**Single Equation Numbering**

In Lyx, it is easy to add a number to an equation via the "Insert->Label..." menu:

\[
\begin{align*}
\ x &= \ y \\
\ y &= a + b
\end{align*}
\]

results in

\[
\begin{align*}
\ x &= \ y \\
\ y &= a + b
\end{align*}
\]

**Multiple-Equation Numbering**

However, if you wish to number multiple equations in a block, the intuitive method, adding another label, might not be what is expected:

\[
\begin{align*}
\ x &= \ y & (1,\text{eq:FirstConstraint}) \\
\ y &= a + b & (2,\text{eq:SecondConstraint})
\end{align*}
\]

results in

\[
\begin{align*}
\ x &= \ y & (1) \\
\ y &= a + b & (2)
\end{align*}
\]

**Subequation Numbering**

If you want to group the equation numbers as, for example, (1a) and (1b), then you must do the following:
1. Add \usepackage{amsmath} to the document preamble.
2. Before the equation block, hit CTRL-L to add a LaTeX block, and type \begin{subequations}.
3. After the equation block, hit CTRL-L to add a LaTeX block, and type \end{subequations}.

The document should now look like this:

\begin{subequations}
\begin{align}
x &= y \quad (1, \text{eq:FirstConstraint}) \\
y &= a + b \quad (2, \text{eq:SecondConstraint})
\end{align}
\end{subequations}

and result in:

\begin{align}
x &= y \\
y &= a + b
\end{align}
\quad (1a) \\
\quad (1b)

A sample document can be found here: MultilineEquationNumbering.lyx

**Additional Options**

If you want to add a cross-reference to the entire block of equations, e.g. (1) rather than (1a) or (1b) in the example above, you need to add a label to the subequations block. Just move your mouse immediately after the \begin{subequations} LaTeX block, then add a label. You can then add a Cross-Reference to this label as normal.