Sequence and Series Formulas

Arithmetic Sequence

Explicit $a_n = a_1 + d(n-1)$

Recursive $a_n = a_{n-1} + d$

Sum of *n* Terms $S_n = \frac{n}{2}(a_1 + a_n)$

Geometric Sequence

Explicit $a_n = a_1(r)^{n-1}$

Recursive $a_n = r(a_{n-1})$

Sum of *n* Terms $S_n = a_1\left(\frac{1-r^n}{1-r}\right)$

Sum of Infinite Geometric Series $S = \frac{a_1}{1-r}$