

Instructions: Answer all questions. Show work where requested. No books, notes, or electronic devices. Calculators are allowed. Circle one answer for single-answer questions; mark all that apply for many-answer questions.

Page:	2	3	4	5	6	7	8	Total
Points:	4	8	6	12	18	18	4	70
Score:								

Time: 75 minutes **Total Points:** 70

Name: _____

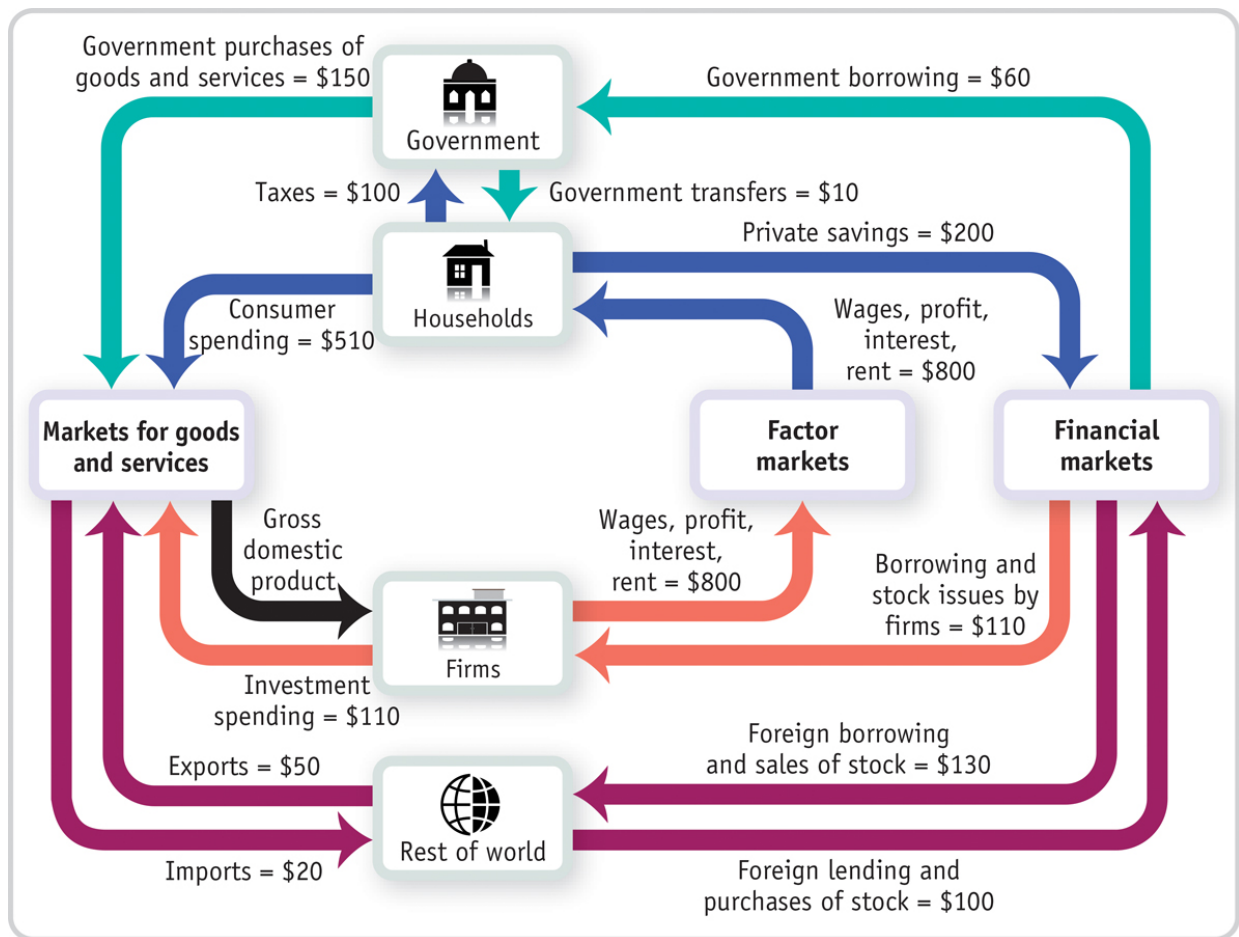


Figure 1: Diagram of circular flow (Krugman & Wells)

- (2 points) Reference figure 1. What is GDP in this economy?
 - \$800
 - \$1000
 - \$770
 - \$780
- (2 points) Reference figure 1. What is the Net Capital Inflow?
 - \$30
 - \$30
 - \$110
 - \$110

3. (2 points) Mark those that would be included in the BLS's official unemployment number.
- ☐ Emily is in medical school full time, studying to be a doctor.
 - ☐ Jane is serving on active duty in the military.
 - ☐ Maria is employed part-time, but is looking for a full time job.
 - ☐ Chris graduated high school last year. His mother wants him to look for a job, but he just sits in the basement playing video games all day.
 - ☐ John was laid off last year, he looked for work for a few months, but gave up looking and now provides child care for his son.
 - ☐ None
4. (2 points) Mark those that would be included in the BLS's official labor force number.
- ☐ Emily is in medical school full time, studying to be a doctor.
 - ☐ Jane is serving on active duty in the military.
 - ☐ Maria is employed part-time, but is looking for a full time job.
 - ☐ Chris graduated high school last year. His mother wants him to look for a job, but he just sits in the basement playing video games all day.
 - ☐ John was laid off last year, he looked for work for a few months, but gave up looking and now provides child care for his son.
 - ☐ None
5. (2 points) Suppose the total population is 200 million, the population aged 16 and older is 150 million, and there are 90 million people employed. If the labor force participation rate is $\frac{2}{3}$, then the unemployment rate is:
- A. 6.67%
 - B. 10%
 - C. 33.33%
 - D. 25%
6. (2 points) Suppose the population of the United States is forecast to grow by 0.1% each year for the next 100 years. Today, the US has 340.1 million people. Solve for the projected population of the US in the year 2060.

7. (2 points) Write down the definition of structural unemployment.

8. (2 points) Suppose you buy a brand new washing machine. Is this purchase counted as part of investment spending in the national accounts? Why or why not?

	Shirts		Pants	
Year	Price	Quantity	Price	Quantity
2013	\$5.00	2000	\$15.00	3000
2014	\$8.00	1900	\$20.00	2500

Figure 2: Production in the clothing economy

9. (2 points) Reference figure 2. Calculate Real GDP growth in 2014 using 2013 as the base year.

10. (2 points) Explain why we might want to use the Fisher index to calculate Real GDP.

11. (2 points) Which of the following production functions exhibits diminishing returns to scale in capital (K) and labor (L)

A. $Y = AK^{1/3}L^{2/3}$

B. $Y = AK^{1/3}(hL)^{2/3}$

C. $Y = KL$

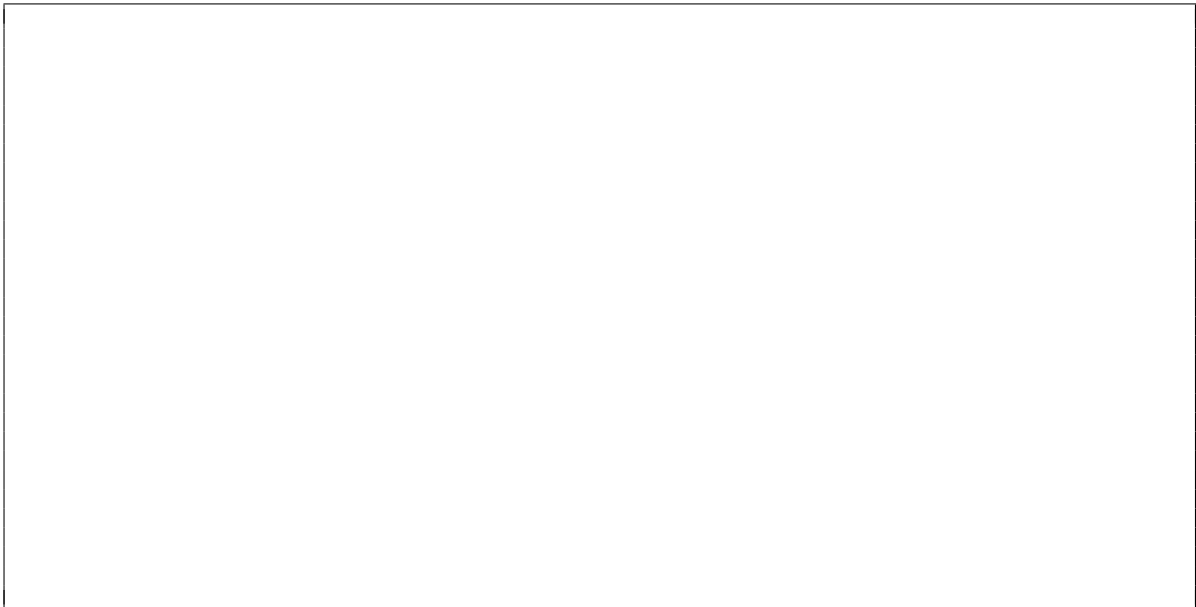
D. $Y = (K/L)^{1/3}L^{2/3}$

12. (8 points) The marginal product of labor is given by $(1 - \alpha)AK^\alpha L^{-\alpha}$ for an output price $p = 1$. Using this formula, derive an expression for $(1 - \alpha)$ as a function of w , Y , and L . Interpret each piece.

13. (8 points) Suppose that Taiwan incentivizes financial investment into its economy. Draw the market for loanable funds before Taiwan passes this policy and after Taiwan passes this policy. Label all points and axes.



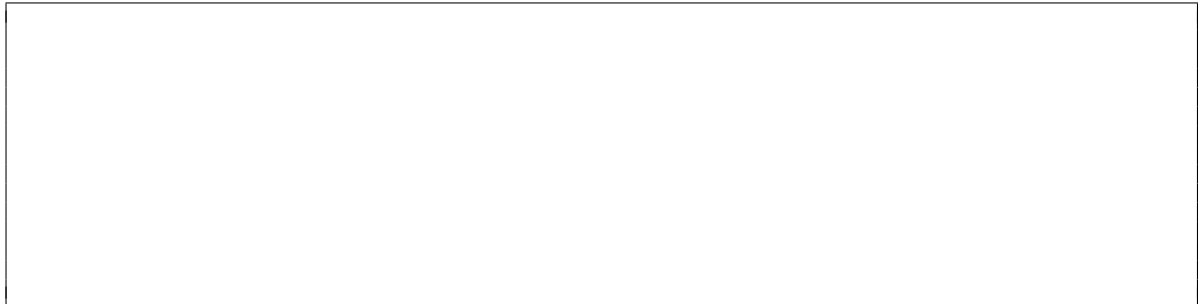
14. (8 points) Suppose the United States has a capital stock of 8 million, labor hours of 27 million, and a constant returns to scale Cobb-Douglas production function with a capital share of output of $1/3$. Suppose the US can produce 9 million tons of coffee or 4.5 million tons of green tea. Draw the production possibilities frontier with tea on the x-axis, coffee on the y-axis. Which areas are feasible? Which areas are efficient? Label everything.



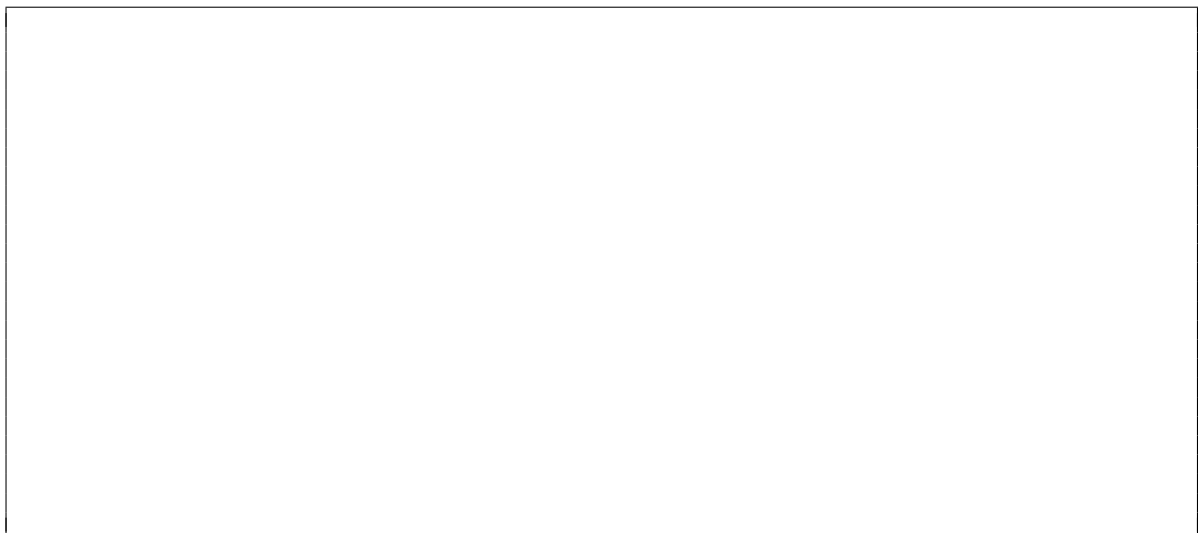
15. (2 points) What is the opportunity cost of producing one ton of green tea?



16. (8 points) Suppose Brazil has a capital share of output of $1/2$, but the same capital stock and labor hours as the United States. Brazil can produce 20 million tons of coffee or 5 million tons of green tea. Go back to question 14 and graph Brazil on the PPF. Are there potential gains from trade here? Why?



17. (10 points) Suppose the United States decides to import coffee from Brazil. Suppose the price of coffee from Brazil is lower than the price of coffee in the United States.
- (a) Draw the market in the United States for coffee. Label everything.
 - (b) Suppose the government imposes a tariff on Brazilian coffee that raises the price some, but not enough to eliminate trade. Analyze the welfare impact of this tariff.



18. (4 points) Mark all statements that are true about tariffs.

- ☐ The deadweight loss from a tariff decreases as the size of the tariff increases.
- ☐ When a tariff is introduced on goods that are imported, domestic producers decrease their production of those same goods.
- ☐ Tariffs generally benefit workers that are employed in the import-competing industry that is subject to the tariff.
- ☐ Tariffs distort both the quantity produced by domestic firms and the quantity consumed by domestic consumers in the industry on which they are applied