Latex Mathematical Formulas

EXAMPLE PROGRAM1:

\documentclass{article}

\usepackage{amsmath}

\begin{document}

\title{Mathematics Formulas}

\maketitle

    \begin{equation}

    f(x)=\sum_{i=1}^{n}{x_i}\\

    \end{equation}

\end{document}

OUTPUT:

$$f(x) = \sum_{i=1}^{n} x_i$$

Example Program2:

```
\documentclass{article}
\begin{document}
        \begin{center}
                displaying square roots
        \end{center}
\begin{center}
        $\sqrt x$\\
        $\sqrt xy$\\
        $\sqrt {xy}$\\
        $\sqrt x^2$\\
        $\sqrt {x^2}$\\
        $\sqrt x^2a$\\
        $\sqrt x^{2a}$\\
        $\sqrt {x^2a}$\\
        $\sqrt {x^{2a}}$\\
\end{center}
\end{document}
```

displaying square roots

$$\sqrt{x}$$
$$\sqrt{x}y$$
$$\sqrt{xy}$$
$$\sqrt{x}^2$$
$$\sqrt{x^2}$$
$$\sqrt{x}^2 a$$
$$\sqrt{x}^{2a}$$
$$\sqrt{x^2 a}$$
$$\sqrt{x^{2a}}$$

Example Program3:

```
\documentclass{article}
\begin{document}
        \begin{center}
                displaying roots
        \end{center}


\begin{center}


3$\sqrt {\frac {a}{b}}$\\
$\sqrt [2]{\frac {a}{b}}$\\
$\sqrt [5]{\frac {a}{b}}$\\


\end{center}



\end{document}
```

OUTPUT:

displaying roots

$$3\sqrt{\frac{a}{b}}$$
$$\sqrt[2]{\frac{a}{b}}$$
$$\sqrt[5]{\frac{a}{b}}$$

Example Program4:

```
\documentclass{article}
\begin{document}
        \begin{center}
                subscripts:
        \end{center}
\begin{center}
$X^2$\\
$X^{2}{3}$\\
$X^a+b$\\
$X^{a+b}$\\
$N_a$\\
$N_ab$\\
$N_{ab}$\\
$N_{ab}X^2$\\
\end{center}
\end{document}
```

OUTPUT:

subscripts:

$$X^2$$
$$X^23$$
$$X^a + b$$
$$X^{a+b}$$
$$N_a$$
$$N_a b$$
$$N_{ab}$$
$$N_{ab}X^2$$

Example Program5:

```
\documentclass{article}
\begin{document}
        \begin{center}
     sums
        \end{center}


\begin{center}
$\sum_a^b$\\
$$\sum_a^b$$\\
$$\sum_{a}^{b}$$\\
$$\sum_{}^{b}$$\\
$$\sum_{a}^{}$$\\
$$\sum_{}^{}$$\\
$$\sum_{-\infty}^{+\infty}$$\\
$$\sum_{-\infty}^{+\infty} \frac{x^2+y}{ax+b}$$\\
$$\sum_{-\infty}^{+\infty} \frac{\sqrt {x^2+y}}{ax+b}$$\\
$$\sum_{-\infty}^{+\infty} \frac{\sqrt {x^2+y}}{a\frac{du}{dx}+b}$$
\end{center}


\end{document}
```

OUTPUT:

sums

$$\sum\nolimits_a^b$$

$$\sum_a^b$$

$$\sum_a^b$$

$$\sum^b$$

$$\sum_a$$

$$\sum$$

$$\sum_{-\infty}^{+\infty}$$

$$\sum_{-\infty}^{+\infty} \frac{x^2 + y}{ax + b}$$

$$\sum_{-\infty}^{+\infty} \frac{\sqrt{x^2 + y}}{ax + b}$$

$$\sum_{-\infty}^{+\infty} \frac{\sqrt{x^2 + y}}{a\frac{du}{dx} + b}$$

Example Program6:

```
\documentclass{article}
\begin{document}
        \begin{center}
                limits
        \end{center}
\begin{center}
$\lim_{x \rightarrow 0}$
$$\lim_{x \rightarrow 0}$$
$$\lim_{x \rightarrow 0} \frac{dy}{dx}$$
$$\lim_{x \rightarrow 0} \frac{\sqrt {{x^3}+y}}{\left(\frac{x}{y}+C\right)}$$
\end{center}
\end{document}
```

OUTPUT:

$$\text{limits}$$

$$\lim_{x\to 0}$$

$$\lim_{x\to 0}$$

$$\lim_{x\to 0} \frac{dy}{dx}$$

$$\lim_{x\to 0} \frac{\sqrt{x^3+y}}{\left(\frac{x}{y}+C\right)}$$

Example Program7:

```
\documentclass{article}
\begin{document}
        \begin{center}
                functions
        \end{center}
\begin{center}
        $\frac{a}{b}$\\
        $\frac{ax+b}{by+d}$\\
        $\frac{\left(\frac{ax}{b}\right)}{\left[\frac{by}{d}\right]}$\\
        $\frac{a^x+b}{b^y+d}$\\
        $\frac{a^{x+b}}{b^{y+d}}$\\
        $\frac{\sqrt x+y}{\sqrt {by+d}}$
\end{center}


\end{document}
```

OUTPUT:

$$functions$$

$$\frac{a}{b}$$
$$\frac{ax+b}{by+d}$$
$$\frac{\left(\frac{ax}{b}\right)}{\left[\frac{by}{d}\right]}$$
$$\frac{a^x+b}{b^y+d}$$
$$\frac{a^{x+b}}{b^{y+d}}$$
$$\frac{\sqrt{x}+y}{\sqrt{by+d}}$$

Example Program8:

```
\documentclass{article}

\begin{document}

        \begin{center}

                integrals

        \end{center}


\begin{center}


$\int_a^b$

$$\int_a^b$$

$$\int_{}^{\infty}$$

$$\int_{-\infty}^{}$$

$$\int_{-\infty}^{\infty} f(x) dx$$

$$\int_{-\infty}^{\infty} \frac{du}{dx}$$

$$\int_{-\infty}^{\infty} \frac {\sqrt {{x^2}+y}}{b}$$


\end{center}


\end{document}
```

integrals

$$\int_a^b$$

$$\int_a^b$$

$$\int^\infty$$

$$\int_{-\infty}$$

$$\int_{-\infty}^\infty f(x)dx$$

$$\int_{-\infty}^\infty \frac{du}{dx}$$

$$\int_{-\infty}^\infty \frac{\sqrt{x^2+y}}{b}$$

Example Program9:

```
\documentclass{article}
\usepackage{amsmath}


\begin{document}


        \begin{displaymath}
        f(x)=\sum_{i=1}^{n}{x_i}\\
        \end{displaymath}


\end{document}
```

OUTPUT:

$$f(x) = \sum_{i=1}^{n} x_i$$

Example Program10:

```
\documentclass{article}
\usepackage{amsmath}
\begin{document}
        \begin{equation}
                f(x)=\sum_{i=1}^{n}{x_i}\\
        \end{equation}
\end{document}
```

OUTPUT:

$$f(x) = \sum_{i=1}^{n} x_i \tag{1}$$