Examrace

▶ Examrace 463K

AP Calculus AB Course Outline

Over the entire high school academic year calculus AB is designed to teach. Spend some time on elementary functions and covering the Calculus AB curriculum within a year can be prove beneficial. However, students have to be extensively prepared for the Calculus AB examination, large quantum of time must be devoted to topics in differential and integral calculus. The AP Exam will focus on such topics.

Course Goals-

Students should be able to:

- analyse and work with functions showed in different ways: Graphical, numerical, analytical, or verbal. Understanding the connections among these representations is also very important.

- Be familiar with the meaning of the derivative in terms of a rate of change and local linear approximation and use various derivatives to solve different type of problems.

- Have a clear understanding of the meaning of the definite integral both as a limit of Riemann sums and as the net accumulation of change and should be able to use integrals to solve different type of problems.

- understand the relationship between the derivative and the definite integral as expressed in both parts of the Fundamental Theorem of Calculus.

- Focus on mathematics both orally and in written sentences and you should be able to explain solutions with the desired problems.

- model a written description of a physical situation with a function, a differential equation, or an integral.

- Use of advanced technology to solve problems, experiment, interpret results and verify conclusions.

- determine the reasonability of solutions, containing sign, size, relative accuracy and units of measurement.

- development of calculus as a coherent body of knowledge and as a human accomplishment.

Various topics will be covered in the exam, they are as follows:

Functions, Graphs, and Limits

- Analysis of Graphs

- Limits of Functions (incl. One-sided limits)

- Asymptotic and Unbounded Behavior

- Continuity as a Property of Functions

Derivatives

- Concept of the Derivatives

- Derivative at a Point

- Derivative as a Function

- Second Derivatives

- Applications of Derivatives

- Computation of Derivatives

Integrals

- Interpretations and Properties of Definite Integrals

- Applications of Integrals

- Fundamental Theorem of Calculus

- Techniques of Antidifferentiation

- Applications of Antidifferentiation

- Numerical Approximations to Definite Integrals