

# Mathematical Formulas

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# 1 Algebra

## 1.1 Basic Identities

- $(a + b)^2 = a^2 + 2ab + b^2$
- $(a - b)^2 = a^2 - 2ab + b^2$
- $(a + b + c)^2 = a^2 + b^2 + c^2 + 2ab + 2ac + 2bc$
- $\left(\sum_{k=0}^n x_k\right)^2 = \sum_{k=0}^n x_k^2 + \sum_{k=0, j=0, k \neq j}^n x_k x_j$

## 2 Calculus

### 3 Geometry