1) **IC para estimar $\mu_1 - \mu_2$, cuando σ_1^2 y σ_2^2 son Conocidas y la Población es Normal e Infinita**

$$P\left(\bar{X}_1 - \bar{X}_2 - Z_{1-\frac{\alpha}{2}}\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}} \leq \mu_1 - \mu_2 \leq \bar{X}_1 - \bar{X}_2 + Z_{1-\frac{\alpha}{2}}\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}\right) = 1 - \alpha$$

2) **IC para estimar $\mu_1 - \mu_2$, cuando σ_1^2 y σ_2^2 son Desconocidas y Distintas**

$$P\left(\bar{X}_1 - \bar{X}_2 - t_{1-\frac{\alpha}{2};v}\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}} \leq \mu_1 - \mu_2 \leq \bar{X}_1 - \bar{X}_2 + t_{1-\frac{\alpha}{2};v}\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}\right) = 1 - \alpha$$

$$v = \frac{\left(\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}\right)^2}{\frac{\left(\frac{S_1^2}{n_1}\right)^2}{n_1 + 1} + \frac{\left(\frac{S_2^2}{n_2}\right)^2}{n_2 + 1}} - 2$$

3) **IC para estimar $\mu_1 - \mu_2$, cuando σ_1^2 y σ_2^2 son Desconocidas e Iguales**

$$P\left(\bar{X}_1 - \bar{X}_2 - t_{1-\frac{\alpha}{2};v}\sqrt{S_a^2\left(\frac{1}{n_1} + \frac{1}{n_2}\right)} \leq \mu_1 - \mu_2 \leq \bar{X}_1 - \bar{X}_2 - t_{1-\frac{\alpha}{2};v}\sqrt{S_a^2\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}\right) = 1 - \alpha$$

$$v = n_1 + n_2 - 2$$

$$S_a^2 = \frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}$$

4) IC para estimar $\frac{\sigma_2^2}{\sigma_1^2}$

$$P\left(\frac{S_2^2}{S_1^2}\frac{1}{B} \leq \frac{\sigma_2^2}{\sigma_1^2} \leq \frac{S_2^2}{S_1^2}\frac{1}{A}\right) = 1 - \alpha$$

$$B = F_{1-\frac{\alpha}{2};n_1-1;n_2-1} \qquad A = F_{\frac{\alpha}{2};n_1-1;n_2-1}$$

5) IC para estimar $p_1 - p_2$

$$P\left(\overline{p}_1 - \overline{p}_2 - Z_{1-\frac{\alpha}{2}}\sqrt{\widehat{p}\widehat{q}\left(\frac{1}{n_1} + \frac{1}{n_2}\right)} \leq p_1 - p_2 \leq \overline{p}_1 - \overline{p}_2 + Z_{1-\frac{\alpha}{2}}\sqrt{\widehat{p}\widehat{q}\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}\right) = 1 - \alpha$$

$$\widehat{p} = \frac{X_1 + X_1}{n_1 + n_2} = \frac{n_1\overline{p}_1 + n_2\overline{p}_2}{n_1 + n_2} \qquad \widehat{q} = 1 - \widehat{p}$$