

Instituto Privado Arévalo Martínez.



Asignatura: Estadística I.

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Carrera: 4to. Bachillerato en Computación con Orientación Comercial.

Sección: ``A``

Ciclo Escolar: 2021.

Trabajo: Actividades Tercera Unidad/ Lección 8-  
Semana 26.

# ACTIVIDAD #8:

Instrucciones: Realice lo que se le pide.

1. Ordene datos.

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 72 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

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

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

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

$$k = 1 + 4.64$$

$$k = 5.64 //$$

$$D = D_{ma} - D_{me} + 1$$

$$D = 90 - 49 + 1$$

$$D = 42 \#$$

Intervalo

$$I = \frac{D}{K}$$

$$I = \frac{42}{5.604}$$

$$I = 7.45$$

$$I = 7 \#$$

Puntajes de 25 alumnos en un examen de contabilidad de Sociedades:

K	L.A	Lri	Lrs	Xs	F	FO	Fxs
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	657
5	77-83	76.5	83.5	80	9	23	720
6	84-90	83.5	90.5	87	2	25	174

$$\Sigma Fxs = 1853$$

↑

No. 4

14

## Calcule Media aritmética:

$$\bar{x} = \frac{\sum fxs}{N}$$

$$\bar{x} = \frac{1853}{25}$$

$$\bar{x} = 74.12$$

## Mediana

$$Md = Ln + \left( \frac{\frac{N}{2} - F_{00}}{F} \right) | \quad 25 \div 2 = 12.5$$

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

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

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

$$Md = 69.5 + 5.81$$

$$Md = 75.31 //$$

## Moda

$$Mo = Ln + \left( \frac{\Delta_1}{\Delta_1 + \Delta_2} \right) |$$

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

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

$$Mo = 69.5 + \left( \frac{6}{6+9} \right) 7$$

$$Mo = 70.5 //$$

$$Mo = 69.5 + (1) 7$$

$$Mo = 69.5 + 7$$

Calculate Quartiles 1, 2 y 3.

Quartil 1.

$$Q_1 = L_{ri} + \left( \frac{\frac{N}{4} - F_{ad}}{F} \right) i$$

$$25/4 = 6.25$$

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

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

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

$$Q_1 = 69.5 + 0.98$$

$$Q_1 = 70.48$$

Quartil 2

$$Q_2 = L_{ri} + \left( \frac{\frac{2N}{4} - F_{ad}}{F} \right) i$$

$$\frac{2 \times 25}{4} = \frac{50}{4} = 12.5$$

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

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

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

$$Q_2 = 69.5 + 5.81$$

$$Q_2 = 75.31$$

## Wartil 3

$$Q_3 = L_{ri} + \left( \frac{3N}{4} - F_{ca} \right) i$$

$$\frac{3 \times 25}{4} = \frac{75}{4} = 18.75$$

$$Q_3 = 76.5 + \left( \frac{18.75 - 14}{4} \right) 7$$

$$Q_3 = 76.5 + \left( \frac{4.75}{4} \right) 7$$

$$Q_3 = 76.5 + (0.53) 7$$

$$Q_3 = 76.5 + 3.71$$

$$Q_3 = 80.21 //$$

Calcular deciles 2, 6 y 9.

## Decil 2

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

$$\frac{2 \times 25}{10} = \frac{50}{10} = 5$$

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

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

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

$$D_2 = 62.5 + 7$$

$$D_2 = 69.5 //$$

Deal 6

$$D_0 = Lr + \left( \frac{N_0 - F_{ad}}{10} \right) i$$

$$\frac{0 \times 25}{10} = \frac{150}{10} = 15$$

$$D_0 = 70.5 + \left( \frac{15 - 14}{9} \right) 7$$

$$D_0 = 70.5 + \left( \frac{1}{9} \right) 7$$

$$D_0 = 70.5 + (0.11) 7$$

$$D_0 = 70.5 + 0.77$$

$$~~D_0 = 71.27~~ //$$

Deal 9

$$D_9 = Lr + \left( \frac{N_9 - F_{ad}}{10} \right) i$$

$$\frac{9 \times 25}{10} = \frac{225}{10} = 22.5$$

$$D_9 = 70.5 + \left( \frac{22.5 - 14}{9} \right) 7$$

$$D_9 = 70.5 + \left( \frac{8.5}{9} \right) 7$$

$$D_9 = 70.5 + (0.94) 7$$

$$D_9 = 70.5 + 6.58$$

$$~~D_9 = 77.08~~ //$$

Calculate percentiles 15, 70 y 95

Percentil 15

$$D_{15} = L_{ri} + \left( \frac{N_{15} - F_{adj}}{F} \right) i$$

$$\frac{25 \times 15}{100} = \frac{375}{100} = 3.75$$

$$P_{15} = 62.5 + \left( \frac{3.75 - 2}{3} \right) 7$$

$$P_{15} = 62.5 + \left( \frac{1.75}{3} \right) 7$$

$$P_{15} = 62.5 + (0.58) 7$$

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

$$P_{15} = 66.56 \quad \#$$

Percentil 70

$$D_{70} = L_{ri} + \left( \frac{N_{70} - F_{adj}}{F} \right) i$$

$$\frac{25 \times 70}{100} = \frac{1750}{100} = 17.5$$

$$D_{70} = 76.5 + \left( \frac{17.5 - 14}{9} \right) 7$$

$$P_{70} = 76.5 + \left( \frac{3.5}{9} \right) 7$$

$$P_{70} = 76.5 + (0.39) 7$$

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

$$P_{70} = 79.23 \quad \#$$

176.16

### Percentil 95

$$P_{95} = L_{ni} + \left( \frac{N_{95} - F_{AD}}{F} \right) \cdot i$$

$$\frac{95 \times 25}{100} = \frac{2375}{100} = 23.75$$

$$P_{95} = 83.5 + \left( \frac{23.75 - 23}{2} \right) \cdot 7$$

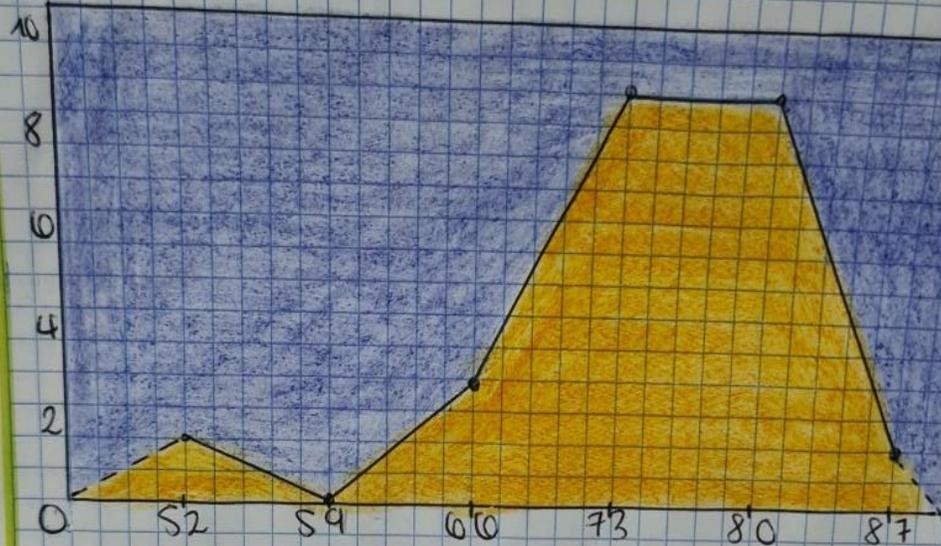
$$P_{95} = 83.5 + \left( \frac{0.75}{2} \right) \cdot 7$$

$$P_{95} = 83.5 + (0.38) \cdot 7$$

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

$$P_{95} = 86.16$$

"Polígono de Frecuencias Punteos de 25 alumnos en un examen de Contabilidad de Sociedades."



Xs	F
52	2
59	0
66	3
73	9
80	9
87	2

-María Isabel Palacios Barrios