- Let $\tilde{X}$ be a set corresponding to a r.v. X.
- Fix n and let $\mathcal{N}_n = \{1, 2, \cdots, n\}$.
- Let the universal set be
$$\Omega = \bigcup_{i \in \mathcal{N}_n} \tilde{X}_i.$$
- Then the atom
$$A_0 = \bigcap_{i \in \mathcal{N}_n} \tilde{X}_i^c = \left(\bigcup_{i \in \mathcal{N}_n} \tilde{X}_i \right)^c = \Omega^c = \emptyset$$
is called the empty atom of $\mathcal{F}_n$.
- $\mathcal{A}$ is the set of other atoms of $\mathcal{F}_n$, called non-empty atoms.
- $|\mathcal{A}| = 2^n - 1$.
- A signed measure μ on $\mathcal{F}_n$ is completely specified by the values of μ on the atoms of $\mathcal{A}$, because $\mu(A_0)$ always vanishes.