# Assignment 8

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## 1 Exercise 11.6.3

**Problem** Prove that the metric space $(\mathbb{R}^d, \text{dist}_{\|\cdot\|_2})$, where $\|\cdot\|_2$ is the Euclidiean norm, is complete

*Proof.* □

## 2 Exercise 11.6.6

**Problem** Consider the following subset $A$ of $\mathbb{R}^2$

$$A := \{(x_1, x_2) \in \mathbb{R}^2 \mid 4(x_1)^2 + (x_2)^2 \leq 25\}.$$

Prove that the set $A$ is a closed and bounded subset of $(\mathbb{R}^2, \|\cdot\|_2)$.

*Proof.* □