Write your name on the cover of the test booklet and nowhere else. Enclose this sheet with the booklet. The Excel file will be handed in via Moodle. Your name will only appear on a page of the file that has nothing else on it. 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 (but you can take the full 2 hours.) Therefore, expect to spend 1 minute for every 2 points. For example, a 10-point question should take 5 minutes.

1) Answer all parts of this question.
A) (4 points) Run a regression using the data in the tab **Butter** in the Excel file to predict the sales of butter.
B) (4 points) Use the results to predict the sales of butter if the person's income is $40,000.00, the price of bread is $3/loaf, and the price of butter is $4/lb. Briefly explain how you chose reached that conclusion.
C) (6 points) Do you think the overall results are good? Explain your answer
D) (10 points) Do the test for multi-colinearity. Is there a problem with it? Explain how you reached the conclusion. **If there is multi-colinearity**, then explain how you solve the problem without actually doing it. Explain why you chose to do that. **If there is not a problem with multi-colinearity**, then for each variable, tell me whether or not it is significant and how you reached that conclusion.

2) Answer all parts of this question.
A) (4 points) Run a regression using the data in the tab **Cats** in the Excel file to predict the sales of cats.
B) (6 points) Do the quick tests for both auto-correlation and heteroscedasticity. For both of them, tell me if you think there is a problem with it and the logic you used to reach that conclusion.
C) (10 points) **If you find both auto-correlation and heteroscedasticity**, then do the formal test for heteroscedasticity. Explain what you did, why you did that, and how you reached your conclusion as to whether or not it exists. Use 1.98 as your cutoff. **If you find auto-correlation but not heteroscedasticity**, then tell me by looking at the graph whether or not the method I proposed for solving the problem would work. Explain your logic. **If you find heteroscedasticity but not auto-correlation**, then do the formal test for heteroscedasticity. Explain what you did, why you did that, and how you reached your conclusion as to whether or not it exists. Use 1.98 as your cutoff. **If you find neither heteroscedasticity nor auto-correlation**, then predict the number of cats you would sell if the average income was $54,321.00, the price of dogs was $2.12/dog and the price of cats was $3.33/cat.

3) (14 points) Answer EITHER Part A OR Part B.
A) Illustrate the effects of an increase in the interest rates in Germany on the supply and demand for the US$ with the € as the other currency. Explain why the curve(s) moved as drawn. Which currency appreciated? Explain your logic.
B) If the government sets a fixed exchange rate at a high value, determine if the money supply will automatically increase or decrease. Explain the economics of this.

4) (16 points) Answer EITHER Part A OR Part B.
A) Draw the Augmented Phillips Curve diagram with both the short-run and long-run curves. Start with an expected inflation rate of 4% and an unemployment rate of 5%. Illustrate an increase of the money supply at 6% and a simultaneous change in people's expectations to 7% increase in the money supply. Explain why the curve(s) moved as drawn and how you found the new point.
B) Draw the Augmented Phillips Curve diagram with both the short-run and long-run curves. Start with an expected inflation rate of 2% and an unemployment rate of 9.6%. The number of long-term unemployed is the highest it has been since the data I have began in 1967 and is about double the previous peak in 1983. Illustrate the effects the hysteresis would have on the diagram. Explain why the curve(s) moved as drawn.

5) (16 points) Answer EITHER Part A OR Part B.
A) Illustrate an increase in Canada's government spending on the IS/LM/FE diagram for the USA. Explain why the curves moved as drawn.
B) What are the costs of a fully anticipated 10% inflation? Explain how it causes those problems.

6) (10 points) Answer EITHER Part A OR Part B.
A) I recently saw a graph in a Federal Reserve Bank of Cleveland publication. The graph plotted the natural rate of unemployment and the actual rate of unemployment over time. During recessions, the natural rate of unemployment was lower than the years immediately before and after the recession. Explain the economics which could cause this. Which theory of the natural rate of unemployment (cultural or hysteresis) does this graph imply is more accurate? Explain your logic.
B) Suppose you were in charge of monetary policy for a country with high inflation. How would you determine whether to use a cold-turkey quick approach or a gradual approach. Mention the aspects of your administration and/or the economy you would look at and explain how you would use that information.