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Economics 202
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Homework #3 (due by 9:00pm on Thursday, March 2)

*Please submit your answers to this homework through the Assignment link at Blackboard. **No credit will be given for answers submitted in class or emailed to the professor, regardless of the excuse.** This includes unique excuses like the police confiscated my computer right before I was going to submit it, excuses like “I lost my Internet”, etc. Please note that all submissions are final, again – regardless of the excuse (which includes “I accidentally hit the submit button”). Note that Blackboard allows you to save your answers, but you must hit the “Save and Submit” button to submit your answers. If you are unfamiliar with Blackboard, then it would be a good idea to visit the class page at Blackboard and check out the homework assignments as they are posted.*

Please note that when Blackboard grades homework answers, more specifically – answers to the fill-in-the-blank questions – your answer must match exactly with the answer that Blackboard is looking for. Below, you’ll find some instructions on how to properly format these answers. Reading this section is strongly recommended.

Homework Question 1 and Questions 5-10

Formatting matters with your answer to these questions. For this reason, **understand that your answer can be technically correct but graded as wrong because you didn’t follow the directions provided below.** Given that formatting is considered part of your answer, a wrongly formatted answer is still a wrong answer.

In that regard, please note the following comments below.

*(a) **On questions #1a, #5-8 and #10, please express your answer as a whole number, not as a decimal, or in terms of dollars, or dollars and cents. E.g., an answer of 10,000.25 should be expressed as 10000 or 10,000 and not values like 10,000.25, \$10,000.25 or 10000.3.***

*(b) **On question #1b, #1c and #9, please express your answer as a decimal rounded to the nearest tenth. E.g., an answer of 5 should be expressed as 5.0, and an answer of 4.78 should be expressed as 4.8.***

If you have any questions about the comments above, then please ask them before submitting your homework for grading. Once homework is submitted, however, it's too late to make any changes.

Homework #3 Questions

Use the equations below to answer Questions #1-6. These equations describe the expenditures within a particular macroeconomy and we'll assume the equations conform to the assumptions associated with the fixed price level Aggregate Expenditure model. All values for expenditure and income are dollar amounts, but for simplicity, we've dropped the \$ below.

Note: express your answer in 1a, 5 and 6 in terms of the nearest whole number (e.g. 10000 or 10,000 instead of 10,000.1), but your answers in 1b and 1c should be expressed as a decimal, rounded to the nearest tenth (e.g. if your answer is 5.43, express your answer as 5.4).

In addition, if you get a negative number as an answer to Questions 1, 5 or 6, then express your answer with the negative sign (e.g. negative 1000 should be expressed as -1000 or -1,000).

$C = 0.6(DI) + 4000$	(C = consumption expenditures, DI = disposable income)
$I = 4000$	(I = investment expenditure)
$G = 4000$	(G = government expenditure)
$X = 2500$	(X = spending on exports)
$M = 3500$	(M = spending on imports)
$DI = Y - T$	(Y = real GDP, T = tax revenues)
$T = 4000$	

- 1a. Equilibrium GDP in this economy is equal to _____
- 1b. The value of this economy's government expenditure multiplier is _____
- 1c. The value of this economy's tax multiplier is _____

2. If Potential GDP is 25,000, then what type of output gap exists in this economy?
 - (a) inflationary gap
 - (b) recessionary gap
 - (c) no output gap

3. Which of the following is a true statement about the government budget in this economy?
 - (a) this economy is currently experiencing a government budget deficit
 - (b) this economy is currently experiencing a government budget surplus
 - (c) this economy is currently experiencing a balanced government budget

4. What is the status of this economy's trade balance?
 - (a) trade deficit
 - (b) trade surplus
 - (c) net exports of zero

5. Assume that Y^* = equilibrium GDP and Y_p = Potential GDP. If $Y_p - Y^* = 6000$, then government can close this output gap if they change government expenditure by _____

6. Assume that Y^* = equilibrium GDP and Y_p = Potential GDP. If we continue to assume that $Y_p - Y^* = 6000$, then government can close this output gap if they change taxes by _____

The equations below should be used to answer Questions #7-8. The equations describe the expenditures within Country X and we'll assume that they conform to the assumptions we've made in lecture regarding the fixed price level Aggregate Expenditure model. All values for expenditure and income are dollar amounts, but for simplicity, we've dropped the \$ below.

For questions 7-8, remember to express your answer in terms of the nearest whole number. E.g., if your answer is 1000.0 or 1000.4, then record your answer as 1000.

$C = 0.8(DI) + 1600$	(C = consumption expenditures, DI = disposable income)
$I = 2000$	(I = investment expenditure)
$G = 1000$	(G = government expenditure)
$X = 1800$	(X = spending on exports)
$M = 1600$	(M = spending on imports)
$DI = Y - T$	(Y = real GDP, T = tax revenues)
$T = 1000$	

7. Assume that you want to increase equilibrium GDP by \$4000, but must maintain a balanced budget. In this situation, what would be the changes in government expenditure (G) and taxes (T)? (note that you must get both answers below correct to get credit for this question)

The change in G would need to be _____ and the change in T would be _____

8. Assume that you want to change the equilibrium GDP by changing G and then T. Use the equations above to answer 8a and then 8b.

a. If (only) G increases by 1000, then equilibrium GDP changes by _____

b. If (only) T decreases by 1000, then equilibrium GDP changes by _____

9. To answer Questions #9a and 9b, you must utilize the consumption function equation below, where C = Consumption Expenditure and DI = Disposable Income.

$C = 0.6(DI) + 2000$	$DI = Y - T$ (where Y = real GDP and T = Taxes)
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For 9a and 9b below, express your answer as a decimal, rounded to the nearest tenth (e.g. 0.91 would be 0.9, and an answer of 2 would be 2.0).

a. If we assume that Y = 12,000 and T = 2000, then the value of the average propensity to consume (APC) is _____

b. If we assume that Y = 12,000 and T = 2000, then the value of the average propensity to save (APS) is _____

10. Consider the table below, where each row illustrates a macroeconomic relationship between consumption, savings and disposable income

Assume that within this macroeconomy, the marginal propensity to consume (MPC) is constant at a value of 0.75 (i.e. **MPC = 0.75**). This allows you to predict how changes in consumption and disposable income should relate between the rows.

Row	C	S	DI
A	1550		1400
B	2450	150	
C	3350		
D			4000

Note that C = Consumption, S = Savings, DI = Disposable Income

Given the information in the table above and the understanding that $MPC = 0.75$, please answer the following questions below.

- What is the amount of Savings in Row A?
- What is the amount of Disposable Income in Row B?
- What is the amount of Savings in Row C?
- What is the amount of Disposable Income in Row C?
- What is the amount of Consumption in Row D?
- What is the amount of Savings in Row D?

Note: round your answers to the nearest whole number (i.e. same format as the other numbers displayed in the table)

11. In the folder Homework #3 material within “Course Documents” at [Blackboard](#), you'll find an article entitled “*When the US paid off the entire National Debt*”. Read this article and answer the question below.

When President Andrew Jackson led the US to pay off the National Debt, what happened after that:

- a. the country headed into a massive depression that would last 6 years
- b. government surplus money was used to purchase large amounts of government land
- c. distributing government surplus money to states allowed state banks to discontinue their printing of money
- d. all of the above
- e. none of the above

12. The website www.usgovernmentspending.com reports the Federal Debt to GDP ratio from 1792 through 2023.

This historical series of Debt-GDP ratios is included in a file entitled *DebtGDPratios.pdf* and posted within the folder Homework #3 material in “Course Documents” at [Blackboard](#). The Debt-GDP ratio is located in the far right column (not including the column that reports whether the ratio is actual “a” or estimated “e”). Match the value you find in the table to the closest value on the list of Debt-GDP ratios below. Note that you'll use the same list for each question.

Debt-GDP ratios

a. What is the smallest value for the Debt-GDP ratio between 1792 and 2023?

b. What is the largest value for the Debt-GDP ratio prior to 2023?

- A. 0.00%
- B. 0.02%
- C. 0.69%
- D. 32.27%
- E. 59.92%
- F. 90.41%
- G. 119.12%
- H. 126.54%
- I. 128.76%
- J. 134.71%
- K. none of the above