

The first document

Your Name

Ngày 17 tháng 9 năm 2025

1 Introduction

Hello LaTeX!

1.1 Introduction

Math equation: $E = mc^2$. Second equation:

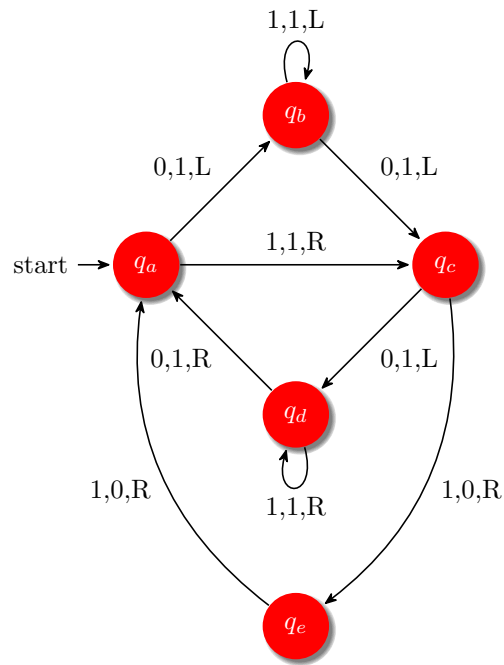
$$\int_a^b f(x) dx = F(b) - F(a)$$

My name is Đỗ Thành Trung.

Tóm tắt nội dung

This is the abstract of the document. I am working as a System Engineer. The following formula is written in LaTeX:

$$\begin{bmatrix} \hat{\text{Re}}(\omega_1) \\ \dots \\ \hat{\text{Re}}(\omega_n) \\ \hat{\text{Im}}(\omega_1) \\ \dots \\ \hat{\text{Im}}(\omega_n) \end{bmatrix} = \begin{bmatrix} \varepsilon_R(\omega_1) \\ \dots \\ \varepsilon_R(\omega_N) \\ \varepsilon_I(\omega_1) \\ \dots \\ \varepsilon_I(\omega_N) \end{bmatrix} +$$
$$\begin{bmatrix} 1 & 0 & -\omega_1^2 & 0 & \omega_1^4 & \dots & \hat{\text{Im}}(\omega_1)\omega_1 & \hat{\text{Re}}(\omega_1)\omega_1^2 & -\hat{\text{Im}}(\omega_1)\omega_1^3 & \dots \\ \dots & \dots & \dots & \dots & \dots & \dots & \dots & \dots & \dots & \dots \\ 1 & 0 & -\omega_N^2 & 0 & \omega_N^4 & \dots & \hat{\text{Im}}(\omega_N)\omega_N & \hat{\text{Re}}(\omega_N)\omega_N^2 & -\hat{\text{Im}}(\omega_N)\omega_N^3 & \dots \\ 0 & \omega_1 & 0 & -\omega_1^3 & 0 & \dots & -\hat{\text{Re}}(\omega_1)\omega_1 & \hat{\text{Im}}(\omega_1)\omega_1^2 & \hat{\text{Re}}(\omega_1)\omega_1^3 & \dots \\ \dots & \dots & \dots & \dots & \dots & \dots & \dots & \dots & \dots & \dots \\ 0 & \omega_N & 0 & -\omega_N^3 & 0 & \dots & -\hat{\text{Re}}(\omega_N)\omega_N & \hat{\text{Im}}(\omega_N)\omega_N^2 & \hat{\text{Re}}(\omega_N)\omega_N^3 & \dots \end{bmatrix} \begin{bmatrix} b_0 \\ \dots \\ b_m \\ a_1 \\ \dots \\ a_n \end{bmatrix}$$
$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$
$$\frac{n!}{r!(n-r)!} \frac{n!}{r!(n-r)!} \frac{n!}{r!(n-r)!} \frac{n!}{r!(n-r)!} \lim_{x \rightarrow \infty}$$



The current candidate for the busy beaver for five states. It is presumed that this Turing machine writes a maximum number of 1's before halting among all Turing machines with five states and the tape alphabet $\{0, 1\}$. Proving this conjecture is an open research problem.