

Data Table and Calculations

| Student | X | Y | XY | X ² |
|---------|---|----|-----|----------------|
| 1 | 1 | 52 | 52 | 1 |
| 2 | 2 | 57 | 114 | 4 |
| 3 | 3 | 61 | 183 | 9 |
| 4 | 4 | 65 | 260 | 16 |
| 5 | 5 | 70 | 350 | 25 |

$$\Sigma x = 15, \Sigma y = 305, \Sigma xy = 959, \Sigma x^2 = 55$$

Slope (m)

Slope (m): 4.4

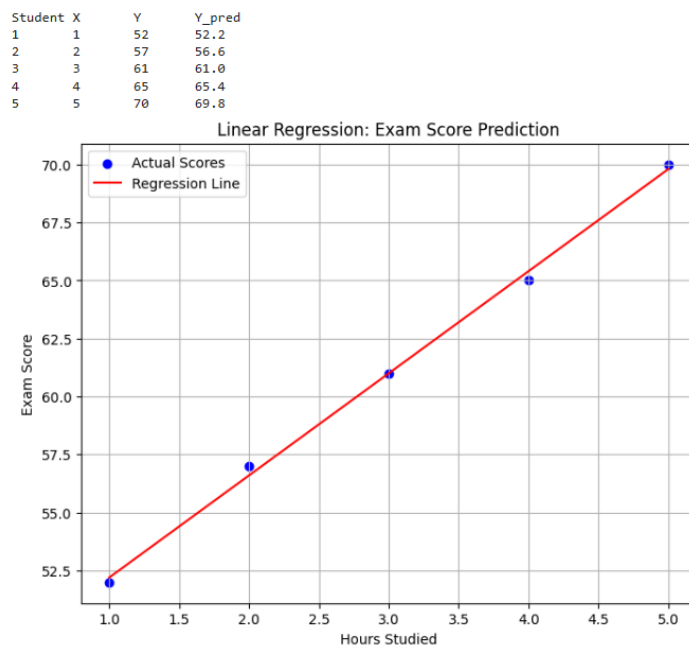
Intercept (b)

Intercept (b): 47.8

Regression Equation

Regression Equation: $y = 4.4x + 47.8$

Scatter Plot



SSE Table

| Student | X | Y | Y_pred | Y-Y_pred | (Y-Y_pred) ² |
|---------|---|----|--------|----------|-------------------------|
| 1 | 1 | 52 | 52.2 | -0.2 | 0.04 |
| 2 | 2 | 57 | 56.6 | 0.4 | 0.16 |
| 3 | 3 | 61 | 61.0 | 0.0 | 0.0 |
| 4 | 4 | 65 | 65.4 | -0.4 | 0.16 |
| 5 | 5 | 70 | 69.8 | 0.2 | 0.04 |

$$SSE = 0.4$$

SST Table

| Student | X | Y | \bar{Y} | Y- \bar{Y} | (Y- \bar{Y}) ² |
|---------|---|----|-----------|--------------|------------------------------|
| 1 | 1 | 52 | 61.0 | -9.0 | 81.0 |
| 2 | 2 | 57 | 61.0 | -4.0 | 16.0 |
| 3 | 3 | 61 | 61.0 | 0.0 | 0.0 |
| 4 | 4 | 65 | 61.0 | 4.0 | 16.0 |
| 5 | 5 | 70 | 61.0 | 9.0 | 81.0 |

$$SST = 194.0$$

R² Value

$$R^2 = 0.9979$$