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 ($\epsilon-\delta$)
- 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