

Sequences and Series

10th Grade

Adding versus multiplying, and the formulas for each.

Arithmetic sequences add a constant. Geometric sequences multiply by one.

	Arithmetic	Geometric
Pattern	add d	multiply by r
nth term	$a_1 + (n-1)d$	$a_1 \cdot r^{n-1}$
Test	constant difference	constant ratio
Graph	straight line	curve

An infinite geometric series converges only when $|r| < 1$. Then the sum is $a_1/(1 - r)$.