

125 points total; 62 minutes total. (2 points per minute)

**Question 1 (10 points; 6 minutes)**

Suppose that in some year,

- total output in an economy was \$3,000 billion,
- income earned by labor and other factors of production was \$3,300 billion, and
- total sales of final goods and services was \$2,800 billion.

- (A) (5 points) Show how income equals output in this economy.  
 (B) (5 points) Show how output equals expenditure in this economy.

**Question 2 (12 points; 6 minutes)**

Alan Blinder and Janet Yellen use two macro models to estimate the effect of various policies and events on the economy of the 1990s. The table below draws from two of their tables – the top panel is based on Table 3.1; it shows the effect of the Fed’s easy money policy in 1992-94; the bottom panel is based on Table 4.1; it shows the effect of the 1993 bond market rally.

<b>Effect on real GDP growth rate (deviation from baseline)</b>				
	Model	1993:4	1994:4	1995:4
1992-94 easy money policy	WUMM	0.7	0.0	-0.3
	FRB-US	0.7	0.6	0.2
1993 bond market rally	WUMM	1.0	0.2	-0.5
	FRB-US	0.6	0.7	0.0

Which event – the monetary policy or the bond market rally – appears to have benefitted the economy more? Explain.

**Question 3 (20 points; 10 minutes)**

*Even if you’re a math whiz, be sure to include enough intermediate steps in both (A) and (B) so that your GSI can tell you didn’t simply memorize the bottom line.*

- (A) (10 points) Starting from  $Y = C + I + G + NX$ , derive  $I = sY$ .  
 (B) (10 points) Starting from the definition of balanced-growth equilibrium, and using the Cobb-Douglas production function, derive the equilibrium relationship between the growth rate of the standard of living and the growth rate of efficiency.

**Question 4 (18 points; 9 minutes)**

Suppose that in the current period,  
Saving rate = 20 percent  
Depreciation rate = 6 percent  
Labor Force Growth rate = 4 percent  
Efficiency Growth rate = 0 percent  
 $\alpha = 0.4$   
Current  $K/Y = 2$

- (A) (5 points) What is the value of capital intensity when the economy is in balanced growth equilibrium? *Show all of your work, simplifying as far as possible without a calculator, or no points. If you don't attempt any simplifying, you won't get as many points as someone who does simplify.*
- (B) (4 points) Is this economy currently in equilibrium? How do you know? At what rate is output per worker growing in this economy?
- (C) (4 points) Using the axes at the right, draw a graph that shows the current and equilibrium positions of the economy.
- (D) (5 points) Suppose this economy is currently below its equilibrium. Describe the process by which the economy would move to its balanced growth equilibrium.



**Question 5 (20 points; 10 minutes)**

Someone says to you,

“There is no good reason to come up with policies that would raise the economy’s saving rate. The growth rate of output per worker just winds up where it was initially.”

The statement is both right and wrong. Identify one thing about the statement that is right and explain why it is right. Identify one thing about the statement that is wrong and explain why it is wrong.

**Question 6 (25 points; 13 minutes)**

The productivity growth slowdown of 1973 to about 1995 has now been followed by what many economists term a “productivity growth speedup” which began sometime between 1995 and 1998.

- (A) (5 points) What is “productivity growth”?
- (B) (8 points) Based on the book by Alan Blinder & Janet Yellen, discuss the primary reason productivity growth increased after the mid-1990s.
- (C) (12 points) Many economists think the post-1995 increases in productivity growth are permanent. But it has only been 9 years since 1995 – not enough time to really know if the increases are permanent. If the increases in productivity growth are not permanent, what difference does that make to the standard of living and its growth rate between now and the time you’re about 50 years old? Explain.

**Question 7 (20 points; 10 minutes)**

- (A) (5 points) The federal budget deficit for 2004 is about \$450 billion (\$450,000 million). (By the way, at this rate, the cumulative budget deficit over 10 years would be about \$4,500 billion or \$4.5 trillion.) There are about 300 million people in the United States, including you. How much did the federal government borrow on your behalf in 2004 (that is, what is the current size of the federal budget deficit per person)? (Hint:  $4.5/3 = 1.5$ )
- (B) (15 points) Relying on the articles assigned from the *San Francisco Chronicle*, explain why the aging of the Baby Boomers, born between 1946 and 1964, worries many economists. In your answer, be sure to discuss possible future changes in saving, and be sure to use the long-run growth model of Chapter 4.