

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. Failure to follow directions will cost you one point. The Excel files should be uploaded directly to Canvas.

You are not allowed to use your books, notes, the internet, or other people when taking this test. You can use the internet to access Canvas and to convert your answers to PDF files. Nothing else.

Failure to follow these directions will cost you 1 point. The test has 100 points (to be scaled up to 170 points) and is scheduled to take 50 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) (18 points) Use the data in the tab “Q1” of the [Excel file](#) to forecast quantity as a function of the different prices, and income. Check for multi-collinearity of the independent variables. Is it acceptable to leave all four variables in? Why or why not? **If it is not acceptable**, re-run the regression without one variable and tell me why you left that variable out. **If it is acceptable**, then tell me how many pumpkin pies you would expect to sell to a person with an income of \$50,000 if you charged \$10/pie, \$12/cake, and \$2/doughnuts. Given the results, are pies and cakes substitutes, likely substitutes, likely unrelated, likely complements, or complements? Explain your logic.

2) (22 points) Use the data in the sheet “Q2” on the [Excel file](#) to run a regression to predict sales as a function of income and price. Do the quick checks for heteroscedasticity and autocorrelation. Explain how you know whether or not you had each problem. **If there is only a problem with autocorrelation**, then run a regression which would adjust for that problem. Explain what you did and why. **If both problems exist or there is only a problem with heteroscedasticity**, then do the formal test for heteroscedasticity and explain what you did. Use the F-distribution function in Excel to determine whether or not you have heteroscedasticity.

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

A) Some economists feel the SRPC is useless because it moves too much. Explain their logic.

B) Explain the hysteresis model of the natural rate of unemployment.

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

A) What can the government do to move the LRPC left? State two actions they could take and explain how one of them would result in the LRPC moving left.

B) What are tax-based income policies (TIP)? How might they reduce inflation? Why might they make the inflation worse?

5) (16 points) Answer EITHER Part A OR Part B.

A) Draw an appropriate diagram to illustrate a Keynesian liquidity trap. Explain how it means that monetary policy will be ineffective.

B) Explain why firms may want to have a fixed markup. How would that cause price rigidity?

6) (18 points) Answer EITHER Part A OR Part B.

A) Draw the Augmented SRPC/LRPC diagram. Have the graph show the unemployment rate as 4% and the expected inflation of 3%. Given your graph, how much inflation is in the economy at the start?

Explain how you reached that conclusion. Suppose the Fed decides to increase the money supply 2% and people believe that. Illustrate the effects of that on the graph. Explain why the curve(s) moved as drawn and how you found the new point. Given your graph, what are the inflation rate and unemployment rate

at the end of the movement? How did you reach the conclusion?

B) Draw the Augmented SRPC/LRPC diagram. Have the graph show the unemployment rate as 5% and the expected inflation of 7%. Given your graph, how much inflation is in the economy at the start? Explain how you reached that conclusion. Suppose the Fed decides to increase the money supply 1% and people change their belief to the money supply will increase 4%. Illustrate the effects of that on the graph. Explain why the curve(s) moved as drawn and how you found the new point. Given your graph, what are the inflation rate and unemployment rate at the end of the movement? How did you reach the conclusion?