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Albores**

**Nombre del trabajo: TRABAJO
Materia: Bioestadística**

Grado: 4 cuatrimestre

Grupo: B

Comitán de Domínguez Chiapas a 30 de noviembre del 2020.

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

• Rango = $\frac{\text{No. Mayor} - \text{No. Menor}}{\text{No. Intervalos.}}$

$$\text{Rango} = \frac{50 - 20}{6} = \frac{30}{6} = 5 //$$

Intervalo	f_i	% f_i	f_{ia}	% f_{ia}	\bar{x}_i	$f_i \bar{x}_i$
20 - 25	## 3	12%	3	12%	22.5	67.5
25 - 30	### 4	16%	7	28%	27.5	110
30 - 35	#### 5	20%	12	48%	32.5	162.5
35 - 40	# 2	8%	14	56%	37.5	75
40 - 45	### 4	16%	18	72%	42.5	170
45 - 50	##### 7	28%	25	100%	47.5	332.5

$$\sum f_i = 25$$

$$\bar{x} = \frac{\sum f_i \bar{x}_i}{n} = \frac{917.5}{25} = 36.7$$

$$\sum f_i \bar{x}_i = 917.5$$

\bar{x}_i^2	$f_i \bar{x}_i^2$
506.25	1,518.75
756.25	3,025
1,056.25	5,281.25
1,406.25	2,812.5
1,806.25	7,225
2,256.25	15,793.75

$$Me = L_i + \frac{\frac{n}{2} - f_{i-1}}{f_i} \cdot a_i$$

$$\frac{n}{2} = \frac{25}{2} = 12.5$$

$$Me = 35 + \frac{12.5 - 12}{2} \cdot 5 = 36.25$$

$$Mo = L_i + \frac{f_i - f_{i-1}}{(f_i - f_{i-1}) + (f_i - f_{i+1})} \cdot a_i$$

$$Mo = 45 + \frac{7 - 4}{(7 - 4) + (7 - 0)} \cdot 5 = 46.5 //$$

$$s^2 = \frac{\sum f_i \bar{x}_i^2 - (\sum f_i \bar{x}_i)^2}{n - 1}$$

$$s^2 = \frac{35,656.25 - \frac{(917.5)^2}{25}}{24} = \frac{82.66}{24}$$

Desviación estándar = 9.09 //

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80 75 71 80 71 44
 38 56 80 42 68 45
 70 40 75 41 53 54
 78 42 66 45 64 58
 55 56 73 56 41 64
 38 67 79 49 44 38

$$\text{Rango} = \frac{\text{No. Mayor} - \text{No. menor}}{\text{No. Intervalos}}$$

$$\text{Rango} = \frac{80 - 38}{7} = \frac{42}{7} = 6 //$$

Intervalo	f _i	% f _i	f _i a	% f _i a	\bar{x}_i	f _i \bar{x}_i
38 - 44	8	22.22%	8	22.22%	41	328
44 - 50	5	13.88%	13	36.11%	47	235
50 - 56	3	8.33%	16	44.44%	53	159
56 - 62	4	11.11%	20	55.55%	59	236
62 - 68	4	11.11%	24	66.66%	65	260
68 - 74	5	13.88%	29	80.55%	71	355
74 - 80	7	19.44%	36	100%	77	539

$$\sum f_i = 36$$

$$\sum f_i \bar{x}_i = 2,112$$

$$\bar{x} = \frac{\sum f_i \bar{x}_i}{n} = \frac{2,112}{36} = 58.66$$

$$M_e = L_i + \frac{\frac{n}{2} - f_{i-1}}{f_i} \cdot a_i \quad \frac{n}{2} = \frac{36}{2} = 18$$

$$M_e = 56 + \frac{18 - 16}{4} \cdot 6 = 59 //$$

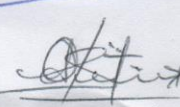
$$M_o = L_i + \frac{f_i - f_{i-1}}{(f_i - f_{i-1}) + (f_i - f_{i+1})} \cdot a_i$$

$$M_o = 38 + \frac{8 - 0}{(8 - 0) + (8 - 5)} \cdot 6 = 42.36 //$$

$$s^2 = \frac{\sum f_i \bar{x}_i^2 - \frac{(\sum f_i \bar{x}_i)^2}{n}}{n - 1}$$

$$s^2 = \frac{130,452 - \frac{(2,112)^2}{36}}{35} = 187.08 //$$

Desviación estándar = 13.67 //

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$$q = 1 - P$$

$$D = \frac{B^2}{4}$$

$$n = \frac{NPq}{(N-1)D + Pq}$$

q = Probabilidad que no ocurra un evento

P = Probabilidad que si ocurra un evento

B = Error de estimación.

n = Muestra.

N = Población.

• Ejercicio 1:

$$N = 45000$$

$$P = 0.5$$

$$q = 1 - 0.5 = 0.5 //$$

$$B = 3\% = 0.03 //$$

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

$$n = \frac{(45000)(0.5)(0.5)}{(44999)(0.000225) + (0.5)(0.5)} = 1,084.36 //$$

• Ejercicio 2:

$$N = 20000$$

$$P = 72.5\% = 0.725$$

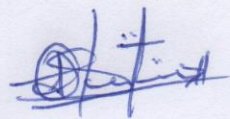
$$q = 1 - 0.725 = 0.275$$

$$B = 5\% = 0.05$$

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

$$n = \frac{(20000)(0.725)(0.275)}{(19999)(0.000625) + (0.725)(0.275)} = 314.007 //$$

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3. Ejercicio

$$N = 50000$$

$$P = 76\% = 0.76$$

$$q = 1 - 0.76 = 0.24$$

$$B = 4\% = 0.04$$

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

$$n = \frac{(50000)(0.76)(0.24)}{(49999)(0.0004) + (0.76)(0.24)} = \underline{451.887}$$

4. Ejercicio.

$$N = 10000$$

$$P = 0.5$$

$$q = 0.5$$

$$B = 5\% = 0.05$$

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

$$n = \frac{(10000)(0.5)(0.5)}{(9999)(0.000625) + (0.5)(0.5)} = \underline{384.652}$$

5. Ejercicio

$$N = 25000$$

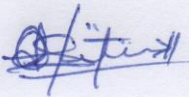
$$P = 55\% = 0.55$$

$$q = 1 - 0.55 = 0.45$$

$$B = 2\% = 0.02$$

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

$$n = \frac{(25000)(0.55)(0.45)}{(24999)(0.0001) + (0.55)(0.45)} = \underline{2,252.12}$$

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6. Ejercicio

$$N = 15000$$

$$P = 66\% = 0.66$$

$$q = 1 - 0.66 = 0.34$$

$$B = 3\% = 0.03$$

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

$$n = \frac{(15000)(0.66)(0.34)}{(14999)(0.000225) + (0.66)(0.34)} = 935.21 //$$

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