

\mathbb{R}^3

$$x = (1, 2, 3)$$

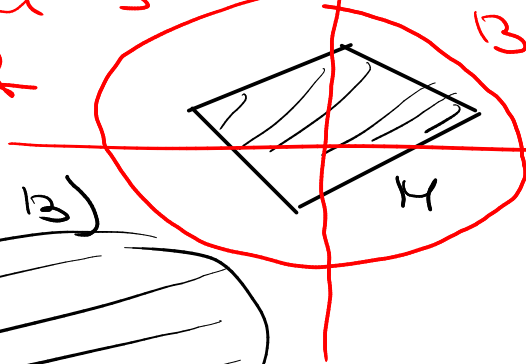
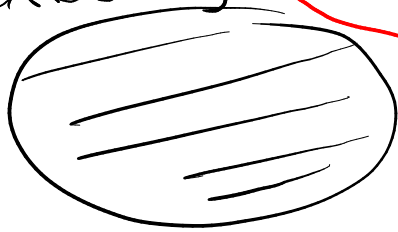
$$y = (2, 4, 6)$$

$$\sqrt{(1-2)^2 + (2-4)^2 + (3-6)^2} =$$
$$\sqrt{1^2 + 2^2 + 3^2} = \underline{\underline{\sqrt{14}}}$$

M is bounded if there exists
a ball B
such that

$M \subset B$

(M is inside B)



sequences

$$\mathbb{D}^1 \quad a_n = \frac{1}{n+2} \quad \lim_{n \rightarrow \infty} \frac{1}{n+2} = 0$$

$$\mathbb{D}^2 \quad a_n = \left(\lim_{n \rightarrow \infty} \frac{1}{n}, \frac{n^2}{2n^2+1} \right) \quad \lim_{n \rightarrow \infty} a_n = \underline{\underline{(0, \frac{1}{2})}}$$

$$\lim_{n \rightarrow \infty} \frac{1}{n} = 0$$

$$\lim_{n \rightarrow \infty} \frac{n^2}{2n^2+1}$$

$$= \lim_{n \rightarrow \infty} \frac{\cancel{n^2}}{\cancel{n^2} \cdot \frac{1}{2 + \frac{1}{n^2}}} = \frac{1}{2}$$

\downarrow
 0