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# My First L<sup>A</sup>T<sub>E</sub>X Document

Your Name

December 27, 2023

Hello! This is my L<sup>A</sup>T<sub>E</sub>X document.

A rectangle has side length of  $(x + 1)$  and area of  $(x + 3)$ . The equation  $A(x) = x^2 + 2x + 1$  is the area of the rectangle.

superscripts

$$2x^3$$

$$2x^{34}$$

$$2x^{3x+4}$$

$$2x^{3x^4+5}$$

subscripts

$$x_1$$

$$x_{12}$$

$$x_{1_2}$$

$$a_o, a_1, a_2, \dots, a_{100}$$

greek letters

$$\pi$$

$$\Pi$$

$$\alpha$$

$$A = \pi r^2$$

trig functions

$$y = \sin x$$

$$y = \cos x$$

$$y = \tan x$$

$$y = \csc \theta$$

$$y = \sin^{-1} x$$

$$y = \arcsin x$$

log functions

$$y = \log x$$

$$y = \log_5 x$$

$$y = \ln x$$

roots

$$\sqrt{2}$$

$$\sqrt[3]{2}$$

fractions

$$\frac{\sqrt{x^2+y^2}}{\sqrt{1+\sqrt{x}}}$$

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

About  $\frac{2}{3}$  of the glass is full.

About  $\frac{2}{3}$  of the glass is full.  
The distributive law

$$a(b+c)=ab+ac$$

for all  $a,b,c\in\mathbb{R}$ .  
The equivalence class of  $a$  is  $[a]$ .  
The set  $A$  is defined to be  $[\{1,2,3\}]$   
The movie ticker cost \$11.50 dollars.

$$2\left(\frac{1}{x^2-1}\right)2\left[\frac{1}{x^2-1}\right]2\left\{\frac{1}{x^2-1}\right\}2\left\langle\frac{1}{x^2-1}\right\rangle\frac{dy}{dx}\Big|_{x=1}$$

tables

$x$	1	2	3	4	5
$f(x)$	2	4	6	8	10

$x$	1	2	3	4	5
$f(x)$	$\frac{1}{2}$	4	6	8	10

Table 1: A table of values for  $f(x)=2x$

Table 2: The relationship between  $f(x)$  and  $f'(x)$

$f(x)$	$f'(x)$
$x>0$	The function $f(x)$ is increasing. The function $f(x)$ is increasing. The function $f(x)$ is increasing. The function $f(x)$ is increasing.

arrays

$$5x^2 - 9 = x + 3 \text{ place your words here} \tag{1}$$

$$5x^2 - 9 - x - 3 = 0 \tag{2}$$

$$= 12 + x - 5x^2 \tag{3}$$

$$5x^2 - 9 = x + 3 \text{ place your words here}$$

$$5x^2 - 9 - x - 3 = 0$$

$$= 12 + x - 5x^2$$

lists

1. First item
2. Second item
3. Third item

- First item
  1. First subitem
  2. Second subitem
  3. Third subitem
- Second item
- Third item

- A. First item
- B. Second item
- C. Third item

6. First item
7. Second item
8. Third item

- First item
  - First subitem

a) Second subitem

Third subitem

\* First subsubitem

\* Second subsubitem

\* Third subsubitem

- Second item

- Third item

This is a **bold** word.  
This is a *italic* word.  
This is a underlined word.  
This is a **typewriter** word.  
This is a SMALL CAPS word.  
This is a ***bold italic*** word.

This is a large word.  
This is a Large word.  
This is a huge word.  
This is a Huge word.  
This is a Normal word.  
This is a small word.  
This is a Script Size word.  
This is a tiny word.

This is centered text.

This is left-aligned text.

This is right-aligned text.

Visit <http://www.google.com> for more information.  
Visit Google for more information.

## 1 First Section

### 1.1 First Subsection

#### 1.1.1 First Subsubsection

### 1.2 Second Subsubsection

## 2 Second Section

### 2.1 First Subsection

#### First Subsubsection

macros  
 $y = \frac{x}{x^2+1}$

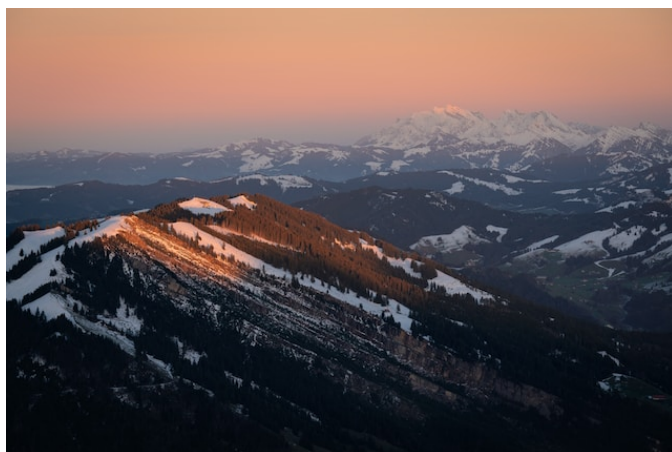
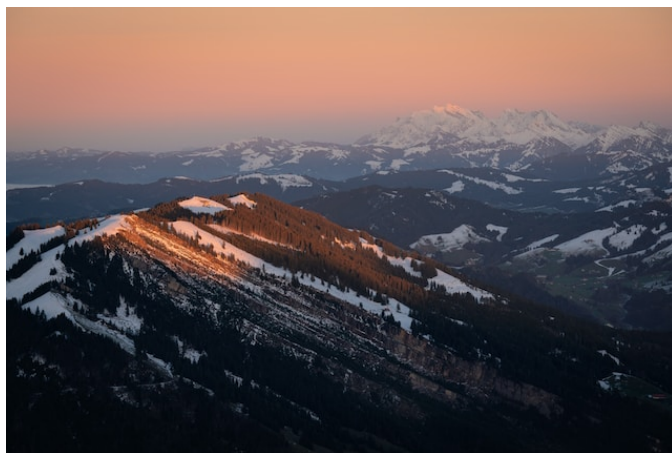
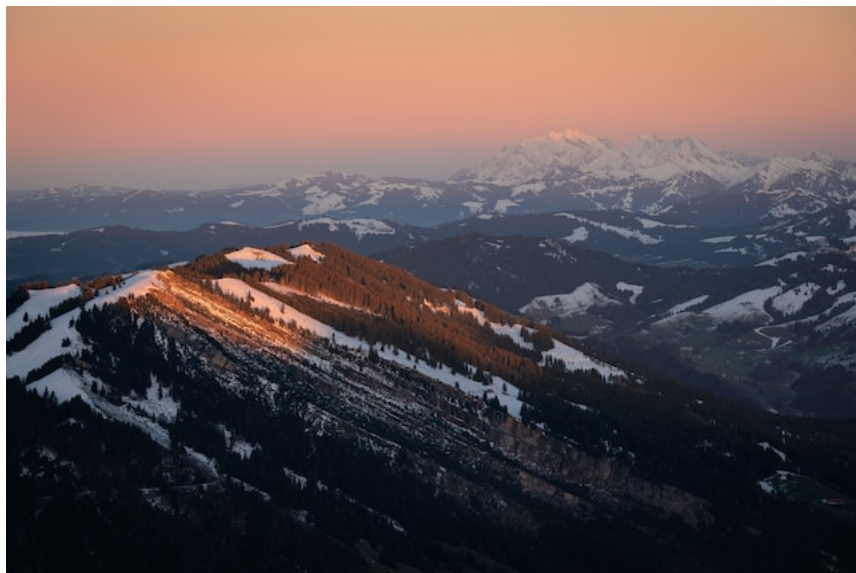


Figure 1: This is a caption.

calculus notation

The function  $f(x) = (x - 3)^2 + \frac{1}{2}$  has a domain of  $D_f : (-\infty, \infty)$  and the range of  $R_f : [\frac{1}{2}, \infty)$ .

$$\lim_{x \rightarrow a^-}$$

$$\lim_{x \rightarrow a} \frac{f(x-a)}{x-a} = f'(a)$$

$$\int \sin x \, dx = -\cos x + C$$

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

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

$$\vec{v} = v_1 \vec{i} + v_2 \vec{j} = \langle v_1, v_2 \rangle$$

plots

