1.

a. Identity Law

i.

x	y	0.x	1+x
0	0	0	d
1	0	0	d
1	1	d	1
0	1	d	1

b. Idempotent Law

i.

x	x	x.x	x+x
0	0	0	0
1	1	1	1

c. Distributive Law

i.

A	B	C	AB	AC	B+C	BC	A+B	A+C	A.(B+C)	AB+AC	A+(BC)	(A+B).(A+C)
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	1	0	0	1	0	0	0	0
0	1	0	0	0	1	0	1	0	0	0	0	0
0	1	1	0	0	1	1	1	1	0	0	1	1
1	0	0	0	0	0	0	1	1	0	0	1	1
1	0	1	0	1	1	0	1	1	1	1	1	1
1	1	0	1	0	1	0	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1

d. De Morgan's Law

i.

A	B	NOT A	NOT B	A + B	A NOR B	NOT A AND NOT B
0	0	1	1	0	1	1
0	1	1	0	1	0	0
1	0	0	1	1	0	0
1	1	0	0	1	0	0

2.

a. $A \oplus B$ given
b. = ¬A.B+B. ¬A
c. ¬ ¬ (¬A.B+B. ¬A) reverse double negation

3.

a. A+AB Given
b. (*A*+A)(*A*+B) Distributive Law
c. 1(A+B) Idempotent Law

d. A+B Identity Law

4.
   a. A(¬B)C +ABC Given
   b. A+(¬BC+BC) Distributive Law
   c. A+(C(¬B+B)) Distributive and Commutative Law
   d. A+(C(1)) Inverse Law
   e. A+C identity law
5. BC + AC + AB
6. A'B'C'D'E + A'B'C'DE' + A'B'CD'E' + A'B'CDE + A'BC'DE + A'BCD'E + A'BCDE' + AB'C'D'E' + AB'C'DE + AB'CD'E + AB'CDE' + ABC'D'E + ABC'DE' + ABCD'E' + ABCDE
7.
   a.
      i. F_1 A XOR A
      ii. F_2 A AND A
      iii. F_3 NOT A
      iv. F_4 (NOT A) OR (A AND A)

   b.
      i. 2^n functions