

Do not write your name on the assignment. Write your name only on the back of this sheet of paper and staple your answers on the front of this sheet of paper. The computer work of the laboratory should not have your name anywhere I can easily see it. Your name should only appear on the first page of the Excel file which does not have any answers on it. It should be e-mailed to me at [wcsaplar@bethanywv.edu](mailto:wcsaplar@bethanywv.edu) when the laboratory ends. Failure to follow these directions will cost you 1 point on the assignment.

**The first part of this assignment will be done as a homework assignment and handed in at the end of the laboratory with the written part of the answers to the laboratory. The second half of this will be done during the laboratory.**

Homework questions:

1A) (10 points) What is the difference between a stochastic simulation with uncorrelated shocks and a stochastic simulation with correlated shocks?

1B) (10 points) What would cause shocks to be correlated?

1C) (15 points) In the NBER simulations, which had longer cycles? Why were those cycles longer?

2) (20 points) Given the results of the simulations on page 325, would a stable monetary policy reduce the fluctuation in GDP? What could the economic reason for this result?

3) (15 points) The book says that the autoregressive model of  $X_t = \beta_0 + \beta_1 X_{t-1} + \beta_2 X_{t-2}$  becomes the same as the same difference model if  $\beta_1 = 2$  and  $\beta_2 = -1$ . Prove it mathematically.

Laboratory questions:

Use the data on page 2 of the data sheet for Nov. 12 to answer these questions.

4) (7 points) Use the 5-period moving average of differences to forecast the next 20 periods.

5) (7 points) Use the 5-period weighted moving average to forecast the next 20 periods.

6) (16 points) Run a regression of in the linear trend form on page 354. Use that to forecast the next 20 periods.