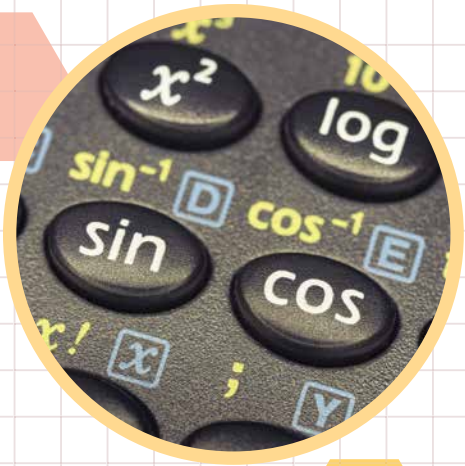
MICRO-INTERNSHIP

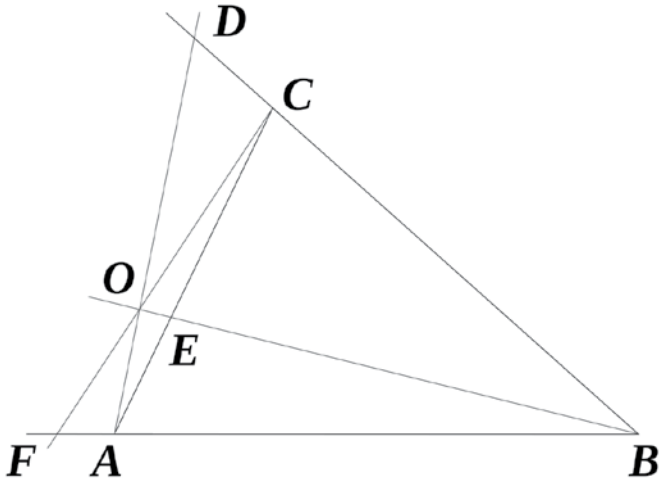
Topics in Advanced Trigonometry

Mentor: Brian Palmer

HARTNELLCOLLEGE



Trigonometry is one of the most useful branches of mathematics, and this internship sought to improve students' skills in trig by working with advanced topics that require full and creative use of a wide range of trigonometric skills. The Micro-Internship began an introduction to proof writing, which was used heavily throughout the experience. The students then worked with an old friend, the Pythagorean Theorem, and they were tasked with using their new proof writing skills to prove the Pythagorean Theorem. Later, students used Taylor series to write sine and cosine in terms of the exponential function, and used this relationship to prove all the basic trig identities. We then transitioned to the very new, challenging, but extremely useful Ceva's theorem, which relates points on the interior of a triangle to points on the boundary of the triangle. Finally, the experience finished with an amazing application of trigonometry in calculating distances between points on the earth using latitude and longitude.



Student Interns:

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