USING TECHNOLOGY TO DETERMINE SAMPLE LINEAR CORRELATION COEFFICIENT AND THE LEAST-SQUARES REGRESSION LINE

By

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OBJECTIVES

❖We shall use technology to determine the:

❑Sample Linear Correlation Coefficient or the Pearson Moment Correlation Coefficient and

❑Least-Squares Regression Line or the Line of Best Fit or the Linear Regression Equation

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PRE-REQUISTES

❖View my videos (where I did "hand" calculations) on:

❑Slope-Intercept Form

❑Sample Linear Correlation Coefficient or the Pearson Moment Correlation Coefficient and

❑Least-Squares Regression Line or the Line of Best Fit or the Linear Regression Equation

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WHAT TECHNOLOGY SHALL WE USE?

❖ **<u>Windows-based Technology</u>**:

➢ Pearson Statcrunch

➢ Microsoft Excel

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EXAMPLE 1

- Consider the data:

X	2.3	3.9	2.8	4.7
Y	3.9	1.4	3.7	4.9

- Draw a scatter plot of your data
- Compute the linear correlation coefficient to 3 d.p
- Assume you add an additional point (10.4,9.3)
- Draw the new scatter plot (with the additional point)
- Compute the new linear correlation coefficient to 3 d.p
- What are your observations?

EXAMPLE 2

- The data below shows the number of days absent and the final grade for the students in a teacher's class.

X(Absences)	0	1	2	3	4
Y (Final Grade)	87.1	77.5	78	68.4	68.9

- Find the least-squares regression line. Round to 2 d.p
- Interpret the slope
- Interpret the y-intercept
- Predict the final grade for a student who misses one class period. Round to 2 d.p
- Compute the residual
- What are your observations?
- Draw the least-squares regression line on a scatter diagram