

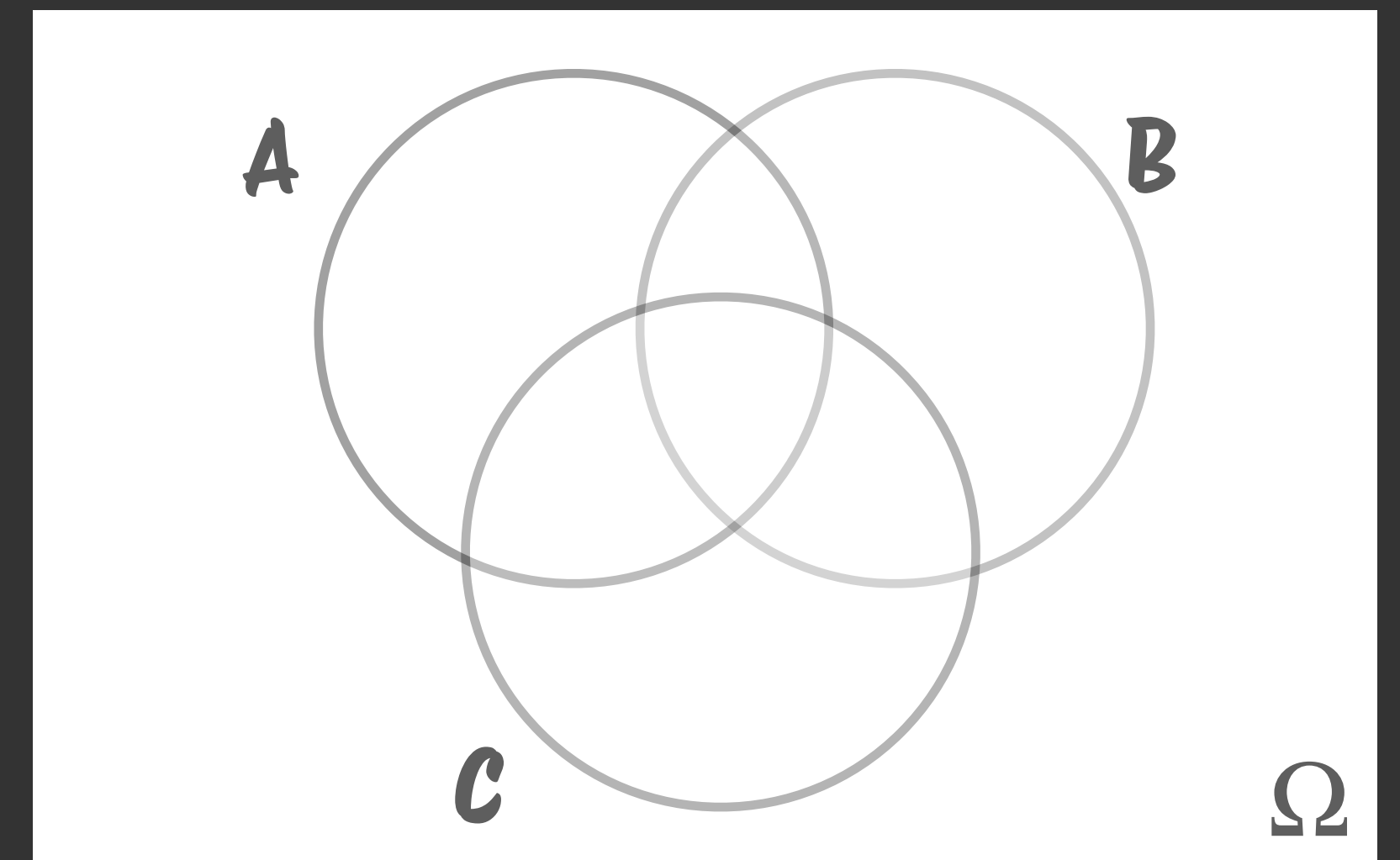
probability rules

Inclusion-Exclusion Rule

For three events A , B , C

$$P(A \cup B \cup C) = P(A) + P(\bar{A} \cap B) + P(\bar{A} \cap \bar{B} \cap C)$$

$$\begin{aligned} P(A \cup B \cup C) = & P(A) + P(B) + P(C) \\ & - P(A \cap B) - P(A \cap C) - P(B \cap C) \\ & + P(A \cap B \cap C) \end{aligned}$$



probability rules

Conditional Probability Rule