1 Random walk challenge

Write a program to model a random walk of N steps, in which each step has the same length L, but is in a random direction in the xy plane. We will define x_F as the value of x at the end of the walk. Your task will be to compute the average value of x_F^2 and the average value of x_F. This will require generating many random N-step walks to compute those averages.

Plot the average value of x_F^2 as a function of the number of steps taken N, and create a separate plot of the average value of x_F versus N.