

Discrete random variables

In the excercise you can use a build in procedure for generating random numbers. Compare the results obtained in simulations with expected results. Use histograms (and tests).

- 1. Choose a value for the probability parameter p in the geometric distribution and simulate 10,000 outcomes. You can experiment with a small, moderate and large value if you like.
- 2. Simulate the 6 point distribution with

Х	1	2	3	4	5	6
p_i	7/48	5/48	1/8	1/16	1/4	5/16

(a) by applying a direct (crude) method

- (b) by using the the rejction method(c) by using the Alias method
- 3. Compare the three different methods using adequate criteria, then discuss the results.
- 4. Give recommendations of how to choose the best suited method in different settings, i.e., discuss the advantages and drawbacks of each method. If time permits substantiate by running experiments.