# 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:

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

### 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

$$\begin{aligned} a &= b + c && (2)\\ &= d + e + f && (3)\\ &= g + h && (4) \end{aligned}$$

### 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:

$$H_2O + CO_2 \longrightarrow H_2CO_3$$

### 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!")
```