Math 303 Assignment 5: Due Friday, March 2 at start of class

I. Problems to be handed in:

1. Consider the simple random walk on the nonnegative integers, that is, \( P_{0,0} = P_{0,1} = \frac{1}{2} \) and \( P_{i,i+1} = P_{i,i-1} = \frac{1}{2} \) if \( i \geq 1 \). Modify this Markov chain by the Metropolis Hastings algorithm such that the stationary distribution of the new chain is Poisson(\( \lambda \)).


II. Recommended problems: These provide additional practice but are not to be handed in. Chapter 5: Exercises 3, 7, 10(a,b), 18(a,b,c), 19, 23.