

Refresh and Supplemental Resources for Calculus III

These resources are designed to be used to help students refresh their prerequisite course knowledge and provide supplementary course resources.

Calc III Topic	Calc I/II Prerequisite Videos	Calc I/II Prerequisite Practice Problems
Three-Dimensional Coordinate System	Graphing in 2 Dimensions	Practice Graphing
Vectors	Pythagorean Theorem	Practice using Pythagorean
Derivatives of Vector Functions	Differentiation rules	Product and Quotient rule , Chain Rule
Integrals of Vector Functions	Basic Integration ,	Indefinite Integrals
Motion in Space	Derivatives of Trig Functions	Differentiate Trig Functions
Partial Derivatives	Implicit differentiation	Implicit differentiation practice
Limits and Continuity	Limits and Continuity in Calc I	Continuity Practice
Multiple Integrals, Line Integrals, Surface Integrals	Integration Techniques	Table of Integrals (Textbook)
Cylindrical Coordinates, Spherical Coordinates	Polar Coordinates – The Basics	Polar Coordinates – Practice Problems

Additional Useful Resources:

- Just Math Tutorials (<http://patrickjmt.com/>) – short videos showing how to solve problems from algebra, trigonometry, calculus, differential equations, linear algebra and probability and statistics
- Khan Academy (<https://www.khanacademy.org/>) – structured online mathematics course materials, including instructional videos and practice problems
- Paul’s Online Notes (<https://tutorial.math.lamar.edu/problems/calci/calci.aspx>) - mathematics practice problems with solutions
- Desmos (<https://www.desmos.com/calculator>) - online graphing calculator
- WolframAlpha (<https://www.wolframalpha.com/>) – multifunctional computational platform that helps solve equations, graph functions, look up formulas, etc.
- Algebra Cheat Sheet (https://tutorial.math.lamar.edu/pdf/Algebra_Cheat_Sheet.pdf), Trigonometry Cheat Sheet (https://tutorial.math.lamar.edu/pdf/Trig_Cheat_Sheet.pdf), and Calculus Cheat Sheet (https://tutorial.math.lamar.edu/pdf/calculus_cheat_sheet_all.pdf)