

Linear Regression

Instructions: Create a scatter plot, find the linear regression equation (line of best fit), and determine the correlation.

1. The table below gives the amount of time students in a class studied for a test and their test scores. Graph the data on a scatter plot, find the line of best fit, and write the equation for the line you draw.

Hours Studied	1	0	3	1.5	2.75	1	0.5	2
Test Score	78	75	90	89	97	85	81	80

Linear Regression Equation: $y = 5.43x + 76.41$

Correlation Coefficient (r): 0.79

2. The table below gives the amount of Krabby Patties made by Spongebob for each year he's worked. Graph the data on a scatter plot, find the line of best fit, and write the equation for the line you draw.

Years worked	1	2	3	4	5	6
Patties made	6,500	7,805	10,835	11,230	15,870	16,387

Linear Regression Equation: $y = 2115x + 4035.33$

Correlation Coefficient (r): 0.98

3. The table below gives the estimated world population (in billions) for various years.

Year	1980	1990	1997	2000	2005	2011
Population	4400	5100	5852	6080	6450	7000

Linear Regression Equation: $y = 84.91x - 163766$

Correlation Coefficient (r): 0.998

4. The table below shows the income for an employee over his first 8 years of work. Use this to estimate his income for his 15th year of work.

Years	1	2	3	4	5	6	7	8
Income	45,000	46,814	48,212	52,870	54,125	58,532	61,075	62,785

Linear Regression Equation: $y = 2714.46x + 41461.5$

Correlation Coefficient (r): 0.992

