

Math 124 Fall 2004
Assignment 3
Due: Dec 8, 2004

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This assignment is intended to give you more practice using excel. You should submit your solutions to this assignment as a brief written report. Do not submit print outs of raw Excel spreadsheets alone. That means don't hand in printouts of the data. Since this is the final assignment it is expected that you will take more care in your presentation ie accurately label and title your figures. It is also expected that you will clearly and concisely interpret your figures and write a brief summary of your conclusions. Presentation will count in the assessment of your work.

Note: Absolutely no late assignments will be accepted. No matter what the circumstances are. If you wish, you may submit your assignment early. It is strongly recommended that you do not leave this assignment to the last minute.

Marketing data

Companies spend millions of dollars on advertising every year in the hopes that consumers will remember their product when it comes time to make a purchase. An effective advertisement will ensure that a potential customer remembers your product. A study has been carried to gather data relating the amount spent on TV advertising with potential customers memory of their advertising. Specifically, this data appeared in the Wall Street Journal on March 1, 1984. The advertisements were selected by an annual survey conducted by Video Board Tests, Inc., a New York ad-testing company, based on interviews with 20,000 adults who were asked to name the most outstanding TV commercial they had seen, noticed, and liked. The retained impressions were based on a survey of 4,000 adults, in which regular product users were asked to cite a commercial they had seen for that product category in the past week.

The data file on the website (available in either tab delimited text or Excel 2000 formats) contains information about how much money was spent (in 1983) on TV advertising by different countries (SPEND) and the Millions of retained impressions per week (MILIMP) for there product estimated by the study for 21 different companies (FIRM).

Your job is to explore the relationship between dollars spend and advertising impressions.

1. Create a scatterplot of MILIMP vs SPEND. Describe any relationship you see between the two variables. Is there any outliers?
2. Transform the data so that you get another scatterplot that has a more linear relationship (Hint: you might want to log one of the variables). Fit a linear relationship between your two variables. What does your regression line say about the relationship between advertiser spending and the number of retained impressions of their product? If an advertiser spent \$30 million dollars in advertising in that year how many retained impressions per week could they expect for their product? Did you see any outliers in your transformed plot?