

Math 107H Section 3 Checklist of topics covered

Fundamental Theorem of Calculus

Basic integration rules and formulae

Techniques of Integration

Integration by substitution

Integration by parts

Trigonometric substitution

Trigonometric integrals

Partial fractions

Improper integrals

Applications of Integration

Area between curves

Volume by slicing

Disks and washers

Cylindrical shells

Arclength

Exponential growth and decay

Sequences and Infinite Series

Limits of sequences and series

n -th term test

Integral test

Comparison test

Limit comparison test

Ratio test and root test

Alternating series and absolute convergence

Power Series

Geometric series

Radius of convergence

Integration and differentiation of power series

Taylor series and Taylor polynomials

Error estimates

Polar Coordinates

Graphing in polar coordinates

Tangent lines

Arclength

Area inside a polar curve

Vectors

Angle between vectors

Orthogonal projection

Equations for lines in space

Distance from a point to a line

Vector-valued functions

Continuity, differentiation, integration

Ballistics problems: position from acceleration

Arclength of parametrized curves