

Example Output for Teachers

Random Walk: An Experiment in Probability and Statistics
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Random Walk	Final Distance from Origin	Times East of the Origin	Times West of the Origin	Times Returning to the Origin
1	9	0	25	0
2	11	1	23	1
3	5	23	1	1
4	1	6	16	3
5	5	1	22	2
6	7	2	20	3
7	1	1	20	4
8	3	8	12	5
9	1	23	4	8
10	5	24	0	1
Totals →	48	79	143	28
Averages →	4.8	7.9	14.3	2.8

The average final distance from the origin is 4.8, a little higher than from the formula $0.8\sqrt{n} = 4$.

Symmetry of East and West and of heads and tails suggests that after a large number of walks, the amount of time on each side of the origin should be close to the same. The large difference between 7.9 and 14.3 may be due to large fluctuations in samples.

Times at the origin is close to the theoretical value of 3.

Distance from the Origin											
Walk→ Steps↓	1	2	3	4	5	6	7	8	9	10	Average
50	8	6	4	6	6	2	10	2	6	4	5.4
100	10	0	10	8	6	20	8	4	18	4	8.8

5.4 is close to $0.8\sqrt{50} = 5.7$ and 8.8 is close to $0.8\sqrt{100} = 8$.