

## Mulohazalar ustida amallar

**1-misol.**  $A \wedge V \rightarrow A \wedge S$  – formulaning rostlik jadvalinituzaylik. Bu formulada faqat A, V, S mulohazalar qatnashib, ularning 8 taqiymatlaritizimiga formulaning mos qiymatlariquyidagi jadvaldako’rsatilgan:

A	V	S	$A \wedge V$	$A \wedge S$	$A \wedge V \rightarrow A \wedge S$
1	1	1	1	1	1
1	0	1	0	1	1
0	1	1	0	0	1
0	0	1	0	0	1
1	1	0	1	0	0
1	0	0	0	0	1
0	1	0	0	0	1
0	0	0	0	0	1

**2-misol.**  $\neg(A \wedge V) \equiv \neg A \vee \neg V$   
tengkuchlilikniisbotqilishuchunrostjadvalituzamiz:

A	V	$A \wedge V$	$\neg(A \wedge V)$	$\neg A$	$\neg V$	$\neg A \vee \neg V$
1	1	1	0	0	0	0
1	0	0	1	0	1	1
0	1	0	1	1	0	1
0	0	0	1	1	1	1

Jadvaldanko’rinibturibdiki  $\neg(A \wedge V)$  va  $\neg A \vee \neg V$  formulalar, buformulalarningtarkibigakirganbarchamulohazalarningixtiyoriyqiymatlaritizimida birxilqiymatlarqabulqiladilar. Demak,  $\neg(A \wedge V) \equiv \neg A \vee \neg V$ .

**3-misol.**  $(A \wedge V) \Rightarrow \neg A$  formulaningformulaostilarita’rifgakûra =uyidagilardaniborat :

$$A, V, \neg A, A \wedge V, (A \wedge V) \Rightarrow \neg A.$$

**4-misol.**  $\neg(A \wedge V) \rightarrow \neg A \vee \neg V$  – formulaaynanrostformuladir. 2.5-misoldagi jadvalyordamidabuformula  $A$  va  $V$  mulohazalarningixtiyoriyqiymatlaritizimidarostqiymatqabulqilishiniko’rishqiyine mas.

**5-misol.**  $A \vee V \vee S$  formulabajariluvchiformuladir, chunki A, V, S mulohazalarning (1, 0, 0) qiymatlaritizimidarostbo’ladi.

**6-misol.**  $A \wedge \neg A$  - formulaziddiyatdir.

Haqiqatdanham, Arostbo'lgandaham,  
yolg'onbo'lgandahambuformulayolg'onqiyamatqabulqiladi.

A

**7-misol** MA ningasosiy teng kuchli formulalarini isbotlang:

1.  $A \wedge A \equiv A$
2.  $A \vee A \equiv A$
3.  $A \vee 1 \equiv 1$
4.  $A \wedge 1 \equiv A$
5.  $A \wedge 0 \equiv 0$
6.  $A \vee 0 \equiv A$
7.  $A \vee \bar{A} \equiv 1$  - uchinchi sinin korqilish qonuni.
8.  $A \wedge \bar{A} \equiv 0$  - ziddiyatga keltirish qonuni.
9.  $\bar{\bar{A}} \equiv A$  - qo'shinkor qonuni.
10.  $A \wedge (B \vee A) \equiv A$
11.  $A \vee (B \wedge A) \equiv A$
12.  $A \leftrightarrow B \equiv (A \rightarrow B) \wedge (B \rightarrow A)$
13.  $A \rightarrow B \equiv \bar{A} \vee B$
14.  $\overline{A \wedge B} \equiv \bar{A} \vee \bar{B}$
15.  $\overline{A \vee B} \equiv \bar{A} \wedge \bar{B}$
16.  $A \wedge B \equiv \overline{\bar{A} \vee \bar{B}}$
17.  $A \vee B \equiv \overline{\bar{A} \wedge \bar{B}}$
18.  $A \wedge B \equiv B \wedge A$
19.  $A \vee B \equiv B \vee A$
20.  $(A \wedge B) \wedge C \equiv A \wedge (B \wedge C)$
21.  $(A \vee B) \vee C \equiv A \vee (B \vee C)$
22.  $A \wedge (B \vee C) \equiv (A \wedge B) \vee (A \wedge C)$
23.  $A \vee (B \wedge C) \equiv (A \vee B) \wedge (A \vee C)$