The binomial distribution converges towards the [Poisson distribution](http://en.wikipedia.org/wiki/Poisson_distribution) as the number of trials goes to infinity while the product *np* remains fixed. Therefore the Poisson distribution with parameter λ = *np* can be used as an approximation to B(*n*, *p*) of the binomial distribution if n is sufficiently large and p is sufficiently small. According to two rules of thumb, this approximation is good if *n* ≥ 20 and *p* ≤ 0.05, or if *n* ≥ 100 and *np* ≤ 10

The Poisson distribution can sometimes be used to approximate the [Binomial distribution](http://www.stats.gla.ac.uk/steps/glossary/probability_distributions.html#binodistn) with parameters n and p. When the number of observations n is large, and the success probability p is small, the Bi(n,p) distribution approaches the Poisson distribution with the parameter given by m = np. This is useful since the computations involved in calculating binomial probabilities are greatly reduced.