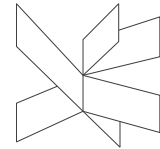


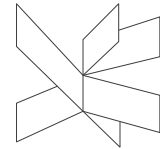
Mandatory Assignment

Table of content

1	From Boolean expression to truth table	1
1.1	Fill out the truth table from the following Boolean expression:.....	1
1.2	Fill out the truth table from the following Boolean expression:.....	1
1.3	Fill out the truth table from the following Boolean expression:.....	2
1.4	Fill out the truth table from the following Boolean expression:.....	2
1.5	Write down the truthtable from the following Boolean expression.	3
2	From truth table to Boolean expression	3
2.1	Write down the Boolean expression described by the truthtable and simplify it as much as possible.	3
2.2	Write down the Boolean expression described by the truthtable and simplify it as much as possible.	4
2.3	Write down the Boolean expression described by the truthtable and simplify it as much as possible.	4
2.4	Write down the Boolean expression described by the truthtable and simplify it as much as possible.	5
2.5	Write down the Boolean expression described by the truthtable and simplify it as much as possible.	5
3	Boolean expression to circuit.	6
3.1	Draw the logic circuit described by the following Boolean expression	6
3.2	Draw the logic circuit described by the following Boolean expression	6
3.3	Draw the logic circuit described by the following Boolean expression	6
3.4	Draw the logic circuit described by the following Boolean expression	6
4	From circuit to Boolean expression	7



4.1	Write down the Boolean expression derived from the logical circuit below:.....	7
4.2	Write down the Boolean expression derived from the logical circuit below:.....	8
5	From circuit to truth table	8
5.1	Write down the truthtable from the following circuit:	8
5.2	Write down the truthtable from the following circuit:	9
5.3	Write down the truthtable from the following circuit:	9
5.4	Write down the truthtable from the following circuit:	10
5.5	Write down the truthtable from the following circuit:	10



1 From Boolean expression to truth table

1.1 Fill out the truth table from the following Boolean expression:

$$Out = A\bar{B}\bar{C} + BC$$

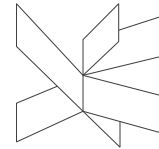
A	B	C	Out
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	
1	1	1	

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1.2 Fill out the truth table from the following Boolean expression:

$$Out = \bar{B}$$

A	B	C	Out
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	



1	0	1	
1	1	0	
1	1	1	

1.3 Fill out the truth table from the following Boolean expression:

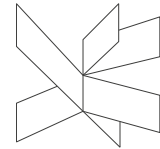
$$Out = 1$$

A	B	C	Out
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	
1	1	1	

1.4 Fill out the truth table from the following Boolean expression:

$$Out = C(A + B)$$

A	B	C	Out
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	



1	0	1	
1	1	0	
1	1	1	

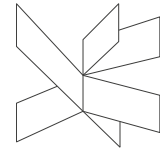
1.5 Write down the truthtable from the following Boolean expression.

$$Out = B(A + C) + \bar{B} \bar{C} \bar{A}$$

2 From truth table to Boolean expression

2.1 Write down the Boolean expression described by the truthtable and simplify it as much as possible.

A	B	C	Out
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	0
1	1	1	1

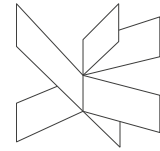


2.2 Write down the Boolean expression described by the truthtable and simplify it as much as possible.

A	B	C	Out
0	0	0	1
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	1

2.3 Write down the Boolean expression described by the truthtable and simplify it as much as possible.

A	B	C	Out
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	1
1	1	1	0

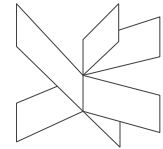


2.4 Write down the Boolean expression described by the truthtable and simplify it as much as possible.

A	B	C	Out
0	0	0	1
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0

2.5 Write down the Boolean expression described by the truthtable and simplify it as much as possible.

A	B	C	Out
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0



3 Boolean expression to circuit.

3.1 Draw the logic circuit described by the following Boolean expression

$$Out = A + \bar{B}$$

3.2 Draw the logic circuit described by the following Boolean expression

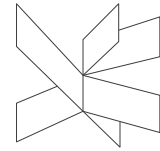
$$Out = CA + \bar{B}$$

3.3 Draw the logic circuit described by the following Boolean expression

$$Out = A\bar{B}C + \bar{A}BC$$

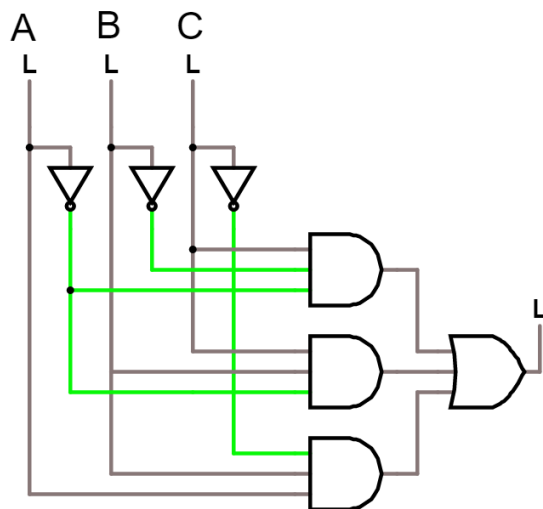
3.4 Draw the logic circuit described by the following Boolean expression

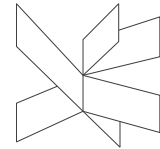
$$Out = A(\bar{B} + \bar{A}C)$$



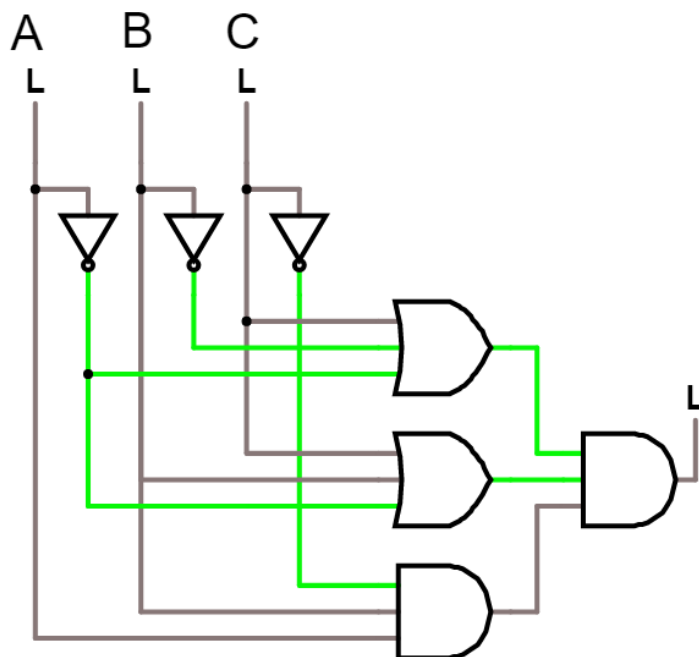
4 From circuit to Boolean expression

4.1 Write down the Boolean expression derived from the logical circuit below:



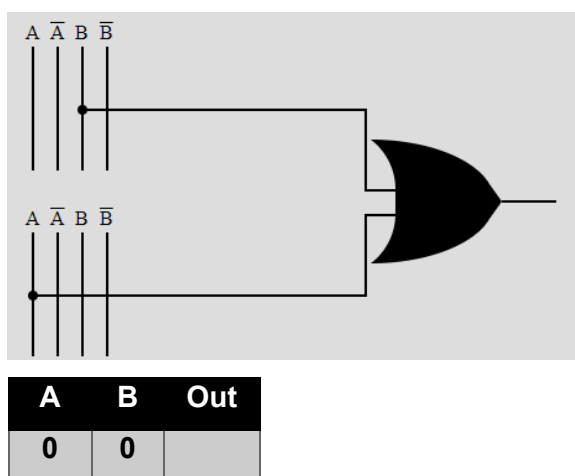


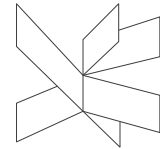
4.2 Write down the Boolean expression derived from the logical circuit below:



5 From circuit to truth table

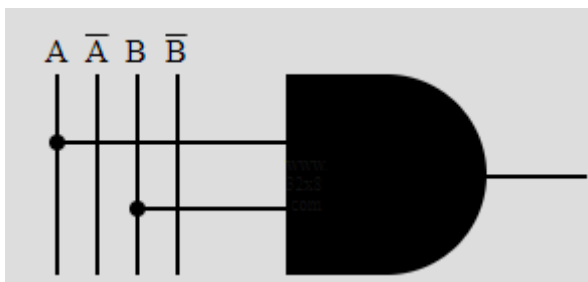
5.1 Write down the truth table from the following circuit:



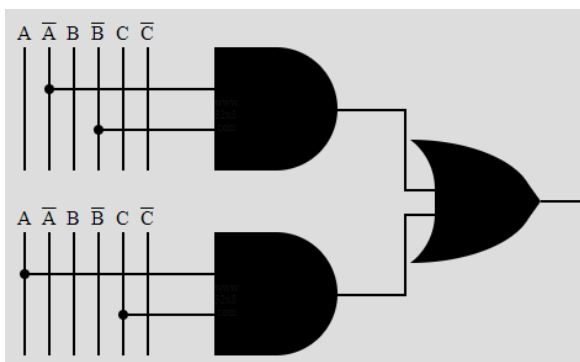


0	1	
1	0	
1	1	

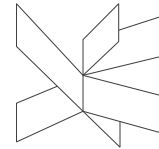
5.2 Write down the truthtable from the following circuit:



5.3 Write down the truthtable from the following circuit:

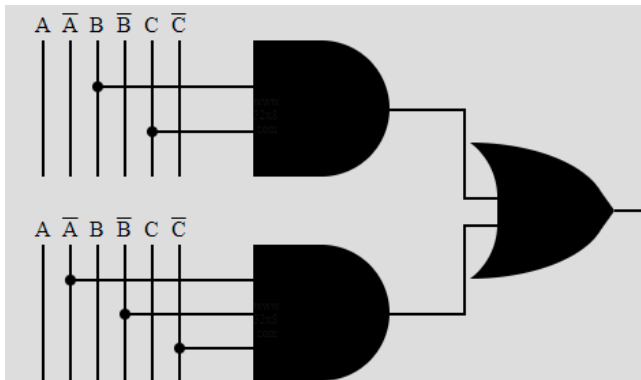


A	B	C	Out
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	



1	1	1	
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5.4 Write down the truth table from the following circuit:



5.5 Write down the truth table from the following circuit:

