5.2 Exercises:

1. identity

X	X * 1
0	0
1	1

X	X + 0
0	0
1	1

2. commutative

X Y	X * Y	Y * X
0 0	0	0
0 1	0	0
1 0	0	0
1 1	1	1

X Y	X + Y	Y + X
0 0	0	0
0 1	1	1
1 0	1	1
1 1	1	1

3. annulment

X	X * 0
0	0
1	0

X	X + 1

0	1
1	1

4. complement

X X'	X * X'
0 1	0
1 0	0

X X'	X * X'
0 1	1
1 0	1

5. idempotent

X X	X * X
0 0	0
1 1	1

X X	X + X
0 0	0
1 1	1

6. distributive

Z Y Z Y + Z	X * (Y + X)	X * Y X * Z	X * Y + X Z
0 0 0 0	0	0 0	0
0 0 1 1	0	0 0	0
0 1 0 1	0	0 0	0
0 1 1 1	0	0 0	0
1 0 0 0	0	0 0	0
1 0 1 1	1	0 1	1
1 1 0 1	1	1 0	1

1 1 1 1	1	1 1	1

Z Y Z Y + Z	X * (Y + X)	X * Y X * Z	X * Y + X Z
0 0 0 0	0	0 0	0
0 0 1 0	0	0 1	0
0 1 0 0	0	1 0	0
0 1 1 1	1	1 1	1
1 0 0 0	1	1 1	1
1 0 1 0	1	1 1	1
1 1 0 0	1	1 1	1
1 1 1 1	1	1 1	1

5.6 Exercises:

1. A
2. $f(x,y,z) = Z' + (X' * Y') + (X * Y)$
3. $f(x,y,z) = (Y' + Z') * (Y + Z) * (X + Z)$
4. $f(x,y,z) = (X' * Y * Z) + (X * Y' * Z)$