**Nombre de alumno:**

Karine Abigail Vicente Villatoro

**Nombre del profesor:**

Lic. Jorge Enrique Albores Aguilar

**Nombre del trabajo:**

Estadística inferencial

**Materia:**

Ejercicios

**Grado:** 4°

**Grupo:** "A"

Comitán de Domínguez Chiapas a 10 de noviembre de 2021

# 1 Actividad

| Estrato 1 | Estrato 2 | Estrato 3 | Estrato 4 |
|---|---|---|---|
| 200 | 195 | 240 | 215 |
| 220 | 230 | 195 | 200 |
| 180 | 210 | 208 | 225 |
| 230 | 200 | 215 | 205 |
| 190 | 170 | 230 | 210 |

$N_1 = 30$
$N_2 = 30$
$N_3 = 30$
$N_4 = 30$
$120$

$n = 20$

$n_1 = \frac{30}{120}(20) = 5$ //
$n_2 = \frac{30}{120}(20) = 5$ //
$n_3 = \frac{30}{120}(20) = 5$ //
$n_4 = \frac{30}{120}(20) = 5$ //

$S^2 = \frac{209800 - \frac{(1020)^2}{5}}{4} = 430$ //

$S^2 = \frac{203,925 - \frac{(1005)^2}{5}}{4} = 480$ //

$S^2 = \frac{238014 - \frac{(1088)^2}{5}}{4} = 316.5$ //

$S^2 = \frac{222,975 - \frac{(1055)^2}{5}}{4} = 92.5$ //

① $\bar{x} = \frac{1020}{5} = 204$ //

② $\bar{x} = \frac{1005}{5} = 201$ //

③ $\bar{x} = \frac{1088}{5} = 217.6$ //

④ $\bar{x} = \frac{1055}{5} = 211$ //

Promedio estandar

$\frac{1}{120} = (30 \times 204) + (30 \times 201) + (30 \times 217.6) + (30 \times 211) = 208.4$

Varianza estandar

$\left(\frac{1}{120}\right)\left(\frac{5}{6}\right)\left[(30)^2\left(\frac{430}{5}\right)\right) + \left((30)^2\left(\frac{480}{5}\right)\right) + \left((30)^2\left(\frac{316.3}{5}\right)\right) + \left((30)^2\left(\frac{92.5}{5}\right)\right) = 237,384$

$(5/6) \div (120)^2 = 13.73$ //

$208.4 \pm (2)\sqrt{13.73}$

$208.4 \pm 7.41$ //

# 2 Actividad

$N_1 = 24$
$N_2 = 36$
$N_3 = 30$
$N_4 = 30$

$n = 40$

| Estrato 1 | Estrato 2 | Estrato 3 | Estrato 4 |
|---|---|---|---|
| 115 | 100 | 115 | 98 |
| 105 | 125 | 100 | 96 |
| 98 | 120 | 104 | 140 |
| 90 | 102 | 106 | 116 |
| 103 | 93 | 108 | 100 |
| 108 | 98 | 98 | 105 |
| 112 | 99 | 97 | 103 |
| 100 | 105 | 107 | 123 |
| 99 | 104 | 110 | 115 |
| 96 | 106 | 108 | 100 |
| 103 | 115 | 107 | 108 |
| 120 | 100 | 120 | 100 |

$n_1 = \frac{24}{120}(40) = 8$ //

$n_2 = \frac{36}{120}(40) = 12$ //

$n_3 = \frac{30}{120}(40) = 10$ //

$n_4 = \frac{30}{120}(40) = 10$ //

① $\bar{x} = \frac{831}{8} = 103.87$ //

② $\bar{x} = \frac{1267}{12} = 105.58$ //

③ $\bar{x} = \frac{1053}{10} = 105.3$ //

④ $\bar{x} = \frac{1096}{10} = 109.6$ //

$s^2 = \frac{86771 - \frac{(831)^2}{8}}{7} = 64.41$ //

$s^2 = \frac{134785 - \frac{(1267)^2}{12}}{11} = 91.90$ //

$s^2 = \frac{111167 - \frac{(1053)^2}{10}}{9} = 31.78$ //

$s^2 = \frac{121864 - \frac{(1096)^2}{10}}{9} = 193.6$ //

## Promedio estandar

$\frac{1}{120} = (24 \times 103.87) + (36 \times 105.58) + (30 \times 105.3) + (30 \times 109.6)$

$= 106.17$ //

$106.17 \pm (2)\sqrt{1.61}$

$106.17 \pm 2.5$

## Varianza estandar

$\left(\frac{1}{120}\right)\left(\frac{5}{6}\right)\left[(24)^2\left(\frac{64.41}{8}\right) + (36)^2\left(\frac{91.90}{12}\right) + (30)^2\left(\frac{31.78}{10}\right) + (30)^2\left(\frac{193.6}{10}\right)\right]$

$= 34,846.42\ (5/6) \div (120)^2 = 1.61$ //