

→ 2x Aufzählung / 2x Eigensubsetten

1)  $A = \{x \in \mathbb{R} \mid 42 \leq x < 50\}$   
 $B \hat{=} \text{alle durch 7 teilbaren, natürlichen Zahlen kleiner}$  45 ↘

2)  $A \hat{=} \text{durch 5 teilbare ganze Zahlen}$   
 $B = \{-10; -9; \dots; 9; 10\}$

a)  $A \cap B$     b)  $A \cup B$     c)  $A \setminus B$     d)  $B \setminus A$

3)  $A = \{x \in \mathbb{R} \mid 1 \leq x \leq 6\}$   
 $B = \{0; 1; 2; 3; 4; 5\}$   
 $C = \{x \in \mathbb{N} \mid x \geq 2\}$   
 $D = \{x \in \mathbb{R} \mid x < 6\}$

}	a) $A \cap B$	e) $B \cap C$
	b) $A \setminus D$	f) $B \cup C$
	c) $A \cap C$	g) $A \setminus C$
	d) $C \setminus A$	h) $B \setminus A$

i)  $(B \cap D) \setminus (C \cap A)$   
j)  $B \setminus C \cup D \setminus A$

$$\begin{aligned}
 1) \quad A \cap B &= \{42\} \longleftarrow \\
 A \cup B &= \{x \in \mathbb{N} \mid 42 \leq x < 50 \vee x \in \{7, 14, 21, 28, 35\}\} \\
 &= \{x \in \mathbb{N} \mid 42 \leq x < 50 \vee (x \bmod 7 = 0 \wedge 7 \leq x \leq 35)\}
 \end{aligned}$$

$$A \setminus B = \{x \in \mathbb{N} \mid 42 < x < 50\}$$

$$B \setminus A = \{7, 14, 21, 28, 35\}$$

$$\{x \in \mathbb{N} \mid 7 \leq x \leq 35\}$$

$$x \geq 7 \wedge x \leq 35$$

$$2) \quad A \cap B = \{-10, -5, 0, 5, 10\}$$

$$A \cup B = \{x \in \mathbb{Z} \mid x \bmod 5 = 0 \vee -9 \leq x \leq 9\}$$

$$A \setminus B = \{x \in \mathbb{Z} \setminus \{\pm 10, \pm 5, 0\} \mid x \bmod 5 = 0\}$$

$$B \setminus A = \{x \in \mathbb{Z} \setminus \{\pm 5, 0\} \mid -9 \leq x \leq 9\}$$

$$3) a) A \cap B = \{1; 2; 3; 4; 5\}$$

$$b) A \setminus D = \{6\}$$

$$c) A \cap C = \{2; 3; 4; 5; 6\}$$

$$d) C \setminus A = \{x \in \mathbb{N} \mid x > 6\}$$

$$f) B \cup C = \{x \in \mathbb{Z} \mid x \geq 0\}; \mathbb{N}_0$$

$$e) B \cap C = \{2; 3; 4; 5\}$$

$$g) A \setminus C = \{x \in \mathbb{R} \setminus \{2; 3; 4; 5; 6\} \mid 1 \leq x \leq 6\}$$

$$h) B \setminus A = \{\emptyset\}$$

$$i) (B \cap D) \setminus (C \cap A) = B \setminus \{2; 3; 4; 5; 6\} = \{0; 1\}$$

$$j) (B \setminus C) \cup (D \setminus A) = \{0; 1\} \cup \{x \in \mathbb{R} \mid x < 1\}$$

$$= \{x \in \mathbb{R} \mid x \leq 1\}$$