

Handwritten mathematical notes in Chinese, covering various topics in algebra, geometry, and trigonometry. The text is written in blue and black ink on a grid background. The notes include definitions, theorems, and proofs, often accompanied by diagrams and formulas.

Section 1: Algebraic Equations and Functions

1.1. **Linear Equations**

Definition: A linear equation in one variable is an equation of the form $ax + b = 0$, where $a \neq 0$.

Theorem: A linear equation in one variable has exactly one solution.

1.2. **Quadratic Equations**

Definition: A quadratic equation in one variable is an equation of the form $ax^2 + bx + c = 0$, where $a \neq 0$.

Theorem: A quadratic equation in one variable has at most two solutions.

1.3. **Trigonometric Functions**

Definition: The sine function, denoted by $\sin$, is a periodic function with period 2π .

Theorem: The sine function is bounded, i.e., $|\sin x| \leq 1$ for all x .

Section 2: Geometry

2.1. **Plane Geometry**

Definition: A plane is a flat, two-dimensional surface that extends infinitely in all directions.

Theorem: The sum of the interior angles of a triangle is 180° .

2.2. **Solid Geometry**

Definition: A solid is a three-dimensional object that has volume and a surface.

Theorem: The volume of a rectangular prism is given by $V = lwh$, where l is the length, w is the width, and h is the height.

Section 3: Calculus

3.1. **Differentiation**

Definition: The derivative of a function $f(x)$ at a point x is the limit of the difference quotient as h approaches 0.

Theorem: The derivative of x^n is nx^{n-1} .

3.2. **Integration**

Definition: The integral of a function $f(x)$ is the area under the curve of $f(x)$.

Theorem: The integral of x^n is $\frac{x^{n+1}}{n+1} + C$, where C is the constant of integration.

Section 4: Probability and Statistics

4.1. **Probability**

Definition: The probability of an event A occurring is the ratio of the number of favorable outcomes to the total number of possible outcomes.

Theorem: The probability of the complement of A is $1 - P(A)$.

4.2. **Statistics**

Definition: The mean of a set of data is the average value.

Theorem: The mean of a normal distribution is the center of the distribution.