Taller PREPARCIAL

Para μ:

$$f(x; \mu, 0) = \frac{1}{\sqrt{2\pi 0^2}} \, e^{\frac{(x-\mu)^2}{20^2}}$$

$$L(\mu, 0) = \prod_{i=1}^{n} \frac{1}{\sqrt{2\pi 0^2}} \, e^{\frac{(x_i - \mu)^2}{20^2}}$$

$$\ln L(\mu, 0) = -\frac{n}{2} \ln(2\pi) - n\ln(0) \sum_{i=1}^{n}$$

$$\frac{\partial \ln L}{\partial \mu} = \sum_{i=1}^{n} \frac{(x_i - \mu)}{0^2}$$

$$\sum_{i=1}^{n} (x_i - \mu) = 0$$

$$\mu = \frac{1}{2} \sum_{i=1}^{n} x_i$$

Para 0^2:

$$\frac{\partial \ln L}{\partial (0^2)} = -\frac{n}{20^2} + \frac{1}{20^4} \sum_{i=1}^{n} (x_i - \mu)^2$$

$$\frac{1}{n} \sum_{i=1}^{n} (x_i - \mu)^2$$

$$\hat{\mu} = \frac{1}{n} \sum_{i=1}^{n} x_i$$

$$\hat{0}^2 = \frac{1}{n} \sum_{i=1}^{n} (x_i - \hat{\mu})^2$$