



PASIÓN POR EDUCAR

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Nombre del profesor:

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Nombre del trabajo:

Ejercicios.

Materia:

Bioestadística.

Grado: “4”

Grupo: “B”

PASIÓN POR EDUCAR

Comitán de Domínguez Chiapas a 4 de diciembre del 2020

Nombre: Vanessa Monserrat Gomez Ruiz
 "Datos agruados" "ejercicio 1"

50	49	25	50	47
29	46	34	48	25
20	33	49	40	33
31	39	43	43	35
28	23	44	44	31

Rango = $\frac{\# \text{ mayor} - \# \text{ Menor}}{\text{Intervalo}}$

Rango = $\frac{50 - 20}{6}$

Rango = $\frac{30}{6}$

Rango = 5

Intervalos	f _i	% f _i	F _{ia}	% F _{ia}	$\sqrt{x^2}$	f _i √x	x ²	F _i × √x
20-25	3	12%	3	12%	22.5	67.5	506.25	1518.75
25-30	4	16%	7	28%	27.5	110	756.25	3025
30-35	5	20%	12	48%	32.5	162.5	1056.25	5281.25
35-40	2	8%	14	56%	37.5	75	1406.25	2812.25
40-45	4	16%	18	72%	42.5	170	1806.25	7725
45-50	7	28%	25	100%	47.5	332.5	2256.25	15193.75

= 25

Media $\bar{x} = \frac{\sum F_i x_i}{n}$ Mediana = $2i + \frac{N}{2} - f_{i0} - 1 - a_i$ $\frac{\sum F_i \sqrt{x}}{2} = \frac{917.5}{2} = 458.75$ $\sum F_i x^2 = 35656.25$

Media = $\frac{917.5}{25}$ Mediana = $\frac{35 + 12.5 - 12.5}{2}$

Media = 36.7 Mediana = 36.27

Moda = $\frac{2i + F_i - F_{i-1}}{F_i - F_{i-1} + F_i + F_{i+1}}$

Moda = $\frac{457.7 - 4}{(7-4) + 7-5}$

Moda = 46.5

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

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Varianza = $\frac{35656.25 - (917.5)^2}{25}$

Varianza = 413.35

S = $\sqrt{413.3}$

S = 20.33

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"Datos agrupados" "ejercicio 2"

80	75	71	80	71	44
38	56	80	42	68	43
70	40	75	41	53	54
78	42	66	45	64	58
55	56	73	56	41	64
38	67	79	44	44	38

Rango = $\frac{\# \text{ Mayor} - \# \text{ Menor}}{7}$

Rango = $\frac{80 - 38}{7}$

Rango = $\frac{42}{7}$

Rango = Amplitud.

Intervalos	f_i	% f_i	$F_{i.a}$	% $F_{i.a}$	$\sqrt{x^2}$	$F_i \cdot \sqrt{x}$	x^2	$F_i \cdot x^2$
38-44	8	22.22%	8	22.22%	41	328	1681	13448
44-50	5	13.88%	13	36.11%	47	235	2209	11045
50-56	3	8.33%	16	44.44%	53	159	2809	8427
56-62	4	11.11%	20	55.55%	59	236	3481	13924
62-68	4	11.11%	24	66.66%	65	260	4225	16900
68-74	5	13.88%	29	80.55%	71	355	5041	25205
74-80	7	19.44%	36	100%	77	2772	5929	41503
	=36							

$\sum F_i \cdot \bar{x}_i = 4345$ $\sum F_i \cdot x_i^2 = 130452$

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"Ejercicio 2"

$$\sum F_i = 36$$

$$\sum F_i \cdot \bar{x}_i = 2132$$

$$\sum F_i \cdot \bar{x}_i^2 = 130452$$

$$\text{Media} = \frac{\sum F_i \cdot \bar{x}_i}{n}$$

$$\text{Media} = \frac{2132}{36}$$

$$\text{Media} = 59.22 //$$

$$\text{Mediana} = L_0 + \frac{N}{2} - F_{i-1} - 1 - a_i - \frac{n}{2} = \frac{36}{2} = 18$$

$$\text{Mediana} = \frac{56 + 18 - 16 \cdot 6}{4}$$

$$\text{Mediana} = 59.$$

$$\text{Moda} = \frac{L_0 + F_i - F_{i-1} - 1}{F_i - F_{i-1} - 1 + F_i + F_{i+1}}$$

$$\text{Moda} = \frac{38 + 8 \cdot 0 \cdot 6}{(8-0)(8-5)}$$

$$\text{Moda} = 42.36$$

$$\text{Varianza} = \frac{\sum F_i \cdot \bar{x}_i^2 - \frac{(\sum F_i \cdot \bar{x}_i)^2}{n}}{n-1}$$

$$\text{Varianza} = \frac{130452 - \frac{(2132)^2}{36}}{35} \cdot 6$$

$$\text{Varianza} = 718.32 //$$

$$S = \sqrt{718.32}$$

$$S = 26.80 //$$

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Ejercicio 1

$$N = 45000$$

$$P = 0.5$$

$$q = 1 - p = 1 - 0.5 = 0.5$$

$$B = 3\% = 0.03$$

$$D = \frac{B^2}{4} = \frac{(0.03)^2}{4} = 0.000225$$

$$n = \frac{N \cdot P \cdot q}{(N-1)D + P \cdot q}$$

$$n = \frac{45000 (0.5) (0.5)}{(44999) + (0.5) (0.000225)} = 1084.$$

$$n = 1085$$

Ejercicio 2.

$$n = 20000$$

$$P = 72.5\% = 0.725$$

$$q = 1 - 0.725 = 0.275$$

$$B = 5\% = 0.05$$

$$D = \frac{B^2}{4} = \frac{(0.05)^2}{4} = 0.000625$$

$$n = \frac{N \cdot P \cdot q}{(N-1)D + P \cdot q}$$

$$n = \frac{20000 (0.725) (0.275)}{19999 (0.000625) + 0.725 (0.275)}$$

$$n = 319.$$

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Ejercicio 3

$$N = 50000$$

$$p = 76\% = 0.76$$

$$q = 1 - p = 1 - 0.76 = 0.24$$

$$B = 4\% = 0.04$$

$$D = \frac{B^2}{4} = \frac{(0.04)^2}{4} = 0.0004$$

$$n = \frac{N \cdot p \cdot q}{(N-1)D + p \cdot q}$$

$$n = \frac{50000 (0.76) (0.24)}{49999 (0.0004) + (0.76) (0.24)} = 951.88$$

$$n = 452$$

Ejercicio 4

$$n = 10000$$

$$p = 0.5$$

$$q = 1 - p = 1 - 0.5 = 0.5$$

$$B = 5\% = 0.05$$

$$D = \frac{B^2}{4} = \frac{(0.05)^2}{4} = 0.000625$$

$$n = \frac{N \cdot p \cdot q}{(N-1)D + p \cdot q}$$

$$n = \frac{10000 (0.5) (0.5)}{9999 (0.000625) + (0.5) (0.5)} = 384.65$$

$$n = 385$$

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Ejercis: 5

$$N = 25000$$

$$P = 55\% = 0.55$$

$$q = 1 - P = 1 - 0.55 = 0.45$$

$$B = 2\% = 0.02$$

$$D = \frac{B^2}{4} = \frac{(0.02)^2}{4} = 0.0001$$

$$n = \frac{N \cdot P \cdot q}{(N-1)D + P \cdot q}$$

$$n = \frac{25000(0.55)(0.45)}{24999(0.0001) + (0.55)(0.45)}$$

$$n = 2253$$

Ejercis: 06

$$N = 15000$$

$$P = 66\% = 0.66$$

$$q = 1 - P = 1 - 0.66 = 0.34$$

$$B = 3\% = 0.03$$

$$D = \frac{B^2}{4} = \frac{(0.03)^2}{4} = 0.000225$$

$$n = \frac{N \cdot P \cdot q}{(N-1)D + P \cdot q}$$

$$n = \frac{15000(0.66)(0.34)}{24999(0.000225) + (0.66)(0.34)} = 985.5$$

$$n = 956$$