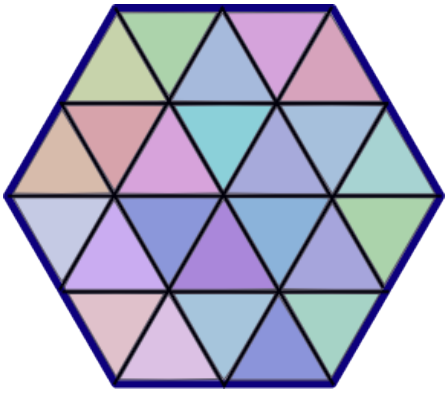
MATH CHALLENGE PROBLEM

for November 2016

Tiny Triangles in Huge Hexagons



You can divide a regular hexagon into equilateral triangles by drawing lines parallel to the sides of the hexagon. For example, a hexagon with side length 2 can be divided into equilateral triangles with side length 1 as shown above. This creates a certain number of triangles, a certain number of vertices of those triangles (each shared by two, three or six triangles) and a certain number of unit line segments (each shared by one or two triangles).

The Challenge: How many triangles, vertices and line segments will there be when a regular hexagon of side length 100 is divided into triangles with side length 1? What is the relationship between these numbers?

Submit solutions to Ross 2239G or `oscar.levin@unco.edu` by **Wednesday, November 30**.

The best solution will WIN A PRIZE!
Prizes include nifty Rubik's style puzzle cubes, math puzzle books, math games, even a math coloring book. So submit your answer TODAY!