

The basic Laws of Boolean Algebra can be stated as follows:

- Commutative Law states that the interchanging of the order of operands in a Boolean equation does not change its result. For example:
 - 1. OR operator $\rightarrow A + B = B + A$
 - 2. AND operator $\rightarrow A * B = B * A$
- Associative Law of multiplication states that the AND operation are done on two or more than two variables. For example:
 $A * (B * C) = (A * B) * C$
- Distributive Law states that the multiplication of two variables and adding the result with a variable will result in the same value as multiplication of addition of the variable with individual variables. For example:
 $A + BC = (A + B) (A + C)$.
- Annulment law:
 $A.0 = 0$
 $A + 1 = 1$
- Identity law:
 $A.1 = A$
 $A + 0 = A$
- Idempotent law:
 $A + A = A$
 $A.A = A$
- Complement law:
 $A + A' = 1$
 $A.A' = 0$
- Double negation law:
 $((A)')' = A$
- Absorption law:
 $A.(A+B) = A$
 $A + AB = A$

Other than the above rules we have De Morgan's Law and very important in many scenario.

De Morgan's Law is also known as De Morgan's theorem, works depending on the concept of Duality. Duality states that interchanging the operators and variables in a function, such as replacing 0 with 1 and 1 with 0, AND operator with OR operator and OR operator with AND operator.

De Morgan stated two laws, which will help us in solving the algebraic problems in digital electronics. The De Morgan's statements are:

- i) $(AB)' = A' + B'$ and
- ii) $(A+B)' = A'.B'$

