

Homework 1 L^AT_EX

MA372 Introduction to Discrete Math

Spring 2022

Name: _____

The goal of this assignment is to begin understanding the basics of L^AT_EX. Recreate this document **EXACTLY**. First note that the course name is listed as the author in the title and the semester is given as the date in the title. The underline after Name: is 4 centimeters long. It is possible to place the “\hspace{ }” function inside the “\underline{ }” function. You may also want to look into how to make quotation marks so that they go the correct direction!

1. For all $x \in \mathbb{R}$ and $a, b \in \mathbb{Z}_{>0}$, $x^a x^b = x^{a+b}$, $(x^a)^b = x^{ab}$, $x^{a/b} = \sqrt[b]{x^a}$, and $\frac{x^a}{x^b} = x^{a-b}$.

2. There is a *stylistic* difference between

$$\frac{p}{q} \text{ and } \frac{p}{q}.$$

3. A multiplication table:

	0	1	2
1	0	1	2
2	0	2	4

4. My three favorite mathematical expressions. Note I can make things non-italicized inside math mode by writing something like {\rm cabin}.

- $\int \frac{1}{\text{cabin}} d(\text{cabin}) = \ln(\text{cabin})$
- $\lim_{\theta \rightarrow 0} \frac{\sin(\theta)}{\theta} = 1$ but $\lim_{\theta \rightarrow \infty} \frac{\sin(\theta)}{\theta} = 0$
- “ $\pi\pi$ you’re so fine, three point one four one five nine!”

5. *Proof.* This is my proof that I am done. You must create this “proof” using a *proof environment* and not simply hardcoding in a small box, using “\hfill” or “\qed.” □