

	EXAMEN SUBDIRECCION ACADEMICA		SAC- FOR-19-2	
	Tipo: Formato	Disposición: Interno	Emisión	Revisión
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Materia	Estadista descriptiva	Grupo escolarizado		
	Total de Preguntas:			Calificación :

Instrucciones: De una manera ordenada y con los procedimientos bien claros realice los siguientes cálculos:

Cuartiles 1,2,3

Deciles 2, 4, 6, 8

Percentiles 5, 22, 35, 41, 66

Intervalo	fi	Fi
15-25	10	10
25-35	3	13
35-45	6	19
45-55	7	26
55-65	3	29
65-75	6	35
75-85	9	44

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INTERVALO	f_i	F_i
15-25	10	10
25-35	3	13
35-45	6	19
45-55	7	26
55-65	3	29
65-75	6	35
75-85	9	44

Total = 44

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

-QUANTILES

Posición $\frac{kn}{4} = \frac{1 \cdot 44}{4} = 11$

$F_{i-1} = 10$
 $F_i = 13$

$L_i = 25$

$A = 65 - 25 = 10$

$$Q_1 = 25 + 10 \left(\frac{11 - 10}{13 - 10} \right)$$

$Q_2 = \text{posición } \frac{kn}{4} = \frac{2 \cdot 44}{4} = 22$

$$Q_1 = 25 + 10 \left(\frac{1}{3} \right)$$

$$Q_2 = 45 + 10 \left(\frac{22 - 19}{26 - 19} \right)$$

$F_{i-1} = 19$

$F_i = 26$

$$Q_1 = 25 + 3.33$$

$$Q_2 = 45 + 10 \left(\frac{3}{7} \right)$$

$L_i = 45$

$A = 10$

$$Q_2 = 45 + 4.2857$$

$$\underline{Q_1 = 28.33}$$

$$\underline{Q_2 = 49.2857}$$

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Posición

$$Q_3 = \frac{Kn}{4} = \frac{3 \cdot 44}{4} = 33$$

$$Q_3 = 65 + 10 \left(\frac{33 - 29}{35 - 29} \right)$$

$$Q_3 = 65 + 10 \left(\frac{4}{6} \right)$$

$$Q_3 = 65 + 6.66$$

$$Q_3 = 71.66$$

Deciles

$$D_k = Li + A \left(\frac{\frac{Kn}{10} - Fi - 7}{F_i - F_{i-7}} \right)$$

$$D_2 = \frac{Kn}{10} = \frac{2 \cdot 44}{10} = 8.8$$

$$F_{i-7} = 0$$

$$L_i = 15$$

$$F_i = 10$$

$$A = 10$$

$$D_2 = 15 + 10 \left(\frac{8.8 - 0}{10 - 0} \right)$$

$$D_2 = 15 + 10 \left(\frac{8.8}{10} \right)$$

$$D_2 = 15 + 8.8$$

$$\underline{D_2 = 23.8}$$

$$D_4 = \frac{Kn}{10} = \frac{4 \cdot 44}{10} = 17.6$$

$$F_{i-7} = 13$$

$$L_i = 35$$

$$F_i = 19$$

$$A = 10$$

$$D_4 = 35 + 10 \left(\frac{17.6 - 13}{19 - 13} \right)$$

$$D_4 = 35 + 10 \left(\frac{4.6}{6} \right)$$

$$\underline{D_4 = 42.66}$$

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$$D_6 = \frac{Kn}{10} = \frac{6.44}{10} = 26.4$$

$$F_{i-1} = 26 \quad L_i = 55$$

$$F_i = 29 \quad A = 10$$

$$D_6 = 55 + 10 \left(\frac{26.4 - 26}{29 - 26} \right)$$

$$D_6 = 55 + 10 \left(\frac{0.4}{3} \right)$$

$$D_6 = 55 + 1.33$$

$$D_6 = \underline{56.33} \quad \text{X}$$

Percentiles

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

$$P_5 = \frac{Kn}{100} = \frac{5.44}{100} = 2.2$$

$$F_{i-1} = 0 \quad L_i = 15$$

$$F_i = 10 \quad A = 10$$

$$P_5 = 15 + 10 \left(\frac{2.2 - 0}{10 - 0} \right)$$

$$P_5 = 15 + 10 \left(\frac{2.2}{10} \right)$$

$$P_5 = 15 + 2.2$$

$$P_5 = \underline{17.2} \quad \text{X}$$

$$D_8 = \frac{Kn}{10} = \frac{8.44}{10} = 35.2$$

$$F_{i-1} = 35 \quad L_i = 75$$

$$F_i = 44 \quad A = 10$$

$$D_8 = 75 + 10 \left(\frac{35.2 - 35}{44 - 35} \right)$$

$$D_8 = 75 + 10 \left(\frac{0.2}{9} \right)$$

$$D_8 = 75 + 0.22$$

$$D_8 = \underline{75.22} \quad \text{X}$$

$$P_{22} = \frac{Kn}{100} = \frac{22.44}{100} = 9.68$$

$$F_{i-1} = 0 \quad L_i = 15$$

$$F_i = 10 \quad A = 10$$

$$P_{22} = 15 + 10 \left(\frac{9.68 - 0}{10 - 0} \right)$$

$$P_{22} = 15 + 10 \left(\frac{9.68}{10} \right)$$

$$P_{22} = 15 + 9.68$$

$$P_{22} = \underline{24.68} \quad \text{X}$$

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$$P_{35} = \frac{Kn}{100} = \frac{35 \cdot 44}{100} = 15.4$$

$$F_i - 1 = 13 \quad Li = 35$$

$$F_i = 19 \quad A = 10$$

$$P_{35} = 35 + 10 \left(\frac{15.4 - 13}{19 - 13} \right)$$

$$P_{35} = 35 + 10 \left(\frac{2.4}{6} \right)$$

$$P_{35} = 35 + 4$$

$$\underline{P_{35} = 39}$$

$$P_{66} = \frac{66 \cdot 44}{100} = 29.04$$

$$F_i - 1 = 29 \quad Li = 65$$

$$F_i = 35 \quad A = 10$$

$$P_{66} = 65 + 10 \left(\frac{29.04 - 29}{35 - 29} \right)$$

$$P_{66} = 65 + 10 \left(\frac{0.04}{6} \right)$$

$$P_{66} = 65 + 0.0666$$

$$\underline{P_{66} = 65.0666}$$

$$P_{41} = \frac{41 \cdot 44}{100} = 18.04$$

$$P_{41} = 35 + 10 \left(\frac{18.04 - 13}{19 - 13} \right)$$

$$P_{41} = 35 + 10 \left(\frac{5.04}{6} \right)$$

$$P_{41} = 35 + 8.4$$

$$\underline{P_{41} = 43.4}$$