

Lab #1 (Boolean Logic)

HINT: Don't THINK like a human, THINK like a chip! Simply "run" the expression!

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Section/Time: _____

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KEY:

Symbol	\cdot	$+$	\bar{n}
Meaning	AND	OR	NOT (n)

Complete the following table:

	x	0	0	1	1
	y	0	1	0	1
Function	Expression	Result			
CONSTANT 0	0	0	0	0	0
x AND y	$x \cdot y$	F	F	F	T
x AND (NOT y)	$x \cdot \bar{y}$	F	F	T	F
x	x	F	F	T	T
(NOT x) AND y	$\bar{x} \cdot y$	F	T	F	F
y	y	F	T	F	T
x XOR y	$x \cdot \bar{y} + \bar{x} \cdot y$	F	T	T	F
x OR y	$x + y$	F	T	T	T
x NOR y	$\overline{x + y}$	T	F	F	F
Equivalence (x == y)	$x \cdot y + \bar{x} \cdot \bar{y}$				
NOT y	\bar{y}	T	F	T	F
IF y THEN x	$x + \bar{y}$	F	F	T	T
NOT x	\bar{x}	T	T	F	F
IF x THEN y	$\bar{x} + y$	F	F	F	T
x NAND y	$\overline{x \cdot y}$	T	T	T	F
CONSTANT 1	1	1	1	1	1