Math in LaTeX

August 6, 2014

Square roots

Square roots

$\sqrt{\pi}$

Square roots

$\sqrt{\pi}$

```
$\sqrt{\pi}$
```

Square root in a sentence

Square root in a sentence

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

Square root in a sentence

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

```
Here␣is␣$\sqrt{\pi}$␣in␣a␣sentence.
```

A displayed formula

A displayed formula

Here is a displayed formula

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

in the middle of text.

A displayed formula

Here is a displayed formula

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

in the middle of text.

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

A displayed formula

Here is a displayed formula

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

in the middle of text.

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

or

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

Fractions

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

Square roots of big hairy fractions

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

Square roots of big hairy fractions

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

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

Integrals

Integrals

$$\int f(x)\,dx$$

Integrals

$\int f(x)\,dx$

```
$\int␣f(x)\,dx$
```

More definite integrals

More definite integrals

$\int_a^b f(x)\ dx = F(b) - F(a)$

More definite integrals

$\int_a^b f(x)\ dx = F(b) - F(a)$

```
$\int_a^b␣f(x)\␣dx=F(b)␣␣␣-F(a)$
```

Sine and Cosine

Sine and Cosine

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

Sine and Cosine

$\sin^2\theta+\cos^2\theta\equiv1$

```
$\sin^2\theta+\cos^2\theta\equiv1$
```

Something more complex

Something more complex

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

Something more complex

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

```
$e^{-\pi␣i}+1=0$
```

Calculus!

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

Curly brackets

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

Curly brackets

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

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

A set

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

Sums and products

$$\sum_{n=0}^{\infty} a_n z^n = \prod_{n=0}^{\infty} (1 - \frac{z}{b_n})$$

Sums and products

$$\sum_{n=0}^\infty a_n z^n = \prod_{n=0}^\infty (1 - \frac{z}{b_n})$$

```
$\sum_{n=0}^\infty␣a_n␣z^n=
\prod_{n=0}^\infty(1-\frac{z}{b_n})$
```

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

Limits

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

Limits

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

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

Inequalities

Inequalities

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

Inequalities

$1 < 2 \le x \ne y$

```
$1<2\le␣x\ne␣y$
```

Numbered equations

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$$\pi = 3 \tag{1}$$

Equation 1 is only true in parts of Ohio.

Numbered equations

$$\pi = 3 \tag{1}$$

Equation 1 is only true in parts of Ohio.

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

Equation␣\ref{crazy}␣is␣only␣true␣in␣parts␣of␣Ohio.
```

Theorems

Theorems

Theorem 1

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

Isn't Theorem 1 lovely!

Theorems

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!
```

References

References

Steve Bell's best theorem appears in his paper [1].

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

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

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