

MATH 3370 – Fall 2020
Project Instructions and Rubric
Due: Saturday, October 3, at 11:30 PM

This project is designed to be completed individually or in teams of two class members. If you choose to have a partner, this should be clearly stated in the memo. Each partner should submit his/her own identical assignment. Each team member will receive the same grade on this assignment.

You will write a report in memo format (sample provided) which fully reflects your work. The mathematical content is of course most important – with all work shown. Analysis of the mathematical content is then to be completed that explains the work to a perhaps lay audience and draws two or more conclusions/recommendations. The questions posed in the project should be answered/addressed in the order posed. Grammar and spelling are also important. The submission will need to be typed and in a format that has a mathematics editor for your mathematical work. Any needed graphs should also be included. Your instructors will provide early feedback, if requested. The final submission of the memo will be graded using the rubric below. For the final project, you must upload the formal memo/submission in unzipped pdf format, and the Excel workbook in which you completed any work.

	0 pts	15 pts	30 pts	45 pts	60 pts
Mathematical Content	No work shown	Work shown with substantial errors	Work shown with errors	Work shown with few errors	Work shown with no errors
	0 pts	5 pts	10 pts	15 pts	20 pts
Memo	No written report submitted and/or no Excel file attached	Written report and/or no Excel file in wrong format or incomplete	Memo and/or no Excel file supplied, but few details provided	Memo and/or no Excel file supplied, with appropriate level of detail, but contains grammar or spelling errors	Well-written memo and Excel file supplied with no errors
Written analysis and conclusions	No written analysis	Analysis reflects some of the requested statistics	Analysis largely correct, but no conclusions drawn	Analysis discusses all mathematical content and draws at least one conclusion	Analysis discusses all mathematical content and draws at least two conclusions

In this project, you play the role of a statistical advisor to a real estate firm. In particular, you will analyze data regarding home prices in certain subdivisions that are of interest to the firm.

Use Excel and hand work to do the following with the provided data set. The data provided present information about home prices in certain subdivisions, also providing information about the number of bedrooms, bathrooms, and square footage of the house. Choose a subdivision to study and then choose whether you will examine it by number of bedrooms, number of bathrooms, acreage, or square footage. For this first five questions, focus only on the subdivision and the price of the house. Be able to report on the following:

1. What is the mean price of the houses in the subdivision you are studying?
 2. Give the 5-number summary of the price of the houses in the subdivision you are studying
 3. Generate an appropriate graphical representation of your data.
 4. Are there any outliers of your data? Be sure to use the statistical definition and justify.
 5. Type up a paragraph (or more) discussing the results of your analysis, including any conclusions you can make.
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6. Is there a linear relationship between two sets in the data you are considering (this is the price of the house and whichever other variable you choose to study (number of bedrooms, number of bathrooms, acreage, or square footage)? Use the statistical concepts discussed in class to determine correlation. For example:
 - Is there a strong correlation between the price of the house and the number of bedrooms in the subdivision you are studying?
 - Is there a correlation between the price of the house and the number of bathrooms?
 - Is there a correlation between the price of the house and the acreage?
 - Is there a correlation between the price of the house and the square footage?
 7. Provide an appropriate graphical representation of your data.
 8. Type up a paragraph (or more) discussing the results of your analysis, drawing at least two conclusions you can make.