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Área: Estadística

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IMAGEN 1

Tabela 3:

X	Y	X - \bar{X}	Y - \bar{Y}	(X - \bar{X})(Y - \bar{Y})	(X - \bar{X}) ²	(Y - \bar{Y}) ²
10	2	-30	-3	90	900	9
20	3	-20	-2	40	400	4
30	4	-10	-1	10	100	1
40	5	0	0	0	0	0
50	6	10	1	10	100	1
60	7	20	2	40	400	4
70	8	30	3	90	900	9
280	35			280	2800	28

$$\bar{X} = \frac{\sum X}{n} = \bar{X} = \frac{280}{7} = 40$$

$$\bar{Y} = \frac{\sum Y}{n} = \bar{Y} = \frac{35}{7} = 5$$

$$S_X = \sqrt{\frac{\sum (X - \bar{X})^2}{n-1}} = S_X = \sqrt{\frac{2800}{7-1}} = \sqrt{\frac{2800}{6}} =$$

$$\sqrt{\frac{2800}{6}} = 4.607 = 2.160$$

$$S_Y = \sqrt{\frac{\sum (Y - \bar{Y})^2}{n-1}} = S_Y = \sqrt{\frac{28}{7-1}} = \sqrt{\frac{28}{6}} = 4.67 = 2.160$$

$$r = \frac{280}{10(2.160)(2.160)}$$

$$r = \frac{280}{219.360} = 1$$

X	Y	X - \bar{x}	Y - \bar{y}	(X - \bar{x})(Y - \bar{y})	(X - \bar{x}) ²	(Y - \bar{y}) ²
10	1	-40	-3.89	155.2	1600	15.13
20	8	-30	3.11	-93.3	900	9.67
30	3	-20	-1.89	37.8	400	3.57
40	6	-10	1.11	-11.1	100	1.23
50	9	0	4.11	0	0	16.89
60	1	10	-3.89	-38.9	100	15.13
70	5	20	0.11	2.2	400	0.0121
80	9	30	4.11	123.3	900	16.89
90	2	40	-2.89	-115.6	1600	8.35
450	44			601	6100	86.87

$$\bar{x} = \frac{\sum x}{n} = \bar{x} = \frac{450}{9} = 50$$

$$\bar{y} = \frac{\sum y}{n} = \bar{y} = \frac{44}{9} = 4.8889$$

$$s_x = \sqrt{\frac{\sum (x - \bar{x})^2}{n-1}} = \sqrt{\frac{6100}{8}} = \sqrt{762.5} = 27.386$$

$$s_y = \sqrt{\frac{\sum (y - \bar{y})^2}{n-1}} = \sqrt{\frac{86.87}{8}} = \sqrt{10.86} = 3.29 = 330$$

$$r = \frac{601}{(8)(27.38)(3.29)} = \frac{601}{727.83} = 0.825$$