Algebra?

Christelle Vincent

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1 Introduction

Hi we are going to do math!

$$a^2 + b^2 = c^2 \tag{1}$$

Inline math: 2^3 Let X be a set and $\cdot$ be a binary operation. Then we have

$$\sin^2 \theta + \cos^2 \theta = 1 \tag{2}$$

As we see in equation (2)....

$$\sin^2 \theta + \cos^2 \theta = 1$$

For $x \in \mathbb{R}, \mathbb{C}, \mathbb{Z}$ look!! $\mathbb{R}$
$\mathcal{O}, \mathfrak{p}$
θ or ϑ
ϵ or ε ϕ or φ
α or
a^{10}
Fun fact!

$$\phi \colon A \to B$$
$$a \mapsto b \tag{3}$$

a	b	c
2	4	6

$G = \langle \sigma \rangle = < \sigma >$

2 Matrices

Let's see how to typeset some matrices!

$$\begin{pmatrix} \frac{1}{2} & \frac{1}{7} & 8 \\ 89 & -10 & -\frac{2}{5} \end{pmatrix}$$

Notice the difference between "frac" and "dfrac" (the "d" is for "display").

Same matrix but this time no parentheses:

$$
\begin{matrix}
\frac{1}{2} & \frac{1}{7} & 8 \\
89 & -10 & -\frac{2}{5}
\end{matrix}
$$

Now brackets:

$$
\begin{bmatrix}
\frac{1}{2} & \frac{1}{7} & 8 \\
89 & -10 & -\frac{2}{5}
\end{bmatrix}
$$

Finally vertical lines. I'm not sure if there are other matrix styles, but I never need them!

$$
\begin{vmatrix}
\frac{1}{2} & \frac{1}{7} & 8 \\
89 & -10 & -\frac{2}{5}
\end{vmatrix}
$$