

$$\underline{\mathbb{R}:o}_r = \frac{x \in \mathbb{R}}{x \setminus o \leq r}$$

$$\underline{\mathbb{R}:o}_r = \frac{x \in \mathbb{R}}{x \setminus o < r}$$

$$U \underset{\text{off}}{\subset} \mathbb{R} \Leftrightarrow \bigwedge_{x \ r > 0} \bigvee^U \underline{\mathbb{R}:x}_r \subset U$$

$$\underline{\mathbb{R}:o}_R \subset \mathbb{R}$$

$$x \in \underline{\mathbb{R}:o}_R \Rightarrow x \setminus o < r \Rightarrow r - x \setminus o > 0$$

$$\underline{\mathbb{R}:x}_{r-x \setminus o} \subset \underline{\mathbb{R}:o}_r$$

$$\acute{x} \in \underline{\mathbb{R}:x}_{r-x \setminus o} \Rightarrow \acute{x} \setminus x < r - x \setminus o \Rightarrow \acute{x} \setminus o \underset{\text{trans}}{\leq} \underbrace{\acute{x} \setminus x}_{< r - x \setminus o} + x \setminus o < r$$

$$A \underset{\text{abg}}{\subset} \mathbb{R} \Leftrightarrow \mathbb{R} \perp A \subset \mathbb{R}$$

$$C \underset{\text{off}}{\subset} \mathbb{R} \Leftrightarrow C \subset \mathbb{R} \subset C$$

$$\emptyset \subset \mathbb{R} \supset \mathbb{R} \left\{ \begin{array}{l} U_i \subset \mathbb{R} \Rightarrow \bigcup_i U_i \subset \mathbb{R} \\ A_i \subset \mathbb{R} \Rightarrow \bigcap_i A_i \subset \mathbb{R} \end{array} \right. \left\{ \begin{array}{l} U_n \subset \mathbb{R} \Rightarrow \bigcap_n U_n \subset \mathbb{R} \\ A_n \subset \mathbb{R} \Rightarrow \bigcup_n A_n \subset \mathbb{R} \end{array} \right.$$

$$\supset : x \in \bigcup_i U_i \Rightarrow \overset{I}{\forall} x \in U_j \Rightarrow \forall_{r>0} \underline{\mathbb{R}:x}_r \subset U_j \subset \bigcup_i U_i \Rightarrow \underline{\mathbb{R}:x}_r \subset U_j \subset \bigcup_i U_i$$

$$\subset : \mathbb{R} \setminus A_i \subset \mathbb{R} \Rightarrow \mathbb{R} \setminus \bigcap_i A_i = \bigcup_i \overline{\mathbb{R} \setminus A_i} \subset \mathbb{R} \Rightarrow \bigcap_i A_i \subset \mathbb{R}$$

Folg-Krit / $A \subset \mathbb{R} \Leftrightarrow \bigwedge_{\text{Folgen}} A \ni {}^n \mathfrak{t} \rightsquigarrow {}^\infty \mathfrak{t} \in \mathbb{R} \curvearrowright {}^\infty \mathfrak{t} \in A$

$$\mathbb{R} \supset U \Rightarrow U = \bigcup_{a \text{ abz}} \mathcal{U}_a$$