Overview of Math 1A

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Functions and Graphs

Functions and Graphs

Limits

Rates of Change

Continuity, Derivatives, and Graphs

Integration

Functions and Graphs

- ► Functions, relations, tables
- ► Inverting functions
- ► Adding, multiplying, and composing functions
- ► Examples, models

Limits

- Intuitive idea
- Precise definition (ϵ–δ)
- Limit laws

Rates of Change

- Slope
- Derivatives
- Tangent line and approximation
- Computing derivatives

Continuity, Derivatives, and Graphs

- ▶ Intermediate and extreme value theorems
- ▶ Rolle's theorem and mean value theorem
- ▶ Applications to graphing
- ▶ Optimization
- ▶ Related rates
- ▶ Newton's method

Integration

- ▶ Antiderivatives
- ▶ Riemann sums and areas
- ▶ Fundamental theorem of Calculus
- ▶ Evaluation of integrals
- ▶ Recognition of integrals: volumes, averages, mass, work