

I. Verzamelingen

A. Definitie van Verzamelingen

$$A = \{1, 2, 3\} \leftarrow B = \{a, b, c\} \quad (\text{of } \{c, b, a\})$$

$$\underbrace{A}_{\text{verzameling}} = \{ \underbrace{3, 2, 1}_{\text{element}} \} \quad C = \{1, a, 19, g\} \quad \{1, 2\}$$

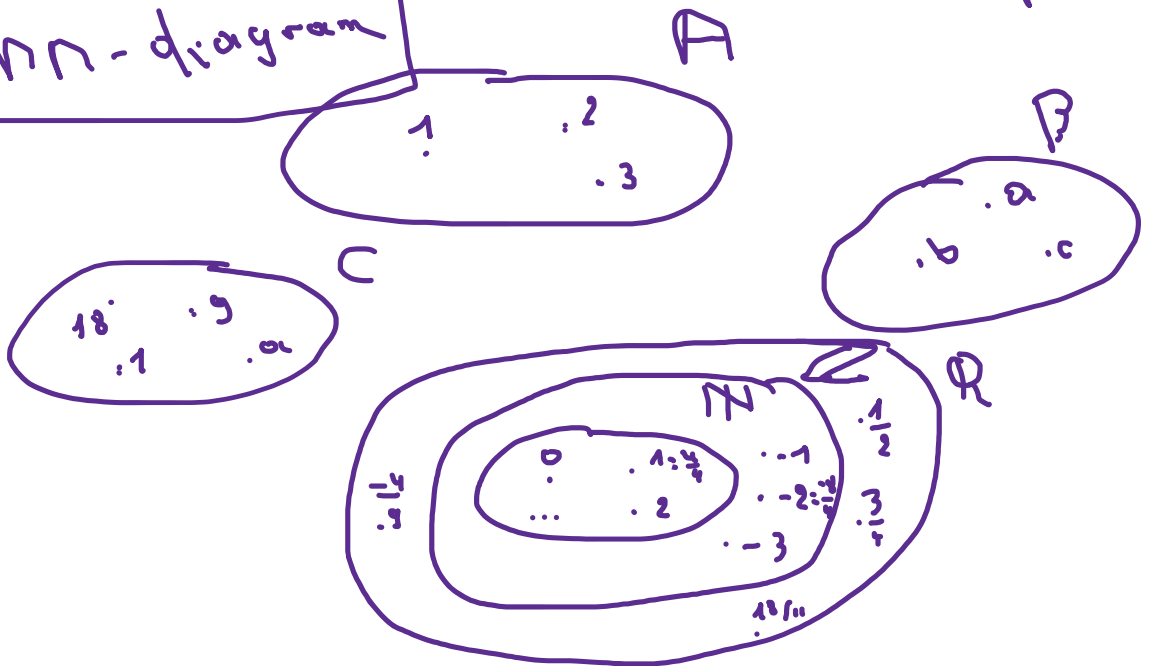
$$\{0, 1, 2, 3, 4, \dots\} = \boxed{\mathbb{N}} = \text{natuurlijke getallen}$$

$$\{ \dots, -4, -3, -2, -1, 0, 1, 2, 3, \dots \} = \boxed{\mathbb{Z}} = \text{gehele getallen}$$

$$\left\{ \frac{1}{2}, \frac{3}{4}, \frac{18}{21}, -\frac{4}{9}, \frac{4}{4}, \frac{3}{4} \right\} = \boxed{\mathbb{Q}} = \text{rationale getallen} \\ = \text{breuken}$$

$$\frac{1}{4} = 1 \\ \frac{1}{5} = 2$$

Venn-diagram



B. Unie van verzamelingen

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

Geef de unie volgende verzamelingen ($A \cup B$)

$A = \{1, 2, 4\}$ en $B = \{3, 4, 5, 6\}$ $A \cup B = \{1, 2, 3, 4, 5, 6\}$ $= \{1, 2, 3, 4, 5, 6\}$	$A = \{2, 4\}$ en $B = \{3, 4, 5\}$ $A \cup B = \{2, 3, 4, 5\}$ $= \{2, 3, 4, 5\}$
$A = \{2, 8, 11\}$ en $B = \{2, 4, 15, 16\}$ $A \cup B = \{2, 4, 8, 11, 15, 16\}$	$A = \{11, 33, 44\}$ en $B = \{22, 44, 55, 66\}$ $A \cup B = \{11, 22, 33, 44, 55, 66\}$
$A = \{1, 2, 4, 5, 6, 7\}$ en $B = \{2, 4, 5, 6, 7, 9\}$ $A \cup B = \{1, 2, 4, 5, 6, 7, 9\}$	$A = \{1, 4\}$ en $B = \{4\}$ $A \cup B = \{1, 4\}$
$A = \{1, 2, 4, 7, 9, 10, 11\}$ en $B = \{2, 4, 5, 6, 7, 8, 9, 10\}$ $A \cup B = \{1, 2, 4, 5, 6, 7, 8, 9, 10, 11\}$	$A = \{1, 3, 4\}$ en $B = \{1, 2, 4, 5\}$ $A \cup B = \{1, 2, 3, 4, 5\}$
$A = \{1, 2\}$ en $B = \{3, 4\}$ $A \cup B = \{1, 2, 3, 4\}$	$A = \{1, 2, 4, 6\}$ en $B = \{2, 4, 5, 6\}$ $A \cup B = \{1, 2, 4, 5, 6\}$

C. Doorsnede van verzamelingen

$$(A \cap B) = \text{en}$$

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

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

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

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

\emptyset \emptyset

Geef de doorsnede volgende verzamelingen ($A \cap B$)

$A = \{1, 2, 4, 5\}$ en $B = \{2, 3, 5, 6\}$ $A \cap B = \{2, 5\}$ $A \cup B = \{1, 2, 3, 4, 5, 6\}$	$A = \{1, 2, 4\}$ en $B = \{3, 4, 5\}$ $A \cap B = \{4\}$ $\neq \emptyset$ $A \cup B = \{1, 2, 3, 4, 5\}$
$A = \{1, 4, 8, 11\}$ en $B = \{1, 4, 15, 16\}$ $A \cap B = \{1, 4\}$ $A \cup B = \{1, 4, 8, 11, 15, 16\}$	$A = \{11, 33\}$ en $B = \{22, 44, 55, 66\}$ $A \cap B = \{\}$ of \emptyset leegte $\{ \}$ $A \cup B = \{11, 22, 33, 44, 55, 66\}$
$A = \{1, 3, 4, 5, 6, 7, 9\}$ en $B = \{2, 4, 5, 6, 7, 8\}$ $A \cap B = \{4, 5, 6, 7\}$ $A \cup B = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$	$A = \{4, 5\}$ en $B = \{4, 5\}$ $A = B$ $A \cap B = \{4, 5\} = A = B$ $A \cup B = \{4, 5\} = A = B$
$A = \{1, 3, 4, 8, 9, 10, 11\}$ en $B = \{2, 5, 6, 7, 8, 9, 10\}$ $A \cap B = \{8, 9, 10\}$ $A \cup B = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11\}$	$A = \{1, 2, 3\}$ en $B = \{1, 2, 4, 5\}$ $A \cap B = \{1, 2\}$ $A \cup B = \{1, 2, 3, 4, 5\}$
$A = \{1, 3, 4\}$ en $B = \{3, 4\}$ $A \cap B = \{3, 4\}$ $A \cup B = \{1, 3, 4\}$	$A = \{1, 2, 5\}$ en $B = \{2, 4, 5, 6\}$ $A \cap B = \{2, 5\}$ $A \cup B = \{1, 2, 4, 5, 6\}$

D. Verschil van verzamelingen

$A \setminus B$ = wel A, niet in B

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

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

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

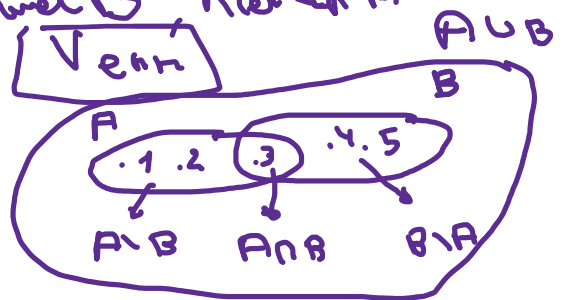
$$A \cap B = \{3\}$$

$$A \setminus B = \{1, 2\}$$

$$B \setminus A = \{4, 5\}$$

$B \setminus A$ = wel B, niet in A

Venn



Geef het verschil volgende verzamelingen ($A \setminus B$)

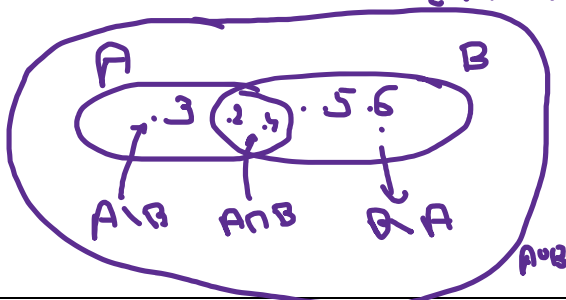
$$A = \{2, 3, 4\} \text{ en } B = \{2, 4, 5, 6\}$$

$$A \setminus B = \{3\}$$

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

$$B \setminus A = \{5, 6\}$$

$$A \cup B = \{2, 3, 4, 5, 6\}$$



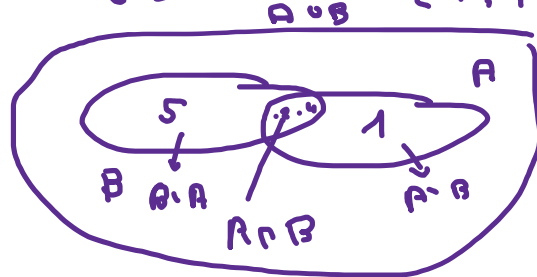
$$A = \{1, 2, 4\} \text{ en } B = \{2, 4, 5\}$$

$$A \setminus B = \{1\}$$

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

$$B \setminus A = \{5\}$$

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



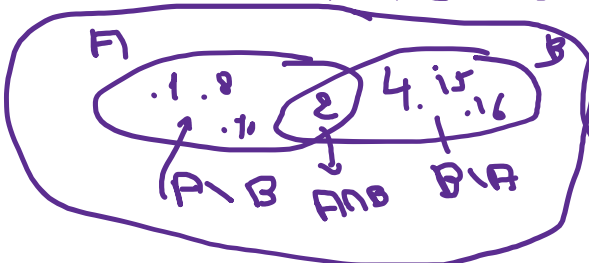
$$A = \{1, 2, 8, 11\} \text{ en } B = \{2, 4, 15, 16\}$$

$$A \setminus B = \{1, 8, 11\}$$

$$A \cap B = \{2\}$$

$$B \setminus A = \{4, 15, 16\}$$

$$A \cup B = \{1, 2, 4, 8, 11, 15, 16\}$$



$$A = \{22, 44\} \text{ en } B = \{22, 44, 55, 66\}$$

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

$$A \cap B = \{22, 44\}$$

$$B \setminus A = \{55, 66\}$$

$$A \cup B = \{22, 44, 55, 66\} = B$$



$A = \{1, 2, 4, 5, 6, 7, 9\}$ en $B = \{2, 4, 5, 6, 7, 8\}$

$A \setminus B = \{1, 9\}$ $A \cap B = \{2, 4, 5, 6, 7\}$

$B \setminus A = \{8\}$ $A \cup B = \{1, 2, 4, 5, 6, 7, 8, 9\}$



$A = \{4\}$ en $B = \{4\}$ $A = B$

$A \setminus B = \{\} = \emptyset$ $A \cap B = \{4\}$

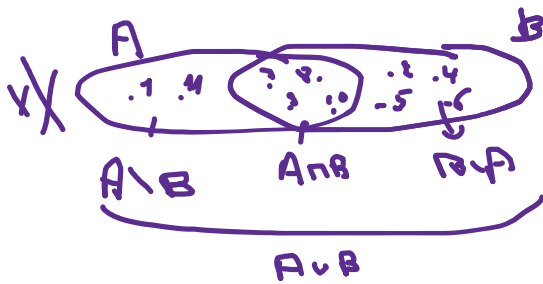
$B \setminus A = \{\} = \emptyset$ $A \cup B = \{4\}$



$A = \{1, 7, 8, 9, 10, 11\}$ en $B = \{2, 4, 5, 6, 7, 8, 9, 10\}$

$A \setminus B = \{1, 11\}$ $A \cap B = \{7, 8, 9, 10\}$

$B \setminus A = \{2, 4, 5, 6\}$ $A \cup B = \{1, 2, 4, 5, 6, 7, 8, 9, 10, 11\}$



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

$A \setminus B = \emptyset$ $A \cap B = \{1, 2, 4\}$

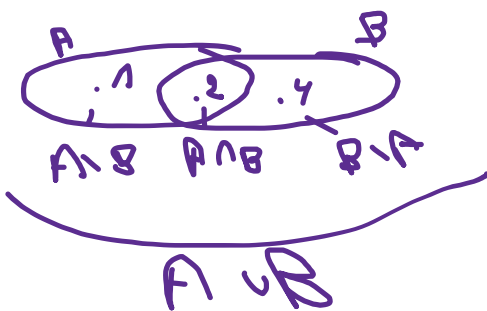
$B \setminus A = \{5\}$ $A \cup B = \{1, 2, 4, 5\}$



$A = \{1, 2\}$ en $B = \{2, 4\}$

$A \setminus B = \{1\}$ $A \cap B = \{2\}$

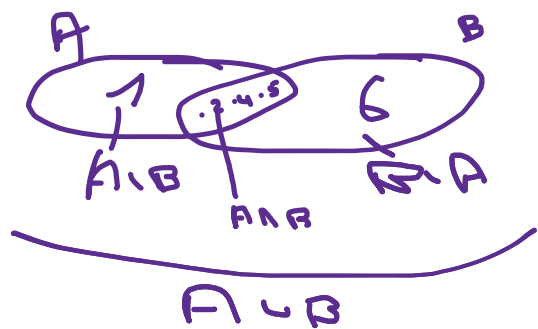
$B \setminus A = \{4\}$ $A \cup B = \{1, 2, 4\}$



$A = \{1, 2, 4, 5\}$ en $B = \{2, 4, 5, 6\}$

$A \setminus B = \{1\}$

$B \setminus A = \{6\}$



E. Element van en deel van

$\in, \notin, \subset, \not\subset$

\in element van
 \subset deel van

$A = \{1, 2, 3\}$
 $3 \in A$ ~~$3 \notin A$~~
 $\{3\} \subset A$ ~~$\{3\} \not\subset A$~~

$1 \in A$
 $2 \in A$
 $4 \notin A$
elementen
 $\notin \in$

$\{1\} \subset A$
 $\{1, 2\} \subset A$
 $\{1, 4\} \not\subset A$
 $\subset \not\subset$

Vul in: $\in, \notin, \subset, \not\subset$

$A = \{1, 2, 3, 4, 5, 6, 7, 8\}$ $2 \dots \in A$ $\{2\} \subset A$	$A = \{1, 2, 3, 4, 5, 6, 7, 8\}$ $9 \dots \notin A$ $\{9\} \not\subset A$
$A = \{1, 2, 3, 4, 5, 6, 7, 8\}$ $\{2, 3, 7\} \dots \subset A$ $\not\subset$	$A = \{1, 2, 3, 4, 5, 6, 7, 8\}$ $\{2, 3, 10\} \dots \not\subset A$ \subset
$A = \{1, 2, 3, 4, 5, 6, 7, 8\}$ en $B = \{7, 8, 9, 10\}$ $6 \dots \notin A \cap B$ $A \cap B = \{7, 8\}$	$A = \{1, 2, 3, 4, 5, 6, 7, 8\}$ en $B = \{6, 7, 8, 9, 10\}$ $\{6, 7\} \dots \subset A \cap B$ $A \cap B = \{6, 7, 8\}$
$A = \{1, 2, 3, 4, 5, 6, 7\}$ en $B = \{7, 8, 9, 10\}$ $\{7, 8\} \dots \not\subset A \cap B$ $A \cap B = \{7\}$ \subset	$A = \{1, 2, 3, 4, 5, 6, 7, 8\}$ en $B = \{7, 8, 9, 10\}$ $8 \dots \in A \cap B$ $\{7, 8\}$ $\not\subset$
$A = \{1, 2, 3, 4, 5, 6, 7, 8\}$ en $B = \{1, 7, 8, 9, 10\}$ $\{1, 7, 8\} \dots \subset A \cup B$ $\not\subset$	$A = \{1, 2, 3, 4, 5, 6, 7, 8\}$ en $B = \{7, 8, 9, 10\}$ $7 \dots \in A \cup B$ $\not\subset$