

1035-11-1153      **Mulatu Lemma\*** (lemmam@savstate.edu), 3219 College Street, Savannah, GA 31404. *The Mathematical Magic Of Triangular and Perfect Numbers.*

Many mathematicians have been fascinated for centuries by the properties and patterns of numbers. The numbers which can be arranged in a compact triangular pattern are called triangular numbers. The triangular numbers are formed by partial sum of the series  $1+2+3+4+5+6+7\dots+n$ . The  $n$ th triangular number can be obtained as  $T_n = n*(n+1)/2$ , where  $n$  is any natural number. In other words triangular numbers form the series 1,3,6,10,15,21,28... . They have also noticed that some numbers are equal to the sum of all of their factors (not including the number itself). Such numbers are called perfect numbers. Thus a positive integer is called a perfect number if it is equal to the sum of its proper positive divisors. The search for perfect numbers began in ancient times. The four perfect numbers 6, 28, 496, and 8128 seem to have been known from ancient times.

In this paper, we will study important concepts which play key roles in the mathematical theory of triangular and perfect numbers. The paper is intended to encourage undergraduate students to learn more about triangular and perfect numbers and then be actively involved in mathematical research dealing with these concepts. (Received September 18, 2007)