1 Advanced Mathematical Expressions

1.1 Fraction and Limit

$$\frac{a+b}{c}$$

$$\int_0^5 \lim_{1 \to 5}$$

$$\frac{2x+1}{x-3}$$

$$\int_{-\infty}^{\infty} \lim_{n \to \infty} \left(1+\frac{1}{n}\right)^n$$

$$\frac{\sin^2(x)}{\cos(x)}$$

$$\lim_{x \to 0} \frac{\tan(x)}{x}$$

$$\frac{\sqrt{a^2+b^2}}{a+b}$$

$$\lim_{n \to \infty} \left(1+\frac{1}{n}\right)^{2n}$$

$$\frac{e^{2x}-1}{e^x+1}$$

$$\int_{-\pi}^{\pi} \lim_{h \to 0} \frac{\sin(x+h)-\sin(x)}{h}$$

1.2 Greek Letters

α
β
ζ
κ
ϵ
ε
ι
ξ
Γ
Δ
Θ
Λ
θ
ϑ
ν
ϱ
λ
μ
ρ
υ
σ
ς
χ
ϕ
φ
δ
ω
γ
η

2 Mathematical Concepts:

2.1 Trigonometry

2.1.1 Sine Function

The sine function, denoted as $\sin(\theta)$, is a trigonometric function that relates the angle θ of a right triangle to the ratio of the length of the side opposite to θ to the length of the hypotenuse.

2.1.2 Cosine Function

The cosine function, denoted as $\cos(\theta)$, is a trigonometric function that relates the angle θ of a right triangle to the ratio of the length of the adjacent side to θ to the length of the hypotenuse.

2.2 Calculus

2.2.1 Derivative

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

$$f'(a) = \lim_{h \to 0} \frac{f(a+h) - f(a)}{h}$$

2.2.2 Integral

The integral of a function $f(x)$ over an interval $[a, b]$ is the limit of Riemann sums as the partition of the interval approaches zero:

$$\int_a^b f(x)\,dx = \lim_{\Delta x \to 0} \sum_{i=1}^{n} f(x_i)\Delta x$$

3 Matrix:

$$\begin{bmatrix} 1 & 2 & 3 & 4 \\ 5 & 6 & 7 & 8 \\ 9 & 10 & 11 & 11 \\ 12 & 13 & 14 & 15 \end{bmatrix} \tag{1}$$

4 Colorful Table:

Previous Data		Subsequent Data	
5	6	7	8
9	10	11	12
13	14	15	16

Previous Data		Subsequent Data	
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20