Math via LaTeX in Piazza

January 12, 2016
Square roots
Square roots

$$\sqrt{\pi}$$
Square roots

$\sqrt{\pi}$

$$\sqrt{\pi}$$
Square root in a sentence

Here is $\sqrt{\pi}$ in a sentence.
Here is $\sqrt{\pi}$ in a sentence.
Here is $\sqrt{\pi}$ in a sentence.
A displayed formula

$$\sqrt{\pi^2+1}$$
A displayed formula

Here is a displayed formula

\[ \sqrt{\pi^2 + 1} \]

in the middle of text.
Here is a displayed formula

$$\sqrt{\pi^2 + 1}$$

in the middle of text.

$\sqrt{\pi^2 + 1}$
Fractions

$$\frac{x^2+1}{x^2-1}$$
Fractions

\[ \frac{x^2+1}{x^2-1} \]
Fractions

$$\frac{x^2+1}{x^2-1}$$

$$\frac{x^2+1}{x^2-1}$$
Square roots of big hairy fractions

$$\sqrt{\frac{x^2+1}{x^2-1}}$$
Square roots of big hairy fractions

\[ \sqrt{\frac{x^2+1}{x^2-1}} \]
Square roots of big hairy fractions

\[ \sqrt{\frac{x^2+1}{x^2-1}} \]
Integrals
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\[ \int f(x) \, dx \]
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\[ \int f(x) \, dx \]

\[ \int \downarrow f(x) \, dx \]
More definite integrals

\[
\int_a^b f(x) \, dx = F(b) - F(a)
\]
More definite integrals

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More definite integrals

$$\int_a^b f(x) \, dx = F(b) - F(a)$$
Sine and Cosine

\[ \sin^2 \theta + \cos^2 \theta \equiv 1 \]
Sine and Cosine

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Sine and Cosine

\[ \sin^2 \theta + \cos^2 \theta \equiv 1 \]
Something more complex

$$e^{-\pi i} + 1 = 0$$
Something more complex

\[ e^{-\pi i} + 1 = 0 \]
Something more complex

\[ e^{-\pi i} + 1 = 0 \]

\[
$$e^{-\pi \text{i}}+1=0$$
\]
Calculus!

\[ \iint_{\Omega} f \, dx \wedge dy \]
Calculus!

\[ \iint_{\Omega} f \ dx \wedge dy \]
Calculus!

\[ \iint_{\Omega} f \, dx \wedge dy \]

\[ \iint_{\Omega} f \, dx \wedge dy \]
More calculus
More calculus

$$\frac{\partial^2 u}{\partial x \partial y}$$
More calculus

$$\frac{\partial^2 u}{\partial x \partial y}$$

$$\frac{\partial^2 u}{\partial x \partial y}$$
Real and complex
Real and complex

$\mathbb{R}^n \subset \mathbb{C}^n$
Real and complex

$\mathbb{R}^n \subset \mathbb{C}^n$

${\mathbb␣R}^n\subset{\mathbb␣C}^n$
Curly brackets

\[ \Omega_n \subset \Omega_{n+1} \]
Curly brackets

\( \Omega_n \subset \Omega_{n+1} \)
Curly brackets

$$\Omega_n \subset \Omega_{n+1}$$

$$\Omega_n \subset \Omega_{n+1}$$
A set

\[ \{ x \in (0,1) : x \text{ is irrational} \} \]
A set

\( \{ x \in (0, 1) : x \text{ is irrational} \} \)
A set

\{x \in (0,1) : x \text{ is irrational}\}

$$\{x \in (0,1) : x \text{ is irrational}\}$$
Sums and products

\[\sum_{n=0}^{\infty} a_n z^n = \prod_{n=0}^{\infty} (1 - \frac{z}{b_n})\]
Sums and products

$$\sum_{n=0}^{\infty} a_n z^n = \prod_{n=0}^{\infty} \left(1 - \frac{z}{b_n}\right)$$
Sums and products

\[ \sum_{n=0}^{\infty} a_n z^n = \prod_{n=0}^{\infty} \left(1 - \frac{z}{b_n}\right) \]

```latex
\sum_{n=0}^{\infty} a_n z^n = \prod_{n=0}^{\infty} \left(1 - \frac{z}{b_n}\right)
```
Big parentheses
Big parentheses

$$\left(\frac{x^2-1}{x^2+1}\right)$$
Big parentheses

$$\left( \frac{x^2-1}{x^2+1} \right)$$

$$\left( \frac{x^2-1}{x^2+1} \right)$$
Limits

$$\lim_{x\to 0} \frac{\sin x}{x} = 1$$
Limits

$$\lim_{x \to 0} \frac{\sin x}{x} = 1$$
Limits

\[
\lim_{x \to 0} \frac{\sin x}{x} = 1
\]
Inequalities

$$1 < 2 \leq x \neq y$$
Inequalities

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Inequalities

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$$1 < 2 \leq x \neq y$$
Numbered equations

The rest of the examples are for LaTeX outside of Piazza in something like a paper or thesis.

\[ \pi = 3 \] (1)

Equation 1 is only true in parts of Ohio.

\begin{equation}
\pi = 3 \label{crazy}
\end{equation}

Equation \ref{crazy} is only true in parts of Ohio.
Numbered equations

The rest of the examples are for LaTeX outside of Piazza in something like a paper or thesis.

$$\pi = 3$$  \hspace{1cm} (1)

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Numbered equations

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\[ \pi = 3 \] (1)

Equation 1 is only true in parts of Ohio.

\begin{equation}
\pi = 3
\end{equation}

Equation \ref{crazy} is only true in parts of Ohio.
Theorem 1

$\sqrt{2}$ is an irrational number.

Isn't Theorem 1 lovely!

\begin{theorem}
\label{abiggy}
$\sqrt{2}$ is an irrational number.
\end{theorem}

Isn't Theorem \ref{abiggy} lovely!
Theorems

Theorem 1
$\sqrt{2}$ is an irrational number.

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Theorems

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\[ \sqrt{2} \text{ is an irrational number.} \]

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\begin{theorem}
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Steve Bell's best theorem appears in his paper [1].

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Steve Bell’s best theorem appears in his paper \cite{best}.

\bibitem{best} S. Bell, *Unique continuation theorems for the $\bar{\partial}$-operator and applications*, J. of Geometric Analysis 3 (1993), 195--224.