Summary of Analysis

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Part I

Meausre and Integration

Chapter 1

Measures

1.1 Abstract Measures

1.1.1 σ-algebras

Definition 1. Consider a collection $\Sigma \subset \mathcal{P}X$ s.t.

- $X \in \Sigma$
- $E \in \Sigma \Rightarrow X \setminus E \in \Sigma$
- $(E_\alpha)_{\alpha \in A} \in \Sigma \Rightarrow \bigcup_{\alpha \in A} E_\alpha \in \Sigma$

Σ is called an *algebra* on X if A is finite, and Σ is called *σ-algebra* on X if A is countably infinite.

Definition 2. A *measure* on

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