Introduction to Quantitative Biology

Homework 7

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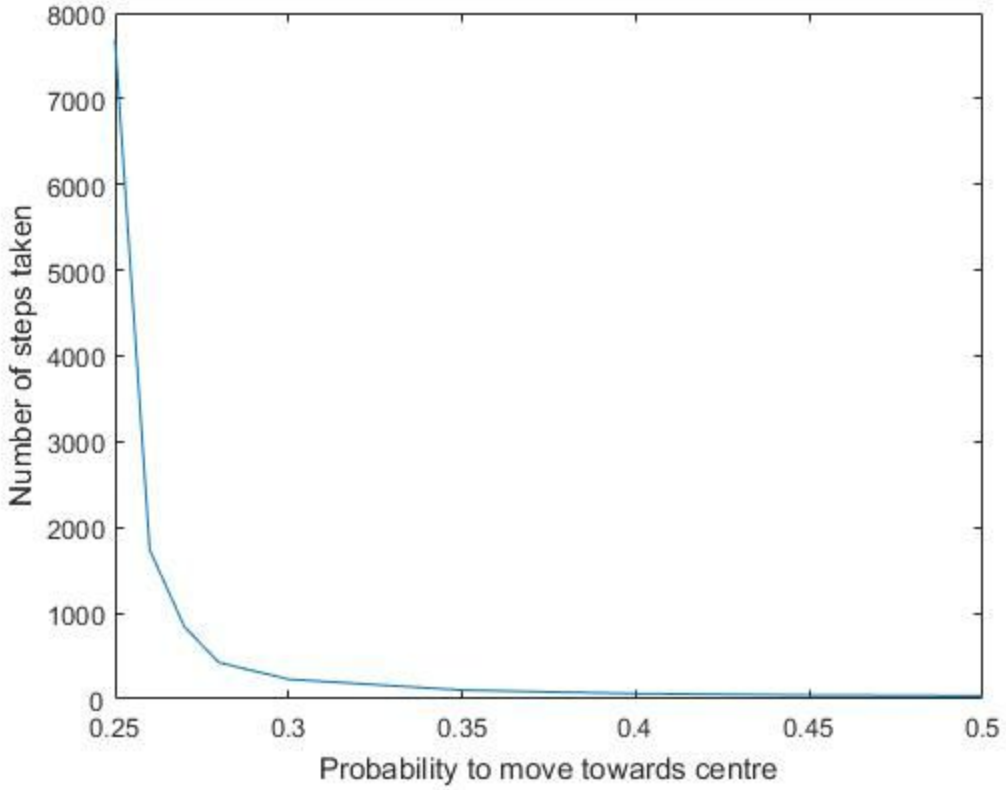
Plot for probability of moving towards centre (x axis) versus average number of steps / time taken to reach the center (y axis):



In our random walk simulation we have taken biased probabilities to reach towards the center of the grid i.e coordinate (0,0). We have run the simulation for 9 different increasing probabilities to move towards centre (increasing biases):

1) Probability to go towards centre = 0.25
2) Probability to go towards centre = 0.26
3) Probability to go towards centre = 0.27
4) Probability to go towards centre = 0.28
5) Probability to go towards centre = 0.3
6) Probability to go towards centre = 0.35

7) Probability to go towards centre = 0.4
8) Probability to go towards centre = 0.45
9) Probability to go towards centre = 0.5

As we can see from the above graph as we increase the probabilities, the number of steps or the time taken to reach the centre decreases.