Swanand Khare

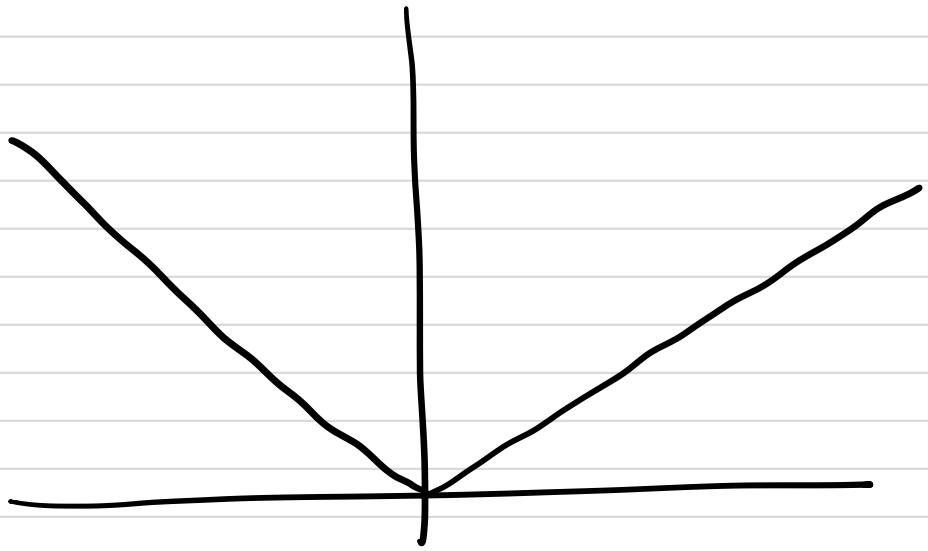
Maths (1)

Lecture 1

functions of 1- variable

$f(x) = |x|$

$f: \mathbb{R} \to \mathbb{R}$; $f(x) = |x|$



$\{(x, f(x)) \mid x \in D\}$ $\quad f: D \to \mathbb{R}$

$\subseteq \mathbb{R}^2$

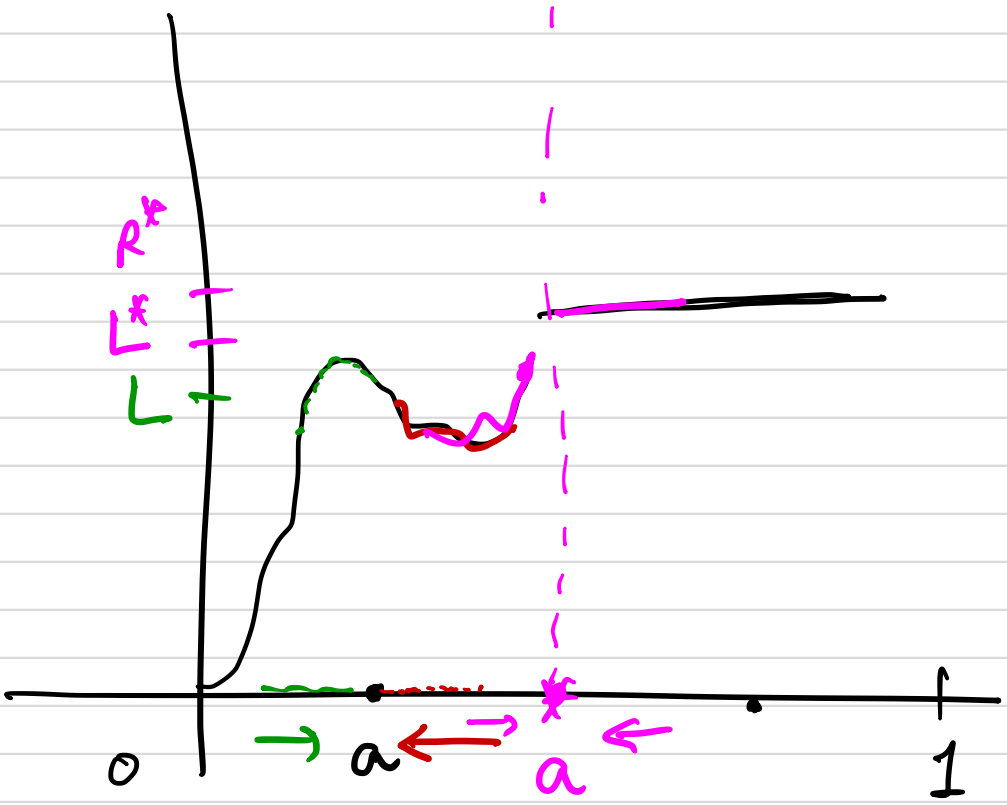
Limit

Continuity

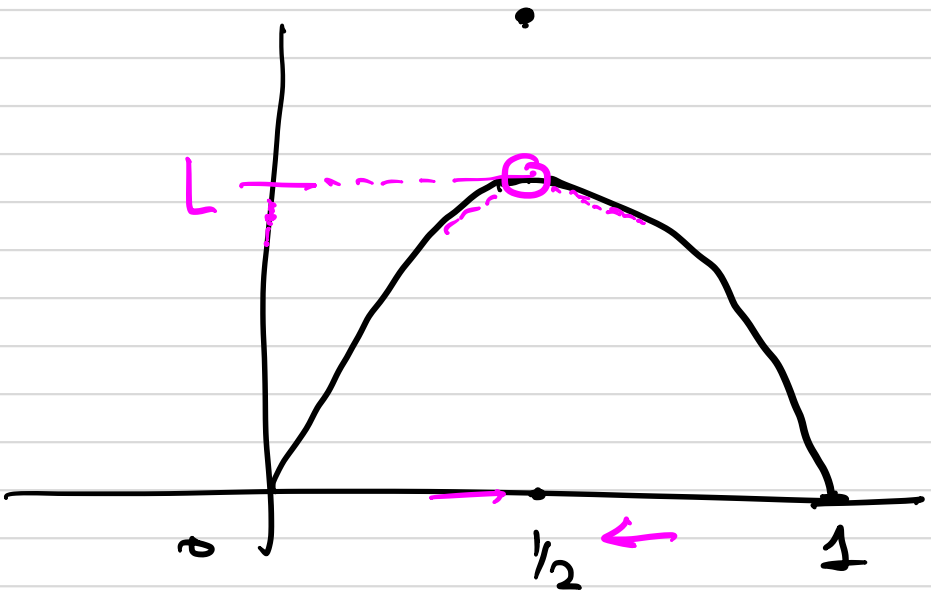
Differentiability / being able to compute derivative of a function

LHL

RHL



$f : [0, 1] \to \mathbb{R}$



$f: [0,1] \to \mathbb{R}$

$f(x) = \frac{1}{x}$ for $x \neq 0$

$= 0$ for $x = 0$

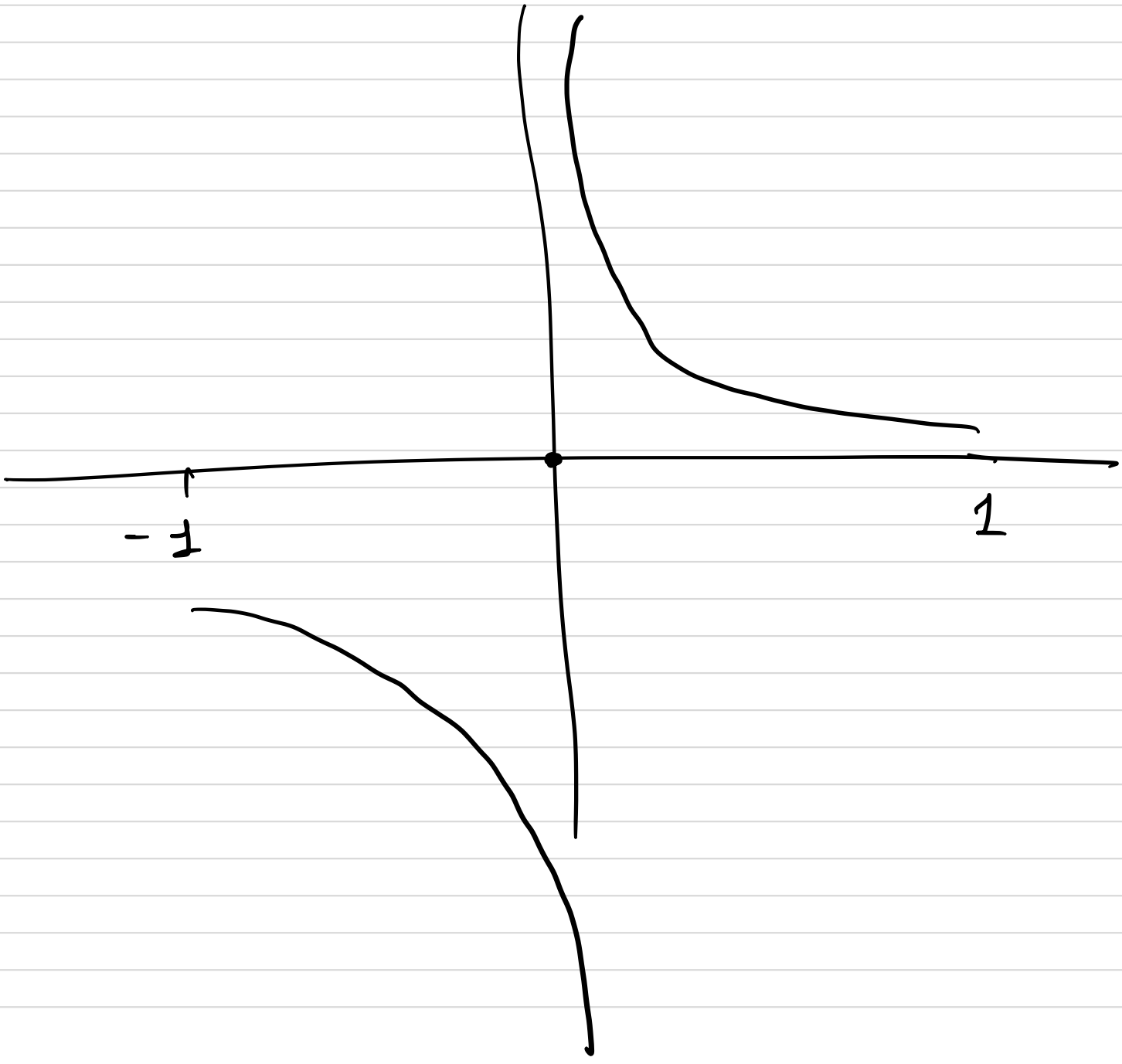
$f: (0,1) \to \mathbb{R}$

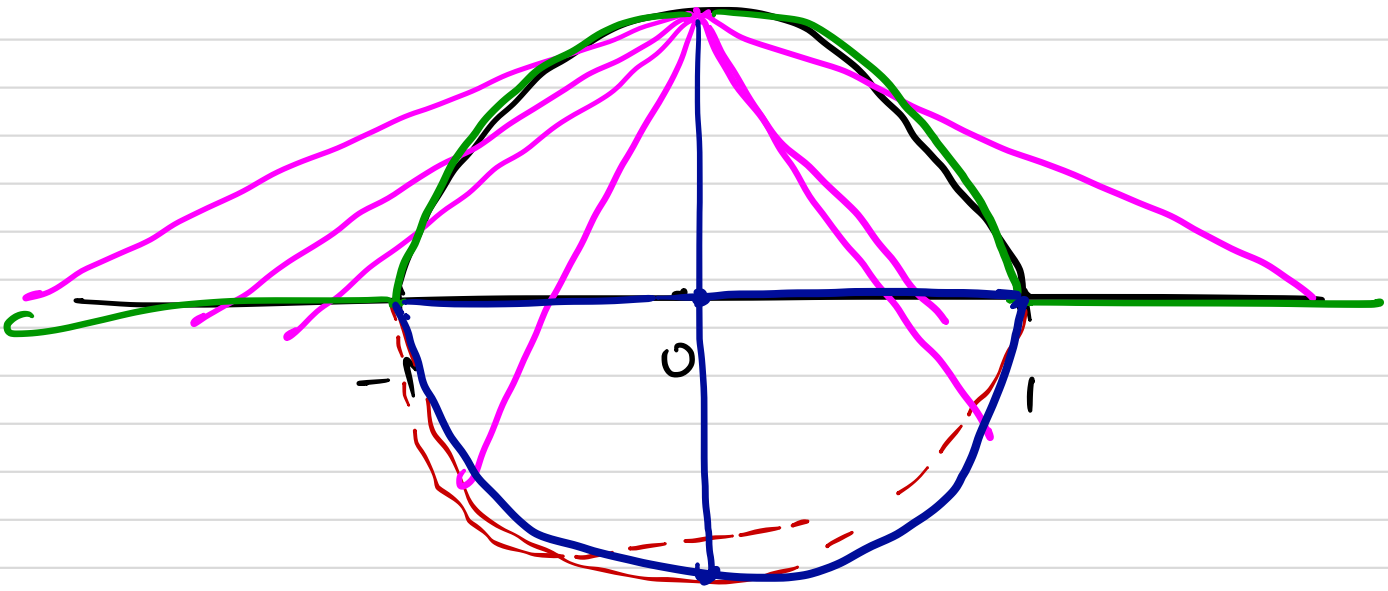
$f(x) = \frac{1}{x}$

$f: [-1, 1] \to \mathbb{R}$

$f(x) = \frac{1}{x}$ for $x \neq 0$

$= 0$ for $x = 0$




-1
0
1

$f: [a, b] \longrightarrow \mathbb{R}$

$f: (a, b) \longrightarrow \mathbb{R}$