Latex Tutorial

Some useful places to find help:

Website 1 gives help by environment, by command, and by subject. Website 2 shows a bunch of pictures of useful math symbols and the latex commands that generate them. Website 3 is a textbook-style Wiki devoted to latex.

1 Details

1.1 Font Control
You can specify *italics*, **boldface**, or `typewriter` fonts, either for specific textual arguments or **for all text** within an environment. Font sizes range from `tiny` to `Huge`.

1.2 In-line and displayed math
Integrals, like any mathematical expression, can be written in-line or as displayed math.
An example of the former is \( \int_0^2 x^2 dx \), and example of the latter is
\[
\int \int x^2 y^2 dydx.
\]

If you want to issue a number with your equation, use the `equation` environment:
\[
\int \int x^2 y^2 dydx.
\] (1)

1.3 Vertical and horizontal control
Words on adjacent lines are printed on the same line of output.
If you want to form a line break between two lines, leave an empty line between them.
It doesn’t matter how many empty lines you leave, Latex will simply put one line break.

If you want to adjust the vertical space, issue the \`vspace\` command.
Indentation is controlled automatically by Latex. If you want to override it, use the \`\indent\` and \`\noindent\` commands.

1.4 Some particularly useful math
Systems of equations can be written using the \`align\` environment:
\[
x = 5a + 3b
\]
\[
y = 7a - 2b.
\] (2) (3)

Matrices can be written with the \`array\` command issued with a math environment:
\[
A = \begin{pmatrix}
a & b \\
c & d
\end{pmatrix}.
\]

Greek letters (\(\alpha, \beta\), etc.), characters with funny hats (\(\hat{z} = 3\)), and other common math symbols (e.g. \(\exists, \forall\), etc.) can be looked up on Website 2 above.