

1 Hints for Homework 7

2 Chapter of 3 of Durrett has a hint. Wald's second equation

5 For the lower bound try to argue that

$$P\left(\frac{1}{d}H_\pi \leq a\right) \leq 2^d * P\left(\frac{1}{d}S_\pi^d \leq a\right)$$

where S_π^d is any path of length d . Now use Large deviation inequalities to bound the right hand side.

For upper bound think of the greedy path approach where at each the path moves starting from $(0,0)$ by choosing the smaller edge at each vertex that it visits. (e.g. from $0,0$ it choses the min edge connecting it to $1,0$ or $0,1$ and moves to that particular vertex and so on)