ACES MATH: Pre-Calculus (I)

Course Description

The pre-calculus course is intended to serve as a preparation for a regular two-semester course sequence on differential and integral calculus. This is the first part of the course that focus mainly on advanced topics related to elementary functions. The objective of the course is to help student make the transition from studying discrete mathematical objects to studying continuous objects.

Prerequisite. Students who plan to take this course should have taken the ACES mathematics courses: Algebra (I)-(III) and Geometry (I)-(II). A placement test is required for anyone who did not take the prerequisite courses.

Textbooks. We recommend the following textbook for students to read:

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Precalculus, 9th Edition
Michael Sullivan
Prentice Hall, 2012.
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The course covers roughly topics in the first half of this book.

Main Topics. The main topics of this course include: (i) advanced topics in theory of elementary functions; (ii) advanced topics in trigonometry and hyperbolic functions; and matrices and determinants; (iii) non-Cartesian coordinates; and (iv) imaginary and complex numbers and functions.

Homework. Learning mathematics is very similar to learning to play piano: you can not learn anything unless you practice a lot, and if you practice a lot you will be good at it. There is no shortcut here. Therefore, we will have a large (but still reasonable) amount of homework for the students after each lecture.

Communications. Students and their parents are encouraged to communicate with the instructor on issues directly related to the course, through the email address aces.math.info@gmail.com; For other issues related to the ACES after school program, please email aces4kidsinfo@gmail.com .