Chapter 10: Function: Local study

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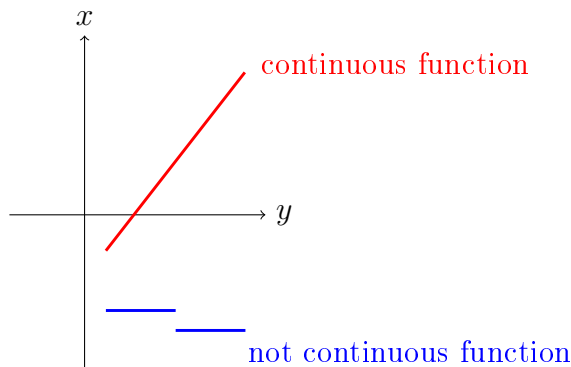## Contents

1   Continuity

1.1   First approach

Let f be a function from $I \subset R$ to R, we say that f is continuous over I if "the graph of f can be drown without taking off the pencil from the paper".

1.1.1   Example

1.2   Definition

① f continuous at $a \in I$:
we say f is continuous at a - a being a point of I - if and only if:

$$f(a) = \lim_{x \to a} f(x)$$
$$f(a) = \lim_{\substack{x \to a \\ x > a}} f(x) = \lim_{\substack{x \to a \\ x < a}} f(x)$$

② f continuous over I:
we say f is continuous over $I \subset R$ if and only if $\forall a \in I, f$ is continuous at a