LINEAR REGRESSION

Equation :-

$$Y = mX + b$$

Y = dependent variable (to predict)

X = independent variable (base/cause)

m = slope of line (how much Y change with a unit change in X

b = intercept ("The value of Y when X is 0")

Example: Predic Pizza prices

Step 1: Data collection

Step 2: Calculation

Step 3: Prediction

Step 4: Visualization

Digmeter in (X)	Price (Y)	Mean (X)	Mean (Y)	Deviation (X)	Product of deviations	Sum of Product of deviation
8	10	10	13	-2	6	12
10	13			0	0	
12	16			2	6	

Deviation (Y)	Square root of deviations for X
-3	4
0	0
3	4

Calculation:

m = Sum of product of deviation / Sum of square of deviation of X

$$m = \frac{12}{8}$$

$$\boxed{m = 1.5}$$

b = Mean of $Y - (m \times \text{Mean of } X)$

$b = 13 - (1.5 \times 10)$

$b = 13 - 15$

$$\boxed{b = -2}$$