

SEMANA 8.

Puntos obtenidos en un examen de Estudios Sociales por 41 alumnos

1 Ordenar Datos

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 - Calcular 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 - Calcular R

$$R = 99 - 45 + 1$$

$$R = 54 + 1$$

$$R = 55$$

4 - Calcular I

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

$$i = \frac{55}{6.36}$$

$$i = 8.65$$

$$i = 8$$

TABLA DE DATOS CON INTERVALOS

L-A	LRI	LRS	XS	f	fa	fxS
45-52	44.5	52.5	48.5	5	5	242.5
53-60	52.5	60.5	56.5	8	13	452
61-68	60.5	68.5	64.5	10	23	645
69-76	68.5	76.5	72.5	12	35	870
77-84	76.5	84.5	80.5	5	40	402.5
85-92	84.5	92.5	88.5	0	40	0
93-100	92.5	100.5	96.5	1	41	96.5
				41		2,708.5

$d = (XS - \bar{x})$	$f d $	$(XS - \bar{x})^2$	$f(XS - \bar{x})^2$
17.56	87.8	308.35	1541.45
9.56	76.48	91.39	31.12
1.56	15.6	2.43	24.3
6.44	77.28	41.47	497.64
14.44	72.2	208.51	1042.55
22.44	0	503.55	0
30.44	30.44	926.59	926.59
359.8		4,763.95	

1 - Media aritmética.

$$\bar{x} = \frac{2708.5}{41}$$

$$\bar{x} = 66.06$$

2 - Mediana y Moda.

$$Md = 68.5 + \left(\frac{20.5 - 23}{12} \right) 8$$

$$Md = 68.5 + (0.21) 8$$

$$Md = 68.5 + 1.68$$

$$Md = 70.18$$

3 - Moda

$$\Delta 1 = 12 - 10 = 2$$

$$\Delta 2 = 12 - 5 = 7$$

$$Mo = 68.5 + \left(\frac{2}{2+7} \right) 8$$

$$Mo = 68.5 + \left(\frac{2}{9} \right) 8$$

$$Mo = 70.26$$

$$Mo = 68.5 + (0.22) 8$$

$$Mo = 68.5 + 1.76$$

QUARTILES

$$Q_1 = 68.5 + \left(\frac{10.25 - 23}{12} \right) 8$$

$$Q_1 = 68.5 + \left(\frac{12.75}{12} \right) 8$$

$$Q_1 = 68.5 + (1.06) 8$$

$$Q_1 = 68.5 + 8.48$$

$$Q_1 = 76.98$$

$$Q_3 = 76.5 + \left(\frac{30.75 - 35}{5} \right) 8$$

$$Q_3 = 76.5 + \left(\frac{8.25}{5} \right) 8$$

$$Q_3 = 76.5 + (0.85) 8$$

$$Q_3 = 76.5 + 6.80$$

$$Q_3 = 83.30$$

DECIL

$$D_3 = 60.5 + \left(\frac{12.3 - 13}{10} \right) 8$$

$$D_3 = 60.5 + \left(\frac{0.7}{10} \right) 8$$

$$D_3 = 60.5 + (0.07) 8$$

$$D_3 = 60.5 + 0.56$$

$$D_3 = 61.06$$

$$D_7 = 68.5 + \left(\frac{12.3 - 23}{12} \right) 8$$

$$D_7 = 68.5 + \left(\frac{10.7}{12} \right) 8$$

$$D_7 = 68.5 + (0.89) 8$$

$$D_7 = 68.5 + 7.12$$

$$D_7 = 75.62$$

PERCENTILES

$$P_{75} = 76.5 + \left(\frac{30.75 - 35}{5} \right) 8$$

$$P_{75} = 76.5 + \left(\frac{4.25}{5} \right) 8$$

$$P_{75} = 76.5 + (0.85) 8$$

$$P_{75} = 76.5 + 6.8$$

$$P_{75} = 83.3$$

$$P_{90} = 84.5 + \left(\frac{36.9 - 40}{0} \right) 8$$

$$P_{90} = 84.5 + \left(\frac{3.1}{0} \right) 8$$

$$P_{90} = 84.5 + 24.8$$

$$P_{90} = 109.3$$

$$P_{90} =$$

$$DM = \frac{359.8}{41}$$

$$DM = 8.78$$

$$S = \sqrt{\frac{4763.95}{41}}$$

$$S = \sqrt{116.19}$$

$$S = 10.78$$

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

$$V = \frac{10.78}{8.78} \times 100 =$$

$$V = 122.78\%$$