

Section 2.3

I. Informal Definition of Continuity

II. Definition of Continuity at a Point

A function f is continuous at a point c if

- a. f is defined at c
- b. $\lim_{x \rightarrow c} f(x)$ exists
- c. $a = b$

Examples

- III. Continuity Theorem: If f is a polynomial, a rational function, a power function, a trigonometric function or an inverse trigonometric function, then f is continuous wherever f is defined.

Examples

IV. Algebra of Continuous Functions

- a. Slide

V. Composition Limit Rule

VI. One-side Continuity

VII. Continuity on an Interval

- a. Open Interval (a,b)
- b. Closed Interval $[a,b]$
- c. Half-open Interval

Examples

VIII. Suspicious Points

- a. Definition change points in piece-wise functions
- b. Points at which substitution yield a division by 0

Examples

IX. Intermediate Value Theorem

- a. Ring of Ice and Fire

X. Root Location

Examples