

For an approximation of discrete random variable, which is the sum of n independent, identically distributed discrete random variables, we can use the central limit theorem. However, it turns out that we can refine this approximation by applying continuity correction. This term is explained in the thesis, and it is illustrated several ways how the continuity correction can be derived. There is also a numerical comparison of the approximation error for the binomial distribution approximation by the normal distribution with the correction for continuity and approximation without the correction. There are also described confidence intervals and χ^2 test of independence in contingency tables in which continuity correction are used. On simulations for various parameters, we will test the properties of these intervals (true confidence level and length) and tests (actual significance level and power).