Real Functions

1 Why

We define functions mapping real numbers to real numbers.

2 Definition

A **real function** is a function from subset of the real numbers into a subset of the real numbers. When clear from context, we call a real function a function.

Often, the domain is an interval. In this case, we say that the function is defined on a closed interval of the real line. We usually leave the codomain as the set of real numbers, unless we wish to speak of the function being onto.

2.1 Notation

Let R denote the set of real numbers. Let $f : R \to R$. Then f is a real function.

Let $a, b \in R$. Let $[a, b] \subset R$ a closed interval of real numbers. Let $f : [a, b] \to R$. Then f is a real function defined on a closed

interval.

We regularly declare the interval and the function in one pass: Let $f : [a, b] \to R$, read aloud as "f from closed a b to R."