

1.  $F = AB + A'C + A'B'C'$

Draw the circuit for the above function using logic gates.  
Clearly label the inputs and output.

2.  $F = A + B'C$

Draw the truth table for the above function.

A	B	C	F
0	0	0	0
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	1

3. The inputs of a circuit are A, B and C. List all the possible minterms.

Answer:  $A'B'C'$ ,  $A'B'C$ ,  $A'BC'$ ,  $A'BC$ ,  $AB'C'$ ,  $AB'C$ ,  $ABC'$ ,  $ABC$

4. The inputs of the circuit are W,X,Y and Z. How many different unique minterms are there?

Answer: 16

5. Consider the following truth table. The inputs are A, B and C. The output is F.

A	B	C	F
0	0	0	1
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

(a) Write the Boolean expression for F in sum-of-minterms form.

Answer:  $F = A'B'C' + A'BC + AB'C + ABC$

(b) Draw the Karnaugh Map for F.

A \ BC	00	01	11	10
0	1	0	1	0
1	0	1	1	0