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## Template

Should modify this

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# 1 LaTeX Syntax

## code

```
1 def f(x):  
2 return x+1
```

## Table

this	is	Header
------	----	--------

a	b	c
---	---	---

## Equation

### Inline

Quadratic funtion is given as  $f(x) = ax^2 + bx + c$

## paragraph

$$f(x) = ax^2 + bx + c$$

or pagebreak

## Multiline

### 1. Align

$$\begin{aligned} f(x) &= ax^2 + bx + c \\ &= ax^2 + bx + c \end{aligned}$$

### 2. Gather

$$f(x) = ax^2 + bx + c \tag{1.1}$$

$$g(x) = ax^2 + bx + c \tag{1.2}$$

## superscript & subscript

### 1.Super Script

$$e^x, e^{x^2}$$

### 2.SubScript

$$a_n = 2a_{n-1} + 1$$

### 3.Mixed

$$\delta_{\beta}^{\alpha}$$

### 2 ) Tensor

$${}_nC_r$$

**Fraction**

## 1) Fraction

$$\frac{1}{2}$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

## 2) Differentiation

$$\frac{df(x)}{dx}$$

$$\frac{\partial f(X)}{\partial x}$$

$$\frac{\partial f(x)}{\partial x}$$

**Matrix**

$$A = \begin{pmatrix} a & b \\ c & d \end{pmatrix}$$

**integration**

$$\int_0^{\infty} f(x)dx$$

**summation**

$$\sum_{n=1}^{\infty} a_n$$

**Limitation**

$$\lim_{n \rightarrow \infty} a_n$$

**paremthesis**

1) small

$$(1 + \frac{1}{2})$$

$$\left(1 + \frac{1}{2}\right)$$

2)middle

$$\{1 + 2\}$$

$$\left\{1 + \frac{1}{2}\right\}$$

**Rimann sum**

$$\int_a^b f(x)dx = \lim_{n \rightarrow \infty} \sum_{k=1}^n f\left(a + \frac{b-a}{n}k\right) \frac{b-a}{n}$$

## Own template

### parenthesis (Bracket)

1) Small

$$\left(1 + \frac{1}{2}\right)$$

2) middle

$$\left\{1 + \frac{1}{2}\right\}$$

3) Big

$$\left[1 + \frac{1}{2}\right]$$

## Ligatures

### 1. Mathcal

$\mathcal{L}$

$\mathcal{L}$

### 2. Mathbb

$\mathbb{R}$

$\mathbb{R} \mathbb{N} \mathbb{Z} \mathbb{Q} \mathbb{C}$

## Tcolor box

**HW 1 LaTeX**

Hi, Hello



## Practice

3. 두 집합  $A = (x, y) \mid (x-1)^2 + y^2 \leq 4$ ,  $B = (x, y) \mid |(x-1) + |y|| \leq a$ 에 대하여  $A \subset B$  이기 위한 양수  $a$ 의 최소값은?