



MUAMMOLI MASALA VA TOPSHIRIQLAR:

1. Quyidagi formulaning umumqiyimatli ekanligini isbotlang:

$$A \equiv (P(x) \rightarrow \overline{Q(x)}) \rightarrow \overline{\exists x P(x) \wedge \forall x Q(x)}$$

2. Agar M to'plamda aniqlangan $A(x)$ va $V(x)$ predikatlar chin qiymatli bo'lsa, u holda ularning chinlik to'plamlari qanday shartlarni qanoatlantirishi kerak:

1) $\forall x(A(x) \rightarrow B(x)) \wedge \exists x(\overline{A(x)} \wedge B(x))$

2) $\overline{\exists x(A(x) \wedge B(x))} \wedge (\forall x(A(x) \rightarrow B(x)))$

3) $\exists x(A(x) \wedge B(x)) \rightarrow (\forall x(A(x) \rightarrow B(x)))$?

3. $M = \{1, 2, 3, \dots, 20\}$ to'plamda quyidagi predikatlar berilgan:

$A(x)$: « x 5 ga bo'linmaydi»

$B(x)$: « x juft son»

$C(x)$: « x tub son»

$D(x)$: « x 3 ga karrali»

Quyidagi predikatlarning chinlik to'plamini toping:

1) $A(x) \wedge B(x)$

2) $C(x) \wedge B(x)$

3) $C(x) \wedge D(x)$

4) $B(x) \wedge D(x)$

5) $\overline{B}(x) \wedge D(x)$

6) $A(x) \wedge \overline{D}(x)$

7) $\overline{B}(x) \wedge \overline{D}(x)$

8) $A(x) \wedge B(x) \wedge D(x)$

9) $A(x) \vee B(x)$

10) $B(x) \vee C(x)$

11) $C(x) \vee D(x)$

12) $B(x) \vee D(x)$

13) $\overline{B}(x) \vee D(x)$

14) $B(x) \vee \overline{D}(x)$

15) $A(x) \vee B(x) \vee D(x)$

16) $C(x) \rightarrow A(x)$

17) $D(x) \rightarrow \overline{C}(x)$

18) $A(x) \rightarrow B(x)$

19) $(A(x) \wedge C(x)) \rightarrow \overline{D}(x)$

20) $(A(x) \wedge D(x)) \rightarrow \overline{C}(x)$