



Algebra/Precalculus

- Graphs of elementary functions:
 - Polynomials and rational functions
 - Trigonometric functions (sine, cosine, tangent, etc.)
 - The exponential function and the natural logarithm (e^x and $\ln x$)

- Equations and graphs of conic sections:
 - Parabolas
 - Ellipses and Circles
 - Hyperbolas

- Special values of sine and cosine:
 - Multiples of $\pi/6$
 - Multiples of $\pi/4$

- Trigonometric identities:
 - Fundamental identity
 - Sum formulae
 - Half-angle formulae

- Solving systems of equations in several variables (elimination/substitution)

¹While mastery of these topics is essential for success in Calculus III, this list is not intended to be comprehensive.

Calculus I

- Derivatives:
 - Limit definition of $f'(x)$
 - Interpretations of $f'(x)$
 - Differentiation rules: linearity, product rule, quotient rule, chain rule
 - Derivatives of elementary functions
 - Implicit differentiation
 - Optimization (maximum and minimum values)
- Definite Integrals:
 - Riemann sums
 - Limit definition of $\int_a^b f(x) dx$
 - Geometric interpretation of $\int_a^b f(x) dx$
 - FTC

Calculus II

- Antidifferentiation (a.k.a. integration) techniques:
 - Substitution
 - (Repeated) Integration by parts
 - Trig. integrals (e.g. integrals of the form $\int \sin^m x \cos^n x dx$)