

## Properties of Continuous functions

Lemma 22.5 Let  $f : [a, b] \rightarrow \mathbb{R}$  be continuous and suppose that  $f(a) < 0 < f(b)$ . Then there exists a point  $c$  in  $(a, b)$  such that  $f(c) = 0$ .

Thm 22.6 Intermediate Value Theorem

Suppose that  $f : [a, b] \rightarrow \mathbb{R}$  is continuous. Then  $f$  has the mean value property on  $[a, b]$ . That is, if  $k$  is any value between  $f(a)$  and  $f(b)$ , then there exists  $c \in (a, b)$  such that  $f(c) = k$ .

HW: 22.7.