

Final Project

The first quantitative variable for this project is the mymathlab homework scores percentages for students in Statistics and Algebra classes, previous to the first test. The second quantitative variable is the first test scores of the same students. The research question is, “Is there a relation between homework scores and test scores?”

To collect data, my group and I handed out anonymous surveys to math students who use mymathlab for homework. We collected the cumulative scores for homework prior to the first test, and collected the first test scores of those same students.

For my group, I made a spreadsheet in OpenOffice, by putting the mymathlab homework scores in one column and another column for the test scores (The document used is attached along with this one.)

I personally used OpenOffice to calculate the mean, standard variation, standard deviation, five-number summary, range, mode, upper fence, lower fence, and the outliers for both quantitative variables. In OpenOffice, I also found the correlation coefficient in order to create an equation for the line of regression. I created the equation for the line of regression by hand, and I have scanned in the work for that to go along with this document.

The histograms, boxplots, and scatterplot for line of regression are also included along with this document.

The results for the mean, standard variation, standard deviation, five-number summary, range, mode, upper fence, lower fence, outliers, correlation coefficient, and line of regression equation are shown below.

Homework

• Mean						85.96
• Standard Variation						3.97
• Standard Deviation						15.76
• Five-number Summary	Minimum	Q1	Median	Q3	Maximum	
	9	81	89.5	97	100	
• Range						91
• Mode						100
• Upper Fence						121
• Lower Fence						57
• Outliers						9,56,19

Tests

• Mean			67.6			
• Standard Variation			4.29			
• Standard Deviation			18.4			
• Five-number Summary	Minimum	Q1	Median	Q3	Maximum	
	12	59.38	70.5	76.96	100	
• Range			88			
• Mode			60			
• Upper Fence			103.33			
• Lower Fence			33			
• Outliers			12,21,29,12,28			

Correlation Coefficient: .56

Equation for Line of Regression: $\hat{y}=0.60513853904x+15.58$

The first difficulty encountered would definitely be collecting the data in the first place. It was difficult to find people who *use* mymathlab, let alone getting people to respond to the surveys that my group and I passed out. I was not too surprised at the averages for homework scores, but I *was* surprised with the comparison with the test scores. More times than not, the students did not do nearly as well on their tests as they did on their homework.

Doing well on homework did not necessarily mean that people did well on their test, however, the majority of students that did better on their homework, also did better on their tests.

There is a positive correlation between the higher mymathlab scores compared with the test scores. Students who performed better on their homework, generally performed better on their test as well. The R value (.56) was greater than the critical value (.217).

Is there a relation between homework scores and test scores? Yes. Generally there is a correlation between homework scores and test scores. There are, however, lurking variables such as test anxiety that can affect students test scores, so however well they may have done on their homework, they might not have done as well on their test.