

Other problem.

I think the difficulty starts about p 3.

Consider sampling without replacement values X_1, \dots, X_N all finite.

A large sample is one in which each of the X_i occurs a great many times, all equally frequently.

What is the large sample version of the real root of the equation

$$\sum \frac{x_i - \mu}{\lambda^2 + \frac{(x_i - \mu)^2}{\lambda}} = 0 ?$$

Now

$$\frac{x_i - \mu}{\lambda^2 + \frac{(x_i - \mu)^2}{\lambda}} = \frac{1}{\lambda} \cdot \frac{x_i - \mu}{1 + \frac{x_i - \mu}{\lambda}}$$

of which the sum over i goes, while the sum over μ is

$$\frac{1}{\lambda^2} \cdot \frac{n^2}{(n+1)(n+2)}$$

Hence, when the sample is infinite without limit

$$X = \sum \frac{x_i - \mu}{\lambda^2 + \frac{(x_i - \mu)^2}{\lambda}}$$

is distributed normally, and you will obtain

$$\frac{n^2}{(n+1)(n+2)} \sum \frac{1}{\lambda^2}$$

$$\sim -\frac{dX}{d\mu} = \sum \frac{1}{\lambda^2} \cdot \frac{1 - \frac{x_i - \mu}{\lambda}}{1 + \frac{x_i - \mu}{\lambda}}$$

of which the sum over i , intended for large sample is

$$\frac{n}{n+2} \sum \frac{1}{\lambda^2}$$

How fast

$$m \cdot \mu = \frac{-X}{dX/d\mu}$$

$$V(\mu) =$$

$$\frac{n+2}{(n+1) \sum \frac{1}{\lambda^2}}$$

