

# Functional Analysis

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## Contents

<b>1</b>	<b>Metric Spaces</b>	<b>2</b>
1.1	Metric Space . . . . .	2
1.2	Further Examples of Metric Spaces . . . . .	2
1.3	Open Set, Closed Set, Neighborhood . . . . .	2

# 1 Metric Spaces

## 1.1 Metric Space

(P18)

**Definition 1.1.1** (Metric space, metric)

**Example 1.1.2** (Real line  $\mathbb{R}$ )

## 1.2 Further Examples of Metric Spaces

(P24)

**Example 1.2.1** (Sequence space  $s$ )

## 1.3 Open Set, Closed Set, Neighborhood

**Definition 1.3.1** (Open Set) *Given a point  $x_0 \in X$  and a real number  $r \geq 0$ .*