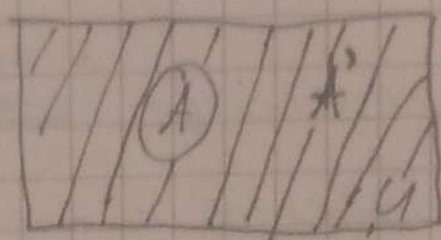
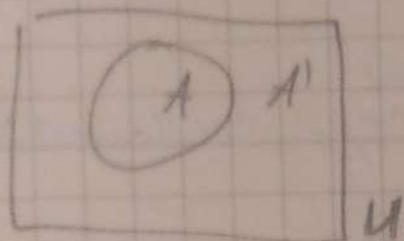


2.3. Диаграммы Венна

①



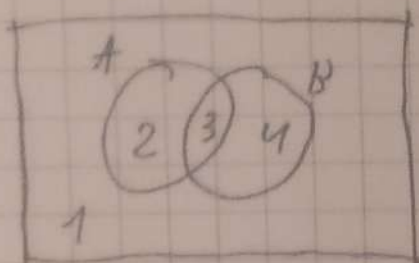
$$A \equiv$$

$$A' \equiv$$

$$U$$

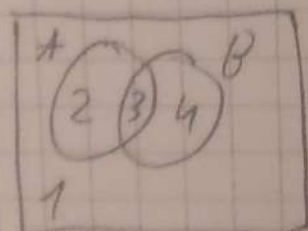


②



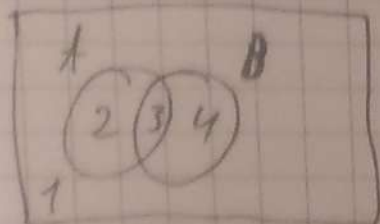
$$A \cap B = 3$$

③



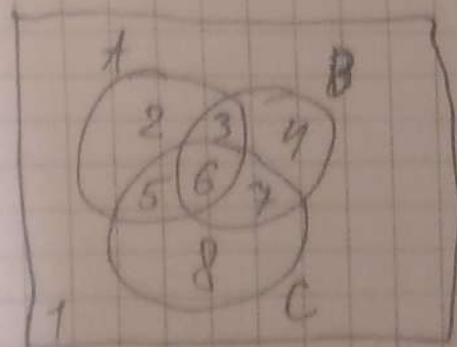
$$A \cup B = 2 + 3 + 4$$

④



$$A - B = 2$$

⑤



$$A \cap B = 3 + 6$$

$$A \cup B \cup C = 2 + 3 + 4 + 5 + 6 + 7 + 8$$

$$A \cap B \cap C = 6$$

$$(A \cup B) - C = 2 + 3 + 4$$

$$C' \cap (A \cup B) = 2 + 3 + 4$$

$$B \cup (A \cap C) = 3 + 4 + 5 + 6 + 7$$

$$\textcircled{a) A \cap A' = A$$



≡



≡

$$\equiv = \equiv$$

$$A \cup A' = A'$$



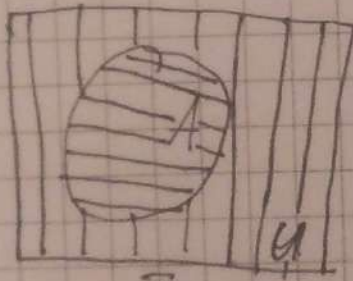
≡



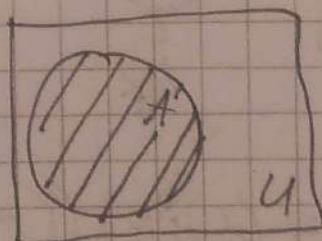
≡

$$\equiv = \equiv$$

$$\oint (A')' = A$$



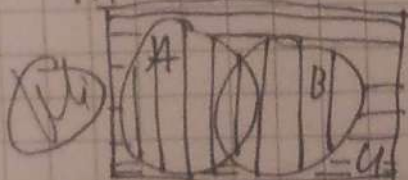
≡



≡

$$\equiv = \equiv$$

$$b) (A \cup B)' = A' \cap B'$$



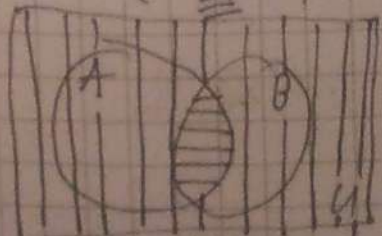
≡



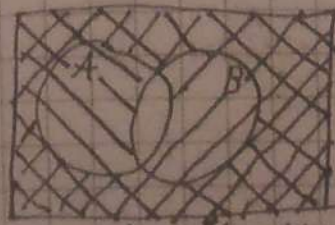
≡

$$\equiv = \equiv$$

$$(A \cap B)' = A' \cup B'$$



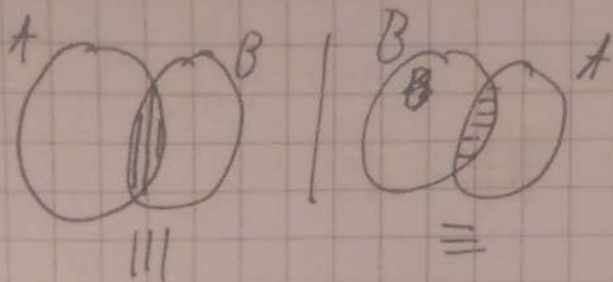
≡



≡

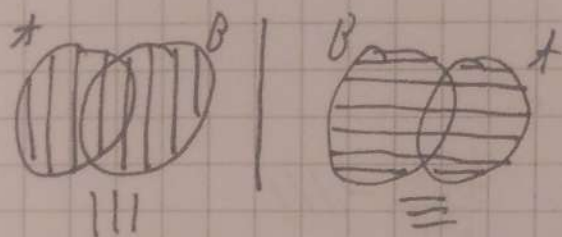
$$\equiv = \left[\begin{matrix} \equiv \\ \equiv \\ \equiv \end{matrix} \right]$$

$$2) A \overset{|||}{\cap} B = B \overset{=}{\cap} A$$



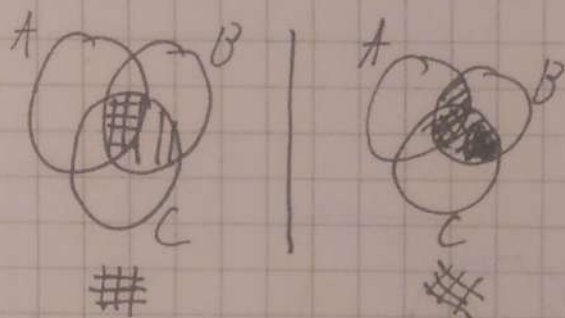
$$||| = =$$

$$A \overset{|||}{\cup} B = B \overset{=}{\cup} A$$



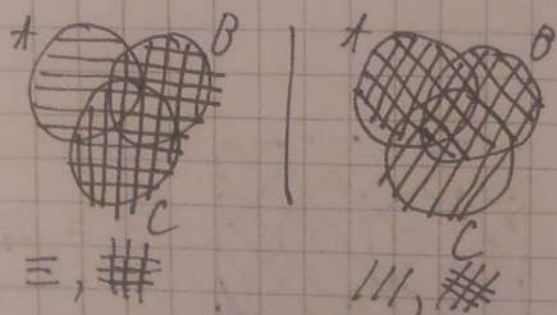
$$||| = =$$

$$g) A \overset{=}{\cap} (B \overset{|||}{\cap} C) = (A \overset{|||}{\cap} B) \overset{=}{\cap} C$$



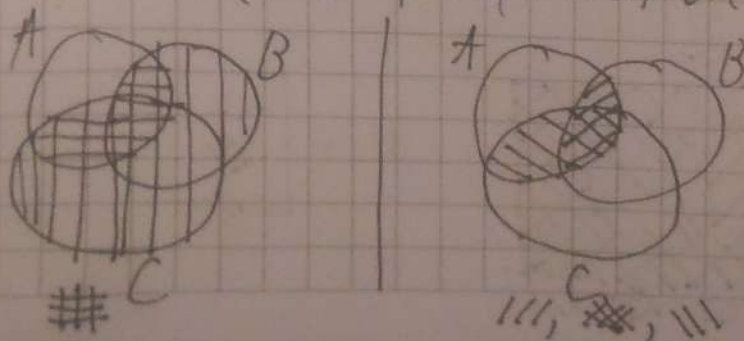
$$\# = \#$$

$$A \overset{=}{\cup} (B \overset{|||}{\cup} C) = (A \overset{|||}{\cup} B) \overset{=}{\cup} C$$



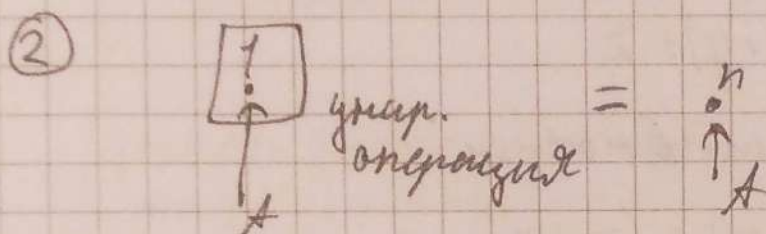
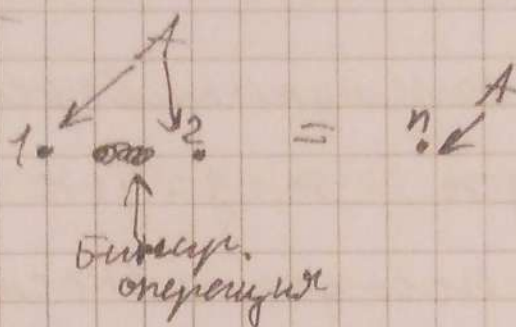
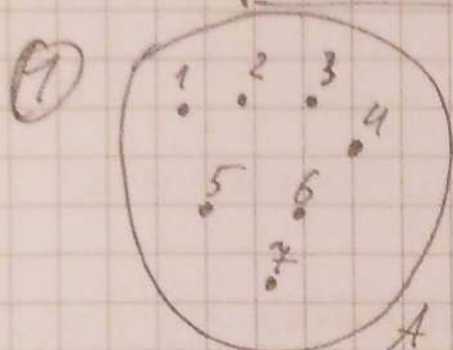
$$=, \# = |||, \#$$

$$e) A \overset{=}{\cap} (B \overset{|||}{\cup} C) = (A \overset{|||}{\cap} B) \overset{=}{\cup} (A \overset{|||}{\cap} C)$$



$$\# = |||, \#, |||$$

2.4) Булева алгебра



③ а) $x \cdot y = y \cdot x$

$x=1, y=0$ $1 \cdot 0 = 0 \cdot 1$
 $0^0 = 0^0$

$x=0, y=0$ $0 \cdot 0 = 0 \cdot 0$
 $0^0 = 0^0$

$x=1, y=1$ $1 \cdot 1 = 1 \cdot 1$
 $1^1 = 1^1$

б) $x + y = y + x$

$x=0, y=0$ $0 + 0 = 0 + 0$
 $0^0 = 0^0$

$x=1, y=0$ $1 + 0 = 0 + 1$
 $1^0 = 1^0$

$x=1, y=1$ $1 + 1 = 1 + 1$
 $1^1 = 1^1$