

Precalculus Honors is a comprehensive course that weaves together previous study of algebra, geometry, and functions into a preparatory course for calculus. The course focuses on the mastery of critical skills and exposure to new skills necessary for success in subsequent math courses. The first semester includes linear, quadratic, exponential, logarithmic, radical, polynomial, and rational functions; systems of equations; and conic sections. The second semester covers trigonometric ratios and functions; inverse trigonometric functions; applications of trigonometry, including vectors and laws of cosine and sine; polar functions and notation; and arithmetic of complex numbers.

Within each Precalculus lesson, students are supplied with a post-study Checkup activity that provides them the opportunity to hone their computational skills in a low-stakes problem set before moving on to formal assessment. Additionally, connections are made throughout the Precalculus course to calculus, art, history, and a variety of other fields related to mathematics.

In the Honors course, Explore activities help students see further connections to other disciplines and other areas of mathematics, including calculus and geometry. Teacher-scored unit tests and semester exams are more open-ended and challenging than their Core counterparts, and Projects allow students to apply advanced mathematics in real-world contexts. In addition, scoring in the Honors Precalculus course places a greater weight on teacher-scored activities, so demonstration of higher-order thinking skills has a stronger impact on students' grades.

The course is built to the National Council of Teachers of Mathematics (NCTM) standards and is aligned with state standards.

Length: Two Semesters

Unit 1: Functions

Unit 2: Quadratic Functions

Unit 3: Polynomial and Rational Functions

Unit 4: Exponential and Logarithmic Functions

Unit 5: Conic Sections

Unit 6: Semester 1 Review and Exam

Unit 7: Introduction to Trigonometry

Unit 8: Trigonometric Functions

Unit 9: Working with Trigonometric Functions

Unit 10: Trigonometric Identities



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Unit 11: Applications of Trigonometry

Unit 12: Complex Numbers

Unit 13: Semester 2 Review and Exam

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