

### A weird limit

Find an example of a function  $f : \mathbb{R} \rightarrow \mathbb{R}$  (i.e., the domain is the real numbers and every value is a real number) such that the limit

$$\lim_{x \rightarrow 0^+} f(x)$$

is not a real number, does not go to  $\infty$ , and does not go to  $-\infty$ . (That is,  $\lim_{x \rightarrow 0^+} f(x)$  DNE.)