Heoolo world!

- The first item
- The second etc

Binomial formula: There are $\binom{2n+1}{n}$ with $1/(2n+1)$ of these have all partial sums positive

Greek letters: Alpha symbol is α Beta symbol is β Gamma symbol is γ
Lambda symbol is λ Delta symbol is δ
Epsilon symbol is ϵ
Powers and indices: $k_{n+1} = n^2 + k_n^2 - k_{n-1}$
n^{221}
n^{p+1}
p_{k+1}
Fractions: $\frac{n!}{k!(n-k)!} = \binom{n}{k}$
Square root of a fraction:
$\sqrt[4]{\frac{a}{b}}$
Nth root of something $\sqrt[n]{1 + x + x^2 + x^3 + \cdots + x^n}$
$\sum_{i=1}^{i=10} t_i$
Factorial formula:
$n! = 1.2.3....n = \prod_{k=1}^{n} k$,
$integern \geq 0$.
Matrices:
$A_{m,n} = \begin{pmatrix} a_{1,1} & a_{1,2} \\ a_{2,1} & a_{2,2} \end{pmatrix}$
$B_{m,n} = \begin{bmatrix} b_{11} & b_{12} \\ b_{21} & b_{22} \end{bmatrix}$
Set and logic symbols in latex:
Set notation is $\{x, y, z\}$
Empty set is $\varnothing$ or $\emptyset$
Set intersection is $\cap$
Set union is $\cup$
Set difference is $\setminus$
Cartesian product is $\times$
Set membership given by $\in$
Universal Quantifier is $\forall$
Existential Quantifier is $\exists$
Cardinality of a set is $|S|$
Subset is $\subseteq$
Proper subset is $\subset$
SuperSet is $\supseteq$
Proper superset is $\supset$
Negation of anything is start with not $\notin$
Mapping from A to B is $f : A \to B$
If f is injective, it is $f : A \rightarrowtail B$

If f is surjective, it is $f : A \twoheadrightarrow B$
if f is a bijection it is $f : A \leftrightarrow B$