Arithmetic progression:

n-th term	$a_n = a_1 + (n-1)\,d$
Sum of n terms	$S_n = \frac{n\,(a_1 + a_n)}{2}$

Geometric progression:

n-th term	$a_n = a_1\,r^{n-1}$
Sum of n terms	$S_n = \frac{r\,a_n - a_1}{r-1}$ or $S_n = \frac{a_1\,(r^n - 1)}{r-1}$
Sum of infinite terms	$S_\infty = \frac{a_1}{1-r}$ where $-1 < r < 1$
Product of n terms	$P_n = \sqrt{(a_1 \cdot a_n)^n}$