

# ESTADISTICA



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# Datos No Agrupados

## Desarrollo de la actividad:

Se realiza una encuesta sobre el tiempo que les lleva los trabajadores llegar a la empresa, el objetivo es mejorar el horario de manera general. Los datos recaudados fueron los siguientes.

20, 25, 13, 12, 45, 75, 8, 8, 20, 25, 20, 32, 16, 25, 12, 8, 3, 25, 40  
35, 45, 15, 15, 12, 8, 16, 25, 20, 35, 5, 8, 20, 25, 13, 12, 45, 75  
8, 8, 20, 25, 20, 32, 16, 25, 8, 5, 25, 40, 35, 45, 15, 15, 12

1.- Determina la media, mediana y moda

Media:  $1.221 \div 55 = 22.2$        $\bar{x} = 22.2$

Mediana:

8, 8, 8, 6, 6, 6, 6, 8, 8, 8, 8, 12, 12, 12, 12, 12, 12, 13, 13, 15, 15, 15, 15, 16, 16, 16  
20, 20, 20, 20, 20, 20, 20, 20, 25, 25, 25, 25, 25, 25, 25, 25, 25, 25, 32, 32,  
35, 35, 35, 40, 40, 45, 45, 45, 45, 75, 75  
Me = 20

Moda:

5, 5, 5, 6, 6, 6, 6, 8, 8, 8, 8, 12, 12, 12, 12, 12, 12, 12, 13, 13, 15, 15, 15, 15, 16,  
16, 16, 20, 20, 20, 20, 20, 20, 20, 20, 25, 25, 25, 25, 25, 25, 25, 25, 25, 25,  
32, 32, 35, 35, 35, 40, 40, 45, 45, 45, 45, 75, 75  
MO = 25

2: Determina el Conjunto de la población al 30%, 55% y 75%  
(Tema de Cuantiles)

5, 5, 5, 6, 6, 6, 6, 8, 8, 8, 8, 12, 12, 12, 12, 12, 12, 13, 13, 15, 15, 15, 15, 16, 16, 16, 20, 20, 20, 20, 20, 20, 20, 20, 25, 25, 25, 25, 25, 25, 25, 25, 25, 25, 32, 32, 35, 35, 35, 40, 40, 45, 45, 45, 45, 75, 75

Q<sub>1</sub> 30% → (12)

Q<sub>2</sub> 55% → (20)

Q<sub>3</sub> 75% → (25)

3: Calcula la Varianza y la desviación estándar

5, 5, 5, 6, 6, 6, 6, 8, 8, 8, 8, 12, 12, 12, 12, 12, 12, 13, 13, 15, 15, 15, 15, 16, 16, 16, 20, 20, 20, 20, 20, 20, 20, 20, 25, 25, 25, 25, 25, 25, 25, 25, 25, 25, 32, 32, 35, 35, 35, 40, 40, 45, 45, 45, 45, 75, 75

$$S^2 = \frac{\sum (x - \bar{x})^2}{n-1} \quad \bar{x} = \frac{1,221}{55} = 22.2$$

$$S^2 = \frac{(5-22.2)^2 + (6-22.2)^2 + (8-22.2)^2 + (12-22.2)^2 + (13-22.2)^2 + (15-22.2)^2 + (16-22.2)^2 + (20-22.2)^2 + (25-22.2)^2 + (32-22.2)^2 + (35-22.2)^2 + (40-22.2)^2 + (45-22.2)^2 + (75-22.2)^2}{54}$$

$$S^2 = \frac{295.84 + 262.44 + 201.64 + 104.04 + 84.64 + 51.84 + 38.44 + 4.84 + 7.84 + 96.04 + 163.84 + 316.84 + 519.84 + 2,787.84}{54}$$

$$S^2 = \frac{4,935.96}{54} \quad S^2 = 91.40 \quad S = \sqrt{91.40}$$

$$S = 9.56$$

$$S^2 = \frac{12,936.8}{54} = 239.57$$

$$S = \sqrt{239.57}$$

$$S = 15.47$$



4.- Construye una tabla de frecuencias respetando rango, intervalos, amplitud, así como las diferentes frecuencias (absoluta, relativa, acumulada y porcentajes)

5, 5, 5, 6, 6, 6, 6, 8, 8, 8, 8, 12, 12, 12, 12, 12, 12, 13, 13, 15, 15, 15, 15, 16, 16, 16, 20, 20, 20, 20, 20, 20, 20, 20, 25, 25, 25, 25, 25, 25, 25, 25, 25, 32, 32, 35, 35, 35, 40, 40, 45, 45, 45, 45, 75, 75

$$R = X_{\max} - X_{\min}$$

$$R = 75 - 5 \quad R = 70$$

$$K = 1 + 3.322 \log(n)$$

$$K = 1 + 3.322 \log(55)$$

$$K = 6.78$$

$$K = 7$$

$$A = \frac{R}{K} = \frac{70}{7}$$

$$A = 10$$

$L_i - L_s$	$X$	$f$	$F$	$f_r$	%
5 - 15	10	19	19	0.345	34.5
15 - 25	20	14	33	0.254	25.4
25 - 35	30	11	44	0.2	20
35 - 45	40	5	49	0.090	9.0
45 - 55	50	4	53	0.072	7.2
55 - 65	60	0	53	0	0
65 - 75	70	2	55	0.036	3.6