

# 1.19) Unendliche Vereinigungen und Durchschnitte

$$\begin{array}{llllll}
 1) \bigcup_{n \in \mathbb{N}} \{n\} & 2) \bigcup_{n \in \mathbb{Z}} \{n\} & 3) \bigcup_{i \in \{2, 4, 6, 8, \dots\}} \{i-1\} & 4) \bigcup_{i \in \mathbb{Z}} \{-i\} & 5) \bigcup_{i \in \mathbb{Z}} \{+, +, 0, 0\} & 6) \bigcap_{i \in \mathbb{Z}} \{+, +, 0, 0\} \\
 \mathbb{N} & \mathbb{Z} & \{1, 3, 5, 7, \dots\} & \{-1, 1\} & \{+, +, 0, 0\} & \{+, +, 0, 0\} \\
 7) \bigcup_{k \in \mathbb{Z}} \{-k, -(k-1), \dots, -1, 0, 1, 2, 3, \dots\} & 8) \bigcap_{k \in \mathbb{Z}} \{0, \frac{1}{k}, \frac{1}{k+1}, \frac{1}{k+2}, \frac{1}{k+3}, \dots\} & 9) \bigcap_{k \in \mathbb{N}} \{k, 2k, 3k, \dots\} \\
 \mathbb{Z} & \{0\} & \emptyset
 \end{array}$$