# The Central Limit Theorem

## Definition

In probability theory, the central limit theorem (CLT) establishes that, **in many situations**, when independent random variables are summed up, **their properly normalized sum** (mean) tends toward **a normal distribution** **even if the original variables themselves are not normally distributed**.

In mathematical denotation, if are n random samples drawn from a population with overall mean and finite variance , and if   is the sample mean, then the limiting form of the distribution**,**