

Def. Metrik: $d(x, y), x, y \in M = d: M \times M \rightarrow [0, \infty)$

(i) $d(x, y) = 0 \iff x = y$ pos. def

(ii) $d(x, y) = d(y, x)$

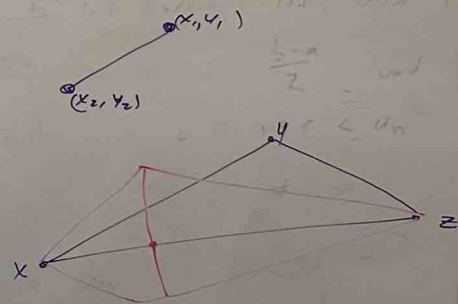
(iii) $d(x, y) + d(y, z) \geq d(x, z)$, Dreiecksungl.

$\Rightarrow (M, d)$ - Metrischer Raum

$(\mathbb{R}, d(x, y))$

$\vec{a} \times \vec{b} = -(\vec{b} \times \vec{a})$

anti-sym



Satz: alle Cauchy Folgen Konv. \iff vollständig in M.R.

wichtiger
Begriff

$\overline{C_k} \rightarrow \sup$

$\underline{C_k} \rightarrow \inf$

$C_n = \left(1 - \frac{(-1)^n}{n}\right) \sin\left(\frac{n\pi}{2}\right)$

$$\lim_{n \rightarrow \infty} \sup x_n =: \underline{a}_{\sup}$$

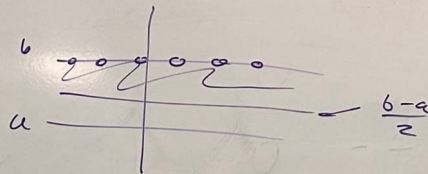
$$\underbrace{A \text{ m.n. } b}_{\text{H.P.}} \rightarrow b$$

$$\underline{b} > x_{g(n)} > a + \varepsilon$$

$$\overline{x}_n \rightarrow b \quad \hookrightarrow$$

$$\boxed{a}_{\sup} > b$$

$$\overline{x}_n := \sup_{m \geq n} \{x_m\}$$



$$c_n = a_n \quad b_n$$

$$(0.1) \sin \vartheta$$

$$\frac{2n}{2n+1}$$

$$A: \quad \forall n \in \mathbb{N}$$

$$-0.1, -0.1, \dots$$