



## Concepts in Vector Calculus

By K.N.P. Singh

Anmol, 2013. Hardcover. Book Condition: New. Dust Jacket Condition: New. 1st Edition. Contents: Preface. 1. Introduction. 2. The vectors. 3. Vector calculus applications. 4. Line integrals in vectors. 5. Curvilinear coordinates. 6. Vector field. 7. Divergence theorem. 8. Integration of vectors function. Bibliography. Index. Vector calculus is a branch of mathematics concerned with differentiation and integration of vector fields, primarily in 3 dimensional Euclidean space. The term vector calculus is sometimes used as a synonym for the broader subject of multivariable calculus, which includes vector calculus as well as partial differentiation and multiple integration. Vector calculus plays an important role in differential geometry and in the study of partial differential equations. It is used extensively in physics and engineering, especially in the description of electromagnetic fields, gravitational fields and fluid flow. Vector calculus was developed from quaternion analysis by J. Willard Gibbs and Oliver Heaviside near the end of the 19th century, and most of the notation and terminology was established by Gibbs and Edwin Bidwell Wilson in their 1901 book, Vector analysis. In the conventional form using cross products, vector calculus does not generalize to higher dimensions, while the alternative approach of geometric algebra, which uses exterior products does...

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