

## Remarks on Unions and Intersections

$$\begin{aligned} & A_1 \cup A_2 \cup A_3 \cup A_4 \cup A_5 \\ &= A_1 \text{ or } A_2 \text{ or } A_3 \text{ or } A_4 \text{ or } A_5 \\ &= \{\text{at least one of } A_1, A_2, A_3, A_4, A_5 \text{ occurs}\} \end{aligned}$$

$$A_1 \cup A_2 \cup A_3 \cup A_4 \cup A_5 = \bigcup_{i=1}^5 A_i = \bigcup_i A_i$$

$$\begin{aligned} & A_1 \cap A_2 \cap A_3 \cap A_4 \cap A_5 \\ &= A_1 \text{ and } A_2 \text{ and } A_3 \text{ and } A_4 \text{ and } A_5 \\ &= \{\text{all of } A_1, A_2, A_3, A_4, A_5 \text{ occur}\} \end{aligned}$$

$$A_1 \cap A_2 \cap A_3 \cap A_4 \cap A_5 = \bigcap_{i=1}^5 A_i = \bigcap_i A_i$$