

Math 207 - Summer 2021

Class 1

Course Overview, Functions, Complete Analysis of a Function, Average Speed and Velocity

Class 2

Limits at Infinity Parts 1 and 2

Class 3

Two-sided Limits, Continuous Functions, Discontinuities of Rational Functions

Class 4

Trigonometric Limits, Induction, The Least Upper Bound Property

Class 5

Summation, The Intermediate Value Theorem, Quadratic Inequalities, The Circle

Class 6

Inverse Trigonometric Functions, Inverse Trigonometric Expressions, Instantaneous Velocity

Class 7

Differentiation, , The Bolzano- Weierstrass Theorem

Class 8

Differentiating Generalized Polynomials, Location, Velocity and Acceleration, Tangent Lines, Taylor Polynomials

Class 9

Limits related to e , Relative Extrema, Differentiable Functions

Class 10

The Product Rule, Quotient Rule, Optimization, Differentiating Logarithmic Functions, Concavity Behavior

Class 11

The Chain Rule, Antiderivatives and Initial Value Problems

Class 12

The Extreme Value Theorem, Mean Value Theorem, Differentiating Exponential Functions

Class 13

Antiderivatives After the Chain Rule, Differentiating Inverse Trigonometric Functions, Implicit Differentiation, (started) Riemann Sums

Class 14

Riemann Sums, started Related Rates

Class 15

Related Rates, The Second Derivative Test, Concavity, Graphing the Antiderivative

Class 16

Fundamental Theorem of Calculus, Definite Integrals

Class 17

Properties of the Definite Integral, Integration by Substitution, (started) Improper Integrals

Class 18

Improper Integrals, Integration by Parts

Class 19

L'Hospital's Rule, Graphing in Polar Coordinates

Class 20

Taylor Polynomials, Logarithms Defined by the Fundamental Theorem, Introduction to Differential Equations

Class 21

Class 22

Conic Sections