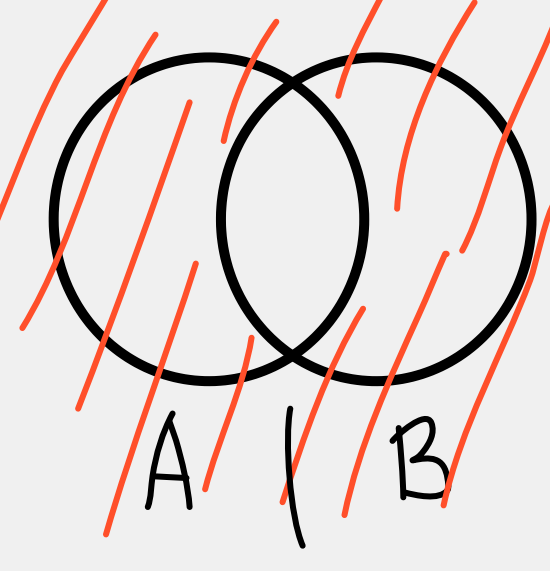
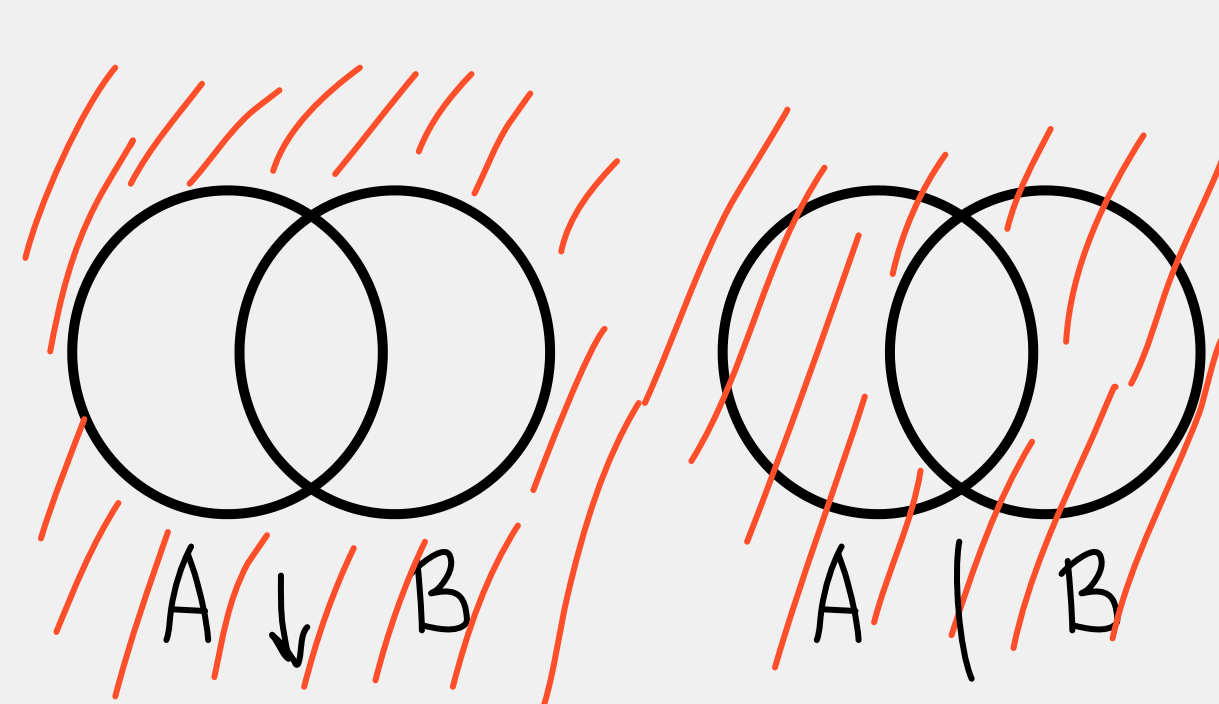
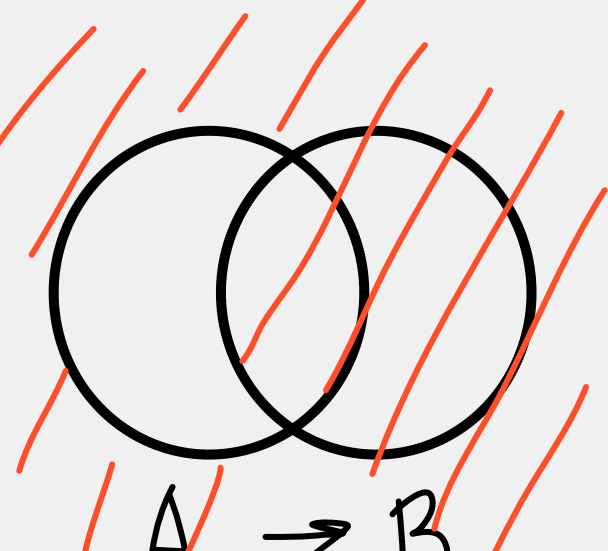
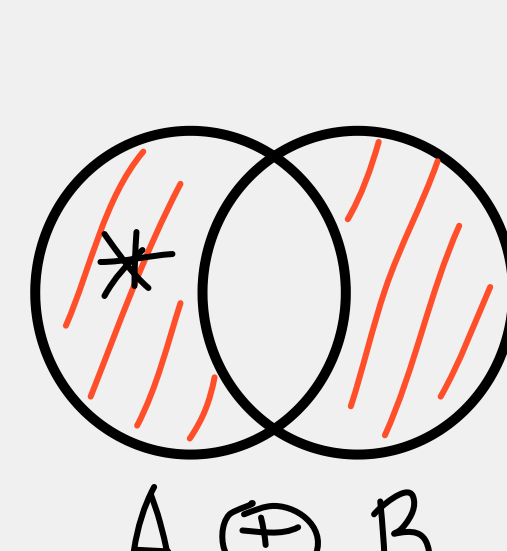


$$a \ b \ \wedge \ \vee \ \oplus \ \rightarrow \ \downarrow \ \sim$$

0	0	0	0	0	1	1	1	0	1
0	1	0	1	1	1	0	1	0	0
1	0	0	1	1	0	0	1	1	0
1	1	1	1	0	1	0	0	0	1



$$1 - x \in X$$

$$0 - x \notin X$$

Помимо Жезаркина

$$a \oplus b = a + b$$

$$a(b+c) = ab+ac$$

$$a \wedge b = ab$$

$$\bar{a} = a + 1$$

$$a \vee b = \overline{(\bar{a} \wedge \bar{b})} = \overline{((a+1) \wedge (b+1))} = (a+1)(b+1) + 1 =$$

$$= ab + a + b + \underline{1+1}$$

$$a \rightarrow b = ab + a + 1$$

$$a \downarrow b = \overline{(a \vee b)} = ab + a + b + 1$$

$$a | b = \overline{(a \wedge b)} = ab + 1$$

$$\bar{a} = a + 1$$

$$a \oplus b = a + b$$

$$a \wedge b = ab$$

$$a \vee b = ab + a + b$$

$$a \rightarrow b = ab + a + 1$$

$$a - b = ab + a$$

$$a \downarrow b = ab + a + b + 1$$

$$a | b = ab + 1$$

$$a \sim b = a + b + 1$$

Метод треугольника

a	b	a-b
0	0	0
0	1	0
1	0	1
1	1	0

$$a + ab = a - b$$

$$\bar{A} \wedge \bar{B} \stackrel{?}{=} \overline{A \vee B}$$

$$(a+1) \wedge (b+1) \stackrel{?}{=} (a \vee b) + 1$$

$$(a+1)(b+1) \stackrel{?}{=} (ab + a + b) + 1$$

$$ab + a + b + 1 = ab + a + b + 1$$

$$((a \vee b) \wedge c) = (ab + a + b)c = abc + ac + bc$$

$$(\bar{a} \wedge (\bar{b} \vee \bar{c})) = \bar{a} \wedge ((b+1) \vee (c+1)) =$$

$$= (a+1) \wedge ((b+1)(c+1) + (b+1) + (c+1)) =$$

$$= (a+1)(bc + \cancel{b+c+1} + \cancel{b+1} + \cancel{c+1}) =$$

$$= (a+1)(bc + 1) = abc + a + bc + 1$$

$$(abc + ac + bc) \vee (abc + a + bc + 1) = \quad x \vee y = xy + x + y$$

$$= \cancel{abc} + \cancel{abc} + \cancel{abc} + \cancel{abc} + \cancel{abc} + \cancel{ac} + \cancel{abc} + \cancel{ac}$$

$$+ \cancel{abc} + \cancel{abc} + \cancel{bc} + \cancel{bc} +$$

$$+ \cancel{abc} + \cancel{ac} + \cancel{bc} + \cancel{abc} + \cancel{a} + \cancel{bc} + 1 =$$

$$= ac + a + 1 \quad \leftarrow$$

$$\bar{a} \vee c = (a+1) \vee c = (a+1)c + (a+1) + c =$$

$$= \cancel{ac} + \cancel{a+1} + \cancel{c} = ac + a + 1 \quad \leftarrow$$

$$((a \downarrow b) \rightarrow (a + b)) \wedge ((a - b) \rightarrow (a | b)) = \underline{a \vee b}$$

$$((ab + a + b + 1) \rightarrow (a + b)) \wedge ((ab + a) \rightarrow (ab + 1)) =$$

$$= ((ab + a + b + 1)(a + b) + (ab + a + b + 1) + 1)$$

$$((ab + a)(ab + 1) + (ab + a) + 1) =$$

$$= (\cancel{ab} + \cancel{ab} + \cancel{a} + \cancel{ab} + \cancel{ab} + \cancel{b} + \cancel{a} + \cancel{b} + \cancel{ab} + \cancel{a} + \cancel{b} + \cancel{1} + \cancel{1})$$

$$(\cancel{ab} + \cancel{ab} + \cancel{ab} + \cancel{a} + \cancel{ab} + \cancel{a} + 1) =$$

$$= \underline{a + ab + b}$$

$\{\oplus, \wedge, \downarrow\}$ who?

$$(\underline{\bar{a}}, \wedge), a \vee b = \overline{\bar{a} \wedge \bar{b}}$$

"

$$\{\underline{\bar{a}}, \wedge, \vee\}$$

$$\{\underline{\downarrow}\}, \{\underline{|}\}, \underline{a \downarrow a = \bar{a}}$$

$$((a \downarrow b) \downarrow (a \downarrow b)) + ((a \downarrow a) \downarrow (b \downarrow b)) = a + b$$

$$\overline{(a \downarrow b)} + (\bar{a} \downarrow \bar{b}) =$$

$$= (ab + a + b + 1) + 1 + (a+1) \downarrow (b+1) =$$

$$= \cancel{ab} + \cancel{a} + \cancel{b} + (\cancel{a+1}) + 1 + (\cancel{a+1}) + (\cancel{b+1}) + 1 =$$

$$= \cancel{ab} + \cancel{a} + \cancel{b} + \cancel{ab} + \cancel{a} + \cancel{b} + \cancel{1} + \cancel{a} + \cancel{1} + \cancel{b} + \cancel{1} + \cancel{1} =$$

$$= a + b$$