Operazioni con gli insiemi

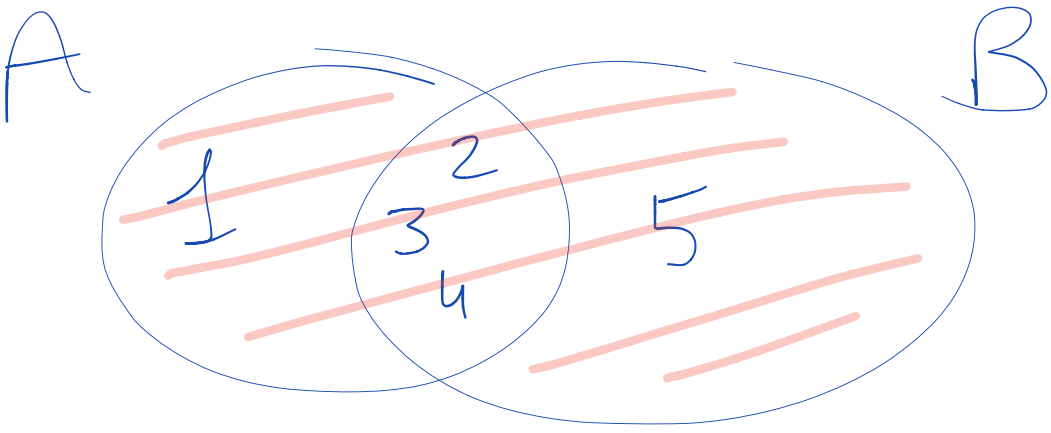
Unione

$$A = \{1, 2, 3, 4\}$$

$$B = \{x \in \mathbb{N} : 2 \leq x \leq 5\} =$$

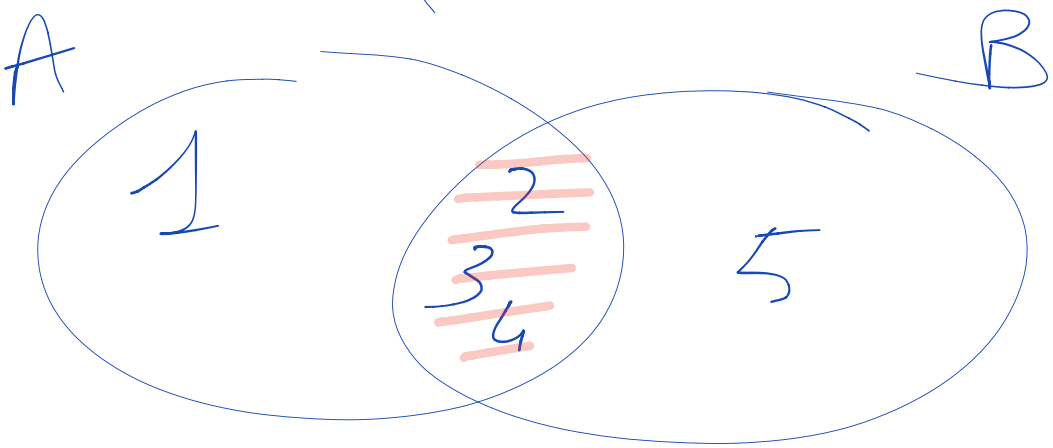
$$= \{2, 3, 4, 5\}$$

$$A \cup B = \{1, 2, 3, 4, 5\}$$



Intersezione

$$A \cap B = \{2, 3, 4\}$$



$$A \cup B = \{ x : x \in A \vee x \in B \}$$

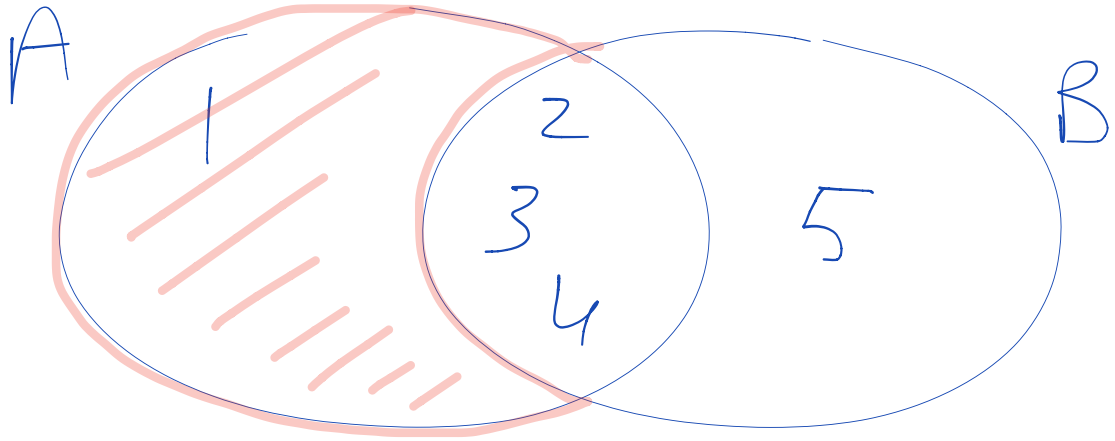
vel

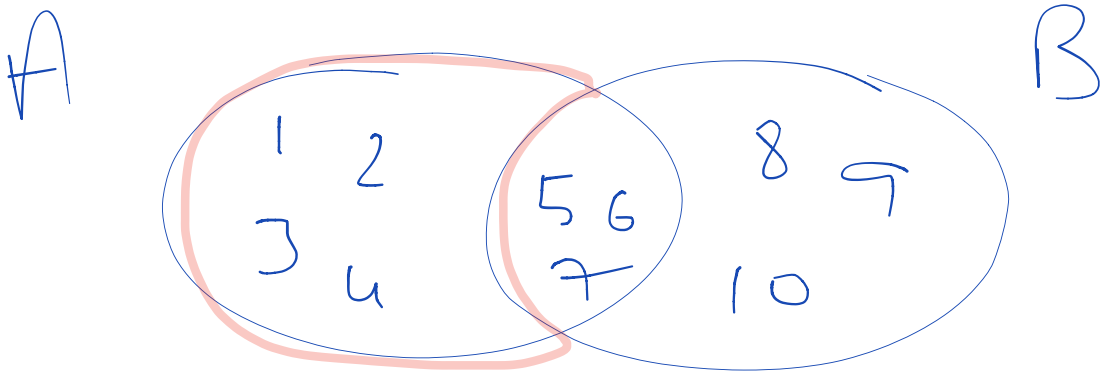
$$A \cap B = \{ x : x \in A \wedge x \in B \}$$

et

Differenza

$$A - B = \{x : x \in A \wedge x \notin B\}$$



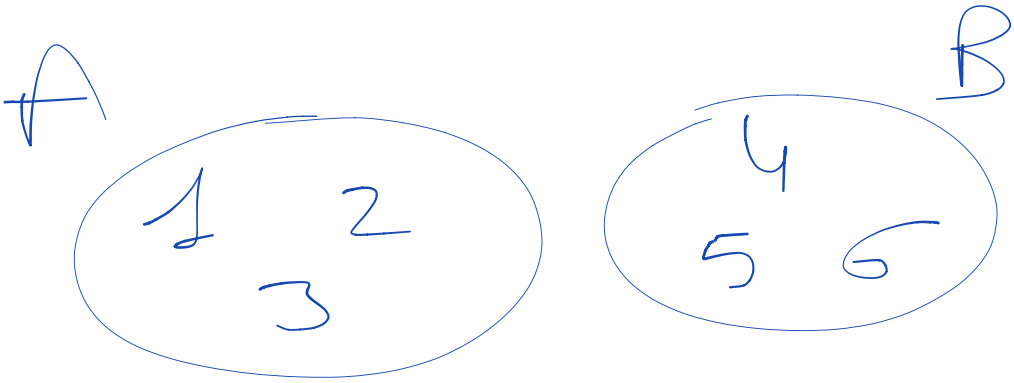


$$A - B = \{1, 2, 3, 4\}$$

$$B - A = \{8, 9, 10\}$$

$A - B \neq B - A$

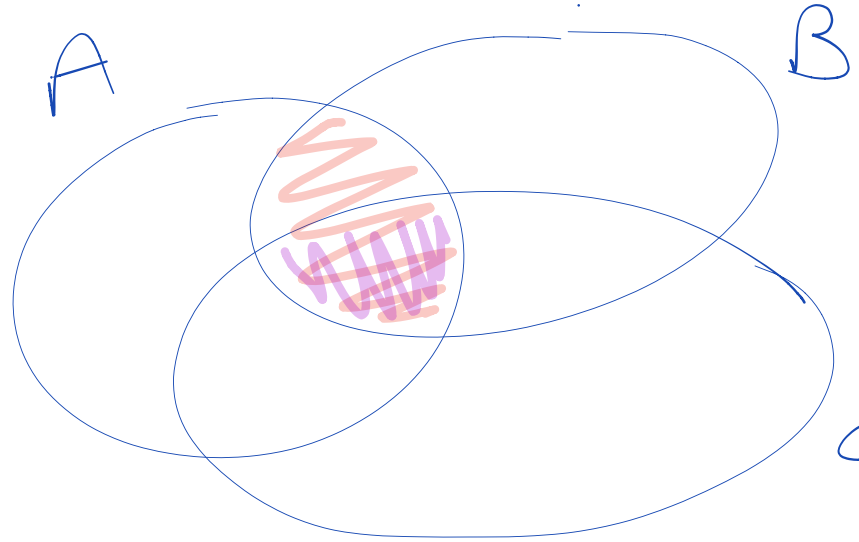
Due insiemi sono
DISGIUNTI
se $A \cap B = \emptyset$

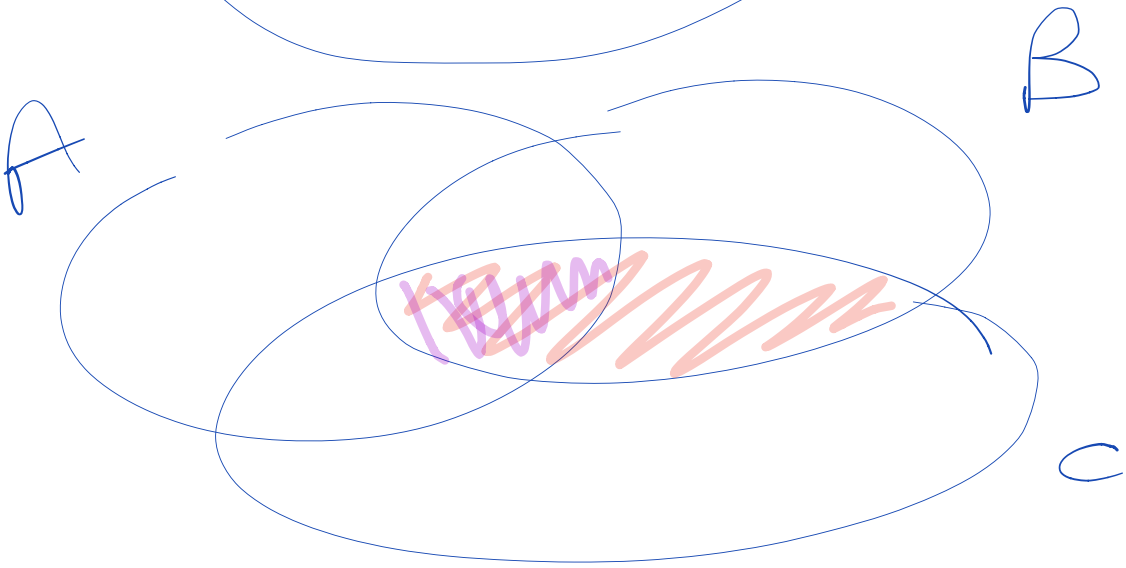


$A - B = A$ $\quad$ $B - A = B$

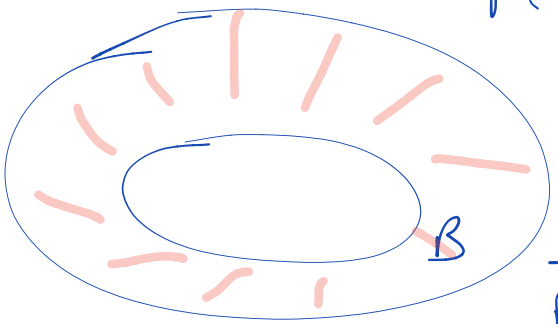
Proprietà

1) $A \cup A = A$ $\quad$ $A \cap A = A$
2) $A \cup \emptyset = A$ $\quad$ $A \cap \emptyset = \emptyset$
3) $A \cup B = B \cup A$ $\quad$ $A \cap B = B \cap A$
4) $A \cup (B \cup C) = (A \cup B) \cup C$ $\quad$ $(A \cap B) \cap C = A \cap (B \cap C)$





Complementare



A $\quad B \subset A$

$\overline{B}$ $\quad \complement_A(B)$

$\overline{B} = A - B$