

Classroom to Campus: Math and Stats Challenge

Grade 12 – MAP4C

Topic D: Data Management

Quantifying the Effect of Study Habits on Academic Achievement

A study was conducted to examine the relationship between the number of hours students study per week and their corresponding test scores. The data collected is as follows:

Study Hours (per week)	1.2	2.2	3	3.5	3.8	4	5.4
Test Score (%)	55	63	68.5	70	75	88	95

- Plot this data on a graph to determine whether the relationship between study hours and test scores appears to be linear. (*Clearly label axis*)
- Estimate a linear function that models this relationship by "eyeballing" a line that seems to fit the data points.
- Would predicting the test score for a student who studies 5 hours per week be an example of interpolation or extrapolation? Make the prediction using the linear model, and discuss whether it is reasonable. (*Round your final answer to one decimal place.*)
- Would predicting the test score for a student who studies 8 hours per week be an example of interpolation or extrapolation? Make the prediction using the linear model, and discuss whether it is reasonable. (*Round your final answer to one decimal place.*)
- According to the data, how many hours per week would a student need to study to achieve a test score of 70%? (*Round your final answer to one decimal place.*)

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