

A geometric sequence is formed by repeatedly multiplying or dividing by a constant amount.

Ex. Determine whether or not each sequence is geometric.

a) $5, -15, 45, -135, \dots$

b) $80, 40, 10, 2, \dots$

Ex. Determine the first 5 terms in a sequence with a first term of 6 and a common ratio of -2 .

We can determine any term in an geometric sequence: $t_n = a(r)^{(n-1)}$

by keeping track of:

a - the first term

r - the common ratio

$(n - 1)$ - the number of times r must be multiplied by the first term

Ex. Determine the 20th term in the geometric sequence $3, -6, 12, -24, \dots$

Ex. Determine the number of terms in the sequence $4, 12, 36, 108, \dots, 26244$.

Ex. Determine an equation for t_n in a geometric sequence with $t_7 = 320$ and $t_{18} = -655360$