Definition 0.0.1 (measurability of a function)**.** A function $X : \Omega \to \Psi$ is said to be **measurable** with respect to $\mathcal{A}$ and $\mathcal{G}$ if the pre-image $X^{-1}(G) = [\omega : X(\omega) \in G] \in \mathcal{A}$ for all $G \in \mathcal{G}$, or equivalently, $X^{-1}[\mathcal{G}] \subseteq \mathcal{A}$.