Brief Overview of Adding LaTeX to a Report

lesson_5_1_1

LaTex

LaTex is a document preparation system that is designed to ease the creation of technical and scientific documents. It is really good at displaying mathematical formulas and is built-in to Jupyter Notebooks. Depending on your use case it may be something you need.

In this lesson we are going to cover the basic use of LaTex to add mathematical formulas to your report.

You can easily find many examples of how to use LaTex on the web. Just search for `latex matrices` or whatever subject you need.

[LaTex Documentation](#)

Inline LaTex Equations

LaTex formulas are written in a Markdown cell. Inline formulas are those that are within a sentence.

The Pythagorean theorem is a^2 + b^2 = c^2.

While the above statement is factual, it doesn't look nice for a report or publication,

The Pythagorean theorem is $a^2 + b^2 = c^2$. Created with `$a^2 + b^2 = c^2$`.

This looks much better and was generated by placing `$` at the beginning and the end of the equation. Inline formulas can be designated with `$`.

Latex Equations Not Inline

LaTex formulas that are not inline are denoted with a `$$` at the start and end of the formula. Be default the formulas will be centered.

Greek characters are denoted by a `\` and the Greek letter. For example \beta results in β.

To create a matrix use `\begin{matrix}` and end with `\end{matix}`.

```
$$
\begin{bmatrix}
\alpha& \beta^{*}\\
\gamma^{*}& \delta
\end{bmatrix}
$$
```

becomes:

$$
\begin{bmatrix}
\alpha& \beta^{}\\
\gamma^{}& \delta
\end{bmatrix}
$$

Here is one last example demonstrating a summation and a fraction.

```
$$
\sum_{i=1}^{n}i=\frac{n(n+1)}{2}
$$
```

becomes:

$$
\sum_{i=1}^{n}i=\frac{n(n+1)}{2}
$$