

Sequences and Series Cheat Sheet

Arithmetic Sequences and Series	Geometric Sequences and Series
<p>Arithmetic sequences happen when you add numbers. The number added is called the common difference.</p>	<p>Geometric sequences happen when you multiply numbers. The number multiplied is called the common ratio.</p>
<p>Recursive formula of an arithmetic sequence: $u_n = u_{n-1} + d$</p>	<p>Recursive formula of a geometric sequence: $u_n = r \cdot u_{n-1}$</p>
<p>Explicit formula of a basic arithmetic sequence: $u_n = u_1 + (n - 1)d \text{ or}$ $u_n = u_o + nd$</p>	<p>Explicit formula of a basic geometric sequence: $u_n = u_1 \cdot r^{n-1}$</p>
<p>Partial sum of an arithmetic sequence: $\sum_{n=1}^k u_n = \frac{k}{2}(u_1 + u_k) \text{ or}$ $\sum_{n=1}^k u_n = ku_1 + \frac{k(k-1)}{2}d$</p>	<p>Partial sum of a geometric sequence: $\sum_{n=1}^k u_n = u_1 \left(\frac{1-r^k}{1-r} \right)$</p>
<p>To input sums in the (TI-89 and similar) calculator: $\Sigma(\text{expression}, \text{variable}, \text{bottom bound}, \text{top bound})$</p>	

