BA360 Spring 2019   Name: _____
Practice Final Exam

Section A. Use the data in this shared **Sheets** file to complete questions 1-3:

1. Time Series Data Analysis
   a. Produce a Line plot to visualize change over time.
   b. Customize your chart and fit a trend line to the data.
   c. Choose the best polynomial fit for the data.
   d. Display the equation and R^2
   e. Write the equation and the R^2 value in the space below.

y-hat equation: _____ R^2: _____

2. Time Series Forecasting
   a. Use the equation from problem 1 above to forecast the next three (3) time periods in the series: Jan, Feb and Mar 2019.
   b. Write the three forecast amounts, rounding to the nearest one-thousandth (3 digits) in the spaces below.

Forecasts by time period 1. _____ 2._____ 3. _____

3. Forecast Error Measurement
   a. Three months have passed and you now know the months of supply to be **6.7** for time period 1, **6.3** for time period 2 and **6.0** for time period 3.
   b. Using the assumptions above in a., calculate MAD and RMSE.
   c. Write MAD and RMSE in the space below.

MAD: _____   RMSE: _____

Section B. Use the data in this shared **Sheets** file to complete questions 4-5.

4. Regression Analysis - Initial Model Run
   a. Use "Selling Price" as the dependent (y) variable.
   b. Use "Beds", "Baths" and "Total SqFt" as the independent (x) variables.
   c. Build an initial regression model and report output in the spaces below.

y-hat equation: _____ R^2: _____
where x1=Beds , x2=Baths , x3=Total SqFt

Most significant t-statistic:_____ and corresponding variable name: _____

Least significant t-statistic:_____ and corresponding variable name: _____

F-Statistic:_____ Significance of F: _____ n=_____

5. Regression Analysis - Improved Model
   a. Improve the model by replacing "Beds" and "Baths" with an interaction variable.
   b. Rerun and report the regression output figures in the spaces below.

y-hat equation: _____ R^2: _____

where x1=_____ , x2=Total SqFt

Most significant t-statistic:_____ and corresponding variable name: _____

Least significant t-statistic:_____ and corresponding variable name: _____

F-Statistic:_____ Significance of F: _____ n=_____

Section C. Use the data in this shared **Sheets** file to complete questions 6-7.
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6. Stock Market Simulation - revise for lower rates of return
   a. You are a financial analyst for wealth management firm, *Dewey, Cheatham & Howe LLP*.
   b. You've been asked to modify the stock market simulation to provide more conservative estimates for portfolio growth, assuming an initial balance of $10,000, but with a lower mean return rate of 8.0% with standard deviation of 6.0%.
   c. Run the simulation with these new figures and generate ending balances for five (5) simulations.
   d. Calculate the mean and standard deviation of the five (5) ending balances and enter the results in the spaces below. Round to the nearest hundredth (2 digits).

Mean ending balance: _____ Standard deviation: _____

7. Stock Market Simulation - add an annual deposit

   a. One of the *Dewey, Cheatham & Howe LLP clients* has asked how much more money she'd have at retirement if she deposited an additional $1,000 to her balance each year.
   b. Change the worksheet to facilitate the $1,000 annual deposit and generate five (5) additional simulations.
   c. Calculate the mean and standard deviation of the five (5) ending balances and enter the results in the spaces below. Round to the nearest hundredth (2 digits).
   d. Write the formula(e) used to facilitate the annual deposit in the space below.

Mean ending balance: _____ Standard deviation: _____

Formula(e): _____