

This is normal text. Even though there are new lines within this tex file, there are no new lines here. In order to create a new paragraph, I need to skip a line, like this.

Here is a new paragraph. I want some inline math here, such as this:  $\sum_{k=0}^n x^{n-k}y^k$ , or maybe a fraction like this:  $\lim_{n \rightarrow \infty} \frac{(x+y)^n}{n}$ .

Here is an integral:  $F(x) = \int_a^x f(t) dt$ .

Now, I want to use ‘display math’ to show a much more important equation, such as the Cauchy-Schwarz inequality, the most important equation in all of mathematics.

$$|\langle x, y \rangle| \leq \|x\| \cdot \|y\| \tag{1}$$