

Practice Problem: Regression

The following dataset contains datapoints for the number of hours a student studied and the grade they earned on the exam.

Hours of Study	Grade on Exam
2	50
3	71
4	87
5	95

1. Find the equation for the least-squares regression line for this dataset **by hand** and show your work.

If you want, you may use excel to set up a table similar to this:

x	y	xy	x ²	y ²
1	30	30	1	900
2	45	90	4	2025
3	51	153	9	2601
4	57	228	16	3249
5	60	300	25	3600
6	65	390	36	4225
7	70	490	49	4900
8	71	568	64	5041
Σx	Σy	Σxy	Σx^2	Σy^2
36	449	2249	204	26541

2. Using your regression model, predict the exam grade for someone who studied for 30 minutes.
3. Calculate the R^2 of your model **by hand** and show your work.
You may use a table in excel if you want.