Math 263-007 Excel Assignment # 2

Due 2/3/15 in class or to my office before 5:30 PM.

Instructions For this assignment, you will download the data **263HW2Dat.xlsx** from the course website. Using this data set, follow the instructions below to produce your plots. Please answer the additional questions either in writing or in a word document - please do not use excel to write your solutions. Your answers should be clearly formatted as if you were producing a semi-professional document.

The data set contains data from the Statistical Abstract of the United States about life expectancy for men and for women in thirty countries and the countrys health care expenditures as a percentage of GDP (gross domestic product). We will look at how well health care spending predicts life expectancy.

1. First, use health care expenditures to predict female life expectancy.

(a) Which variable is the response and which is the explanatory variable?

(b) Make a scatterplot of female life expectancy against health care expenditures, and add the trend line and r^2 value. Instructions for making scatter plots and adding trend lines are at end of assignment, or peruse YouTube. Paste the resulting scatter plot into your solutions.

(c) Are there any outliers? If so, which country or countries? To find the data for the outlier, hover over it in the scatter plot. Then look up the country in the list.

(d) For the outlier(s), is life expectancy higher or lower than would be predicted from the countrys health care spending?

(e) What is the correlation coefficient between life expectancy and health care?

(f) In the equation of your line $Y = mX + b$, give an interpretation, in the context of the problem, of the slope m and the Y-intercept b. Note 'm is the slope and b is the Y-intercept' are not considered adequate interpretations!

2. Use health care expenditures to predict male life expectancy.

(a) Create a new scatter plot for the male data and add a trend line, using the same process as before. Paste the result into your solutions.

(b) What is your r^2 value? Interpret this value in the context of health care and male life expectancy.

3. Compare the linear regressions you found for males and females.

(a) For which gender does life expectancy appear to be more affected by health care expenditures? Give a reason for you answer.

(b) Is there a level of health care expenditures where both male and female life expectancies are predicted to be equal? How do you know? If so, find it.

Excel Tutorials

Making a scatter plot

1. Under '**insert**' or '**charts**', choose **scatter plot**. Choose the version without connecting lines. A blank graph should appear.

2. Right click on the graph and choose **select data**. Choose the appropriate cell ranges for the X and Y data. Do not include headings (i.e. only select the numerical cells).

Labeling your plot To label your chart, choose the **layout** or **chart layout** tab/menu, then look for the **axis title** button.

Adding a trendline Right click your plot and select '**add trendline**'. A box will pop up - choose a linear trend line, the go to **options** and check the boxes next to 'display equation' and 'display r^2 value'.