

D/3

2.16 - 2.19; 2.24; 2.25 (1-4)

2.16 $A = \{a, b, c\}$

Подмножества: $\{a\}; \{b\}; \{c\}; \{a, b\}; \{a, c\};$
 $\{b, c\}; \{a, b, c\}; \emptyset$

2.17 $A = \{\{a, b, c\}\}$

Подмножества: $\{\{a, b, c\}\}; \emptyset$

2.18 $A = \{a, \{b, c\}\}$

Подмножества: $\{a\}; \{\{b, c\}\}; \{a, \{b, c\}\}; \emptyset$

2.19 1) $P(\emptyset) = \{\emptyset\}$

2) $P(P(\emptyset)) = \{\{\emptyset\}; \emptyset\}$

2.24 $(A \cup B) \overset{①}{\Delta} (A \cup C) \stackrel{?}{=} (B \overset{②}{\Delta} C) \setminus A$

① $(A \cup B) \Delta (A \cup C) =$

$= ((A \cup B) \setminus (A \cup C)) \cup ((A \cup C) \setminus (A \cup B)) =$

$$= (B \setminus C) \cup (C \setminus B) = (B \Delta C)$$

① \neq ② \Rightarrow тождество неверно

2.25 $\frac{\textcircled{1}}{1) (A \cup \bar{B}) \stackrel{?}{=} \bar{A} \cap B \textcircled{2}}$

① $\bar{A} \cap B$ по зак. Де Моргана

① = ② \checkmark т.е.

2) $(A \cup (A \cap \bar{B})) \cap (A \cap (A \cup B)) = A$

$$A \cup ((A \cap \bar{B}) \cap (A \cup B)) =$$

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

$$= A$$

$$\Lambda \cdot \neg = \Pi \cdot \neg$$

$$\neg \neg \varphi.$$

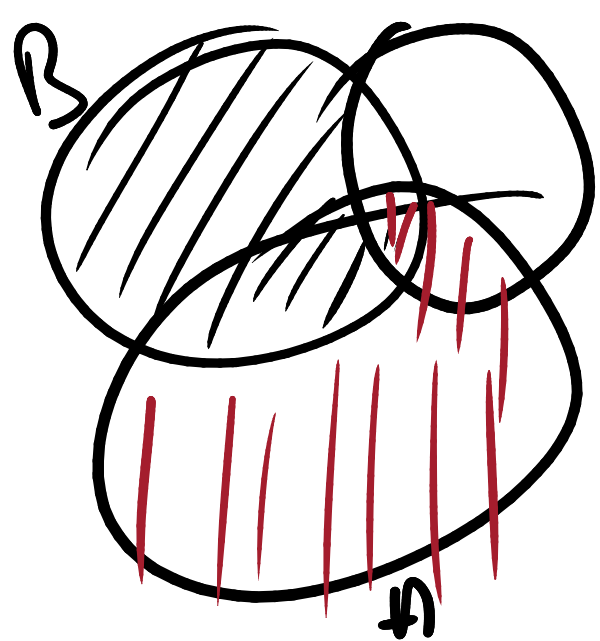
$$\textcircled{3} \quad (A \cup B) \setminus C = (A \setminus C) \cup (B \setminus C)$$

$$\textcircled{1} \quad (A \cup B) \setminus C = (A \setminus C) \cup (B \setminus C)$$

$$\textcircled{1} = \textcircled{2} \quad \text{z.t.g.}$$

$$\textcircled{4} \quad (A \setminus (B \setminus C)) \setminus ((A \setminus B) \setminus C) = A \cap C$$

$$((A \cap C) \cup (A \setminus B)) \setminus ((A \setminus B) \setminus C) = A \cap C$$



$$\Lambda.z = \Pi.z.$$

$$\text{z.t.g.}$$