

- Let $I = \{1, 2\}$, then

$$\bigcup_{n \in I} A_n = A_1 \cup A_2, \quad \bigcap_{n \in I} A_n = A_1 \cap A_2.$$

- If $I = \{1, 2, 3, 4\}$, then

$$\bigcup_{n \in I} A_n = A_1 \cup A_2 \cup A_3 \cup A_4, \quad \bigcap_{n \in I} A_n = A_1 \cap A_2 \cap A_3 \cap A_4.$$