

# Lessons in Mathematical Methods

## A Quick Reminder of Vectors

A. K. Kapoor  
<http://ospace.org/users/kapoor>  
akkapoor@cmi.ac.in; akkhcu@gmail.com

### §1 Lesson Overview

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#### Learning Goals

In this lesson, we shall begin with vectors as geometrical objects. A quick review of a few vector algebra identities will be presented. With a choice of coordinate system, vectors are described as objects with three components. We will present a result on change in components of a vector when coordinate axes are changed.

#### Prerequisites

A first exposure to vector algebra; Dot, cross and triple products. Components of a vector along coordinate axes.

### §2 Main Lesson

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Click on links below to open required page on Ospace.org.

Chalk Talk 1 :: Vectors as Geometrical Objects

Chalk Talk 2 :: An Example

Chalk Talk 3 :: Vector Algebra Identities

### §3 EndNotes

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1. For a quick review of vector algebra see Murphy[1] Ch4; Griffiths[2] Ch1; For use of vectors in Physics see Feynman Lectures Vol-I[3] Ch 11.

## References

- [1] H. Margenau and G.M. Murphy. *The Mathematics of Physics and Chemistry*. Van Nostrand, 1967.
- [2] David J. Griffiths. *Introduction to Electrodynamics*. Pearson Education, Inc, India, 1999.
- [3] R. P. Feynman. *Lectures in Physics Vol. I*. B. I. Publishers, INDIA, 1969.