

# Equations for Sequences and Series

arithmetic sequence formula

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

arithmetic mean

$$\frac{\text{sum of two numbers}}{2}$$

arithmetic series formula

$$S_n = \frac{n}{2}(a_1 + a_n)$$

**geometric sequence formula**

$$a_n = a_1 \cdot r^{n-1}$$

**geometric mean formula**

**geometric mean =**  
 **$+\sqrt{\text{product of two numbers}}$**

**sum of finite geometric series**

$$S_n = \frac{a_1(1 - r^n)}{1 - r}$$

**sum of infinite geometric series**

$$S = \frac{a_1}{1 - r}$$