Logical _____ are sentences that can be either _____, or _____. If two such sentences are both _____ or _____ under any condition, we say that they are logically _____. If p and q are _____, the expression $p \Rightarrow q$ is called an _____. The symbol $\Rightarrow$ is an example of a logical _____. Another example is $\neg$, which reverses truth value and is called _____.

Let A and B be sets. We can combine A and B using *set operations* which arise by applying logical _____ to the _____ $x \in A$ and $x \in B$. The expression $x \in A$ is read as 'x is an _____ of A'. Applying the logical 'and', that is, taking all x satisfying $x \in A \wedge x \in B$, results in a set of all x that are common to both A and B. Such set is called the _____ of A and B. If we instead consider all x that lie in A *or* in B, we obtain a set called the _____ of A and B. Finally, the set which contains all _____ contained in A but **not** in B, is denoted $A \setminus B$ and called the _____ of A and B.

NEGATION

INTERSECTION

TRUE

UNION

ELEMENT

OPERATOR

PROPOSITION

IMPLICATION

FALSE

DIFFERENCE

EQUIVALENT