

# Lecture 16 - Highlights

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## MAJOR THEOREM 7

Thm (Intermediate Value Theorem):

If  $f$  is continuous on an interval  $I \subseteq \text{dom}(f)$ , then for all  $a, b \in I$ , if  $y$  lies between  $f(a)$  and  $f(b)$ , then there exists  $x$  between  $a$  and  $b$  s.t.  $f(x) = y$ .

either  $f(a) \leq y \leq f(b)$  or  $f(b) \leq y \leq f(a)$

either  $a \leq x \leq b$  or  $b \leq x \leq a$



