MINIMAL INTRODUCTION TO LaTeX IN GRADESCOPE AND CAMPUSWIRE

ADAM S. SIKORA

LaTeX(pronounced LAH-tekh or LAY-tekh) is a typesetting "language" and a computer program for document preparation. It is widely used in academia and it is a standard in all sciences involving math. (It is an extension of an earlier system TeX.)

LaTeXwriting uses plain text only as opposed to the formatted text found in "What You See Is What You Get" word processors like Microsoft Word. Although LaTeX was designed as a system for creating standalone pdf documents, its math expressions format was adopted by several websites and computer programs, like Gradescope, StackExchange, Wikipedia, MacOS Pages, Dropbox Paper.

For example, typing

```
Let $$\alpha_{ij}^k\in \{1,2\}$$
```

in GradeScope and in Campuswire outputs

$$\text{Let } \alpha_{ij}^k \in \{1,2\}$$

I strongly encourage you to use LaTeX math formatting in your Gradescope answers and Campuswire postings. LaTeX math expression in Gradescope and CampusWire need to be surrounded it by double dollar signs, `$$`. A subscript or superscript consisting of a single token c (like a character or `alpha`) is achieved by `_c` and `^c`. If a subscript or superscript consists of more than one character you need to enclose it in braces {...}, for example

```
$$x_\alpha^{n^2}$$
```

outputs

$$x_\alpha^{n^2}$$

(`$$x_\alpha^n^2$$` is illegal.)

In general, braces are used to group math symbols together. However, in order to display them use `\{` and `\}`. (Backslash is a special "control" character in LaTeX.) Math operators

$$\leq, \geq, \neg, \vee, \wedge, \cap, \cup, \in, \subset, \subseteq, \subsetneq$$

can be entered as

```
\leq, \geq,\neg, \vee, \wedge, \cap, \cup, \in
    \subset, \subseteq,\subsetneq
```

Many of them can be negated by `\not`, for example

```
$\Omega\not\in \emptyset$
```

outputs $\Omega \notin \emptyset$ ("not an element of").

LaTeX codes for all other conceivable symbols can be easily found online, eg. [1]. Furthermore, there are great apps [2] which provide a latex code matching any math symbol you draw.

The code `$$\mathbb N, \bf N$$` will output $\mathbb{N}, \mathbf{N}$. I encourage you to use one these symbols to denote the set of natural numbers. And analogous symbols, $\mathbb{Z}, \mathbb{Q}, \mathbb{R}$ to denote the sets of integers, rationals and reals, respectively.

If one day you decide to write and publish a pdf document involving math notation, you will need to learn more about LaTeX. For example, this document was prepared in LaTeX. You can find a short intro to it in [3].

In "true" LaTeX, double dollar signs are used for enclosing standalone math equations. In-line math expressions are surrounded by single dollar signs (unlike in Gradescope and CampusWire). Single dollar signs are also used for math expressions in StackExchange, Wikipedia, and in the OS Mac program Pages.

References

[1] [1] Math Symbols Table, for example `http://www.math.wsu.edu/math/kcooper/M300/symALL.php`
[2] [2] `Detexify` (for Android) and `DeTeXt` (for iOS)
[3] [3] `https://ussproton.nl/files/pimpyourthesis-2019.pdf`