

My LaTeX Document

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1 Hello World

Section name is Hello World

1.1 How Hello World is bad

hello my name is abhiroop mukherjee

1.1.1 subsection

hello how are you

paragraph my name is not abhiroop mukherjee

subparagraph fsf

2 Maths

2.1 Inline Method of Maths

This is the way to do maths $f(x) = 100x^2$ in line

2.2 Dedicated Equation Environment

$$f(x) = 100x^2$$

2.3 Alignment

see the '=' is aligned

$$\begin{aligned} 1 + 2 &= 3 \\ 1 &= 3 - 2 \\ 0 &= 3 - 2 - 1 \\ 1 + 2 - 3 &= 0 \end{aligned}$$

2.4 Fractions, Integral Sign, and more

$$f(x) = 100x^2 \tag{1}$$

$$\begin{aligned} f'(x) &= \frac{d(100x^2)}{dx} \\ &= 100 \frac{d(x^2)}{dx} \\ &= 100.(2x) \\ f'(x) &= 200x \end{aligned} \tag{2}$$

$$\begin{aligned} f(x) &= \int_x^0 f'(x)dx \\ &= \int_x^0 200x dx \\ &= 200 \int_x^0 x dx \\ &= 200 \left[\frac{x^2}{2} \right]_0^x \\ &= 200. \frac{x^2}{2} \\ &= 100x^2 \end{aligned} \tag{3}$$

$$g(x) = 10\sqrt{x} \tag{4}$$

$$g'(x) = \frac{d}{dx} (10\sqrt{x}) \tag{5}$$

$$= 10 \left(\frac{1}{2\sqrt{x}} \right) \tag{6}$$

$$g'(x) = \frac{5}{\sqrt{x}} \tag{7}$$

2.5 Matrices

Sample Matrix

$$\begin{matrix} 1 & 0 \\ 0 & 1 \end{matrix} \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$