Math-III Homework #3

1. Test the 5-th moment of the random numbers sequence in your programming language for 10000 numbers. Does it correlate or not?
2. Take 500 steps 2-dimensional random walk with a unit step length in a *single* trial, making (You need to shift/rescal the random numbers in a range [-1,+1])
   1. Plot the x-y path for this walk.
   2. Plot sqrt(R) vs. sqrt(N) (N is the N-th step), where R=sqrt(x\*\*2+y\*\*2).
   3. **Then average over 100 trial**, plot sqrt(R) vs. sqrt(N) again. Discuss.
3. Use Monte Carlo method to calculate  , up to 5 significant figures. The analytic value is 155/6.

Due: Tuesday (July 6, 2021)