



UNIVERSIDAD DEL SURESTE

EJERCICIO

UNIDAD IV

“COEFICIENTE DE CORRELACION Y REGRESION  
LINEAL”

DE LOS SANTOS SOLORIO HANNA MICHELL

GONZALES SALAS VICTOR ANTONIO

BIOESTADISTICA

LICENCIATURA EN ENFERMERIA

TAPACHULA, CHIAPAS

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Las estaturas y pesos de 10 jugadores de baloncesto de un equipo son:

X	Y	XY	X <sup>2</sup>	Y <sup>2</sup>
Estatura	Peso			
186	85	15,810	34,596	7,225
189	85	16,065	35,721	7,225
190	86	16,340	36,100	7,396
192	90	17,280	36,864	8,100
193	87	16,791	37,249	7,569
193	91	17,563	37,249	8,281
198	93	18,414	39,204	8,649
201	103	20,703	40,401	10,609
203	100	20,300	41,209	10,000
205	101	20,705	42,025	10,201
<u>1,950</u>	<u>921</u>	<u>179,971</u>	<u>380,618</u>	<u>85,255</u>

$$A) \text{ De } x \quad SC_x = \sum x^2 - \frac{(\sum x)^2}{n} = 380,618 - \frac{(1,950)^2}{10}$$

$$SC_x = 380,618 - \frac{3,802,500}{10} = 380,618 - 380,250$$

$$SC_x = 368$$

$$B) \text{ De } y \quad SC_y = \sum y^2 - \frac{(\sum y)^2}{n} = 85,255 - \frac{(921)^2}{10}$$

$$SC_y = 85,255 - \frac{848,241}{10} = 85,255 - 84,824.1$$

$$SC_y = 430.9$$

$$C) \text{ De } xy \quad SC_{xy} = \sum xy - \frac{(\sum x)(\sum y)}{n} = 179,971 - \frac{(1,950)(921)}{10}$$

$$SC_{xy} = 179,971 - \frac{1,795,950}{10} = 179,971 - 179,595$$

$$SC_{xy} = 376$$

$$r = \frac{SC_{xy}}{\sqrt{(SC_x)(SC_y)}} = \frac{376}{\sqrt{(368)(430.9)}} = \frac{376}{\sqrt{158,571.2}}$$

$$r = \frac{376}{398.20} = 0.94 \rightarrow \text{Fuerte y positiva}$$

(Regresión lineal)

$$SC_x = 368 \quad SC_y = 430.9 \quad SC_{xy} = 376$$

$$1. b_1 = \frac{SC_{xy}}{SC_x} = \frac{376}{368} = 1.02$$

$$2. \bar{x} = 195 \quad \bar{y} = 92.1$$

$$3. b_0 = \bar{y} - b_1 * \bar{x} = 92.1 - 1.02 * 195 = 92.1 - 198.9$$
$$b_0 = -106.8$$

$$MRL \hat{y} = b_0 + b_1 * \hat{x} = -106.8 + 1.02 * 208 = -106.8 + 212.16$$

$$MRL \hat{y} = 105.36$$

$$MRL \hat{x} = \frac{\hat{y} - b_0}{b_1} = \frac{105.36 - (-106.8)}{1.02} = \frac{212.16}{1.02}$$

$$MRL \hat{x} = 190.98$$