CS 301 > Half-Adder and Full-Adder Worksheet

Create the truth table for a half-adder.

a	b	sum	carry

Create the logic diagram for **sum** column.

Create the logic diagram for **carry** column.

create the K-map for **sum** column , and determine the Boolean expression.

Create the K-map for the **carry** column, and determine the Boolean expression.

Create the logic diagram for the half-adder combinational circuit. (Use only one instance of each input, as listed below.)

a

b

Create the truth table for a full-adder.

a	b	Ci	sum (s)	carry (Co)

create the K-map for **sum** column , and determine the Boolean expression.

Remember these are NOT in numerical order	a =0	a=1
b=0, ci=0		
b =0, ci =1		
b=1, ci =1		
b=1, ci=0		

Create the K-map for the **carry** column, and determine the Boolean expression.

Remember these are NOT in numerical order	a =0	a=1
b=0, ci=0		
b =0, ci =1		
b=1, ci =1		
b=1, ci=0		

Create the logic diagram for the full-adder combinational circuit. (Use only one instance of each input, as listed below.)

a

b

Ci