

# UDS

Nombre del Alumno: Yahir Aguilar Sicathva

Nombre del Tema: Tabla de datos  
agrupados

Parcial: 1

Nombre de la Materia: P. y Estadística

Nombre del Profesor: Jorge Enrique A. Aguilar

N. de la Licenciatura: Ing. Sistemas  
Computacionales

Cuatrimestre: 2

Yahir Aguilar Sicathua

Para este ejercicio realice 6 intervalos

79	75	71	79	71	44
38	56	79	42	68	45
70	40	75	41	53	54
78	42	66	45	64	58
55	56	73	56	41	64
38	67	79	49	44	38

$$\text{Rango} = \frac{(79-38)+1}{6} = \frac{42}{6} = 7$$

	$F_i$	$\%F_i$	$F_{ia}$	$\%F_{ia}$	$X_i$	$F_i X_i$	$X_i^2$
38-44	10	27.77	10	27.77	41	410	1,681
45-51	3	8.33	13	36.11	48	144	2,304
52-58	7	19.44	20	55.55	55	385	3,025
59-65	2	5.55	22	61.11	62	124	3,844
66-72	8	16.66	28	77.77	69	414	4,761
73-79	36	22.22	36	100	76	608	5,776
						<u>2,085</u>	

$$F_i X_i^2$$

$$16,810$$

$$6,912$$

$$21,175$$

$$7,688$$

$$28,566$$

$$46,200$$

$$\underline{127,359}$$

$$\text{Media } \bar{x} = \frac{\sum F_i X_i}{n} = \frac{2,085}{36} = 57.91$$

$$\text{Mediana } Me = Li + \frac{\frac{n}{2} - F_{ia-1}}{F_i} \cdot ai$$

$$\frac{n}{2} = \frac{36}{2} = 18$$

$$Me = 52 + \frac{18 - 13}{7} \cdot 6 = 56.28$$

$$\text{cal } 18 - 13 = 5 \cdot 0.7 = 3.5 \rightarrow +52$$

Moda

$$Mo = Li + \frac{F_i - F_{i-1}}{(F_i - F_{i-1}) + (F_i - F_{i+1})} \cdot ai$$

$$Mo = 38 + \frac{10 - 0}{(10 - 0) + (10 - 3)} \cdot 6 = 41.52$$

$$\text{cal } 10 - 0 = 10 \cdot 0.7 = 7 \rightarrow +38$$

$$\text{Varianza } s^2 = \frac{\sum F_i X_i^2 - \frac{(\sum F_i X_i)^2}{n}}{n-1}$$

$$s^2 = \frac{127,359 - \frac{(2,085)^2}{36}}{35} = 188.65$$

$$35$$

$$S = 13.73$$

# Yahir Aguilar Sicalhua

45	100	65	38	49	72	45	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

Rango	$f_i$	% $f_i$	$f_{ia}$	$\cdot f_{ia}$	$\bar{x}_i$	$f_i \bar{x}_i$	$\bar{x}_i^2$	$f_i \bar{x}_i^2$
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	57.81	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  

$$\bar{x} = \frac{\sum f_i \bar{x}_i}{n} = \frac{4,704}{64} = 73.5$$

Mediana  

$$Me = Lit \frac{\frac{n}{2} - f_{ia-1}}{f_i} \cdot a_i$$

$$\frac{n}{2} = \frac{64}{2} = 32$$
  

$$Me = 74 + \frac{32 - 30}{7} \cdot 8 = 76.28$$

cal  

$$32 - 30 = 2 \cdot 7 = 14 = 7 \cdot 2$$

Moda  

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

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

cal  

$$16 - 11 = 5 \cdot 0((16 - 11) + (16 + 0)) = 5 \cdot 8 = 40$$

Varianza  

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

$$S^2 = \frac{369,072 - \frac{(4,704)^2}{64}}{63} = 370.28$$

$$S = 19.24$$