Integration Theory
Exam

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Definition (σ-algebra)

A family m of subsets of a set X is said to be a σ-algebra if

1. $\emptyset, X$ belongs to m
2. If A belongs to X, then the complement $\mathcal{C}(A) = X \setminus A$ belongs to m.
3. If (A_n) is a sequence of sets in in X then the infinte union belongs to X.

An ordered pair (X, m) consisting of a set X and a σ-algebra m of subsets of X is called measurable space.