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Practica estadística

Las Estaturas y Pesos de los Jugadores de baloncesto de un equipo son:

Estatura 186, 189, 190, 192, 193, 193, 198, 201, 203, 205

Estatura	Peso	xy	x^2	y^2
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
20	100	20,300	41,209	10,000
205	101	20,705	42,025	10,201
1,950	921	179,931	380,618	85,255

$$A) \text{Dix } s_{cx} = \frac{ex^2}{n} - \frac{(ex)^2}{n^2} = \frac{380,618}{10} - \frac{(1,950)^2}{100}$$

$$s_{cx} = 38,0618 - \frac{3,802,500}{10} = 38,0618 - 380,250$$

$$s_{cx} = 368$$

$$B) \text{Dix } s_{cy} = \frac{ey^2}{n} - \frac{(ey)^2}{n^2} = \frac{85,255}{10} - \frac{(921)^2}{100}$$

$$s_{cy} = 8,5255 - \frac{848,241}{10} = 8,5255 - 84,8241$$

$$s_{cy} = -430,9$$

$$C) D_{xy} \quad SC_{xy} = \sum xy - (\sum x)(\sum y) = 179,971 - \frac{(1,795)(921)}{10}$$

$$SC_{xy} = 179,971 - \frac{1,795 \cdot 921}{10} = 179,971 - 179,595$$

$$SC_{xy} = 376$$

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

$$r = \frac{376}{398.20} = 0.94 - \text{forte y positiva}$$

Regresia lineal

$$S(x) = 368 \quad S(y) = 430.9 \quad SC_{xy} = 376$$

$$1. b_1 = \frac{SC_{xy}}{SC_x} = \frac{376}{368} = 1.02 \quad 2. \bar{x} = 195 \quad \bar{y} = 92.1$$

$$3. b_0 = \bar{y} - b_1 \bar{x} = 92.1 - 1.02 \cdot 195 = 198.8 \quad b_0 = -106.8$$

$$m.e. \bar{y} = b_0 + b_1 \bar{x} = -106.8 + 1.02 \cdot 208 = 106.8 + 212.16$$

$$m.e. \bar{x} = 105.36$$

$$m.e. \bar{x} = \frac{\bar{x} - b_0}{b_1} = \frac{33 - (-106.8)}{1.02} = \frac{140.8}{1.02}$$

$$m.e. \bar{x} = 138.04$$