

Chapter 4 Notes

4.2 Harmonic Functions and the Dirichlet Problem

- A. The mean-value property
- B. The Dirichlet problem
- C. Conditions for regularity
- D. Integral formulas of Poisson
- E. Supplementary Exercises

4.3 The One-Dimensional Heat Equation

- A. The Tychonoff uniqueness theorem
- B. Nonnegative solutions of the heat equation
- C. Boundary Crossing probabilities for Brownian motion
- D. Mixed initial/boundary value problems

4.4 The Formulas of Feynman and Kac

- A. The multi-dimensional formula
- B. The one-dimensional formula