

**Result 0.0.1.**

- Given a partition  $\mathcal{D}$  of  $\Omega$ ,  $\mathbb{P}(A|\mathcal{D}) = \mathbb{P}(A|\sigma(\mathcal{D}))$  for all  $A \in \mathcal{A}$ . More generally,  $\mathbb{E}(X|\mathcal{D}) = \mathbb{E}(X|\sigma(\mathcal{D}))$ .
- For a simple random variable  $X$ ,  $\sigma(X) = \sigma(\mathcal{D}(X))$ .