

Datos Agrupados.

	Intervalos	Marca de clase x	Frecuencia absoluta f	Frecuencia acumulada F	$m_i f_i$	$ m_i - \bar{x} $	$ m_i - \bar{x} f_i$
1	[0-4)	2	3	3	6	7.8	23.4
2	[4-8)	6	5	8	30	3.8	19
3	[8-12)	10	6	14	60	0.2	1.2
4	[12-16)	14	4	18	56	4.2	16.8
5	[16-20)	18	3	21	54	8.2	24.6
	Total		21		206		85

Media.

$$M = \frac{\sum f_i m_i}{\sum f_i} = M = \frac{(2)(3) + (6)(5) + (10)(6) + (14)(4) + (18)(3)}{21}$$

$$M = \frac{6 + 30 + 60 + 56 + 54}{21}$$

$$M = \frac{206}{21} = 9.80$$

Moda.

$$\hat{X} = L_i + \left(\frac{d_1}{d_1 + d_2} \right) I = L_i = \frac{8 + 8}{2} \quad I = 12 - 8$$

$$L_i = 8 \quad I = 4$$

$$\hat{X} = 8 + \left(\frac{1}{1+2} \right) 4$$

$$d_1 = 6 - 5 = 1$$

$$\hat{X} = 8 + \frac{1}{3} (4)$$

$$d_2 = 6 - 4 = 2$$

$$\hat{X} = 9.33$$

Desviación media

$$DM = \frac{\sum |(m_i - \bar{x})| f_i}{\sum f_i} = \frac{85}{21} = 4.05 \Rightarrow Dm$$

Mediana.

$$n = 21$$

$$\frac{n}{2} = 10.5 \quad me = 8 + \frac{10.5 - 8}{6} (4)$$

$$8 + \frac{2.5}{6} (4)$$

$$me = 9.66$$

Varianza.

$$\sigma^2 = \frac{\sum (x_i - \bar{x})^2}{n}$$

$$\sigma^2 = \frac{(7.8)^2 + (3.8)^2 + (0.2)^2 + (4.2)^2 + (8.2)^2}{21}$$

$$\sigma^2 = 96.16$$

D. Estándar

$$\sqrt{\sigma^2} = \sqrt{\frac{\sum (x_i - \bar{x})^2}{n}}$$

$$\sqrt{\sigma^2} = \sqrt{96.16} = 9.80$$