

Place your name on the back of this sheet of paper and nowhere else. Staple your answers face up on the front of this sheet of paper. Failure to follow these directions will cost you 10 points. Your assignment will be typed, except graphs can be drawn by hand and mathematical equations can be done by hand. Turn in the Excel file via Canvas. Place your name on an otherwise blank page of the Excel file. Failure to type this assignment will cost you 10 points. If you use double-sided printing or print on the back of scrap paper, I will give you one additional point.

All questions except for #1 should be done before class. You will hand all of the answers in together.

1) Suppose the economy is described by $C_t = 100 + .9((Y_t + Y_{t-1} + Y_{t-2})/3 - T_t)$, $T_t = .2Y_t$, $I_t = 0.4(Y_t - Y_{t-1})$, $G = 500$, $NX_t = 300 - .12Y_t$. Use these equations to answer this question.

A) (25 points) Use the system of equations to solve for Y as a function of exogenous variable(s) and parameters.

B) (20 points) Put the equations into an Excel spreadsheet. Use it to find the GDP for the next 30 years if the last year's GDP was \$1200 and \$1000 two years ago. Have Excel plot the GDP over that period. Is that monotonic convergence, monotonic divergence, oscillating convergence, oscillating divergence, or something else? Explain your logic.

2) (45 points) According to the State of Montana News Room, the unemployment rate in the USA is 3.9% and in Montana it is 2.5%. According to Bloomberg News, the two-year government bond is paying 1% interest. According to Market Watch, the current inflation rate is 7%. Draw the LRAS/SRAS/AD diagram, IS/LM/FE diagram, real MS/real MD diagrams to show that situation. (You can choose either the USA or Montan.) Briefly explain how your diagram shows the information. If the economy is left alone, what will happen to the curves? Explain why that occurs and show that on the graphs. Explain why the curves moved as drawn.

[https://news.mt.gov/Governors-Office/Montana Unemployment Hits New Record Low of 2.5](https://news.mt.gov/Governors-Office/Montana_Unemployment_Hits_New_Record_Low_of_2.5)
<https://www.bloomberg.com/markets/rates-bonds/government-bonds/us>
<https://www.marketwatch.com/story/coming-up-consumer-price-index-11641993303>

3) (10 points) In Question #2, some weird things are happening. What is one of the weird things? Explain why that is weird.