



Math for the people, by the people.

Boole inequality

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Let (Ω, \mathcal{F}, P) be a probability space and $\{A_1, A_2, \dots\}$ be a sequence of events such that $\{A_1, A_2, \dots\} \subset \mathcal{F}$. Then

$$P\left(\bigcup_{n=1}^{\infty} A_n\right) \leq \sum_{n=1}^{\infty} P(A_n).$$