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Calculus. An active approach with projects. (English) [Zbl 1274.26001](#)

Classroom Resource Materials. Washington, DC: Mathematical Association of America (MAA) (ISBN 978-0-88385-972-8/ebook). xxiv, 307 p. (2010).

Publisher's description: This volume contains student and instructor material for the delivery of a two-semester calculus sequence at the undergraduate level. It can be used in conjunction with any textbook. It was written with the view that students who are actively involved inside and outside the classroom are more likely to succeed, develop deeper conceptual understanding, and retain knowledge, than students who are passive recipients of information.

This book contains two main student sections. The first contains activities usually done in class, individually or in groups. Many of the activities allow students to participate in the development of central calculus ideas. The second section contains longer projects where students work in groups outside the classroom. These projects may involve material already presented, motivate concepts, or introduce supplementary topics.

In addition to facilitating active student learning, the material will foster student comprehension of calculus as a unified subject. It provides many opportunities for students to make connections between different calculus topics. Unifying threads appear throughout the activities and projects. These threads include graphical calculus, distance and velocity, multiple representations of functions, estimation and approximation, and mathematical modeling.

Student thinking and communication are promoted through use of activities and projects where students need to organize their thinking, determine problem-solving strategies, and clearly communicate results to others.

Instructor materials contained in the volume include comments and notes on each project and activity, guidelines on their implementation, and a sample curriculum which incorporates a collection of activities and projects.

MSC:

- 26-01** Introductory exposition (textbooks, tutorial papers, etc.) pertaining to real functions
- 00A35** Methodology of mathematics