

# Part III Advanced Probability

Based on lectures by P. Sousi

Notes taken by Pantelis Tassopoulos

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# 1 Proof of the Riemann Hypothesis

Lecture 1 We start with setting up some notation.  
note the margins are narrow.

$$\int_a^b f \, \mathrm{d}\mu \tag{1}$$

# 2 Proof of Collatz Conjecture

$$\sum_{n \in \mathbb{N}} a_n \tag{2}$$

In other words, the following diagram

$$\begin{array}{ccc} X & \xrightarrow{T} & Y \\ \downarrow \iota_X & & \downarrow \iota_Y \\ X^{**} & \xrightarrow{T^{**}} & Y^{**} \end{array}$$

commutes (vertical arrows are canonical embeddings).

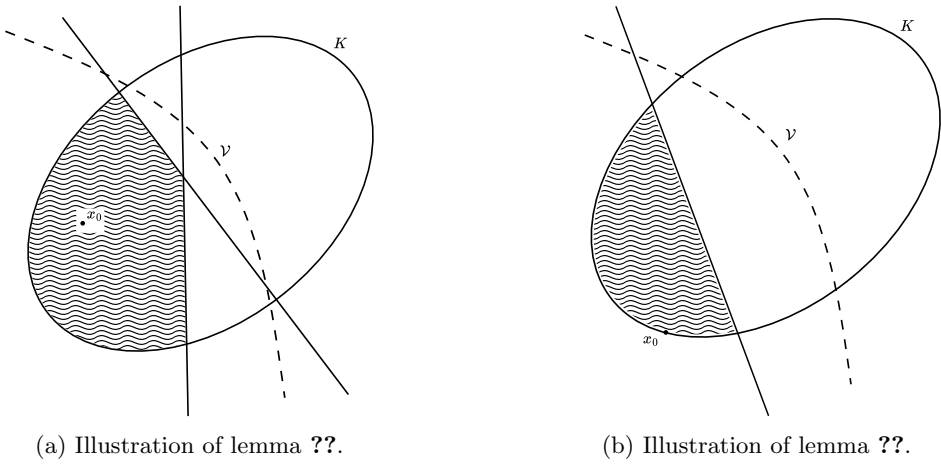


Figure 1