

100 points, 75 minutes

Question 1 (10 points total; 7.5 minutes total)

- a. (6 points) You washed your own car. Your neighbor took her car to the car wash. Both of you have clean cars. Where is your activity recorded in GDP? Explain.
- b. (4 points) What is the current value of the federal government's budget deficit?

Question 2 (16 points total; 12 minutes total)

- a. (8 points) Describe the current sub-prime mortgage crisis by answering the following questions. What does it mean for a mortgage to be "sub-prime"? Why are so many homeowners currently facing foreclosure?
- b. (8 points) The San Francisco Supervisors are considering one strategy for addressing the crisis: urging sub-prime lenders to negotiate more affordable terms for borrowers facing foreclosure. Critics say, "This strategy won't work." Drawing on our discussions of sub-prime lending, identify an assumption that could explain why the supervisors and the critics disagree. Explain why this is a key assumption in the supervisors' and the critics' arguments.

Question 3 (19 points total; 14 minutes total)

- a. (10 points) Starting from the definition of balanced growth equilibrium, and using a Cobb-Douglas production function, derive the expression which states that the equilibrium growth rate of the standard of living equals the growth rate of labor efficiency. *Even if you're a math whiz, be sure to include enough intermediate steps so that your GSI can tell you didn't simply memorize the bottom line.*
- b. (9 points) Consider three possibilities: $g = 0$, $g > 0$ but constant, and g is increasing. For each of these three possibilities, what can you say about the values of labor efficiency over time? For each of these three possibilities, how would you draw the production function over time?

Question 4 (20 points total; 15 minutes total)

Suppose the following parameters describe an economy

$$\begin{aligned}n &= 1 \text{ percent} \\g &= 2 \text{ percent} \\ \delta &= 2 \text{ percent} \\s &= 20 \text{ percent} \\ \alpha &= 1/2\end{aligned}$$

current value of $E = 8,000$

current value of $Y/L = 24,000$

- a. (9 points) What is the balanced growth equilibrium value of K/Y ? *First write the formula, then plug in the values, then simplify – or no credit.*
- b. (7 points) Determine whether this economy is in balanced growth equilibrium. *(Yes, you have enough information to answer this question.)*

- c. (4 points) At the right, draw a graph that shows the current actual and equilibrium positions for this economy. Label everything clearly.

Question 5 (20 points total; 15 minutes total)

A war was fought in a country. Before the war began, the country was in balanced-growth equilibrium with a decent standard of living. But now, the enemy has destroyed factories, bridges, roads, railroad networks, communications towers, and electrical power plants.

- a. (10 points) Suppose s , n , g , and δ are all constant. At the right, show the effect of the war on the country's standard of living. Below, tell us: After a few generations, what will the standard of living be in this country? Why?
- b. (10 points) Now suppose instead that the saving rate, s , is endogenous. When Y/L is low, the saving rate is also very low. But when Y/L is relatively high, the saving rate is also relatively high. At the right, show the effect of the war on the country's standard of living. Below, tell us: After a few generations, what will the standard of living be in this country? Why?

Question 6 (15 points total; 11 minutes total)

You work for an organization promoting growth in an *extremely* poor country. You can propose one strategy for increasing growth. You want to choose the most effective strategy for this very poor country.

- a. (10 points) List three strategies that you will consider and then identify the one strategy that you will propose. Why did you propose that particular strategy?
- b. (5 points) Illustrate the impact of your growth-promoting strategy using either the math or the graph of our growth model.