

In the name of God

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ADVANCED TOPICS IN STATISTICAL PHYSICS II

Exercise Set 7

(Date Due: 1393/02/20)

1. Suppose that for a random walk in 1D, the probability of jumping forward is P_+ , the probability for jumping backward is P_- and the probability for remaining in its position to be P_0 , where $P_+ + P_- + P_0 = 1$.

A : In this case calculate $\langle x \rangle_N$ and $\langle (x - \langle x \rangle)^2 \rangle_N$.

B : For long run, namely, $N \rightarrow \infty$, compute the shape of probability density function.

Good luck, Movahed
