

	X	Y	X*Y	X <sup>2</sup>	Y <sup>2</sup>
	68	74	5032	4624	5476
	87	79	6873	7569	6241
	75	80	6000	5625	6400
	91	93	8463	8281	8649
	82	88	7216	6724	7744
	77	79	6083	5929	6241
	86	97	8342	7396	9409
	82	95	7790	6724	9025
	75	89	6675	5625	7921
	79	92	7268	6241	8464
Sum =	802	866	69742	64738	75570

Based on the above table, the following is calculated:

$$\bar{X} = \frac{1}{n} \sum_{i=1}^n X_i = \frac{802}{10} = 80.2$$

$$\bar{Y} = \frac{1}{n} \sum_{i=1}^n Y_i = \frac{866}{10} = 86.6$$

$$SS_{XX} = \sum_{i=1}^n X_i^2 - \frac{1}{n} \left( \sum_{i=1}^n X_i \right)^2 = 64738 - 802^2/10 = 417.6$$

$$SS_{YY} = \sum_{i=1}^n Y_i^2 - \frac{1}{n} \left( \sum_{i=1}^n Y_i \right)^2 = 75570 - 866^2/10 = 574.3999999999999$$

$$SS_{XY} = \sum_{i=1}^n X_i Y_i - \frac{1}{n} \left( \sum_{i=1}^n X_i \right) \left( \sum_{i=1}^n Y_i \right) = 69742 - 802 \times 866/10 = 288.8$$

Therefore, based on the above calculations, the regression coefficients (the slope  $m$ , and the y-intercept  $n$ ) are obtained as follows:

$$m = \frac{SS_{XY}}{SS_{XX}} = \frac{288.8}{417.6} = 0.6916$$

$$n = \bar{Y} - \bar{X} \cdot m = 86.6 - 80.2 \times 0.6916 = 31.136$$

Therefore, we find that the regression equation is:

$$Y = 31.136 + 0.6916X$$

