Jorge Armando López Ramírez

Instrucciones: Complete la siguiente tabla para datos agrupados

datos	fi	fire	mc	fi . mc	fr	fir
15-35	8	8	25	200	0.1666666667	16.66666667
35-55	4	12	45	180	0.0833333333	8.33333333
55-75	12	24	65	780	0.25	25
75-95	8	32	85	680	0.1666666667	16.66666667
95-115	7	39	105	735	0.1458333333	14.58333333
115-135	3	42	125	375	0.0625	6.25
135-155	6	48	145	870	0.125	12.5

Instrucciones:

Dada la siguiente tabla calcule:

Cuartil 1,2,3

Decil 3,7,9

Percentil 40, 57, 78

datos	fi	Fi
25-35	8	8
35-45	4	12
45-55	12	24
55-65	8	32
65-75	7	39
75-85	3	42
85-95	6	48

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Cuartil 1, 2, 3[4]
Decil 3, 7, 9[10]
percentil 40, 57, 78[100]

Datos	FP	FP
25 - 35	8	8
35 - 45	4	12
45 - 55	12	24
55 - 65	8	32
65 - 75	7	39
75 - 85	3	42
85 - 95	6	48

Cuartil 1=

$Qk = Li + A\left(\frac{\frac{kn}{4} - FP-1}{FP - FP-1}\right)$

Posición $= \frac{kn}{4} = \frac{1 \times 48}{4} = 12.$

$Q_1 = Li = 45$

Cuartil 2=

$Qk = Li + A\left(\frac{\frac{kn}{4} - FP-1}{FP - FP-1}\right)$

Posición $= \frac{kn}{4} = \frac{2 \times 48}{4} = 24$

$Q_2 = Li = 55$

Cuartil 3.

$Qk = Li + A\left(\frac{\frac{kn}{4} - FP-1}{FP - FP-1}\right)$

Posición $= \frac{kn}{4} = \frac{3 \times 48}{4} = 36$

FP-1 = 32 Li = 65

FP = 39 A = Ls - Li = 10

$Q_3 = 65 + 10\left(\frac{36 - 32}{39 - 32}\right)$

$Q_3 = 65 + 10\left(\frac{4}{7}\right)$

$Q_3 = 65 + 5.714285714285714285$

$Q_3 = 70.714285714285714285$

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Decil 3.

$D_k = L_i + A\left(\frac{\frac{kn}{10} - F_{i-1}}{F_i - F_{i-1}}\right)$

Posición $= \frac{kn}{10} = \frac{3 \times 48}{10} = 14.4$

$F_{i-1} = 12$ $\quad L_i = 45$

$F_i = 24$ $\quad A = L_s - L_i = 10$

$D_3 = 45 + 10\left(\frac{14.4 - 12}{24 - 12}\right)$

$D_3 = 45 + 10\left(\frac{2.4}{12}\right)$

$D_3 = 45 + 2$

$D_3 = 47$

Decil 7.

$D_k = L_i + A\left(\frac{\frac{kn}{10} - F_{i-1}}{F_i - F_{i-1}}\right)$

Posición $= \frac{kn}{10} = \frac{7 \times 48}{10} = 33.6$

$F_{i-1} = 32$ $\quad L_i = 65$

$F_i = 39$ $\quad A = L_s - L_i = 10$

$D_7 = 65 + 10\left(\frac{33.6 - 32}{39 - 32}\right)$

$D_7 = 65 + 10\left(\frac{1.6}{7}\right)$

$D_7 = 65 + 2.2857142857$

$D_7 = 67.2857142857$

Decil 9

$D_k = L_i + A\left(\frac{\frac{kn}{10} - F_{i-1}}{F_i - F_{i-1}}\right)$

Posición $= \frac{kn}{10} = \frac{9 \times 48}{10} = 43.2$

$F_{i-1} = 42$ $\quad L_i = 85$

$F_i = 48$ $\quad A = L_s + L_i = 10$

$D_3 = 85 + 10\left(\frac{43.2 - 42}{48 - 42}\right)$

$D_3 = 85 + 10\left(\frac{1.2}{6}\right)$

$D_3 = 85 + 2$

$D_3 = 87$

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Percentil 40.

$P_k = L_i + A\left(\frac{\frac{k_n}{100} - F_{i-1}}{F_i - F_{i-2}}\right)$

Posición $= \frac{k_n}{100} = \frac{40 \times 48}{100} = 19.2$

$F_{i-1} = 12$ $L_i = 45$

$F_i = 24$ $A = L_s - L_i = 10$

$P_{40} = 45 + 10\left(\frac{19.2 - 12}{24 - 12}\right)$

$P_{40} = 45 + 10\left(\frac{7.2}{12}\right)$

$P_{40} = 45 + 6$

$P_{40} = 51.$

Percentil 57

$P_k = L_i + A\left(\frac{\frac{k_n}{100} - F_{i-1}}{F_i - F_{i-1}}\right)$

Posición $= \frac{k_n}{100} = \frac{57 \times 48}{100} = 27.36$

$F_{i-1} = 24$ $L_i = 55$

$F_i = 32$ $A = L_s - L_i = 10$

$P_{57} = 55 + 10\left(\frac{27.36 - 24}{32 - 24}\right)$

$P_{57} = 55 + 10\left(\frac{3.36}{8}\right)$

$P_{57} = 55 + 4.2$

$P_{51} = 59.2$

Percentil 78.

$P_k = L_i + A\left(\frac{\frac{k_n}{100} - F_{i-1}}{F_i - F_{i-2}}\right)$

Posición $\frac{k_n}{100} = \frac{78 \times 48}{100} = 37.44$

$F_{i-1} = 32$ $L_i = 65$

$F_i = 39$ $A = L_s - L_i = 10$

$P_{78} = 65 + 10\left(\frac{37.44 - 32}{39 - 32}\right)$

$P_{78} = 65 + 10\left(\frac{5.44}{7}\right)$

$P_{78} = 65 + 7.771428571.$

$P_{78} = 72.771428571.$