

# Lab 8: Vector Functions in Space

**Lab8.ma** is a *Mathematica* notebook that extends the work of Lab 3 to curves in three-dimensional space. It shows how to obtain the velocity vector, the acceleration vector, the speed, and the arc length of the trajectory in space.

Like all *Mathematica* notebooks, this one is used by opening its cells and executing its *Mathematica* commands. To open a cell, double-click on its cell bracket. To execute a *Mathematica* command, click on its cell bracket to select it, and then press the Enter key (not the Return key).

**Lab8.wn** explains how to work through **Lab8.ma** on the NeXT.

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## Category:

Mathematics

## Usage:

This software is used by students enrolled in Multivariate Calculus at the University of Richmond.

## Version:

This software uses Mach 2.0 and *Mathematica* 2.0

## References:

This software refers to the two books:

*Calculus and Analytic Geometry*, Fourth Edition  
by Sherman K. Stein (McGraw-Hill, 1987).

*A Guidebook to Calculus with Mathematica*  
by Philip Crooke and John Ratcliffe (Wadsworth, 1991).