

Definition 3.4 A real function μ defined on \mathcal{F}_n is called a **signed measure** if it is **set-additive**, i.e., for disjoint A and B in \mathcal{F}_n ,

$$\mu(A \cup B) = \mu(A) + \mu(B).$$

Remark For any set-additive function μ ,

$$\mu(\emptyset) = 0$$

because for any set A ,

$$\mu(A) = \mu(A \cup \emptyset) = \mu(A) + \mu(\emptyset)$$

implies $\mu(\emptyset) = 0$.

Remark A signed measure can take positive or negative values. If a signed measure takes only positive values, it is simply called a **measure**.