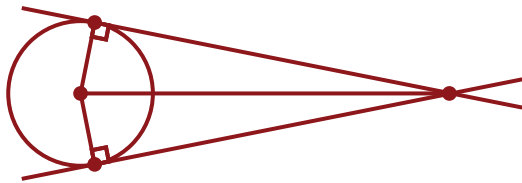## Accelerated Integrated Math 2/3 Honors

Torrey Pines offers IM 1 Honors, IM 2 Honors, IM 3 Honors, along with the corresponding college preparatory level classes. Students interested in acceleration may enroll in IM 2 Honors and IM 3 Honors during the same school year. This is a double-period class that focuses on preparing students for AP Calculus the following year. Accelerated IM 2/3 Honors is designed for students who have proven successful in IM 1 Honors and who are interested in pursuing in-depth studies in mathematics and other STEM fields. tpmath.net/AIM23H.pdf

Advanced Placement Classes

Torrey Pines offers three different year-long Advanced Placement (AP) classes. AP Calculus AB covers the content in Calculus I as traditionally taught in college. AP Calculus BC covers Calculus I and Calculus II material. AP Statistics and Probability is equivalent to an introductory college course and is available to students after successful completion of IM 3. Some students take AP Statistics and AP Calculus concurrently. All AP math classes at Torrey Pines are year-long and are taught through the administration of AP exams. tpmath.net/Courses.htm

For more information please visit

www.tpmath.net
www.abbymath.com
www.tphs.net

or contact

Math Department Chair
Josh Mihalinec (josh.mihalinec@sduhsd.net)

All figures created with Mathematica using content taught in the TPHS math program.

$$\int_0^{20} x^2\, e^{-x/2}\, dx$$

$$z = \tfrac{1}{3}\left(x^2 - y^2\right)$$

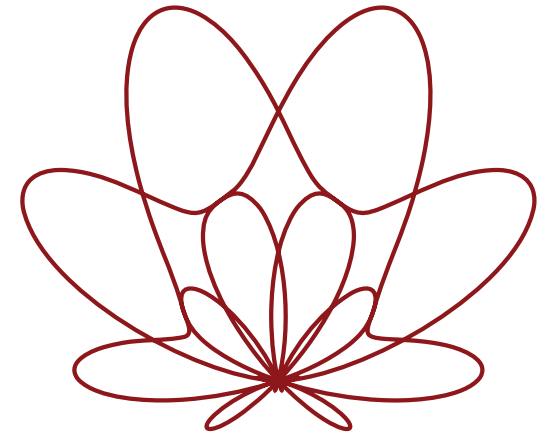$$\triangle APO \cong \triangle BPO$$

$$\mathbf{F}(x,\, y) = \langle -x,\, -y \rangle$$

$$r(\theta) = \sin(\theta) + \sin^3\!\left(\tfrac{5\,\theta}{2}\right)$$

$$x = 2\,t + \sin(5\,t) + \sin(7\,t),\ \ y = -\sin(5\,t) + \sin(7\,t)$$

Advanced MATH
Opportunities

The Torrey Pines High School Math Department offers a rich variety of classes, activities, and programs for students interested in exploring advanced mathematics. These opportunities go beyond traditional high school math education.

SDSU Math Classes

In addition to AP classes, Torrey Pines offers 5 semesters of college classes in collaboration with San Diego State University. Students enroll through the extended studies program at SDSU and may earn up to 15 semester units of college math credit that is transferable to most colleges and universities. Classes are taught on the Torrey Pines High School campus as part of the regular school schedule.

After AP Calculus AB, students may take SDSU Calculus II/III (also known as Calc CD). After AP Calculus BC, students may take SDSU Calc III/Linear Algebra (also known as Calc D/Linear). Some students in Calc CD add Linear Algebra in the spring semester to take two SDSU classes concurrently. Students who complete Calc CD or Calc D/Linear usually take AP Statistics and/or Advanced Topics in Mathematics II. tpmath.net/SDSU.htm

Advanced Topics in Math II

Advanced Topics in Mathematics II is a project-based, elective math course where students do mathematics, interdisciplinary, and community service projects. Students have the opportunity to work individually and in groups to study a variety of topics including math, science, computer science, art, sports, economics, and other social science applications. The course includes a heavy emphasis on using computers and programming with Wolfram Mathematica. Students present their work to the class and other audiences. Students optionally may enroll with SDSU for 1 unit of college credit in the fall semester and 3 units in the spring. tpmath.net/AdvTopicsClass.htm

Annual Math Open House

All of the SDSU classes culminate with the Annual Advanced Math Open House at the end of the school year. At this event students share their final projects with friends, family, and community members showcasing what they have learned and accomplished. All students are welcome to attend and celebrate mathematics and its many applications. tpmath.net/MathOpenHouse.htm
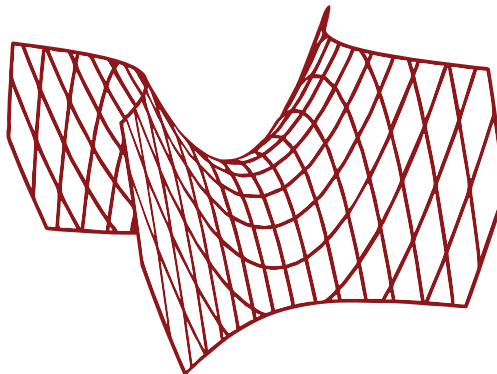
Wolfram Mathematica

All Torrey Pines High School students have access to Wolfram Mathematica, a computer program designed for mathematics and technical computing used throughout the world in education, research, and industry. Mathematica allows a user to easily create two- and three-dimensional visualizations along with custom interfaces for dynamic interaction. Students may install the software on their personal computers or activate a cloud computing account. Mathematica can be used in a variety of classes. tpmath.net/CT.htm

Computational Thinking CT@TP

The CT@TP club focuses on computational thinking: asking questions and formulating problems so computers can solve them. CT@TP is for anyone interested in mathematics, computer programming, and artificial intelligence. Participants solve interesting real-world problems, think computationally, learn applications of machine learning, and do a variety of activities with the Wolfram Language using state-of-the-art computer technologies including Mathematica, cloud computing, parallel computing, and more. Also, students have access to the innovative 3D printers in the Torrey Pines CAD Lab to create custom, original three-dimensional models. tpmath.net/CT.htm
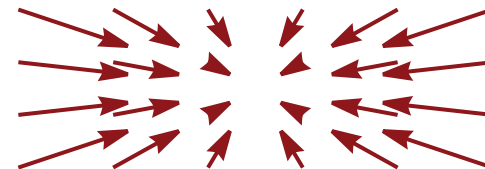

TP Math Club

The Torrey Pines High School Math Club meets weekly to prepare students for success in various mathematics competitions. The Math Club participates in local and national competitions including the California Mathematics League, the annual San Diego Honors Math Contest sponsored by UCSD, and the American Mathematics Competitions. Torrey Pines traditionally does quite well in such contests and participates at a very competitive level. The Math Club is open to all students and has opportunities for students at any level to contribute. tpmath.net/MathClub.htm

Mu Alpha Theta Honor Society

Mu Alpha Theta is the national high school and two-year college mathematics honor society. Active participants in the TP Math Club who have completed at least two-years of college-preparatory mathematics with sufficiently high grades are invited to join. Membership is a notable recognition and provides opportunities for participation in additional mathematics events and eligibility for scholarships. mualphatheta.org

American Math Competitions

All students at Torrey Pines are welcome to participate in the American Mathematics Competition (AMC) exams. These lead to the American Invitational Mathematics Exam (AIME) and possibly the U.S.A. Mathematical Olympiad (USAMO). These take place in the spring each year. Interested students are encouraged to attend Math Club meetings for information and preparation. maa.org/math-competitions