1.

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

2. (a) $X = (A + B + C')\overset{\text{D.E.}}{=}(A'B'C)'$

   (b) $Y = (A(BC') + C)\overset{\text{D.E.}}{=}((A' + (B' + C'))C')'$

   (c) $Z = (A' + C)'(AB) + C'\overset{\text{D.E.}}{=}((AC') + (A' + B'))C)'$

3. (a) $X = A' + B = (AB')'$

   (b) $Y = (AB') + (A'B) + (A'B') = ((AB)'(A'B)'(A'B')')'$

4. (a)

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

   (b) $F = (A'B'C') + (A'B'C) + (AB'C') + (ABC)$

5.