

# Ejercicio 1.

	<u>Fi</u>	
7.1 - 8.1	9	7.6
8.2 - 9.2	11	8.7
9.3 - 10.3	8	9.8
10.4 - 11.4	7	10.9
11.5 - 12.5	1	12
12.6 - 13.6	1	13.1
13.7 - 14.7	1	14.2
14.8 - 15.8	1	15.3
	<u>40</u>	

• Cuartil

$$Q_1 = \frac{40}{4} = 10 \rightarrow Q_1 = 8.15 + \frac{10-9}{11} * 1.1 = Q_1 = 8.25$$

• Decil :

$$D_5 = \frac{5(40)}{10} = 20 = 8.15 + \frac{20-9}{11} * 1.1 = D_5 = 9.25$$

• percentil =

$$p_{75} = \frac{75(40)}{100} = 30$$

$$p_{75} = 10.35 + \left( \frac{30-28}{7} \right) * 1.1 = p_{75} = 10.66$$

## Ejercicio 2

Calcular los cuartiles de las siguientes series:

a) 3, 5, 2, 7, 6, 4, 9  $\rightarrow$  2, 3, 4, 5, 6, 7, 9

$$Q_1 = \frac{(7+1)}{4} = \frac{8}{4} = 2$$

$$Q_2 = \frac{(7)2}{4} = \frac{14}{4} = 3.5$$

$$Q_3 = \frac{(7)3}{4} = \frac{21}{4} = 5.25$$

b) 3, 5, 2, 7, 6, 4, 9, 1  $\rightarrow$  1, 2, 3, 4, 5, 6, 7, 9

$$Q_1 = \frac{(8+1)}{4} = \frac{9}{4} = 2.25$$

$$Q_2 = \frac{(8)2}{4} = \frac{16}{4} = 4$$

$$Q_3 = \frac{8(3)}{4} = \frac{24}{4} = 6$$

3, 4, 4, 5, 6, 7, 7, 8, 8, 9, 9, 10, 10, 10, 10, 11, 13, 13, 14, 16, 16, 17, 18, 18, 20

$$Q_1 = \frac{(26+1)}{4} = \frac{27}{4} = 6.75$$

$$Q_2 = \frac{(26)2}{4} = \frac{52}{4} = 13$$

$$Q_3 = \frac{(26)3}{4} = \frac{78}{4} = 19.5$$

### Ejercicio 3

	$F_i$	$F_i$
(50, 60)	8	8
(60, 70)	10	18
(70, 80)	16	34
(80, 90)	14	48
(90, 100)	10	58
(100, 110)	5	63
(110, 120)	2	65
	<u>65</u>	

Decil  $3^\circ =$

$$\frac{65 \cdot 3}{10} = 19.5$$

$$D_3 = 70 + \frac{19.5 - 18}{16} \cdot 10 = 70.94$$

Decil  $7^\circ =$

$$\frac{65 \cdot 7}{10} = 45.5$$

$$D_7 = 80 + \frac{45.5 - 34}{14} \cdot 10 = 88.21$$

Decil  $10^\circ =$

$$\frac{65 \cdot 10}{10} = 65$$

$$D_{10} = 110 + \frac{65 - 63}{2} \cdot 10 = 120$$

Dados las Series

a) 3, 5, 2, 7, 6, 4, 9 → calcular percentil 32, 85  
2, 3, 4, 5, 6, 7, 9

$$7 \cdot \left( \frac{32}{100} \right) = 2.2 \quad P_{32} = 4$$

$$7 \cdot \left( \frac{85}{100} \right) = 5.9 \quad P_{85} = 7$$

b) 3, 5, 2, 7, 6, 4, 9, 1 → calcular percentil 20 y 70  
1, 2, 3, 4, 5, 6, 7, 9

$$8 \cdot \left( \frac{20}{100} \right) = 1.6 \quad P_{20} = 2$$

$$8 \cdot \left( \frac{70}{100} \right) = 5.6 \quad P_{70} = 6$$

## Ejercicio 5

	$F_i$	$F_i$
(50, 60)	8	8
(60, 70)	16	18
(70, 80)	16	34
(80, 90)	14	48
(90, 100)	10	58
(100, 110)	5	63
(110, 120)	2	65
	65	

• percentil 35:

$$\frac{65 \cdot 35}{100} = 22.75$$

$$p_{35} = (70, 80)$$

$$L_i = 70 \quad F_{i-1} = 18 \quad F_i = 16 \quad d_i = 10$$

$$p_{35} = 70 + \frac{22.75 - 18}{16} \cdot 10 = 72.97$$

• percentil 60:

$$\frac{65 \cdot 60}{100} = 39$$

$$p_{60} = (80, 90)$$

$$L_i = 80 \quad F_{i-1} = 34 \quad F_i = 14 \quad d_i = 10$$

$$p_{60} = 80 + \frac{39 - 34}{14} \cdot 10 = 83.57$$