Exercise 1:
Implement the following expression in LogicWorks

$F = a'b + b'c$

$F(a, b, c) = \sum m(1, 2, 3, 5)$

a	b	c	F
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	0
1	1	1	0

Exercise 2:
Implement the following expression in LogicWorks

$F =$ "Plus 3" of the input. However, when the input is > 4, the output is 0.

Input | Output

a	b	c	x	y	z
0	0	0	0	1	1
0	0	1	1	0	0
0	1	0	1	0	1
0	1	1	1	1	0
1	0	0	1	1	1
1	0	1	0	0	0
1	1	0	0	0	0

1	1	1	0	0	0

Exercise 3:
Implement the following expression in LogicWorks

$F =$ The number of "1" bits present in a four bit input, ABCD, where A is the most significant input bit.

Input					Output		
A	**B**	**C**	**D**		**X**	**Y**	**Z**
0	0	0	0		0	0	0
0	0	0	1		0	0	1
0	0	1	0		0	0	1
0	0	1	1		0	1	0
0	1	0	0		0	0	1
0	1	0	1		0	1	0
0	1	1	0		0	1	0
0	1	1	1		0	1	1
1	0	0	0		0	0	1
1	0	0	1		0	1	0
1	0	1	0		0	1	0
1	0	1	1		0	1	1
1	1	0	0		0	1	0
1	1	0	1		0	1	1
1	1	1	0		0	1	1
1	1	1	1		1	0	0

Exercise:
Implement the following expression in LogicWorks and create a custom device for the circuit

$F =$ Compare one 2-bit number (AB) and output whether it's "less than or equal to" and "more than" another 2-bit number (CD).

A	**B**	**C**	**D**		**X** (≤)	**Y** (>)
0	0	0	0		1	0
0	0	0	1		1	0
0	0	1	0		1	0
0	0	1	1		1	0
0	1	0	0		0	1
0	1	0	1		1	0
0	1	1	0		1	0
0	1	1	1		1	0
1	0	0	0		0	1
1	0	0	1		0	1
1	0	1	0		1	0
1	0	1	1		1	0
1	1	0	0		0	1
1	1	0	1		0	1
1	1	1	0		0	1
1	1	1	1		1	0