

1014-01-510      **William Dunham\*** ([wdunham@muhlenberg.edu](mailto:wdunham@muhlenberg.edu)), Department of Mathematical Sciences,  
Muhlenberg College, Allentown, PA 18104. *Euler's Amicable Numbers*.

Two whole numbers are amicable if each is the sum of the proper divisors of the other. The Greeks knew the amicable pair 220 and 284, and by the end of the 17th century only two other pairs had been discovered. It is thus remarkable that Leonhard Euler single-handedly found five dozen new ones. In a 1750 paper, he explained his method, one that used properties of what we now call the Euler-sigma function (i.e., the sum of all whole number divisors) to reach the desired end. This talk examines the argument by which Euler increased the world's supply of amicable numbers twenty-fold. (Received September 19, 2005)