E228

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Friday, September 16
12:30 in SCP229

ABSTRACT:

How's that for the shortest title ever? This talk will be about Leonhard Euler's 228th paper, written when he was just 32 years old. He asked how you can decide if a number is the sum of two squares? Euler begins with the dumbest possible algorithm you can think of: Take the number, subtract a square, and check If the remainder is a square. If not, repeat, repeat, repeat. But Euler, being Euler, finds a way of converting all those subtractions into additions. He applies this to 1,000,009, and---in less than a page---finds that there are two ways to express this as a sum of squares. Hence, by earlier work in E228, it is not a prime. Curiously, when he later described how to prepare a table of primes "ad millionem et ultra" (E467), he included this number as prime. So he then feels obliged to write another paper, E699, using another refinement of this method, to show that 1,000,009 is not prime. This is a talk about elementary number theory, elementary in both the technical and colloquial sense of the word.

BIOGRAPHY:

Professor Rickey retired a few years ago because he could not get any work done while working. Now he spends lots of time doing research in the history of mathematics, visiting rare book rooms, traveling to meetings on the history of mathematics, but no time grading calculus exams. Instead he reads old calculus books, including the three that Euler (1707-1783) wrote. He enjoys reading the work that mathematicians have created – in their own words. His paper, "Isaac Newton: Man, Myth, and Mathematics" (College Mathematics Journal, vol. 18, pp. 362-389) received the George Polya Award for expository excellence. Rickey was one of the first mathematicians to win the Deborah and Franklin Tepper Haimo Award for Distinguished College of University Teaching of Mathematics. He delights in sharing his knowledge of history of mathematics with students and faculty all over the country.