FORMULAS

DeMorgan’s Laws for Set:

\[(A \cup B)' = A' \cap B'\]

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Cardinal Number Rules:

for unions and intersections:

\[n(A \cup B) = n(A) + n(B) - n(A \cap B)\]

and

for complements:

\[n(A) + n(A') = n(U)\]

Permutations:

\[n \, P_r = \frac{n!}{(n-r)!}\]

Combinations:

\[n \, C_r = \frac{n!}{r!(n-r)!}\]

Factorials:

\[n! = (n) \ast (n-1) \ast (n-2) \ast (n-3) \ast \ldots \ast 3 \ast 2 \ast 1\]

and

\[0! = 1\]