



Highly divisible triangular number

Problem 12

The sequence of triangle numbers is generated by adding the natural numbers. So the 7th triangle number would be $1 + 2 + 3 + 4 + 5 + 6 + 7 = 28$. The first ten terms would be:

1, 3, 6, 10, 15, 21, 28, 36, 45, 55, ...

Let us list the factors of the first seven triangle numbers:

1: 1
3: 1, 3
6: 1, 2, 3, 6
10: 1, 2, 5, 10
15: 1, 3, 5, 15
21: 1, 3, 7, 21
28: 1, 2, 4, 7, 14, 28

We can see that 28 is the first triangle number to have over five divisors.

What is the value of the first triangle number to have over five hundred divisors?