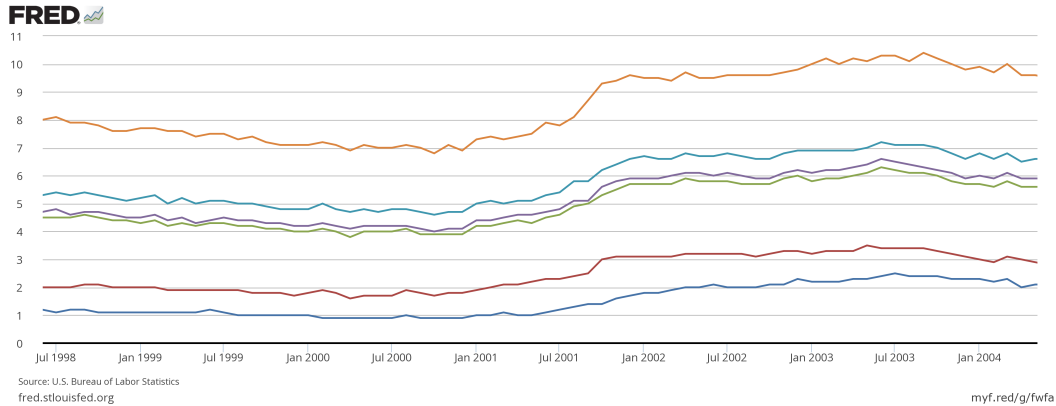
Decrease capital per-worker: _____

2. What is the difference between the golden rule steady state and other steady states?

3. What is the formula for the U6 unemployment rate?

4. According to the Chapter 7 natural rate theory of unemployment, what are the two variables that determine the natural rate of unemployment?

5. Consider the graph below. Each line represents one of the six unemployment rates computed by the BLS. (U1, U2, U3, U4, U5, U6). Based only on the definitions of each rate, indicate which line represents which rate or indicate that it is not possible to determine and explain why. Write either the rate label or an x in the margin next to the graph in the same order that the lines appear. Explain any x's in the space below the graph.



6. According to the Solow model what factors are related economic growth? What could a nation do to achieve a temporary boost in its aggregate output growth rate pushing it to a higher steady state level thereafter? Is there anything a nation could do achieve sustained growth. Explain your answers.

7. (a) Draw the Solow growth model graph, labeling all curves and axes.
- (b) Identify the steady state levels of capital per-worker (label it k^*) and output per-worker (label it y^*).
- (c) Identify a level of capital per-worker below the steady state and label it k_{low} . Explain what would happen over time, according the Solow model, in an economy starting with that level of capital per-worker.

8. Assume that an economy has a per-worker production function of $y = k^{1/2}$. Let $s = 0.4$, $\delta = 0.1$, and $n = 0.12$.
- (a) Solve for the steady-state values of k , y , and c .
 - (b) What are the growth rates of Y and K in this steady state?
 - (c) What happens to the steady-state values of k , y , and c if the population growth rate decreases to 0.04?