The compound axiom says
\[ x: A, B \equiv x: A \lor x: B \]
There are 16 two-operand binary operators that could sit where \( \lor \) sits in this axiom if we just replace bunch union (,) by a corresponding bunch operator. Which of the 16 two-operand binary operators correspond to useful bunch operators?

§ What is “useful”? It’s not a well-defined question. I suppose any non-degenerate operator is useful (which means it uses both its operands; on the truth table below, if the comment to the right mentions both \( A \) and \( B \) then the operator is not degenerate). One could argue that the degenerate operators are useful for throwing away information, or that they aren’t useful because there is a perfectly good zero-operand or one-operand operator that could be used in their place.

Let \( \setminus A \) be the complement of bunch \( A \) (those elements that are not in \( A \), \( \setminus \) has precedence 2), defined formally by
\[ x: \setminus A \equiv \neg x: A \]

\[
\begin{array}{cccc}
T & T & T & T \\
\lor & T & T & T \\
\iff & T & T & T \\
\Rightarrow & T & T & T \\
= & T & T & T \\
\land & T & T & T \\
\oplus & T & T & T \\
\end{array}
\]

\( \text{null} \) (universal bunch)

\( A, B \)

\( A, \setminus B \)

\( \setminus A, B \)

\( \setminus A, \setminus B \)

\( \setminus B \)

\( A \setminus B \)

\( \setminus A \)

\( A \setminus B \)

\( \setminus A \setminus B \)