

Programming a random walk

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Write a python notebook that contains a program that will generate a simple random walk in one dimension with adsorbing boundary conditions. By running the program in your python notebook multiple times calculate estimates for the following:

1. The probability that the walk finishes at $X = 0$ together with error bars at the 90 % confidence limit on this estimate.
2. The probability mass function for the number of steps in the walk prior to absorption.

Compare the results you obtain with the values obtained by inserting the parameters of your model into the expression that can be by solving the relevant homogeneous and inhomogeneous difference equation. Do not include derivations of these analytical result in your report, however.