

31 / Oct / 2021

Datos:

$\sigma_1 = 15$        $\sigma_2 = 18$       Al nivel: 99%

$n_1 = 40$        $n_2 = 35$

$\bar{X}_1 = 170 \text{ cm}$        $\bar{X}_2 = 160 \text{ cm}$        $Z = \frac{\alpha}{2} = \frac{0.99}{2} = 0.495$        $z = 2.578$   
 Hombres      Mujeres

$IC = (\bar{X}_1 - \bar{X}_2 \pm z \sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}})$

$(\bar{X}_1 - \bar{X}_2 - z \sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}; \bar{X}_1 - \bar{X}_2 + z \sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}})$

$(170 - 160 - 2.578 \sqrt{\frac{15^2}{40} + \frac{18^2}{35}}; 170 - 160 + 2.578 \sqrt{\frac{15^2}{40} + \frac{18^2}{35}})$

$10 - 2.578 (3.856); 10 + 2.578 (3.856)$

$(10 - 9.940; 10 + 9.940)$

$(0.06; 19.94)$  → La población de alumnos de diferencia de alturas está en promedio entre 0.06 cm y 19.94 cm

$(\bar{X}_1 - \bar{X}_2 - z \sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}; \bar{X}_1 - \bar{X}_2 + z \sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}})$  Al nivel: 85%

$z = \frac{\alpha}{2} = \frac{0.85}{2} = 0.425$        $z = 1.44$

$(170 - 160 - 1.44 \sqrt{\frac{15^2}{40} + \frac{18^2}{35}}; 170 - 160 + 1.44 \sqrt{\frac{15^2}{40} + \frac{18^2}{35}})$

$10 - 1.44 (3.856); 10 + 1.44 (3.856)$

$(10 - 5.552; 10 + 5.552)$

$(4.448; 15.552)$  → La población de alumnos de diferencia de alturas está en promedio entre 4.448 cm y 15.552 cm.