Sequences – Series – Patterns



Section 4.5 Geometric series

Text & Tests 6



The sum to *n* terms of a geometric sequence,

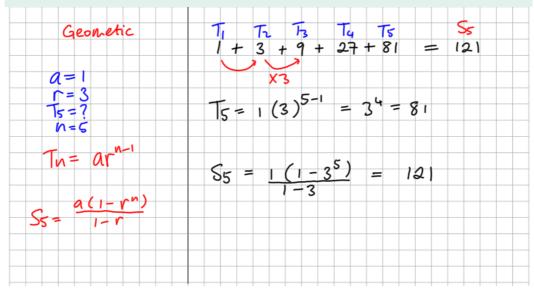
$$S_n = \frac{a(1-r^n)}{1-r}$$
, where *a* is the first term and *r* is the common ratio.

Example 1

Find T_5 and S_5 of each of the following:

(i)
$$1+3+9+...$$

(ii)
$$1 + \frac{1}{4} + \frac{1}{16} + \dots$$



Example 2

In a geometric series, $T_3 = 32$ and $T_6 = 4$; find a and r and hence find S_8 , the sum of the first eight terms.

