

The theme of this thesis are symmetric random walks. We define different types of paths and prove the reflection principle. Then, based on the paths, we define random walks. The thesis also deals with probabilities of returns to the origin and first returns to the origin, further with probabilities of number of changes of sign or returns to the origin up to a certain time. We also define the maximum of the random walk and the first passage through a certain point. In the second chapter, we solve several problems, which form the proofs of some theorems from the first chapter or complement the first chapter in a different way. For example, we prove geometrically that the number of paths of one type equals the number of paths of another type or we compute the probability that there occurs a certain number of changes of sign up to a given time.