

WDS

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Nombre de la materia: Estadística Descriptiva.

Nombre de la licenciatura: Psicología

Cuatrimestre : 2

Ejercicio 1 8 Intervalos

111	76	97	48	97	95	105	90
48	80	100	49	100	99	68	97
55	97	90	55	66	107	56	92
60	98	76	57	69	104	87	87
100	105	98	67	56	48	85	88
54	56	100	103	68	106	93	98
67	49	76	109	78	111	98	100

$$\text{Rango} = (111 - 48) + 1$$

$$\text{Rango} = \frac{64}{8} = 8 = 7$$

Intervalos	f_i	$\% f_i$	P_{ia}	$\% P_{ia}$	\bar{X}_i	$f_i \bar{X}_i$
48-55	8	14.28%	8	14.28%	51.5	412
56-63	5	8.92%	13	23.21%	59.5	297.5
64-71	6	10.71%	19	33.92%	67.5	405
72-79	4	7.14%	23	41.07%	75.5	302
80-87	4	7.14%	27	48.21%	83.5	334
88-95	6	10.71%	33	58.92%	91.5	549
96-103	15	26.78%	48	85.71%	99.5	1492.5
104-111	8	14.28%	56	100.0%	107.5	860
	<u>56</u>					<u>4,652</u>

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\bar{X}_i^2	$f_i \bar{X}_i^2$
2652.25	21218
3540.25	17701.25
4556.25	27337.5
5700.25	22801
6972.25	27889
8372.25	50233.5
9900.25	148503.75
11556.25	92450

$$\bar{X} = \frac{\sum f_i \bar{X}_i}{n} = \frac{4652}{56} = 83.07$$

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

$$\frac{56}{2} = 28$$

$$Me = 88 + \frac{28 - 27}{6} \cdot 7$$

$$Me = 28 - 27 = 1 = \frac{1}{6} = \frac{1}{6} \cdot 7 = 1.167 \rightarrow 88 + 1.167 = 89.16$$

$$M0 = Li + \frac{f_i - f_{i-1}}{(f_i - f_{i-1}) + (f_i - f_{i+1})} \cdot a_i$$

$$M0 = 96 + \frac{15 - 6}{(15 - 6) + (15 - 8)} \cdot a_i$$

$$M0 = 15 - 6 = 9 \div [(15 - 6) + (15 - 8)] = 9 \div 12 = 0.75 \rightarrow 96 + 9 \cdot 0.75 = 99.93$$

$$S^2 = \frac{\sum f_i \bar{X}_i^2 - \frac{(\sum f_i \bar{X}_i)^2}{n}}{n-1}$$

$$S^2 = \frac{408134 - \frac{(4652)^2}{56}}{55}$$

$$S^2 = \frac{408134 - 388133.33}{55} = \frac{20000.67}{55} = 363.65$$

$$S = \sqrt{\frac{\sum f_i \bar{X}_i^2 - \frac{(\sum f_i \bar{X}_i)^2}{n}}{n-1}}$$

$$S = \sqrt{363.65} = 19.07$$

Ejercicio 2 6 Intervalos

80	77	71	55	63	69
70	69	80	56	67	71
55	60	74	67	74	70
45	56	60	48	45	80
76	45	49	77	58	59
48	80	50	70	56	49
53	72	70	46	60	80
56	76	80	71	80	80

$$\text{Rango} = \frac{(80-45)+1}{6} = \frac{36}{6}$$

$$\text{Rango} = 6 = 5$$

Intervalos	fi	·fi	fia	·fia	Xi	f·Xi	Xi ²	fi·Xi ²
45-50	9	18.75%	9	18.75%	47.5	427.5	2256.25	20,306.25
51-56	7	14.58%	16	33.33%	53.5	374.5	2862.25	20035.75
57-62	5	10.41%	21	43.75%	59.5	297.5	3540.25	17,701.25
63-68	3	6.25%	24	50%	65.5	196.5	4290.25	12,870.75
69-74	12	25%	36	75%	71.5	858	5,112.25	61,347
75-80	12	25%	48	100%	77.5	930	6,006.25	72,075
	<u>48</u>					<u>3084</u>		<u>204336</u>

$$\bar{X} = \frac{3084}{48} = 64.25$$

$$Me = \frac{Li + \frac{n}{2} - fia - 1}{fi} \cdot ai = \frac{48}{2} = 24$$

$$Me = 63 + \frac{24 - 21}{3} \cdot 5$$

$$Me = 24 - 21 = 3 = 3 \cdot 5 + 63 = 68$$

$$MO = \frac{71.5 + 77.5}{2} = 74.5$$

I.P.D.A

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

$$S^2 = \frac{204334 - \frac{(3084)^2}{48}}{48-1=47}$$

$$S^2 = 204334 - (3084^2 \div 48) = \div 47 = 131.68$$

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

$$S = \sqrt{131.68} = 11.47$$

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