ATTEMPT AT LAB 2

A. STUDENT

1. Probability at the University of Sheffield

Welcome to the University of Sheffield's Probability Research Group! We are a vibrant community of scholars and students dedicated to exploring the fascinating realm of probability theory and its applications. Our group is committed to fostering an inclusive and collaborative environment where individuals from diverse backgrounds can come together to share ideas, learn from one another, and push the boundaries of probability research.

Our members engage in a wide range of research topics, including

(1) branching processes;

(2) random walk;

(3) random graphs;

(4) random fractals;

(5) stochastic processes.

We encourage active participation in seminars, workshops, and discussions, providing opportunities for intellectual growth and networking within the field.

Sheffield has a proud tradition of research and teaching in both probability and statistics, dating back to the early 1950s under Geoffrey Jowett and Hilda Davies. In 1965 Professor Joe Gani was appointed as the first professor and head of the new Department of Probability and Statistics which separated from the Mathematics Departments.

Linked with the group is 'The Applied Probability Trust', which publishes two major international journals (*Journal of Applied Probability* and *Advances in Applied Probability*, both founded by Joe Gani.)

Members. The probability group consists of the following academic staff.

- Dr Nic Freeman
- Dr Jonathan Jordan
- Dr Bas Lodewijks
- Dr Rosie Shewell Brockway
- Dr Robin Stephenson
- Dr Mark Yarrow

- Dr Maksim Zhukovskii

The material here comes from the website `https://sites.google.com/sheffield.ac.uk/probabilitygroup/home`.

2. Typesetting practice

(1) $x^2 + y^2$; x_i; $x_i^2 - y_i^2$; x_{i_m}; ${x_i}^m$; x^{2p}.

(2) $\frac{1}{y}$; $\frac{x^2}{x+y}$;

$$\frac{\frac{1}{x} + \frac{1}{y}}{\frac{1}{x+y}}.$$

(3) $\sqrt{x+y} + 7$; $\sqrt[3]{7}$; $\sqrt[n]{1 + \sqrt{1+x}}$.

(4)

$$\int_0^\infty e^{-x^2}\,dx = \frac{\sqrt{\pi}}{2}; \quad \sum_{i=1}^{n} i = \frac{1}{2}n(n+1).$$

(5) $\sin^2 x + \cos^2 x = 1$;

$$\Gamma(x) \equiv \lim_{x \to 0} \prod_{v=0}^{n-1} \frac{n!\; n^{x-1}}{x+v}.$$

(6) $\left(2^{2^{2^2}} - 1\right)^2$; $\left\{\alpha + \left(\sqrt{\beta} + \gamma^2\right)^2\right\}$.

(7) $\sum_{i=1}^{n} i^2 = \frac{1}{6}n(n+1)(2n+1)$ for $n = 1, 2, 3, \ldots$