

MATH 125 Worksheet 10 Boolean Algebra

1. Simplify the Boolean expression **using Boolean algebra**.

a. $(A + B) + \overline{B}$.

b. $AA + BC + B\overline{C}$.

c. $\overline{A} + C + AB$.

d. $\overline{A}(B + AC)$.

2. Create the Boolean Table for $AB + \overline{C}$

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

3. Draw the network using switches. $F + G(A + B)$.

4. Simplify the Boolean expression.

a. $\overline{A}(B + A)$.

b. $(B + A\overline{B})(C + AC)$

c. $ABC + A\overline{B}C + AB\overline{C}$

d. $(B + AC)(B + \overline{A})$

5. Draw the network using switches. $C(AD + B)$.

Simplify using the Properties of Boolean Algebra

$$6. \overline{(A + \bar{B})(B + \bar{C})}$$

$$7. \overline{(\bar{A} + B)(\bar{B} + C)}$$

$$8. \overline{(A + \bar{C})(\bar{A} + \bar{B})}$$

$$9. \overline{(\bar{A} + \bar{B})(\bar{B} + C)}$$

$$10. \overline{(\bar{A} + \bar{B})(\bar{B} + C)}$$