Proposition Given a measurable space $(S, \Sigma_{\mathcal{B}})$ generated by a base $\mathcal{B}$ containing S, and given $f : \mathcal{B} \to [0, \infty]$ which satisfies the countable disjoint union property, there exists a unique measure $\mu_f : \Sigma_{\mathcal{B}} \to [0, \infty]$ which coincides with f on the elements of $\mathcal{B}$.

We say that μ_f *is induced by* f. μ_f can be constructed inductively from f in the same way as $(S, \Sigma_{\mathcal{B}})$ can be constructed from $\mathcal{B}$.

We have a similar reslt for probability measure, except that we require also $f(S) = 1$.