

$$\sup_{x \in A \cup B} |d(x, A) - d(x, B)| =$$

$$= \sup_{x \in B} |d(x, A) - 0|, \quad x \in B =$$

$$\sup_{x \in A} |d(x, B) - 0|, \quad x \in A$$

$$= \begin{cases} \sup_{x \in B} d(x, A), & x \in B \\ \sup_{x \in A} d(x, B), & x \in A \end{cases} = \max \{-1\}$$

1. Lest: Ist  $A$  ~~ext~~ <sup>ext</sup> ~~abgeschlossen~~

ist preußischerweise in metrischenräumen

$\Rightarrow d(x, A) = d(x, a)$  also jedes  $a \in A$ .

d-f:

$$d(x, A) = \inf_{a \in A} d(x, a), \text{ wgl } \underline{\text{---}}$$

ist wgl  $a_n$ , d.h.  $d(x, a_n) \xrightarrow{n} \inf d(x,$

preußischerweise, wgl minima wählbar  
podgl. z. B.  $a'_n \xrightarrow{n} a$ .

$A$  ~~abgeschlossen~~, wgl  $a \in A$  to  $\exists a', \forall$

~~if  $d(x, \alpha)$~~

$d(x, A) = d(x, \alpha) \cdot$ , to justify

$d(x, A) \geq d(x, \alpha) - \varepsilon, \varepsilon > 0$

a point  $\alpha'_n$  so that is

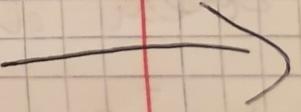
$d(x, \alpha'_n) - d(x, \alpha) \leq \frac{\varepsilon}{2} \cdot$   ~~$d(x, \alpha)$~~

2. view.  $\Delta$ :

~~$d(x, \alpha'_n) + d(\alpha'_n, \alpha) \geq d(x, \alpha)$~~

~~$d(\alpha'_n, \alpha) \geq \varepsilon + d(x, \alpha)$~~

$-d(\alpha'_n, \alpha) \geq \frac{\varepsilon}{2}$ , with  $\alpha'_n$  nearby  $\alpha$ .



als koidlego  $x \in X - A \cup B$ :

zatem my BSO je  $d(x, A) \geq d(x, B)$

korzystajc z lematu miedz  $d(x, b) = d(b, B)$

als koidlego  $a \in A$ :

$$d(x, A) = \inf_{a \in A} d(x, a) \leq d(x, a) \leq d(x, b) + d(b, a)$$

$$= d(x, B) + d(b, a)$$

czyli:

$$\sup_{a \in A} d(x, A) \leq \sup_{a \in A} d(x, B) + \sup_{a \in A} d(b, a)$$

$$d(x, A) \leq d(x, B) + d(b, A)$$

$$0 \leq d(x, A) - d(x, B) \leq d(b, A) - d(b, B)$$

$$|d(x, A) - d(x, B)| \leq |d(b, A) - d(b, B)|$$

zatem als koidlego  $x \in X - A \cup B$

możemy wskazać  $b \in B$  (BSO↑b)

zdaje się

— || —  $\cup$

o. yli

$$\sup_{x \in X \setminus A \cup B} |d(x, A) - d(x, B)| \leq \sup_{x \in A \cup B} |d(x, A) - d(x, B)|$$

B). o. yli

$$\sup_{x \in X} | - | - | = \sup_{x \in A \cup B} | - | - | = d_H$$

Sprennbar w. hiner, jo  $d_H$  to määrile

1.  ~~$\sup_{x \in X} |d(x, A) - d(x, B)| \geq 0$~~

~~W. v. m. y. of value~~

2.  $\sup_{x \in X} |d(x, A) - d(x, B)| = \sup |d(x, B) - d(x, A)|$

3.  $|d(x, A) - d(x, C)| = |d(x, A) - d(x, B) + d(x, B) - d(x, C)|$

$$\sup_{x \in X} |d(x, A) - d(x, C)| \leq \sup_{x \in X} (|d(x, A) - d(x, B)| + |d(x, B) - d(x, C)|)$$

$$\leq \sup_{x \in X} | - | - |$$

$$+ \sup_{x \in X} | - | - | \quad .$$