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**Nombre del trabajo:** Estrato

**Materia:** estadística descriptiva

**Grado:** Cuarto cuatrimestre

**Grupo:** A

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De los siguientes ejercicios calcule

- Promedio estándar
- Varianza estándar
- Límite para el error de estimación.

$$N_1 = 30 = 20 \left( \frac{30}{120} \right) = 5$$

$$N_2 = 30 = 20 \left( \frac{30}{120} \right) = 5$$

$$N_3 = 30 = 20 \left( \frac{30}{120} \right) = 5$$

$$N_4 = 30 = 20 \left( \frac{30}{120} \right) = 5$$

$$n = 20$$

$$N = 120$$

**Estado 1**

1	200	
2	270	$\bar{x} = \frac{1020}{5} = 204$
3	180	
4	230	$s = 430$
5	190	$s_{st} = 208.4$
1020		

$$E_{Fi} = 204.800$$

**Estado 2**  $\bar{x} = \frac{1005}{5} = 201$

195		
230	$s = 480$	
210		
200		
170		
1005		
		$E_{Fi} = 203.925$

**Estado 3**

240		
195	$\bar{x} = \frac{1088}{5} = 217.6$	
208		
215	$s = 316.3$	
230		
1088		

$$E_{Fi} = 238.014$$

**Estado 4**

215		
200	$\bar{x} = \frac{1055}{5} = 211$	
225		
205	$s = 92.5$	
210		
1055		

$$E_{Fi} = 222.975$$

P.E  $\rightarrow y_{st} = 208.4$

V.E  $\rightarrow 13.73$

$$\sqrt{13.73} = 3.70$$

$$13.73 \begin{cases} -7.4 \\ +7.4 \end{cases}$$

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$$\begin{aligned}
 N_1 = 24 &= 40 \left( \frac{24}{120} \right) = 8 \\
 N_2 = 36 &= 40 \left( \frac{36}{120} \right) = 12 \\
 N_3 = 30 &= 40 \left( \frac{30}{120} \right) = 10 \\
 N_4 = 30 &= 40 \left( \frac{30}{120} \right) = 10 \\
 n &= 40 \\
 N &= 120
 \end{aligned}$$

$$\begin{aligned}
 \bar{y}_{SE} \pm 2\sqrt{\hat{V}(\bar{y}_{SE})} & \leftarrow \times 2. \\
 106.17 \pm 2\sqrt{1.61} & \\
 106.17 \pm 2.53 &
 \end{aligned}$$

Estrato 1

115	
105	
98	
90	
103	
108	
112	
100	
<hr/>	
831	

$$\begin{aligned}
 \bar{x} &= \frac{831}{8} = 103.875 \\
 s^2 &= 64.41 \\
 \hat{E}F_i^2 &= 831 \\
 \hat{E}F_i^2 &= 86.771 \\
 \hat{E}F_i^2 &= 86.771
 \end{aligned}$$

Estrato 2

100	
125	
170	
102	
93	
98	
99	
105	
104	
106	
115	
100	
<hr/>	
1267	

$$\begin{aligned}
 \bar{x} &= \frac{1267}{12} = 105.58 \\
 s^2 &= 91.90 \\
 \hat{E}F_i^2 &= 126.729
 \end{aligned}$$

Estrato 3

115	
100	
104	
106	
108	
98	
97	
107	
110	
08	
<hr/>	
1053	

$$\begin{aligned}
 \bar{x} &= \frac{1053}{10} = 105.3 \\
 s^2 &= 31.78 \\
 \hat{E}F_i^2 &= 111.167
 \end{aligned}$$

Estrato 4

98	
96	
140	
116	
100	
105	
103	
123	
115	
100	
<hr/>	
1096	

$$\begin{aligned}
 \bar{x} &= \frac{1096}{10} = 109.6 \\
 s^2 &= 193.6 \\
 \hat{E}F_i^2 &= 121.864
 \end{aligned}$$

$$\begin{aligned}
 \bar{y}_{SE} &= 106.7 \\
 \frac{(N_1 - n_1)}{N_1} &= \frac{24 - 8}{24} = \frac{2}{3} \\
 &= \frac{(24^2) \left( \frac{64.41}{8} \right) + (36^2) \left( \frac{91.90}{12} \right) + (30^2) \left( \frac{31.78}{10} \right) + (30^2) \left( \frac{193.6}{10} \right)}{(120^2) \left( \frac{193.6}{10} \right)} = \sqrt{\frac{2}{3}} = \sqrt{120^2} = 7.6
 \end{aligned}$$