SEQUENCES AND SERIES

Arithmetic Sequence - common difference "d"

\[ t_n = t_1 + (n - 1)d \]

\[ S_n = \left( \frac{n}{2} \right) (2t_1 + (n - 1)d) \]

\[ S_n = \frac{n}{2} (t_1 + t_n) \]

Geometric Sequence - common ratio "r"

\[ t_n = t_1 r^{n-1} \]

\[ S_n = \frac{t_1}{1 - r} \left( 1 - r^n \right) \]

Infinite Geometric Series

\[ S = \frac{t_1}{1 - r}, \quad |r| < 1 \]