Measure Theory

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Contents

1 Prologue

Definition 1.1 $\sigma - additivity$

$$area(\biguplus_{j \in N} A_j) = \sum_{j \in N} area(A_j) \tag{1.1}$$

2 The pleasures of counting

Lemma 2.1 $f : X \to Y$ is injective iff $f(A \cap B) = f(A) \cap f(B)$ for all $A, B \subset X$

Lemma 2.2 $f : X \to Y$ is injective iff $f(X \backslash A) = f(X) \backslash f(A)$ for all $A \subset X$