

## Filtered Probability

A probability space is  $(\Omega, \mathcal{F}, P)$ .

$\mathcal{F}$  is subset  $2^\Omega$

$P : \mathcal{F} \rightarrow [0, 1]$

Exercise: Define  $\sigma$ . Show that intersection of  $\sigma$  algebra is also a  $\sigma$  algebra.

A collection  $\{\mathcal{F}_n\}_{n \geq 0}$  of  $\sigma$  algebras is called a filtration if  $\mathcal{F}_k \subset \mathcal{F}_{k+1}$  for all  $k \geq 0$ .