UNIVERSIDAD DEL SURESTE

LIC. EN ADMINISTRACION DE EMPRESAS

3ER CUATRIMESTRE

DOCENTE

JORGE ENRIQUE ALBORES AGUILAR

MATERIA

ESTADÍSTICA DESCRIPTIVA

TRABAJO

EJERCICIO

ALUMNO

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COMITÁN DE DOMÍNGUEZ, CHIAPAS.

SABADO 13 DE JUNIO

2020

INTERVALOS	f	F
10 – 15	8	8
15 – 20	12	20
20 – 25	3	23
25 – 30	6	29
30 – 35	4	33
35 – 40	10	43
40 – 45	9	52
45 – 50	8	60
50 – 55	7	67

$$= 67$$

PRIMER CUARTIL

$$Q_k = L_i + A \left(\frac{\frac{kn}{4} - F_{i-1}}{F_i - F_{i-1}} \right)$$

Posición $\quad \frac{kn}{4} = \frac{1 \times 67}{4} = 16.75$

$F_{i-1} = 8 \qquad L_i = 15$

$F_i = 20 \qquad A = L_s - L_i = 5$

$$Q_1 = 15 + 5 \left(\frac{16.75 - 8}{20 - 8} \right)$$

$$Q_1 = 15 + 5 \left(\frac{8.75}{12} \right)$$

$$Q_1 = 15 + 3.64$$

$$Q_1 = \boxed{18.64}$$

Segundo Cuartil

$$Q_k = Li + A \left(\frac{\frac{Kn}{4} - Fi - 1}{Fi - Fi - 1} \right)$$

Posición: $\frac{Kn}{4} = \frac{2 \times 67}{4} = 33.5$

$Fi - 1 = 33$ $Li = 35$

$Fi = 43$ $A = Ls - Li = 5$

$$Q_2 = 35 + 5 \left(\frac{33.5 - 33}{43 - 33} \right)$$

$$Q_2 = 35 + 5 \left(\frac{0.5}{10} \right)$$

$$Q_2 = 35 + 0.25$$

$$\boxed{Q_2 = 35.25}$$

Tercer Cuartil

$$Q_k = \left(\frac{\frac{Kn}{4} - Fi - 1}{Fi - Fi - 1} \right)$$

Posición: $\frac{Kn}{4} = \frac{3 \times 67}{4} = 50.25$

$Fi - 1 = 43$ $Li = 40$

$Fi = 52$ $A = Ls - Li = 5$

$$Q_3 = 40 + 5 \left(\frac{50.25 - 43}{52 - 43} \right)$$

$$Q_3 = 40 + 5 \left(\frac{7.25}{9} \right)$$

$$Q_3 = 40 + 4.02$$

$$\boxed{Q_3 = 44.02}$$

Segundo Deciles

$$D_k = Li + A\left(\dfrac{\frac{Kn}{10} - fi-1}{fi - fi-1}\right)$$

$$\frac{Kn}{10} = \frac{2 \times 67}{10} = 13.4$$

$$Fi-1 = 8 \qquad Li = 15$$
$$Fi = 20 \qquad A = Ls - Li = 5$$

$$D_2 = 15 + 5\left(\frac{13.4 - 8}{20 - 8}\right)$$

$$D_2 = 15 + 5\left(\frac{5.4}{12}\right)$$

$$D_2 = 15 + 2.25 \qquad \boxed{D_2 = 17.25}$$

Cuarto Deciles

$$\frac{Kn}{10} = \frac{4 \times 67}{10} = 26.8$$

$$Fi-1 = 23 \qquad Li = 25$$
$$Fi = 29 \qquad A = Ls - Li = 5$$

$$D_4 = 25 + 5\left(\frac{26.8 - 23}{29 - 23}\right)$$

$$D_4 = 25 + 5\left(\frac{3.8}{6}\right)$$

$$D_4 = 25 + 3.16$$

$$\boxed{D_4 = 28.16}$$

Sexto Deciles

$$\frac{kn}{10} = \frac{6 \times 67}{10} = 40.2$$

$Fi - 1 = 33$ $Li = 35$

$Fi = 43$ $A = Ls - Li = 5$

$$D_6 = 35 + 5 \left(\frac{40.2 - 33}{43 - 33} \right)$$

$$D_6 = 35 + 5 \left(\frac{7.2}{10} \right)$$

$$D_6 = 35 + 3.6 \qquad \boxed{D_6 = 38.6}$$

Octavo Deciles

$$\frac{kn}{10} = \frac{8 \times 67}{10} = 53.6$$

$Fi - 1 = 52$ $Li = 45$

$Fi = 60$ $A = Ls - Li = 5$

$$D_8 = 45 + 5 \left(\frac{53.6 - \mathbf{52}}{60 - 52} \right)$$

$$D_8 = 45 + 5 \left(\frac{1.6}{8} \right)$$

$$D_8 = 45 + 1$$

$$D_8 = 46$$

Noveno Deciles

$$\frac{Kn}{10} = \frac{9 \times 67}{10} = 60.3$$

$Fi-1 = 60 \quad Li = 50$

$Fi = \quad 67 \quad A = Ls - Li = 5$

$$Dq = 50 + 5\left(\frac{60.3 - 60}{67 - 60}\right)$$

$$Dq = 50 + 5\left(\frac{0.3}{7}\right)$$

$$Dq = 50 + 0.21 \qquad \boxed{Dq = 50.21}$$

Percentil 9

$$P_K = Li + A \left(\frac{\frac{kn}{100} - Fi - 1}{Fi - Fi - 1} \right)$$

$$\frac{kn}{100} = \frac{9 \times 67}{100} = 6.03$$

$Fi - 1 = 0 \qquad Li = 10$
$Fi = 8 \qquad A = Ls - Li = 5$

$$P_9 = 10 + 5 \left(\frac{6.03 - 0}{8 - 0} \right)$$

$$P_9 = 10 + 5 \left(\frac{6.03}{8} \right)$$

$$P_9 = 10 + 3.76 \qquad \boxed{P_9 = 13.76}$$

Percentil 55

$$\frac{kn}{100} = \frac{55 \times 67}{100} = 36.85$$

$Fi - 1 = 33 \qquad Li = 35$
$Fi = 43 \qquad A = Ls - Li = 5$

$$P_{55} = 35 + 5 \left(\frac{36.85 - 33}{43 - 33} \right)$$

$$P_{55} = 35 + 5 \left(\frac{3.85}{10} \right)$$

$$P_{55} = 35 + 1.92$$

$$\boxed{P_{55} = 36.92}$$

Percentil 69

$$\frac{Kn}{100} = \frac{69 \times 67}{100} = 46.23$$

$$Fi-1 = 43 \qquad Li = 40$$
$$Fi = 52 \qquad A = Ls - Li = 5$$

$$P_{69} = 40+5\left(\frac{46.23-43}{52-43}\right)$$

$$P_{69} = 40+5\left(\frac{3.23}{9}\right)$$

$$P_{69} = 40 + 1.79$$

$$\boxed{P_{69} = 41.79}$$

Percentil 72

$$\frac{kn}{100} = \frac{72 \times 67}{100} = 48.24$$

$$Fi-1 = 43 \qquad Li = 40$$
$$Fi = 52 \qquad A = Ls - Li = 5$$

$$P_{72} = 40+5\left(\frac{48.24-43}{52-43}\right)$$

$$P_{72} = 40+5\left(\frac{5.24}{9}\right)$$

$$P_{72} = 40 + 2.91$$

$$\boxed{P_{72} = 42.91}$$