

Do NOT write your name anywhere. (Canvas will tell me who turned in the exam.) Take pictures of your answers and use your own software or <https://pdfcandy.com/> to create a PDF. Upload that to Canvas. Upload each answer as a separate file with that question.

The test has 10 questions.

Failure to follow these directions will cost you 1 point. The test has 150 points (to be scaled up to 210 points) and is scheduled to take 75 minutes. Therefore, expect to spend 1 minute for every 2 points. For example, a 12-point question should take 6 minutes. I have it set up to only give you an hour and a half.

1) (10 points) Answer EITHER Part A OR Part B.

A) If your savings account pays 1% interest, how long will it take for the balance to double. If it pays 10% interest, how long would it take to double. Show all work.

B) In a homework question, I showed you that if you save 40 years for retirement, you only need to save about one half as much as if you saved for 30 years. There were two reasons for this. What were they?

2) (12 points) Answer EITHER Part A OR Part B.

A) All statistics have problems with their definition (i.e. how it is calculated) which make the statistic less useful than we would like it to be. What are two problems with the CPI? Explain those problems.

B) Suppose the CPI at the beginning of the year was 1800 and at the end of the year it was 1980. Calculate the inflation rate showing all work. If people expected 12% inflation, who gained from the inflation. Name one group and explain how they gained.

3) (12 points) Answer EITHER Part A OR Part B.

A) Explain why the LRAS Curve is vertical.

B) When we estimated the size of the government spending multiplier, we implicitly made some assumptions. What did we implicitly assume about taxes? If we relaxed that assumption, what would happen to the size of the multiplier? Explain your logic.

4) (14 points) Answer EITHER Part A OR Part B.

A) Explain why in general, increasing the tax rate could cause a decrease in tax revenue. Make sure your explanation applies to any tax. Give a numerical example of an excise tax where increasing the tax rate caused the tax revenue to decrease.

B) Use the table below to determine the marginal tax rate, total taxes paid, and average tax rate for a person earning \$50,000. Show all work. If there is no work, state how you got the answer.

Income bracket	tax rate
\$0 - \$20,000	20%
\$20,000 - \$40,000	25%
\$40,000 - \$60,000	30%
> \$60,000	40%

5) (14 points) Answer EITHER Part A OR Part B.

A) One of the things that the book states will help a country's economy to grow faster is "saving." What does that mean? How does it help the economy to grow faster?

B) Explain how "obtaining human capital" helps the economy to grow? Make sure you define it.

6) (14 points) Answer EITHER Part A OR Part B.

A) The GDP in Greece is about 48 billion euro. What two calculations do we do if we want to compare that to the US GDP of 21 trillion dollars? Briefly explain how each calculation is done and why it is done.

B) What are the income method of calculating GDP and the value added method of calculating GDP? Explain why they should give the same number.

7) (16 points) Answer EITHER Part A OR Part B.

A) Suppose a country has 1000 people 16 or older. 630 of them have jobs, 70 of them do not have jobs but are looking for a job. 50 people do not have a job and have quit looking. The rest are retired. Calculate the labor force participation rate and the unemployment rate. Show all work and briefly state what you did.

B) Suppose a person has been unemployed for so long they stop looking for a job. What happens to the unemployment rate? Why? Which type of unemployment is the one most likely affected? Explain your logic. Suppose you were a restaurant worker and got laid off now because of COVID-19. Assuming you are looking for a job, which type of unemployment do you think this is? Explain your logic. There is more than one good answer to this.

8) (18 points) Draw the Keynesian Cross, a.k.a.  $45^\circ$  diagram for the USA. Illustrate the effects of EITHER the event in Part A OR the event in Part B. Explain why the curve(s) moved as drawn. What happens to the level of GDP?

A) Income tax rates increase.

B) The Canadian GDP increases.

9) (20 points) Answer EITHER Part A OR Part B.

A) What is the long-term problem facing Social Security? What two reasons will cause the problem to get worse over the next decade or more? One way to reduce the problem is to *means test benefits*. How would that reduce the problem? If you were President of the USA, would you use this as part of your plan to save Social Security? Explain your logic.

B) What is the long-term problem facing Social Security? What two reasons will cause the problem to get worse over the next decade or more? One way to reduce the problem is to decrease the Social Security benefits. How would that reduce the problem? If you were President of the USA, would you use this as part of your plan to save Social Security? Explain your logic.

10) (20 points) Draw the SRAS/LRAS/AD diagram with an upward sloping SRAS. (Even though that is not the real shape, it will do for now.) Illustrate the effects of EITHER the event in Part A OR the event in Part B. Explain why the curve(s) moved as drawn. What happens to the GDP, inflation rate, and unemployment rate?

A) There is an improvement in technology.

B) There is a decrease in the interest rate.