Consider the equation \( y = e^x \) and the display
\[
\int_0^5 f(x) \, dx = \sum_{k=1}^n \frac{1}{k^3}.
\]
These are useful for considering the graph \( G(V, E) \) and the recurrence \( h_n = 2h_{n-1} + 1 \).

If you want to label a displayed equation, you need to do it explicitly:
\[
1 + 1 = 2 \tag{3}
\]

If you want an array with equations or inequalities lining up, do this:
\[
\begin{align*}
1 + 1 + 1 &= 1 + (1 + 1) \\
&= 1 + 2 \\
&> 2.
\end{align*}
\]
You can label this whole thing using the \texttt{\textbackslash eqno} command as before:
\[
\begin{align*}
1 + 1 + 1 &= 1 + (1 + 1) \\
&= 1 + 2 \\
&> 2. \tag{5b}
\end{align*}
\]

If you want to label each line, or some of the lines, you need a different command:
\[
\begin{align*}
1 + 1 + 1 &= 1 + (1 + 1) \tag{6} \\
&= 1 + 2 \\
&> 2. \tag{7}
\end{align*}
\]

Warning: \LaTeX{} uses completely different alignment commands. In fact, it has disabled the \TeX{} alignment commands I just showed you. Most \TeX{} commands work in \LaTeX{}, but not these.