

**Nombre de alumno: Darolyn Sayuri Hidalgo Méndez.**

**Nombre del trabajo: Datos agrupados**

**Nombre del profesor: Lic. Jorge Enrique Albores Aguilar.**

**Materia: Estadística 1**

**Grado: 1er cuatrimestre.**

**Grupo: A.**

7 intervalos.

Darolyn Suyri Hidalgo Méndez

45	100	65	38	49	72	41	76
100	92	63	45	67	85	50	89
90	100	98	69	73	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

$$\text{Rango} = \frac{(100 - 38) + 1}{7} = 9$$

Intervalo	$f_i$	% $f_i$	$f_{ia}$	% $f_{ia}$	$\bar{x}_i$	$f_i \bar{x}_i$	$\bar{x}_i^2$	$f_i \bar{x}_i^2$
38-46	8	12.5%	8	12.5%	42	336	1,764	14,112
47-55	8	12.5%	16	25%	51	408	2,601	20,808
56-64	5	7.81%	21	32.81%	60	300	3,600	18,000
65-73	9	14.06%	30	46.87%	69	621	4,761	42,849
74-82	7	10.93%	37	57.8%	78	546	6,084	42,588
83-91	11	17.18%	48	75%	87	957	7,569	83,259
92-100	16	25%	64	100%	96	1,536	9,216	147,456
	64					4,704		369,072

Media= Dardyn Hidalgo

$$X = \frac{4704}{64} = 73.5$$

Mediana=

$$Me = Li + \frac{\frac{n}{2} - f_{i-1}}{f_i} \cdot a_i = Me = 74 + \frac{32 - 30}{7} \cdot 8 = 76.28$$

Moda=

$$Mo = Li + \frac{f_i - f_{i-1}}{(f_i - f_{i-1}) + (f_i - f_{i+1})} \cdot a_i = 92 + \frac{16 - 11}{(16 - 11) + (16 - 0)} \cdot 8 = 92 + \frac{5}{21} \cdot 8$$

$$Mo = 93.90$$

$$s^2 = \frac{\sum f_i \bar{x}_i^2 - \frac{(\sum f_i \bar{x}_i)^2}{n}}{n-1} = \frac{369,072 - \frac{(4704)^2}{64}}{63} = \frac{369,072 - 345,744}{63}$$

$$s^2 = 370.28$$

Desviación

$$\sqrt{s^2} = \sqrt{370.28}$$

$$\sqrt{s^2} = 19.24$$

5 intervalos Darolyn Sayuri Hidalgo Méndez

79	75	71	79	71	44
45	56	74	42	68	45
70	41	75	41	53	54
78	42	66	45	64	58
55	56	73	56	41	64
45	67	79	49	44	45
90	87	80	85	90	84

$$\text{Rango} = \frac{(90 - 41) + 1}{5} = 10$$

Intervalo	$f_i$	$\% f_i$	$f_{ia}$	$\% f_{ia}$	$\bar{x}_i$	$f_i \bar{x}_i$	$\bar{x}_i^2$	$f_i \bar{x}_i^2$
41-50	13	30.95%	13	30.95%	45.5	591.5	2,070.25	26,913.25
51-60	7	16.6%	20	47.61%	55.5	388.5	3,080.25	21,561.75
61-70	6	14.28%	26	61.90%	65.5	393	4,290.25	25,741.5
71-80	11	26.19%	37	88.09%	75.5	830.5	5,700.25	62,702.75
81-90	5	11.90%	42	100%	85.5	427.5	7,310.25	36,551.25
	42					2,631	22,451.25	173,470.5

Media = Dorelyn Hidalgo

$$X = \frac{2631}{42} = 62.64$$

Mediana =

$$Me = Li + \frac{\frac{n}{2} - f_{i-1}}{f_i} \cdot ai = Me = 61 + \frac{21 - 20}{6} \cdot 9 = 62.5$$

Moda =

$$Mo = Li + \frac{f_i - f_{i-1}}{(f_i - f_{i-1}) + (f_i - f_{i+1})} \cdot ai = 41 + \frac{13 - 0}{(13 - 0) + (13 - 7)} \cdot 9 = 41 + \frac{13}{19} \cdot 9 = 47.15$$

Varianza

$$S = \frac{\sum f_i \bar{x}_i^2}{n-1} - \frac{(\sum f_i \bar{x}_i)^2}{n} = \frac{173,470.5}{41} - \frac{(2631)^2}{42} = \frac{173,470.5}{41} - \frac{164,813.35}{41} =$$

$$S = 211.15$$

Desviación estandar =

$$\sqrt{S} = \sqrt{211.15}$$

$$\sqrt{S} = 14.53$$