new

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- let's begin with a formulae $e^{i\pi} + 1 = 0$ but we can also do

$$e = \lim_{n\to\infty} \left(1 + \frac{1}{n}\right)^n = \lim_{n\to\infty} \frac{4}{\sqrt[n]{n!}}$$

- we can do another:

$$e = \sum_{0}^{\infty} \frac{1}{n!}$$

- we can also use continued fractions

$$e = 2 + \cfrac{1}{1 + \cfrac{1}{2 + \cfrac{1}{3 + \cfrac{3}{5 + \ddots}}}}$$

New formulae

$$\int_a^b f(x)dx$$

$$\vec{v} =< v_1, v_2, v_3 >$$

$$\vec{v} \cdot \vec{w}$$

$$\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix}$$

Figure 1: This is a description of the image, explaining what it represents or how it relates to the content.

Fourier Analysis

Fourier analysis is a mathematical method used to analyze functions or signals in terms of their constituent frequencies. It is based on the idea that any periodic function can be decomposed into a sum of simple sine and cosine functions, known as Fourier series. The continuous version of this, known as the Fourier transform, allows the representation of a function as an integral of sine and cosine functions over continuous frequencies. This method is widely applied in

signal processing, physics, and engineering for analyzing waveforms, solving partial differential equations, and compressing data.
Mathematically, the Fourier transform of a function $f(x)$ is given by:

$$\hat{f}(\xi) = \int_{-\infty}^{\infty} f(x) e^{-2\pi i x \xi} \, dx$$

This formula transforms the function $f(x)$ from the time domain into the frequency domain, where ξ represents the frequency. The inverse Fourier transform allows us to recover the original function from its frequency components.

Examples

this is my test document
normal table
This is the new

Item	Description	Price
Apples	Fresh and juicy	$2.50/kg
Oranges	Sweet and tangy	$3.00/kg
Bananas	Rich in potassium	$1.50/kg
Grapes	Seedless and sweet	$4.00/kg

Table 1: Table with Inner and Outer Lines

Item	Description	Quantity	Price ($)
Apple	Fresh red apple	10	0.50
Banana	Ripe yellow banana	8	0.30
Orange	Juicy orange	12	0.40
Pineapple	Tropical pineapple	3	1.20

1 Problem 2

1.1 darius

1.1.1 coola

StudyMobile is a user-friendly mobile application specifically designed to provide students with on-the-go access to educational materials such as textbooks, notes, quizzes, and practice exams. The app's main aim is to break down the barriers of traditional learning, allowing students to access high-quality reading materials anytime, anywhere. As digital learning continues to expand globally, StudyMobile is well-positioned to meet the growing need for flexible, mobile study resources.

$$4x\sum_{=}$$

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