

UNIVERSIDAD DEL SURESTE



Estadística

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Primer cuatrimestre "A"

29	30	29	33	29	37	33	34
45	100	65	38	49	72	41	76
100	92	63	45	67	85	50	89
90	100	98	69	77	88	66	90
56	98	88	65	88	94	63	93
100	49	80	92	92	38	78	94
73	56	84	78	100	47	84	50
38	52	91	67	49	68	92	45
91	77	100	45	56	74	100	50

Calculo

$$\text{Rango} = \frac{(100 - 29) + 1}{8}$$

$$\text{Rango} = \frac{72}{8} = 9$$

Intervalo	f _i	% f _i	F _{id}	% F _{id}	\bar{x}_i	f _i x _i	X _i ²	f _i X _i ²
29-37	8	11.11%	8	11.11%	33	264	1,089	8,712
38-46	8	11.11%	16	22.22%	42	336	1,764	14,112
47-55	8	11.11%	24	33.33%	51	408	2,601	20,808
56-64	5	6.94%	29	40.27%	60	300	3,600	18,000
65-73	9	12.5%	38	52.77%	69	621	4,761	42,849
74-82	7	9.72%	45	62.5%	78	546	6,084	42,588
83-91	11	15.27%	56	77.77%	87	957	7,569	83,259
92-100	16	22.22%	72	100%	96	1,536	9,216	147,456
						4,968		377,784

Σ f_i = 72

Media

$$\bar{x} = \frac{\sum f_i x_i}{n}$$

$$x = \frac{4968}{72} = 69$$

Mediana

$$\frac{n}{2} = \frac{72}{2} = 36$$

$$me = L_i + \frac{\frac{n}{2} - f_{i-1}}{f_i} \cdot a_i$$

$$me = 65 + \frac{36 - 29}{9} \cdot 8 = 71.22$$

Moda

$$mo = \frac{L_i + f_i - f_{i-1}}{(f_i - f_{i-1}) + (f_i - f_{i+1})} \cdot a_i$$

$$77 + 78 = 155 = 91.5$$

$$mo = \frac{92 + 16 - 11}{(16 - 11) + (16 - 0)} \cdot 8 = 93.90$$

Varianza

$$s^2 = \frac{\sum f_i x_i^2 - \frac{(\sum f_i x_i)^2}{n}}{n-1}$$

$$s^2 = \frac{377,784 - \frac{(4,968)^2}{72}}{71} = 492.84$$

Desviación estándar

$$s = \sqrt{\frac{\sum f_i x_i^2 - \frac{(\sum f_i x_i)^2}{n}}{n-1}}$$

$$\sqrt{22.2}$$

