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**Nombre del trabajo: dispersión
medidas de**

PASIÓN POR EDUCAR

**Materia: Grado: segundo cuatrimestre,
grupo único**

EJERCICIO 1 DATOS NO AGRUPADOS. CUARTILES (Q)

x_1 50 x_2 50 x_3 52 x_4 53 x_5 55 x_6 56 x_7 56 x_8 56 x_9 56 x_{10} 58 x_{11} 58 x_{12} 58 x_{13} 58 x_{14} 59 x_{15} 60 x_{16} 60
 x_{17} 60 x_{18} 61 x_{19} 63 x_{20} 63 x_{21} 63 x_{22} 63 x_{23} 63 x_{24} 64 x_{25} 64 x_{26} 64 x_{27} 65 x_{28} 65 x_{29} 68 x_{30} 68
 Q1 Q2 Q3

Determina =

$Q_1 = 56$
 $Q_3 = 63$
 $D_5 = 59$
 $D_8 = 64$

Posición $Q_k = \frac{kn}{4}$

$Q_1 = \frac{56+56}{2} = \frac{112}{2} = 56$

$Q_2 = \frac{59+60}{2} = \frac{119}{2} = 59.5$

$Q_3 = \frac{63+64}{2} = \frac{127}{2} = 63.5$

Posición (D) $Q_k = \frac{kn}{10}$

$D_5 = \frac{5 \times 30}{10} = \frac{150}{10} = 15 \rightarrow 59$

$D_8 = \frac{8 \times 30}{10} = \frac{240}{10} = 24 \rightarrow 64$

Ejercicio 2

DATOS NO AGRUPADOS - DECILES (D)

x_1 2 x_2 2 x_3 10 x_4 11 x_5 18 x_6 20 x_7 25 x_8 28 x_9 41 x_{10} 43 x_{11} 50 x_{12} 53 x_{13} 75
 3.5 10.5

Determina =

$Q_1 = 10.5$
 $Q_3 = 46.5$
 $D_2 = 10$
 $D_7 = 42$

Posición (Q) $Q_k = \frac{k(n+1)}{4}$

$Q_1 = 1 \frac{(13+1)}{4} = \frac{14}{4} = 3.5 \rightarrow 10.5$

$Q_3 = 3 \frac{(13+1)}{4} = \frac{42}{4} = 10.5 \rightarrow 46.5$

Posición (D) $Q_k = \frac{k(n+1)}{10}$

$D_2 = 2 \frac{(13+1)}{10} = \frac{28}{10} = 2.8 \rightarrow 10$

$D_7 = 7 \frac{(13+1)}{10} = \frac{98}{10} = 9.8 \rightarrow 42$

Ejercicio 3 Datos Agrupados Puntualmente

X	f	F
44	9	9
45	13	22
49	16	38
53	12	50
54	11	61
55	8	69
56	6	75
57	5	80
total	80	

Determina:

$$Q_3 = 14$$

$$D_5 = 53$$

$$D_7 = 54$$

$$P_{45} = 46$$

$$P_{73} = 54$$

$$\frac{Q_k}{\frac{K_n}{4}}$$

$$\frac{D_k}{\frac{K_n}{10}}$$

$$\frac{P_k}{\frac{K_n}{100}}$$

$$Q_3 \quad \frac{3 \times 80}{4} = \frac{240}{4} = 60 \rightarrow 54$$

$$D_5 \quad \frac{5 \times 80}{10} = \frac{400}{10} = 40 \rightarrow 53$$

$$D_7 \quad \frac{7 \times 80}{10} = \frac{560}{10} = 56 \rightarrow 54$$

$$P_{45} \quad \frac{45 \times 80}{100} = \frac{3600}{100} = 36 \rightarrow 49$$

$$P_{73} \quad \frac{73 \times 80}{100} = \frac{5840}{100} = 58.4 \rightarrow 54$$