Logical Operators

Please do the following exercises individually.

Logical Operators

Please fill in the following truth tables.

a	b	a∧b

a	b	a⊕b

a	b	a∨b

De Morgan's law

Please simplify these expressions with the law of De Morgan.

¬(a∧¬b) =

¬(a∧¬b∧c) =

¬((¬a∧¬b∧¬c) ∨ (a∧b∧¬c)) =

¬((¬a∨b∨¬c) ∧ (a∨¬b∨¬c)) =

Venn Diagrams

Please draw the Venn diagram of the NAND-Opterator.

Logical Operators and Truth Tables

Please do the following exercises individually.

Logical Operators

Please fill in the following truth tables.

a	b	a∧b
0	0	0
0	1	0
1	0	0
1	1	1

a	b	a⊕b
0	0	0
0	1	1
1	0	1
1	1	0

a	b	a∨b
0	0	0
0	1	1
1	0	1
1	1	1

De Morgan's law

Please simplify these expressions with the law of De Morgan.

¬(a∧¬b) = ¬a∨b

¬(a∧¬b∧c) = ¬a∨b∨¬c

¬((¬a∧¬b∧¬c) ∨ (a∧b∧¬c)) = (a∨b∨c) ∧ (¬a∨¬b∨c)

¬((¬a∨b∨¬c) ∧ (a∨¬b∨¬c)) = (a∧¬b∧c) ∨ (¬a∧b∧c)

Venn Diagrams

Please draw the Venn diagram of the NAND-Opterator.