

## 1 Series

### 1.1 Arithmetic series

$$s = \frac{n}{2} \cdot (2a + (n-1)d)$$

- $n$ : Number of terms.
- $d$ : Difference between terms.
- $a$ : First term.

## 2 Equations

### 2.1 Quadratic formula

$$ax^2 + bx + c = 0$$
$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

## 3 Combinatorics

### 3.1 Combinations

$$C(n, k) = \binom{n}{k} = \frac{n!}{(n-k)!k!}$$

### 3.2 Pascal's triangle

$$\binom{n}{k} = \binom{n-1}{k-1} + \binom{n-1}{k}$$

## 4 Statistics

### 4.1 Percentiles

Calculate the percentile of  $x$  in the interval  $[l, r]$ , assuming that  $x \in [l, r]$ .

$$P(x) = \frac{x-l}{r-l}$$