

# Test 1 Title

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## 1 LaTeX Math in Markdown

This document demonstrates how to use LaTeX math equations in Markdown.

### 1.1 Inline Math Equations

You can include inline equations like this:  $E = mc^2$  or  $(F = ma)$  within your text.

### 1.2 Display Math Equations

For standalone equations, use double dollar signs:

$$\int_a^b f(x) dx = F(b) - F(a)$$

Or use the equation environment:

$$\frac{d}{dx} \left( \int_a^x f(t) dt \right) = f(x) \quad (1)$$

### 1.3 Matrix Example

$$\begin{pmatrix} a & b \\ c & d \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} ax + by \\ cx + dy \end{pmatrix}$$

### 1.4 Aligned Equations

$$a = b + c \quad (2)$$

$$= d + e + f \quad (3)$$

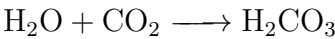
$$= g + h \quad (4)$$

### 1.5 Fractions and Summations

$$\sum_{i=1}^n \frac{1}{i^2} = \frac{\pi^2}{6}$$

### 1.6 Chemical Equations

If you have the mhchem package included:



### 1.7 Greek Letters

Alpha:  $\alpha$ , Beta:  $\beta$ , Gamma:  $\gamma$ , Delta:  $\delta$ , Epsilon:  $\epsilon$

### 1.8 Theorem Environment

**Theorem 1.** *For a right triangle with sides  $a$ ,  $b$  and hypotenuse  $c$ :*

$$a^2 + b^2 = c^2$$

### 1.9 Proof Environment

*Proof.* This is a proof of the Pythagorean theorem. □

## 2 Regular Markdown Features

- Bullet points
- Work normally

1. Numbered lists
2. Also work

**Bold text** and *italic text* are supported.

Blockquotes work as expected.

Tables work too:

Column 1	Column 2	Column 3
Cell 1	Cell 2	Cell 3
Cell 4	Cell 5	Cell 6

Code blocks are supported:

```
def hello_world(): print("Hello, world!")
```