

Instituto Privado Arévalo Martínez.



Asignatura: Estadística I.

Profesor: Josué Estrada.

Alumna: María Isabel Palacios Barrios.

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

Sección: "A"

Ciclo Escolar: 2021.

Trabajo: Actividades cuarta unidad/ Actividad 8.

ACTIVIDAD #8:

Instrucciones: Agregue las columnas que hacen falta y calcule lo siguiente.

1. Ordene los datos:

Puntajes obtenidos en un examen de Estudios Sociales Por 41 alumnos.

45	50	72	65	60	80	60	69	75	61
68	55	73	60	60	75	67	74	76	61
50	64	73	60	74	94	67	75	78	61
58	72	70	60	80	65	68	75	80	65
63									

Datos Ordenados

45	45	50	50	50	55	60	60	60	60
60	60	60	61	61	61	63	63	65	66
67	67	68	69	69	72	72	73	73	74
74	75	75	75	76	78	79	80	80	83
99									

2. K

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

$$K = 1 + 3.322 \log(41)$$

$$K = 1 + 3.322 (1.61278)$$

$$k = 1 + 5.36$$

$$k = 6.36 //$$

$$3. l$$

$$l = Bma - Dme + 1$$

$$l = 99 - 45 + 1$$

$$l = 55 //$$

$$4. i$$

$$I = \frac{l}{k} \quad I = \frac{55}{6.36} \quad I = 8.65 \quad I = 9 //$$

5. Media aritmética, Mediana y Moda.

Media Aritmética:

$$\bar{x} = \frac{\sum fxs}{N} \quad \bar{x} = \frac{9,338}{51} \quad \bar{x} = 18.31 //$$

Mediana

$$Md = Lri + \left(\frac{\frac{N}{2} - Faa}{f} \right) i \quad 51 \div 2 = 25.5$$

$$Md = 62.5 + \left(\frac{25.5 - 16}{9} \right) 9$$

$$Md = 62.5 + \left(\frac{9.5}{9} \right) 9$$

$$Md = 62.5 + (0.5)9$$

$$Md = 62.5 + 4.5$$

$$\underline{Md = 67} //$$

Moda

$$MO = Lrit + \left(\frac{\Delta_1}{\Delta_1 + \Delta_2} \right) i$$

$$\Delta_1 = 14 - 9 = 5$$

$$\Delta_2 = 14 - 1 = 13$$

$$MO = 71.5 + \left(\frac{5}{5 + 13} \right) 9$$

$$MO = 71.5 + \left(\frac{5}{18} \right) 9$$

$$MO = 71.5 + (0.28)9$$

$$MO = 71.5 + 2.52$$

$$\underline{MO = 74.02} //$$

0. Quartiles 1 & 3

Quartil 1

$$Q_1 = Lrit + \left(\frac{\frac{N}{4} - F_{ao}}{f} \right) i$$

$$41 \div 4 = 10.25$$

$$Q_1 = 53.5 + \left(\frac{10.25 - 5}{11} \right) 9$$

$$Q_1 = 53.5 + (0.25)9$$

$$Q_1 = 53.5 + (0.48)q$$

$$Q_1 = 53.5 + 4.32$$

$$Q_1 = 57.82 //$$

Work 3

$$Q_2 = Lr + \left(\frac{BN - Fcu}{4} \right) i$$

$$\frac{3 \times 41}{4} = 123 = 30.75$$

$$Q_2 = 71.5 + \left(\frac{30.75 - 25}{11} \right) q$$

$$Q_2 = 71.5 + \left(\frac{5.75}{11} \right) q$$

$$Q_2 = 71.5 + (0.41)q$$

$$Q_2 = 71.5 + 5.69$$

$$Q_2 = 77.19 //$$

7. Deciles 3 y 7

Decal 3

$$D_2 = Lr + \left(\frac{N_3 - Fcu}{10} \right) i$$

$$\frac{3 \times 41}{10} = 123 = 12.3$$

$$D_3 = 53.5 + \left(\frac{12.3 - 5}{11} \right) q$$

$$D_3 = 53.5 + \left(\frac{7.3}{11} \right) q$$

$$D_3 = 53.5 + (0.66)9$$

$$D_3 = 53.5 + 5.94$$

$$D_3 = 59.44 //$$

Dec 1 7

$$D_7 = 71.5 + \left(\frac{78.7 - 75}{10} \right) 9$$

$$\frac{78.7 - 75}{10} = \frac{3.7}{10} = 0.37$$

$$D_7 = 71.5 + (0.37)9$$

$$D_7 = 71.5 + 3.33$$

$$D_7 = 74.83 //$$

$$D_7 = 71.5 + 3.34$$

$$D_7 = 74.84 //$$

8. Percentajes 75 y 90

$$D_{75} = 71.5 + \left(\frac{75 - 75}{100} \right) 9$$

$$\frac{75 - 75}{100} = \frac{0}{100} = 0$$

$$D_{75} = 71.5 + (0)9$$

$$D_{75} = 71.5 + 0$$

$$D_{75} = 71.5 //$$

$$D_{75} = 71.5 + 0$$

$$D_{75} = 71.5 //$$

$$P_{90} = L_{vi} + \left(\frac{90N - F_{ad}}{F} \right) i$$

$$\frac{90 \times 41}{100} = \frac{3690}{100} = 36.9$$

$$P_{90} = 71.5 + \left(\frac{36.9 - 25}{14} \right) 9$$

$$P_{90} = 71.5 + \left(\frac{11.9}{14} \right) 9$$

$$P_{90} = 71.5 + (0.85) 9$$

$$P_{90} = 71.5 + 7.65$$

$$P_{90} = 79.15 //$$

9) Desviación Media Estándar y Coeficiente de variación o dispersión.

Desviación Media

$$D.M. = \frac{\sum Fd}{N}$$

$$D.M. = \frac{360.98}{41}$$

$$D.M. = 9.05 //$$

Desviación Estándar:

$$S = \sqrt{\frac{\sum F(XS - X)^2}{N}}$$

$$S = \sqrt{\frac{5,268.09}{41}}$$

$$S = \sqrt{128.37}$$

$$S = 11.33 //$$

Coefficiente de Variación o dispersión

$$V = \frac{S}{\bar{x}} \times 100$$

$$V = \frac{11.23}{66.78} \times 100$$

$$V = 16.97\%$$

La media es bastante representativa.

10) Construya un diagrama de sectores.

Puntajes Obtenidos en un Exámen de Estudios Sociales por 41 alumnos.

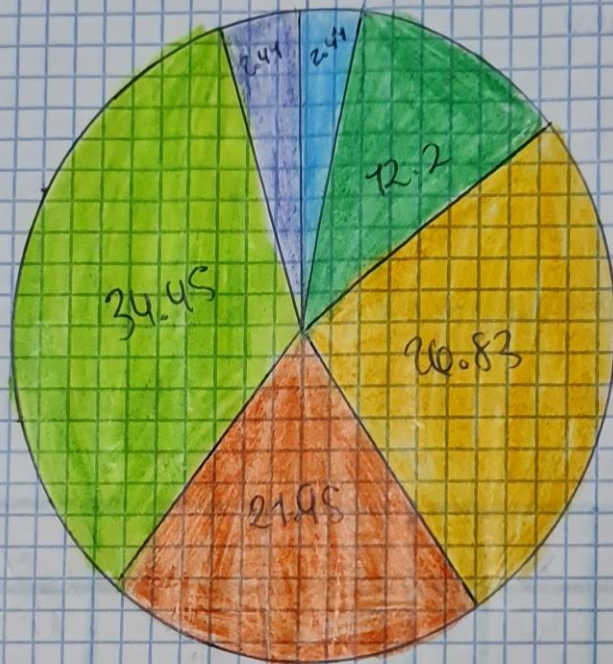
Límites Apar.	xs	F	Fr	Grados	%
45 - 53	49	5	0.1220	44	12.2
54 - 62	58	11	0.2683	97	26.83
63 - 71	67	9	0.2195	79	21.95
72 - 80	76	14	0.3415	123	34.15
81 - 89	85	1	0.0244	9	2.44
90 - 98	94	0	0	0	0
99 - 107	103	1	0.0244	9	2.44

41

361

100

"Puntajes Obtenidos en un Exámen de Estudios Sociales por 41 alumnos."



 = 49

 = 58

 = 67

 = 76

 = 85

 = 103



Puntajes obtenidos en un examen de Estados Unidos por 41 Alumnos.

k	$L-A$	Gr	GrS	x_j	F	F_0	$F \times S$	$ d = x_j - \bar{x} $	$ F d $	$(x_j - \bar{x})$	$F(x_j - \bar{x})^2$
1	45-52	44.5	53.5	49	5	5	245	17.78	88.9	316.13	1,580.65
2	54-62	53.5	62.5	58	11	16	638	8.78	96.88	77.09	847.99
3	63-71	62.5	71.5	67	9	25	603	0.22	1.98	0.05	0.45
4	72-80	71.5	80.5	76	14	39	1,004	9.22	129.08	85.01	1,190.14
5	81-89	80.5	89.5	85	1	40	85	18.22	18.22	331.97	331.97
6	90-98	89.5	98.5	94	0	40	0	27.22	0	740.93	0
7	99-103	98.5	107.5	103	1	41	103	30.22	36.22	7,311.89	1,311.89
							2,158		570.48		5,203.01

$d = Gr - L$

$d = Gr - L$

$d = Gr - L$