

SAMPLE \LaTeX DOCUMENT

ISAAC NEWTON

ABSTRACT. This is where you will write your abstract containing a brief description of all of your brilliant mathematical results.

1. INTRODUCTION

Put your introduction here.

2. MAIN RESULTS

You can create mathematics inline such as $\frac{a}{b}$ or $\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$ or $\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$. You can also put the mathematics on its own line,

$$\sum_{k=0}^{\infty} \frac{1}{2^k} = 2.$$

We can write in *italics* and **boldface**. We can also underline text. We can make “blackboard bold” letters (notice how we made the quotes) to denote the natural numbers, rational numbers, real numbers and integers.

$$\mathbb{Q} = \left\{ \frac{a}{b} \in \mathbb{R} : a, b \in \mathbb{Z}, b \neq 0 \right\}$$

We can make matrices of various types.

$$A = \begin{pmatrix} 1 & 0 & 4 & -1 \\ 0 & 1 & -3 & 1 \\ 0 & 0 & 0 & 1 \end{pmatrix} = \begin{bmatrix} 1 & 0 & 4 & -1 \\ 0 & 1 & -3 & 1 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

We can make unordered lists.

- Alabama
- Alaska
 - Juno
 - Fairbanks
 - Anchorage
- Arizona
- Arkansas

We can also make ordered lists.

- (1) Cat

Date: September 29, 2003.

- (2) Dog
 - (a) Golden retriever
 - (b) Black lab
 - (c) Muttt
- (3) Gerbil
- (4) Hamster

Latex will format definitions, theorems, corollaries, proposition, lemmas, etc. For instance we have the following examples.

Definition 1 (Definition of limit). Let f be a function defined on an open interval containing $x = a$, but perhaps not at $x = a$. We say $\lim_{x \rightarrow a} f(x) = L$ if for any $\epsilon > 0$ there exists $\delta > 0$ such that $|f(x) - L| < \epsilon$ whenever $0 < |x - a| < \delta$.

Definition 2. The *derivative* of f is defined to be $f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$, if this limit exists.

Theorem 3 (Fundamental Theorem of Calculus). *If f is continuous on the interval $[a, b]$, then*

$$\frac{d}{dx} \int_a^x f(t) dx = f(x)$$

for all $a \leq x \leq b$.

Proof. Proof goes here □

Corollary 4. *If f is continuous on the interval $[a, b]$, then*

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

where F is any antiderivative of f .

You can reference sections (for instance, this section is Section 2). You can also reference definitions (the definition of derivative is Definition 2), theorems (the Fundamental Theorem of Calculus is Theorem 3), etc.

You can put images (pdf files) in your document.

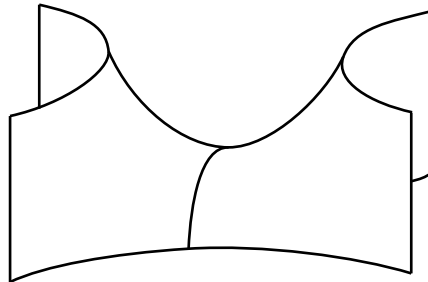


FIGURE 1. This is a saddle.

You can cite books, such as *The L^AT_EX Companion* by Goosens, Mittelbach and Samarin ([GMS]) or journal articles such as Franks and Richeson's "Shift equivalence and the Conley index" ([FR]).

REFERENCES

- [GMS] M. Goosens, F. Mittelbach, A. Samarin *The L^AT_EX companion*. Addison-Wesley, Reading, Mass., (1994)
- [FR] J. Franks, D. Richeson, Shift equivalence and the Conley index. *Trans. Amer. Math. Soc.*, 352(7):3305-3322, 2000

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