UIL Official List of Boolean Algebra Identities (Laws)

1	$A + A = A$	Indempotent Law for OR
2	$A * A = A$	Indempotent Law for AND
3	$A + B = B + A$	Commutative Law for OR
4	$A * B = B * A$	Commutative Law for AND
5	$A + (B + C) = (A + B) + C$	Associative Law for OR
6	$A * (B * C) = (A * B) * C$	Associative Law for AND
7	$A * (B + C) = A * B + A * C$	Distributive Law for AND over OR
8	$A + B * C = (A + B) * (A + C)$	Distributive Law for OR over AND
9	$A + 1 = 1$	Law of Union
10	$A * 0 = 0$	Law of Intersection
11	$A * (A + B) = A$	Law of Absorption
12	$A + A * B = A$	Law of Absorption
13	$A * 1 = A$	Identity Law for AND
14	$A + 0 = A$	Identity Law for OR
15	$\overline{\overline{A}} = A$	Double Negative Law
16	$A + \overline{A} = 1$	Law of Complement for OR
17	$A * \overline{A} = 0$	Law of Complement for AND
18	$\overline{A + B} = \overline{A} * \overline{B}$	DeMorgan's Law
19	$\overline{A * B} = \overline{A} + \overline{B}$	DeMorgan's Law
20	$A \oplus B = A * \overline{B} + \overline{A} * B = \overline{A} * B + A * \overline{B}$	Exclusive OR (XOR)
21	$\overline{A \oplus B} = A * B + \overline{A} * \overline{B}$	Exclusive NOR (XNOR)
22	$A + \overline{A} * B = A + B$	Law of the "disappearing opposite"
23	$(A + B) * (A + C) = A + B * C$	Reverse of Law #8
24	$(A + B) * (C + D) = A * C + A * D + B * C + B * D$	FOIL (**F**irst,**O**uter,**I**nner,**L**ast) Distribut

Note: ***AND*** will always be expressed explicitly with the ***** operator

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