Александър Владимиров Каранейчев Фак. номер 2001261008

Домашна работа 1

Нека N е последната цифра на вашия фак. номер - 2001261008

Зад. 1

$A = \{x \in N \mid x$ е просто число $< 30\}$

$B = \{x \in N \mid x = 5k - 2$ при $1 \leq k \leq 10\}$

$C = \{x \in N \mid x$ е четно число $< 20\}$

$D = \{x \in N \mid x \leq 15$, което се дели на 2 и на 3$\}$

$A = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29\}$

$B = \{3, 8, 13, 18, 23\}$

$x = 5k - 2$

$x_1 = 5 \cdot 1 - 2 = 3 \in N$

$x_2 = 5 \cdot 2 - 2 = 8 \in N$

$x_3 = 5 \cdot 3 - 2 = 13 \in N$

$x_4 = 5 \cdot 4 - 2 = 18 \in N$

$x_5 = 5 \cdot 5 - 2 = 23 \in N$

$x_6 = 5 \cdot 6 - 2 = 28 \in N$

$x_7 = 5 \cdot 7 - 2 = 33 \in N$, но $\notin U$

$x_8 = 5 \cdot 8 - 2 = 38 \in N$, но $\notin U$

$x_9 = 5 \cdot 9 - 2 = 43 \in N$, но $\notin U$

$x_{10} = 5 \cdot 10 - 2 = 48 \in N$, но $\notin U$

$C = \{2, 4, 6, 8, 10, 12, 14, 16, 18\}$

$D = \{5, 7, 10, 14, 15\}$

① $M = A \cup B = \{2, 3, 5, 7, 8, 11, 13, 17, 18, 19, 23, 29\}$

② $N = \bar{A} \cap C = \{4, 6, 8, 10, 12, 14, 16, 18\}$

$\bar{A} = \{1, 4, 6, 8, 9, 10, 12, 14, 15, 16, 18, 20, 21, 22, 24, 25, 26, 27, 28, 30\}$

③ $P = (A \cup B) \cap C = M \cap C$

$P = \{2, 8, 18\}$

④ $Q = (\overline{A \cap B}) \cup D$

$\overline{A \cap B} = \{1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30\}$

$Q = \{1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30\} = \overline{A \cap B}$

⑤ $L = (A \Delta B) \cup C$

$A \Delta B = \{2, 5, 8, 11, 17, 19, 24, 8, 18\}$

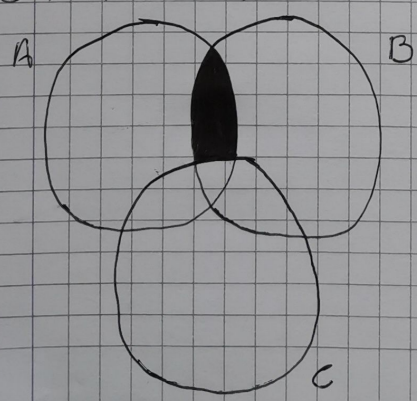
$L = \{2, 4, 5, 6, 7, 8, 10, 11, 12, 14, 16, 17, 18, 19, 29\}$

⑥ $T = \{A \cap B\} \times D = \{3, 13, 23\} \times \{5, 7, 10, 14, 15\}$

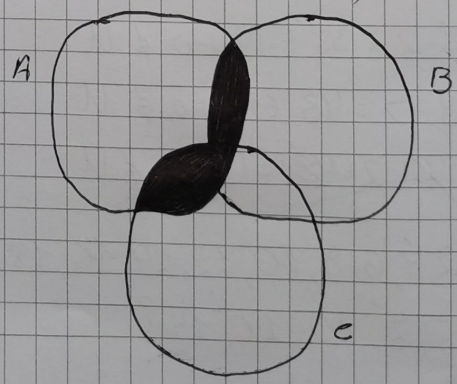
$T = \{(3,5); (3,7); (3,10); (3,14); (3,15); (13,5); (13,7); (13,10); (13,14); (13;15); (23,5); (23,7); (23,10); (23,14); (23,15)\}$

3Aq. 2

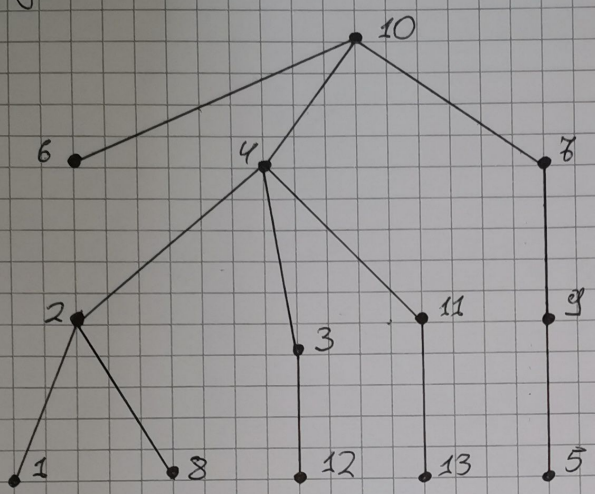
① $A \cap (B - C)$



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



Zad. 4



a) PREORDER

10, 6, 4, 2, 1, 8, 3, 12, 11, 13, 7, 9, 5

b) POSTORDER

6, 1, 8, 2, 12, 3, 13, 11, 4, 5, 9, 7, 10