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Materia Estadística descriptiva

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Albores

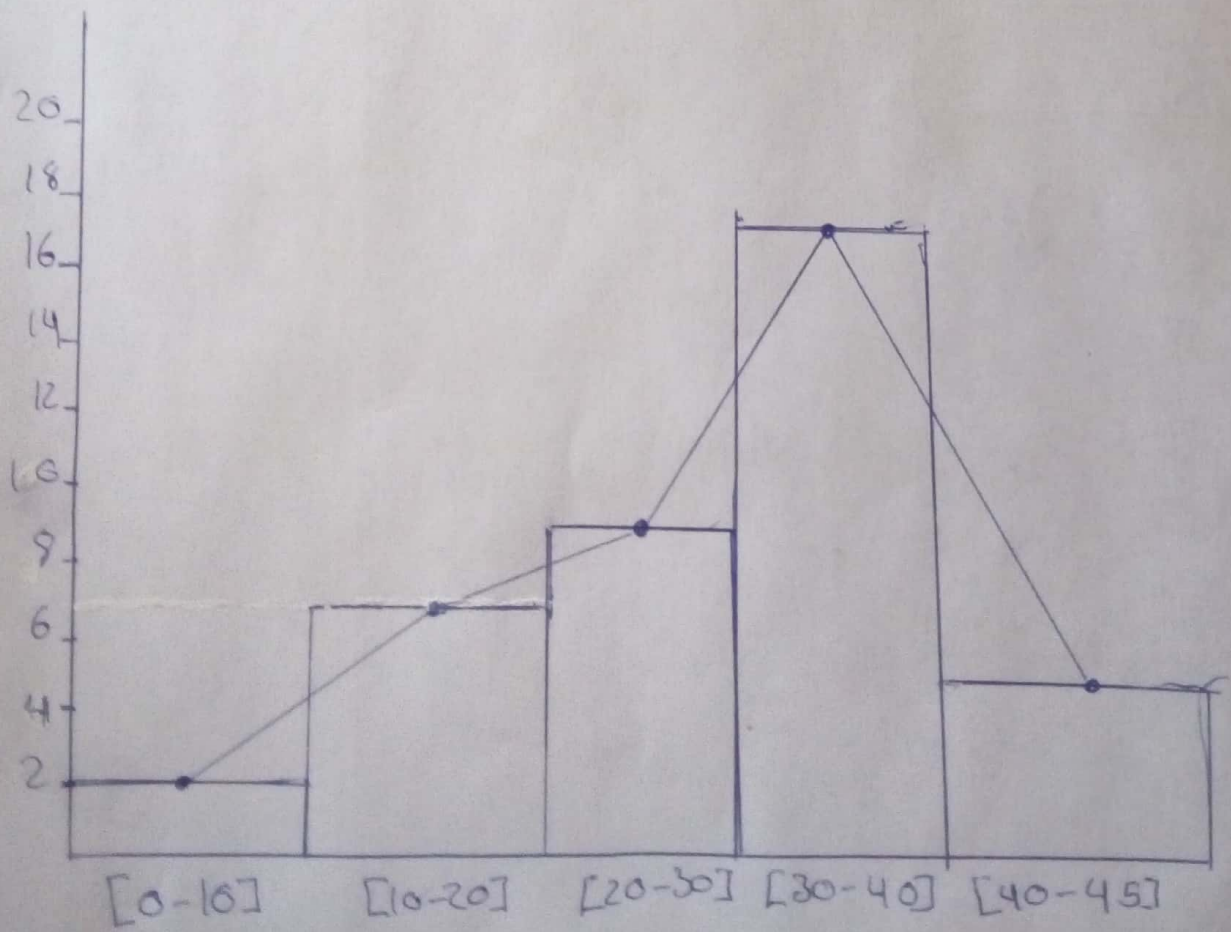
Fecha: 22/05/2020

Los alumnos de una clase han obtenido las sgtes. puntuaciones sobre 50, en un examen de Física.

32, 35, 28, 38, 44, 48, 15, 32, 3, 15, 24, 28, 33, 35, 38, 42, 23, 38, 36, 34, 29, 25, 17, 7, 34, 36, 39, 44, 31, 26, 20, 11, 13, 22, 27, 47, 39, 37, 34 y 13

Ratos	f_i	F_{ac}	M_c	$f_i \cdot M_c$	F_a	F_r
[0-10]	2	2	5	10	0.05	5%
[10-20]	7	9	15	105	0.175	17.5%
[20-30]	9	18	25	225	0.225	22.5%
[30-40]	17	35	35	595	0.425	42.5%
[40-45]	5	40	45	225	0.125	12.5%
					$\frac{f_i}{n}$	$\frac{f_i}{n} \cdot 100$

$n = 40$



Promedio (\bar{X})

$$\bar{X} = \frac{\sum M_c \cdot f_a}{n} = \frac{10 + 105 + 225 + 595 + 225}{40} = \frac{1160}{40} = 29$$

Moda (M_o)

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

$$M_o = 30 + \left(\frac{5}{9 + 5} \right) \cdot 10 = 33.57$$

Mediana (M)

$$L_i + \left(\frac{\frac{N}{2} - (f_{ac} - 1)}{f_i} \right) \cdot a_i$$

$$M = 30 + \left(\frac{20 - 18}{17} \right) \cdot 10 = 31.17$$

$$P_{70} = \frac{n \cdot 70}{100} = \frac{40 \cdot 70}{100} = 28 \leq f_{ac}$$

$$= L_i + \left(\frac{\frac{X_n}{100} - (f_{ac} - 1)}{f_i} \right) \cdot a_i$$

$$30 + \left(\frac{28 - 18}{17} \right) \cdot 10$$

$$P_{70} = 35.88$$

$$Q_3 = \frac{N \cdot 75}{100} = \frac{40 \cdot 75}{100} = 30 \leq f_{ac}$$

$$Q_3 = L_i + \left(\frac{Q_3 - (f_{ac} - 1)}{f_i} \right) \cdot a_i$$

$$30 + \left(\frac{30 - 18}{17} \right) \cdot 10$$

$$Q_3 = 37.05$$