

INSTITUTO PRIVADO RAFAEL ARÉVALO MARTÍNEZ

Nombre:

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Grado:

4to. Administración de Empresas

Catedrático:

Josue Estrada

Curso:

Estadística

v.j.m.j.ch. 23/08/2021

Instrucciones: realice lo que a continuación se le pide

1. Ordene los datos
2. k
3. R
4. i
5. Calcule Media aritmética, mediana y moda
6. Calcule Cuantiles, 1, 2 y 3
7. Calcule deciles 2, 6 y 9
8. Calcule percentiles 15, 70 y 95
9. Elabore un polígono de frecuencias

TAREA #8

Puntajes de 25 alumnos en un examen de Contabilidad de Sociedades.

70	66	72	75	74	81	76	75	78	76
65	77	81	80	73	90	81	81	72	66
55	49	84	79	83					

Datos Ordenados

49	55	65	66	66	70	72	72	72	74
75	75	76	76	77	78	79	80	81	81
81	81	83	84	90					

$$K = 1 + 3.322 \log(n)$$

$$K = 1 + 3.322 \log(25)$$

$$K = 1 + 3.322 (1.39794)$$

$$K = 1 + 4.64$$

$$K = 5.64$$

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Rango

$$Dma - Dme + 1$$

$$R = 90 - 49 + 1$$

$$R = 41 + 1$$

$$R = 42$$

Intervalo

$$i = \frac{R}{k}$$

$$i = \frac{R}{k} = \frac{42}{5.64}$$

$$i = 7.45$$

$$i = 7$$

TABLA DE DATOS AGRUPADOS CON INTERVALOS

K	LA	Lri	Lrs	Xs	f	fa	fx
1	49-55	48.5	55.5	52	2	2	104
2	56-62	55.5	62.5	59	0	2	0
3	63-69	62.5	69.5	66	3	5	198
4	70-76	69.5	76.5	73	9	14	651
5	77-83	76.5	83.5	80	9	23	720
6	84-90	83.5	90.5	87	2	25	174

1853

v.j.m.g.cn.25/08/2021

$$1) \bar{x} = \frac{\sum f \times s}{N} = \bar{x} = \frac{1853}{25} = 74.12 \leftarrow \text{Medi\u00e1 aritm\u00e9tica}$$

$$3) Mo = Lr_i + \left(\frac{\Delta_1}{\Delta_1 + \Delta_2} \right) i$$

$$\Delta_1 = 9 - 3 = 6$$

$$\Delta_2 = 9 - 9 = 0$$

$$Mo = 69.5 + \left(\frac{6}{6+0} \right) 7$$

$$Mo = 76.5 \leftarrow \text{Moda}$$

$$2) Md = Lr_i + \left(\frac{N/2 - f_{an}}{f} \right) i$$

$$Md = 69.5 + \left(\frac{12.5 - 5}{9} \right) 7$$

$$Md = 69.5 + \left(\frac{7.5}{9} \right) 7$$

$$Md = 69.5 + (0.83) 7$$

$$Md = 69.5 + 5.81$$

$$Md = 75.31 \leftarrow \text{Mediana}$$

Vij. m. j. ch. 25 / 08 / 2021

$$Q_1 = Lr + \left(\frac{N/4 - f_{aa}}{f} \right) i$$

$$Q_1 = 69.5 + \left(\frac{6.25 - 5}{9} \right) 7$$

$$Q_1 = 69.5 + \left(\frac{1.25}{9} \right) 7$$

$$Q_1 = 69.5 + (0.14) 7$$

$$Q_1 = 69.5 + 0.98$$

$$Q_1 = 70.48$$

Quartil 1

$$Q_2 = Lr + \left(\frac{2N/4 - f_{aa}}{f} \right) i$$

$$Q_2 = 69.5 + \left(\frac{12.5 - 5}{9} \right) 7$$

$$Q_2 = 69.5 + \left(\frac{7.5}{9} \right) 7$$

$$Q_2 = 69.5 + (0.83) 7$$

$$Q_2 = 69.5 + 5.81$$

$$Q_2 = 75.31$$

Quartil 2

$$Q_3 = Lr + \left(\frac{3N/4 - f_{aa}}{f} \right) i$$

$$Q_3 = 69.5 + \left(\frac{18.75 - 5}{9} \right) 7$$

$$Q_3 = 69.5 + \left(\frac{13.75}{9} \right) 7$$

$$Q_3 = 69.5 + (1.53) 7$$

$$Q_3 = 69.5 + 10.71$$

$$Q_3 = 80.21$$

Quartil 3

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$$D_2 = L_{ri} + \left(\frac{N_2}{10} - f_{a0} \right) i$$

$$D_2 = 62.5 + \left(\frac{5 - 2}{3} \right) 7$$

$$D_2 = 62.5 + \left(\frac{3}{3} \right) 7$$

$$D_2 = 62.5 + (1) 7$$

$$D_2 = 62.5 + 7$$

$$D_2 = 69.5$$

Decil 2

$$D_6 = L_{ri} + \left(\frac{N_6}{10} - f_{a0} \right) i$$

$$D_6 = 76.5 + \left(\frac{15 - 14}{9} \right) 7$$

$$D_6 = 76.5 + \left(\frac{1}{9} \right) 7$$

$$D_6 = 76.5 + 0.77$$

$$D_6 = 77.27$$

Decil 6

$$D_9 = L_{ri} + \left(\frac{N_9}{10} - f_{a0} \right) i$$

$$D_9 = 76.5 + \left(\frac{22.5 - 14}{9} \right) 7$$

$$D_9 = 76.5 + \left(\frac{8.5}{9} \right) 7$$

$$D_9 = 76.5 + (0.94) 7$$

$$D_9 = 76.5 + 6.58$$

$$D_9 = 83.08$$

Decil 9

Vijay Ch. 30/08/2021

$$P_{15} = L_{ri} + \left(\frac{\frac{N \times}{100} - f_{aq}}{f} \right) i$$

$$P_{15} = \left(\frac{25 \times 15}{100} \right)$$

$$P_{15} = 62.5 + \left(\frac{3.75 - 2}{3} \right) \times$$

$$P_{15} = 62.5 + (1.25) \times$$

$$P_{15} = 62.5 + (0.58) \times$$

$$P_{15} = 62.5 + (4.06)$$

$$P_{15} = 66.56 //$$

Percentil 15

$$P_{70} = L_{ri} + \left(\frac{\frac{N \times}{100} - f_{aq}}{f} \right) i$$

$$P_{70} = \left(\frac{25 \times 70}{100} \right)$$

$$P_{70} = 76.5 + \left(\frac{17.5 - 14}{9} \right) \times$$

$$P_{70} = 76.5 + \left(\frac{3.5}{9} \right) \times$$

$$P_{70} = 76.5 + (0.39) \times$$

$$P_{70} = 76.5 + 2.73$$

$$P_{70} = 79.23 //$$

Percentil 70-70

$$P_{95} = L_{ri} + \left(\frac{\frac{N \times}{100} - f_{aq}}{f} \right) i$$

$$P_{95} = \left(\frac{25 \times 95}{100} \right)$$

$$P_{95} = 83.5 + \left(\frac{23.75 - 23}{2} \right) \times$$

$$P_{95} = 83.5 + \left(\frac{0.75}{2} \right) \times$$

$$P_{95} = 83.5 + (0.38) \times$$

$$P_{95} = 83.5 + 2.66$$

$$P_{95} = 86.16 //$$

Percentil 95

V.j.m.j.ch. 31/08/2021

Polígono de frecuencias

Límites Aparentes	F	Xs
49 - 55	2	52
56 - 62	0	59
63 - 69	3	66
70 - 76	9	73
77 - 83	9	80
84 - 90	2	87

