Useful LaTeXCommands for CIT 592

Be sure to include the packages "mathtools, amssymb" by including `\usepackage{mathtools,amssymb}`.

Activate math mode by using $ signs.
For example, to type $\forall x \in A, \exists y \in B$, enter `$\forall x \in A, \exists y \in B$`.

1 General

Not Equal: $\neq$ - `\neq`
Exponentiation: a^b - `a^b`
Square root: $\sqrt{x}$ - `\sqrt{x}`
Nth root: $\sqrt[n]{x}$ - `\sqrt[n]{x}`
Multiplication symbol: $\times$ - `\times`
Division symbol: $\div$ - `\div`
Fraction: $\frac{a}{b}$ - `\frac{a}{b}`
Floor: $\lfloor a \rfloor$ - `\lfloor a \rfloor`
Ceiling: $\lceil a \rceil$ - `\lceil a \rceil`
Natural Numbers: $\mathbb{N}$ - `\mathbb{N}`
Integers: $\mathbb{Z}$ - `\mathbb{Z}`
Positive Integers: $\mathbb{Z}^+$ - `\mathbb{Z}^+`
Dots: $\dots$ - `\dots`
Left brace: $\{$ - `\{`
Right brace: $\}$ - `\}`
Summation: $\sum_{i=1}^{n} i^2+i$ - `\sum_{i=1}^{n} i^2+i`
Product notation: $\prod_{i=1}^{n} i^2+i$ - `\prod_{i=1}^{n} i^2+i`

2 Greek Letters

Epsilon: ϵ - `\epsilon`

3 Logical

Logical Negation: $\bar{p}$ or $\overline{p}$ - `\bar{p}` or `\overline{p}`
Logical Not: $\neg p$ - `\neg p`
Logical And / Conjunction: $\land$ - `\land`
Logical Or / Disjunction: $\lor$ - `\lor`
Exclusive Or / XOR: $\oplus$ - `\oplus`
Implication: $\rightarrow$ - `\rightarrow`
Biconditional / If and Only If: $\leftrightarrow$ - `\leftrightarrow`
Triple Bar: $\equiv$ - `\equiv`

4 Quantifiers

For all: $\forall$ - `\forall`
There exists: $\exists$ - `\exists`

5 Set Notation

Is element of: $\in$ - `\in`
Not element of: $\notin$ - `\not \in`
Is proper subset of: $\subset$ - `\subset`
Not proper subset of: $\not\subset$ - `\not \subset`
Is subset of: $\subseteq$ - `\subseteq`
Not subset of: $\not\subseteq$ - `\not \subseteq`
Union: $\cup$ - `\cup`
Intersection: $\cap$ - `\cap`
Complement of set A: A^c - `A^c`
Set Difference/Minus: $\setminus$ - `\setminus`
Cartesian Product: $\times$ - `\times`

6 Counting

Combinations: $\binom{n}{2}$ - `\binom{n}{2}`
Permutations: $P(a,b)$ - `P(a,b)`