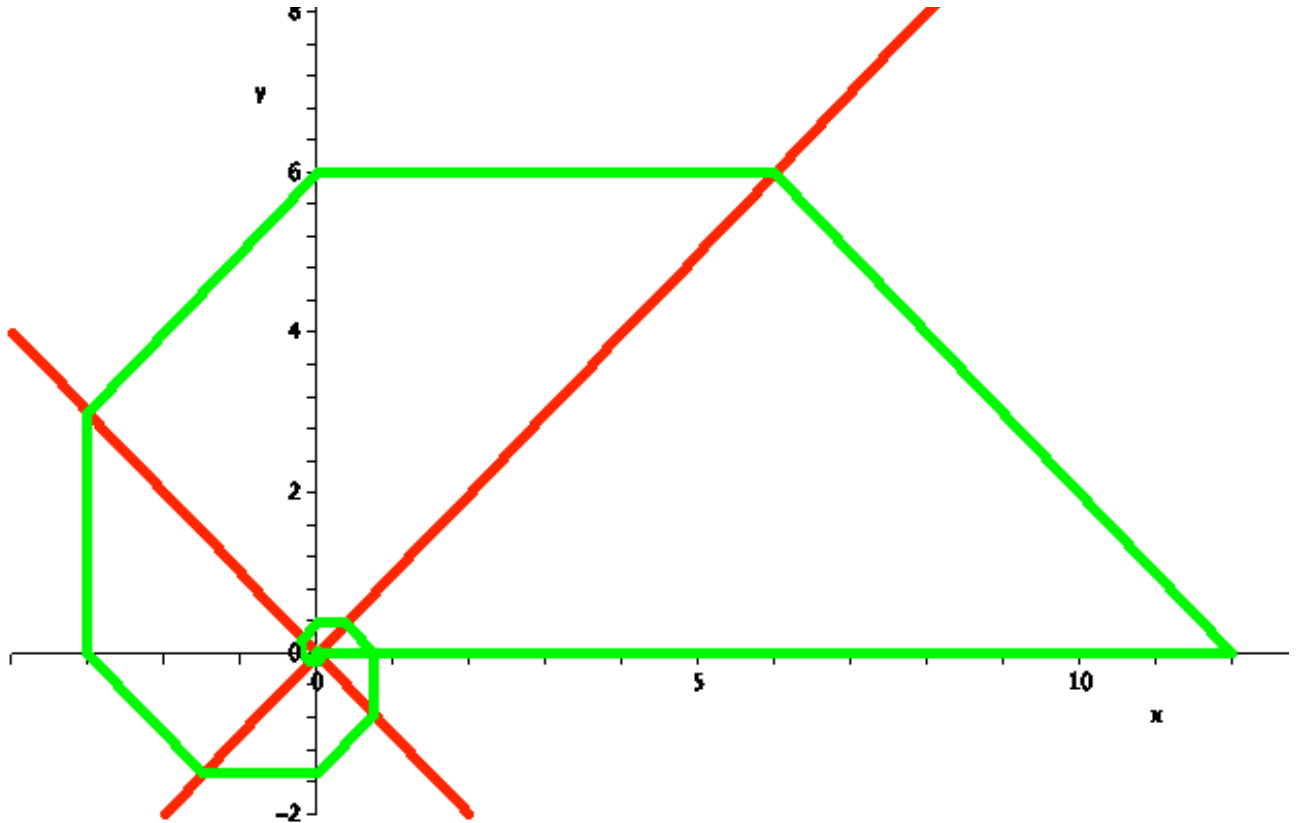


Geometric Series in Geometry

I. Length of an infinite Geometric Spiral :



Let l_0 be the length of the first horizontal segment : $l_0 = 12$.

1. Find the length of the second segment $l_1 = \dots$
2. Find the relationship between l_n and l_{n+1} according to the above construction.

3. Let $S_n = l_0 + l_1 + l_2 + \dots + l_n = \sum_{i=0}^{i=n} l_i$

a. Give the expression of S_n in terms of l_0 and n .

b. Give the expression of $S = \lim_{n \rightarrow \infty} S_n = \sum_0^{\infty} l_n$

c. What is the value of S ?

II.