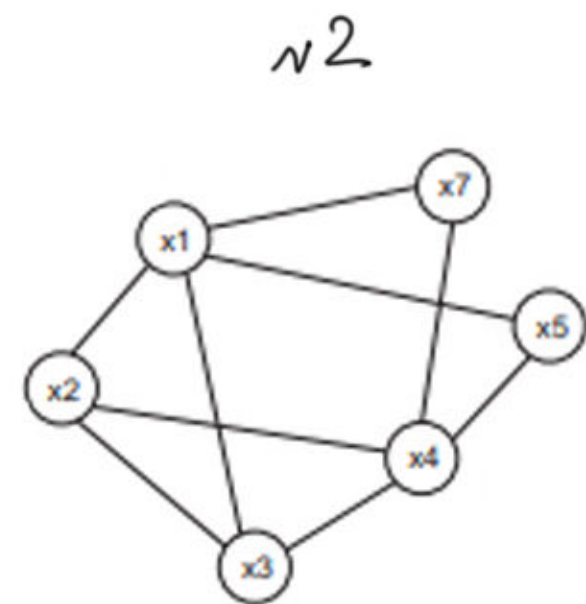


X	Adj	Mark	C
1	2 5 6 7 8 9	1	—
2	1 3 4 5 6 8 10	2	1
3	2 4 10	1	2
4	2 3 8 9 10	3	1, 2
5	1 2 6	3	1, 2
6	1 2 4 5 7 8 9	4	1, 2, 3
7	1 6 8 9 10	2	1, 4
8	1 2 4 6 7 9	5	1, 2, 3, 4
9	1 4 6 7 8 10	6	1, 2, 3, 4, 5
10	2 3 4 7 9	4	1, 2, 3, 6

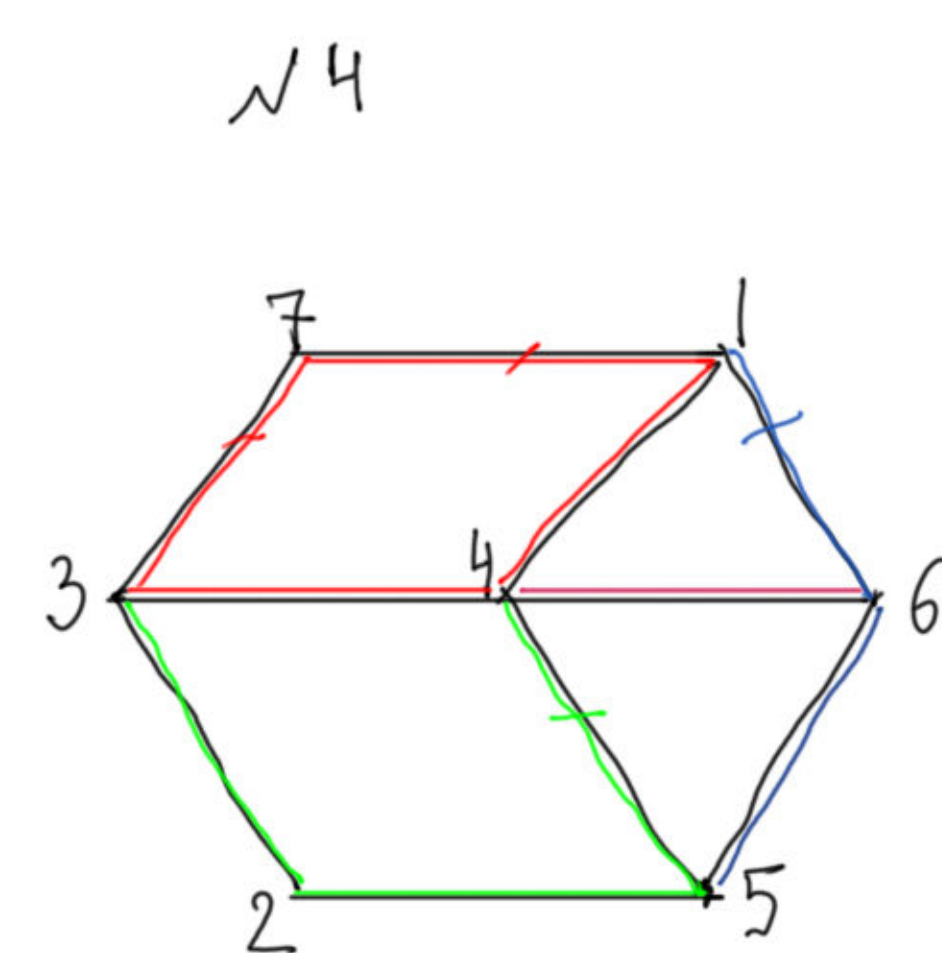
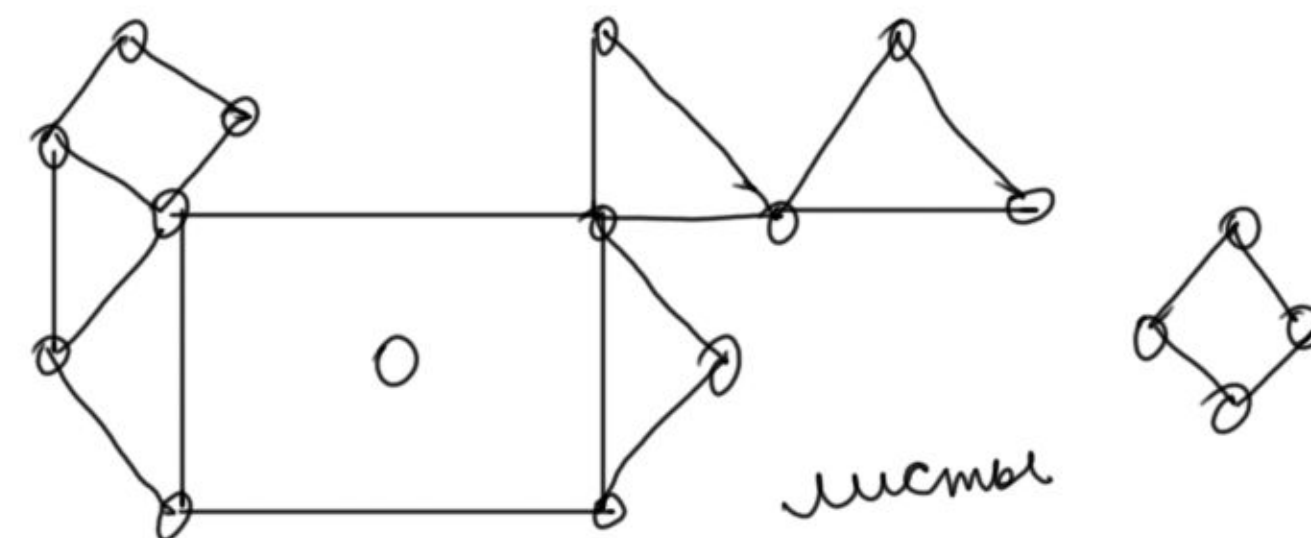
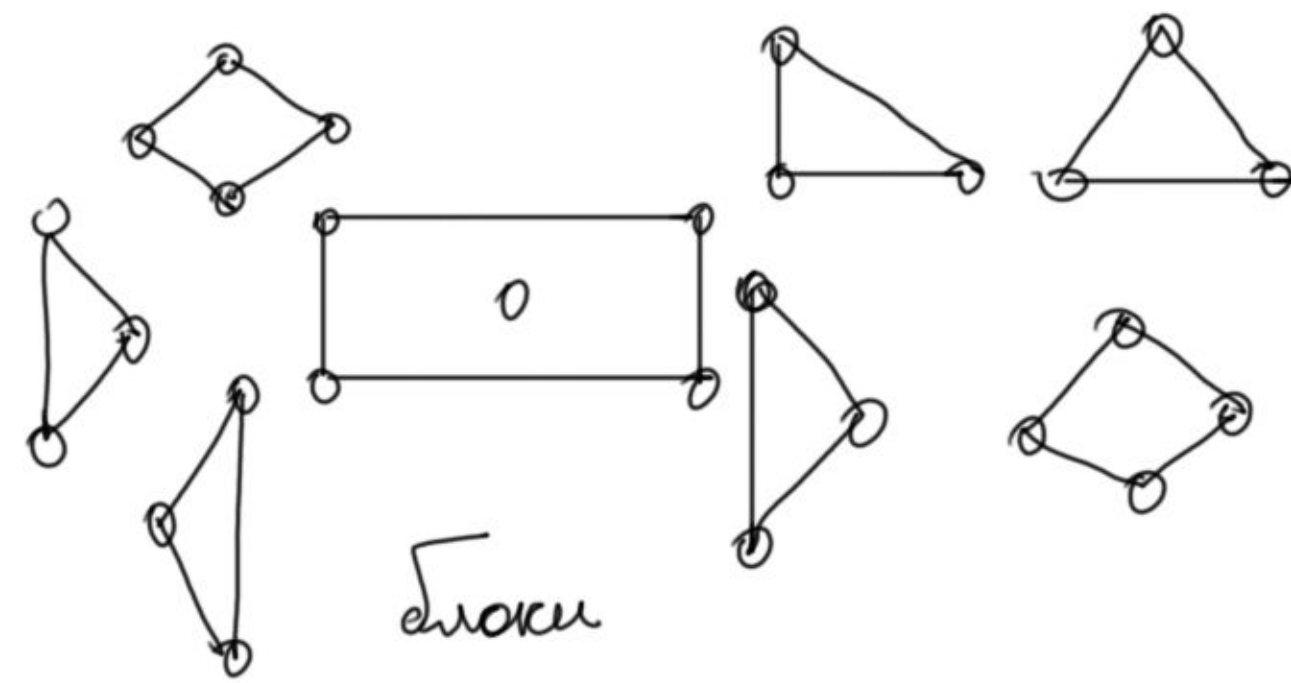
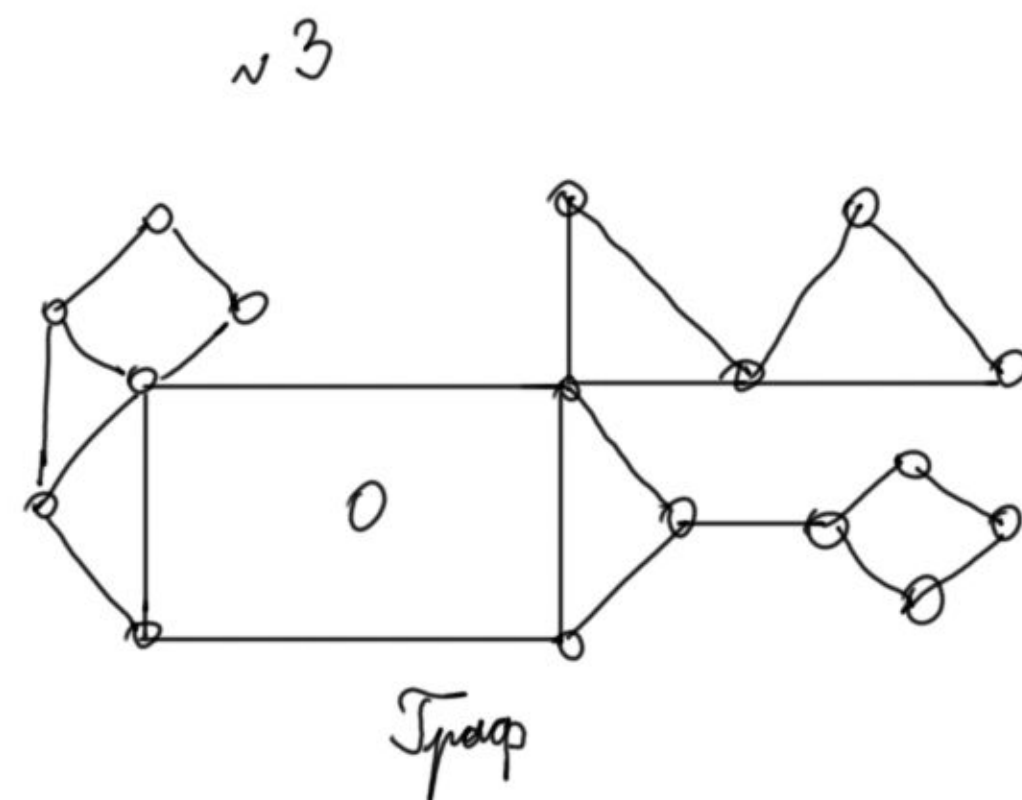


x	Adj
1	2 3 5 7
2	1 3 4
3	1 2 4
4	2 3 5 7
5	1 4
7	1 4

$$(x_1 + x_2)(x_1 + x_3)(x_1 + x_5)(x_1 + x_7) \times (x_2 + x_3)(x_2 + x_4) \times$$

$$(x_3 + x_4) \times (x_4 + x_5)(x_4 + x_7)$$

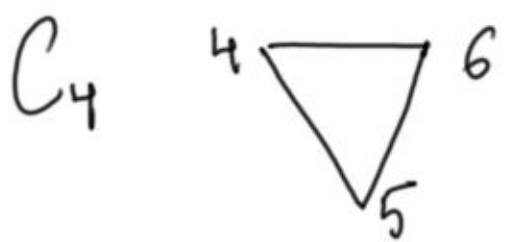
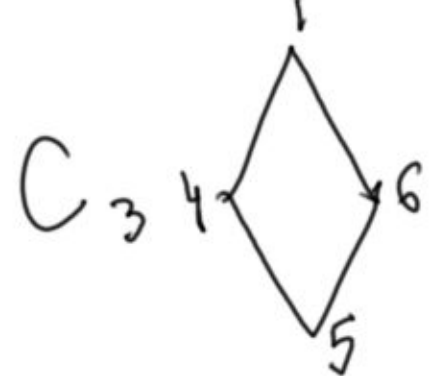
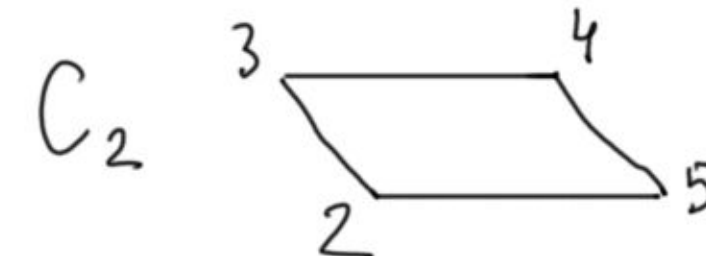
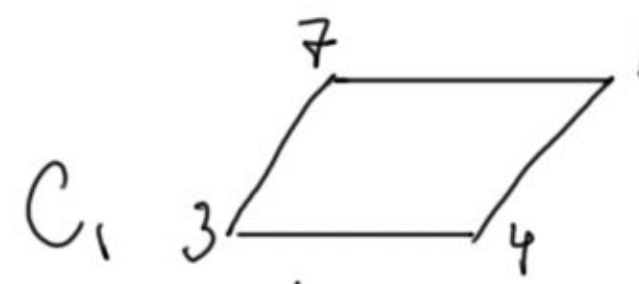
$$x_1 = ①, x_2 = ②, x_3 = ③, x_4 = ①, x_5 = ②, x_7 = ②$$



x	Adj
1	2 3 4 5 6 7
2	1 3 4 5 6 7
3	1 2 4 5 6 7
4	1 2 3 5 6 7
5	1 2 3 4 6 7
6	1 2 3 4 5 7
7	1 2 3 4 5 6

$$C_5 = C_3 \oplus C_4$$

$$\text{Anthem: } C_1 \oplus C_2 \oplus C_4 \oplus C_5$$



3. Используя алгоритм чередующихся цепей, найти максимальное паросочетание в двудольном графе $\Gamma = (V_1 \cup V_2, U)$, где $V_1 = \{s_1, s_2, s_3, s_4, s_5, s_6, s_7\}$ и $V_2 = \{1, 2, 3, 4, 5, 6, 7\}$. Смежные вершины в графе: $s_1 - \{6, 3, 7, 1\}$, $s_2 - \{6, 3, 2, 4\}$, $s_3 - \{3, 5\}$, $s_4 - \{7, 5\}$, $s_5 - \{6, 3\}$, $s_6 - \{6, 3, 7\}$, $s_7 - \{3, 7, 5\}$. Начальное паросочетание: $\pi = \{(s_1, 6), (s_2, 3), (s_3, 5), (s_4, 7)\}$.

$V_1 = \{s_1, s_2, s_3, s_4, s_5, s_6, s_7\}$ $A_1 = \{s_5, s_6, s_7\}$

$V_2 = \{1, 2, 3, 4, 5, 6, 7\}$ $A_2 = \{1, 2, 4\}$

$\pi = \{(s_1, 6), (s_2, 3), (s_3, 5), (s_4, 7)\}$

$C_1 = \{s_5, s_6, s_7\} \xrightarrow{u} \{3, 5, 6, 7\} \xrightarrow{\pi} \{s_2, s_3, s_1, s_4\} \xrightarrow{u} \{1, 2, 3, 4, 5, 6, 7\} \in A_2$

$1 \rightarrow s_1 \rightarrow 6 \rightarrow s_5$

$C_2 = \{s_6, s_7\} \xrightarrow{u} \{3, 5, 6, 7\} \xrightarrow{\pi} \{s_2, s_3, s_5, s_4\} \xrightarrow{u} \{2, 3, 4, 5, 6, 7\} \in A_2$

$2 \rightarrow s_2 \rightarrow 3 \rightarrow s_6$

$C_3 = \{s_7\} \xrightarrow{u} \{3, 5, 7\} \xrightarrow{\pi} \{s_6, s_3, s_4\} \xrightarrow{u} \{3, 5, 6, 7\} \xrightarrow{\pi} \{s_6, s_3, s_5, s_4\} \xrightarrow{u} \{3, 5, 6, 7\}$

$\text{Anthem: } \pi = \{(s_1, 1), (s_5, 6), (s_2, 2), (s_6, 3), (s_3, 5), (s_4, 7)\}$