S 28 Nr. 2 $A = \{\ldots -10; -5; 0; 5; 10; \ldots\}$

$B = \{-10; -9; -8; \ldots; 8; 9; 10\}$

a) $A \cap B = \{\pm 10; \pm 5; 0\} = \{x \in [-10; 10]_{\mathbb{Z}} \mid x \bmod 5 = 0\}$

b) $A \cup B = \{x \in \mathbb{Z} \mid x \bmod 5 = 0 \vee (x > -10 \wedge x < 10)\}$

$-9 \leq x \leq 9$

c) $A \setminus B = \{\ldots -20; -15; 15; 20; \ldots\}$ $\quad x \geq 15 \vee x \leq -15$

$= \{x \in \mathbb{Z} \mid x \bmod 5 = 0 \wedge |x| \geq 15\}$

d) $B \setminus A = \{x \in [-10; 10]_{\mathbb{Z}} \mid x \bmod 5 \neq 0\}$

$= x \in [-9; 9]_{\mathbb{Z}} \setminus \{\pm 5; 0\}$

S 32 Nr. 1

$A = \{-6; -4; -2; 0; 2; 6; 14; 16; 18; 20; 22; 26\}$

$B = \{-10; -8; -4; 0; 4; 8; 10; 12; 16; 20; 24; 28; 30; 32\}$

a) $A \cap B = \{-4; 0; 16; 20\}$

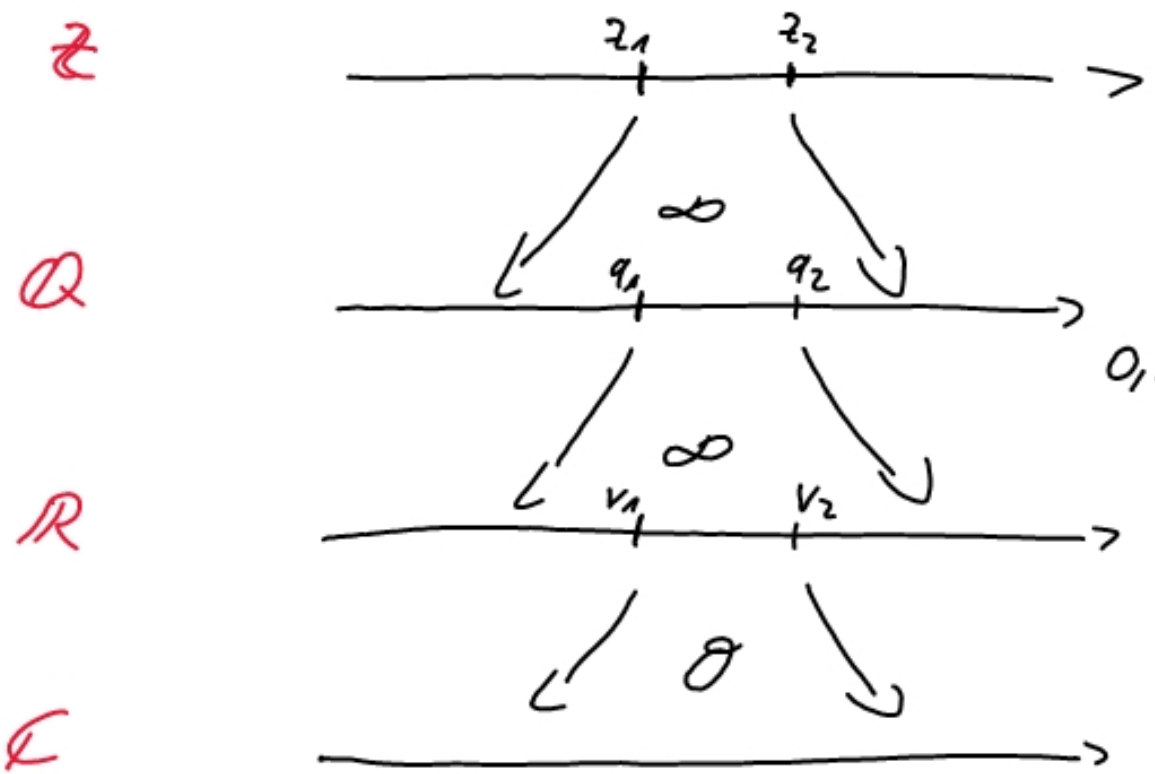
b) $A \cup B = \{x \in [-10; 32]_{\mathbb{Z}} \mid x \bmod 2 = 0\}$

c) $A \setminus B = \{-6; -2; 2; 6; 14; 18; 22; 26\}$

$= \{x \in [-6; 26]_{\mathbb{Z}} \setminus \{10\} \mid x \bmod 2 = 0 \wedge x \bmod 4 \neq 0\}$

d) $B \setminus A = \{x \in [-10; 32]_{\mathbb{Z}} \setminus \{-4; 0; 16; 20\} \mid x \bmod 4 = 0 \vee x \bmod 10 = 0\}$

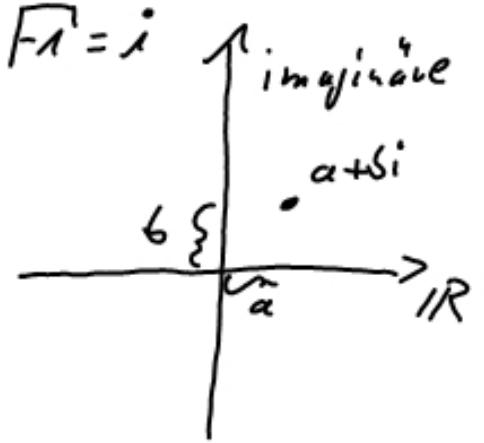
Zahlenmengen



$0,\overline{4} = 4/9$

$0,0\overline{7} = 1/10 \cdot 7/9 = 7/90$

$0,1\overline{23} = \frac{1}{10} + \frac{1}{10} \cdot \frac{23}{99}$



$2 \cdot x + 7 = 11 \qquad |-7$

$2 \cdot x + 7 - 7 = 11 - 7$

$2 \cdot x + 0 = 4 \qquad |\cdot \frac{1}{2}$ $\quad 0$ ist neutral (+)

$\frac{1}{2} \cdot 2 \cdot x + 0 = \frac{1}{2} \cdot 4$

$1 \cdot x + 0 = 2$ $\quad 1$ ist neutral (*)

$x = 2$

$\overline{25 + 17} = \overline{42}$

$\overline{25} - \overline{17} = 50 - 8 = 42$