

Домашнее задание по Математической логике №5

Приложение 3. Таблицы истинности для  $\oplus_5$  и ДНФ/КНФ

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$e_{1,2}$	$e_{1,3}$	$e_{1,4}$	$e_{1,5}$	$e_{1,6}$	$e_{1,2} \oplus e_{1,3} \oplus e_{1,4} \oplus e_{1,5} \oplus e_{1,6}$
0	0	0	0	0	0
0	0	0	0	1	1
0	0	0	1	0	1
0	0	0	1	1	0
0	0	1	0	0	1
0	0	1	0	1	0
0	0	1	1	0	0
0	0	1	1	1	1
0	1	0	0	0	1
0	1	0	0	1	0
0	1	0	1	0	0
0	1	0	1	1	1
0	1	1	0	0	0
0	1	1	0	1	1
0	1	1	1	0	1
0	1	1	1	1	0
1	0	0	0	0	1
1	0	0	0	1	0
1	0	0	1	0	0
1	0	0	1	1	1
1	0	1	0	0	0
1	0	1	0	1	1
1	0	1	1	0	1
1	0	1	1	1	0
1	1	0	0	0	0
1	1	0	0	1	1
1	1	0	1	0	1
1	1	0	1	1	0
1	1	1	0	0	1
1	1	1	0	1	0
1	1	1	1	0	0
1	1	1	1	1	1

$$\begin{aligned}
& (e_{1,2} \vee e_{1,3} \vee e_{1,4} \vee e_{1,5} \vee e_{1,6}) \wedge (e_{1,2} \vee e_{1,3} \vee e_{1,4} \vee \neg e_{1,5} \vee \neg e_{1,6}) \wedge (e_{1,2} \vee e_{1,3} \vee \neg e_{1,4} \vee e_{1,5} \vee \neg e_{1,6}) \wedge (e_{1,2} \vee e_{1,3} \vee \\
& \neg e_{1,4} \vee \neg e_{1,5} \vee e_{1,6}) \wedge (e_{1,2} \vee \neg e_{1,3} \vee e_{1,4} \vee e_{1,5} \vee \neg e_{1,6}) \wedge (e_{1,2} \vee \neg e_{1,3} \vee e_{1,4} \vee \neg e_{1,5} \vee e_{1,6}) \wedge (e_{1,2} \vee \neg e_{1,3} \vee \neg e_{1,4} \vee \\
& e_{1,5} \vee e_{1,6}) \wedge (e_{1,2} \vee \neg e_{1,3} \vee \neg e_{1,4} \vee \neg e_{1,5} \vee \neg e_{1,6}) \wedge (\neg e_{1,2} \vee e_{1,3} \vee e_{1,4} \vee e_{1,5} \vee \neg e_{1,6}) \wedge (\neg e_{1,2} \vee e_{1,3} \vee e_{1,4} \vee \neg e_{1,5} \vee
\end{aligned}$$

$$e_{1,6}) \wedge (\neg e_{1,2} \vee e_{1,3} \vee \neg e_{1,4} \vee e_{1,5} \vee e_{1,6}) \wedge (\neg e_{1,2} \vee e_{1,3} \vee \neg e_{1,4} \vee \neg e_{1,5} \vee \neg e_{1,6}) \wedge (\neg e_{1,2} \vee \neg e_{1,3} \vee e_{1,4} \vee e_{1,5} \vee e_{1,6}) \wedge$$

$$(\neg e_{1,2} \vee \neg e_{1,3} \vee e_{1,4} \vee \neg e_{1,5} \vee \neg e_{1,6}) \wedge (\neg e_{1,2} \vee \neg e_{1,3} \vee \neg e_{1,4} \vee e_{1,5} \vee \neg e_{1,6}) \wedge (\neg e_{1,2} \vee \neg e_{1,3} \vee \neg e_{1,4} \vee \neg e_{1,5} \vee e_{1,6})$$

$e_{1,2}$	$e_{2,3}$	$e_{2,4}$	$e_{2,5}$	$e_{2,6}$	$e_{1,2} \oplus e_{2,3} \oplus e_{2,4} \oplus e_{2,5} \oplus e_{2,6}$
0	0	0	0	0	0
0	0	0	0	1	1
0	0	0	1	0	1
0	0	0	1	1	0
0	0	1	0	0	1
0	0	1	0	1	0
0	0	1	1	0	0
0	0	1	1	1	1
0	1	0	0	0	1
0	1	0	0	1	0
0	1	0	1	0	0
0	1	0	1	1	1
0	1	1	0	0	0
0	1	1	0	1	1
0	1	1	1	0	1
0	1	1	1	1	0
1	0	0	0	0	1
1	0	0	0	1	0
1	0	0	1	0	0
1	0	0	1	1	1
1	0	1	0	0	0
1	0	1	0	1	1
1	0	1	1	0	1
1	0	1	1	1	0
1	1	0	0	0	0
1	1	0	0	1	1
1	1	0	1	0	1
1	1	0	1	1	0
1	1	1	0	0	1
1	1	1	0	1	0
1	1	1	1	0	0
1	1	1	1	1	1

$$(e_{1,2} \wedge e_{2,3} \wedge e_{2,4} \wedge e_{2,5} \wedge e_{2,6}) \vee (e_{1,2} \wedge e_{2,3} \wedge e_{2,4} \wedge \neg e_{2,5} \wedge \neg e_{2,6}) \vee (e_{1,2} \wedge e_{2,3} \wedge \neg e_{2,4} \wedge e_{2,5} \wedge \neg e_{2,6}) \vee (e_{1,2} \wedge e_{2,3} \wedge$$

$$\begin{aligned}
& \neg e_{2,4} \wedge \neg e_{2,5} \wedge e_{2,6}) \vee (e_{1,2} \wedge \neg e_{2,3} \wedge e_{2,4} \wedge e_{2,5} \wedge \neg e_{2,6}) \vee (e_{1,2} \wedge \neg e_{2,3} \wedge e_{2,4} \wedge \neg e_{2,5} \wedge e_{2,6}) \vee (e_{1,2} \wedge \neg e_{2,3} \wedge \neg e_{2,4} \wedge \\
& e_{2,5} \wedge e_{2,6}) \vee (e_{1,2} \wedge \neg e_{2,3} \wedge \neg e_{2,4} \wedge \neg e_{2,5} \wedge \neg e_{2,6}) \vee (\neg e_{1,2} \wedge e_{2,3} \wedge e_{2,4} \wedge e_{2,5} \wedge \neg e_{2,6}) \vee (\neg e_{1,2} \wedge e_{2,3} \wedge e_{2,4} \wedge \neg e_{2,5} \wedge \\
& e_{2,6}) \vee (\neg e_{1,2} \wedge e_{2,3} \wedge \neg e_{2,4} \wedge e_{2,5} \wedge e_{2,6}) \vee (\neg e_{1,2} \wedge e_{2,3} \wedge \neg e_{2,4} \wedge \neg e_{2,5} \wedge \neg e_{2,6}) \vee (\neg e_{1,2} \wedge \neg e_{2,3} \wedge e_{2,4} \wedge e_{2,5} \wedge e_{2,6}) \vee \\
& (\neg e_{1,2} \wedge \neg e_{2,3} \wedge e_{2,4} \wedge \neg e_{2,5} \wedge \neg e_{2,6}) \vee (\neg e_{1,2} \wedge \neg e_{2,3} \wedge \neg e_{2,4} \wedge e_{2,5} \wedge \neg e_{2,6}) \vee (\neg e_{1,2} \wedge \neg e_{2,3} \wedge \neg e_{2,4} \wedge \neg e_{2,5} \wedge e_{2,6})
\end{aligned}$$

$e_{1,2}$	$e_{2,3}$	$e_{2,4}$	$e_{2,5}$	$e_{2,6}$	$e_{1,2} \oplus e_{2,3} \oplus e_{2,4} \oplus e_{2,5} \oplus e_{2,6}$
0	0	0	0	0	0
0	0	0	0	1	1
0	0	0	1	0	1
0	0	0	1	1	0
0	0	1	0	0	1
0	0	1	0	1	0
0	0	1	1	0	0
0	0	1	1	1	1
0	1	0	0	0	1
0	1	0	0	1	0
0	1	0	1	0	0
0	1	0	1	1	1
0	1	1	0	0	0
0	1	1	0	1	1
0	1	1	1	0	1
0	1	1	1	1	0
1	0	0	0	0	1
1	0	0	0	1	0
1	0	0	1	0	0
1	0	0	1	1	1
1	0	1	0	0	0
1	0	1	0	1	1
1	0	1	1	0	1
1	0	1	1	1	0
1	1	0	0	0	0
1	1	0	0	1	1
1	1	0	1	0	1
1	1	0	1	1	0
1	1	1	0	0	1
1	1	1	0	1	0
1	1	1	1	0	0
1	1	1	1	1	1

$$\begin{aligned}
& (e_{1,2} \wedge e_{2,3} \wedge e_{2,4} \wedge e_{2,5} \wedge e_{2,6}) \vee (e_{1,2} \wedge e_{2,3} \wedge e_{2,4} \wedge \neg e_{2,5} \wedge \neg e_{2,6}) \vee (e_{1,2} \wedge e_{2,3} \wedge \neg e_{2,4} \wedge e_{2,5} \wedge \neg e_{2,6}) \vee (e_{1,2} \wedge e_{2,3} \wedge \neg e_{2,4} \wedge \neg e_{2,5} \wedge e_{2,6}) \vee (e_{1,2} \wedge \neg e_{2,3} \wedge e_{2,4} \wedge e_{2,5} \wedge \neg e_{2,6}) \vee (e_{1,2} \wedge \neg e_{2,3} \wedge e_{2,4} \wedge \neg e_{2,5} \wedge e_{2,6}) \vee (e_{1,2} \wedge \neg e_{2,3} \wedge \neg e_{2,4} \wedge e_{2,5} \wedge e_{2,6}) \vee (e_{1,2} \wedge \neg e_{2,3} \wedge \neg e_{2,4} \wedge \neg e_{2,5} \wedge \neg e_{2,6}) \vee (\neg e_{1,2} \wedge e_{2,3} \wedge e_{2,4} \wedge e_{2,5} \wedge \neg e_{2,6}) \vee (\neg e_{1,2} \wedge e_{2,3} \wedge e_{2,4} \wedge \neg e_{2,5} \wedge e_{2,6}) \vee (\neg e_{1,2} \wedge e_{2,3} \wedge \neg e_{2,4} \wedge e_{2,5} \wedge \neg e_{2,6}) \vee (\neg e_{1,2} \wedge e_{2,3} \wedge \neg e_{2,4} \wedge \neg e_{2,5} \wedge e_{2,6}) \vee (\neg e_{1,2} \wedge \neg e_{2,3} \wedge e_{2,4} \wedge e_{2,5} \wedge \neg e_{2,6}) \vee (\neg e_{1,2} \wedge \neg e_{2,3} \wedge e_{2,4} \wedge \neg e_{2,5} \wedge e_{2,6}) \vee (\neg e_{1,2} \wedge \neg e_{2,3} \wedge \neg e_{2,4} \wedge e_{2,5} \wedge \neg e_{2,6}) \vee (\neg e_{1,2} \wedge \neg e_{2,3} \wedge \neg e_{2,4} \wedge \neg e_{2,5} \wedge e_{2,6}) \vee (\neg e_{1,2} \wedge \neg e_{2,3} \wedge \neg e_{2,4} \wedge \neg e_{2,5} \wedge \neg e_{2,6})
\end{aligned}$$

$$e_{2,6}) \vee (\neg e_{1,2} \wedge e_{2,3} \wedge \neg e_{2,4} \wedge e_{2,5} \wedge e_{2,6}) \vee (\neg e_{1,2} \wedge e_{2,3} \wedge \neg e_{2,4} \wedge \neg e_{2,5} \wedge \neg e_{2,6}) \vee (\neg e_{1,2} \wedge \neg e_{2,3} \wedge e_{2,4} \wedge e_{2,5} \wedge e_{2,6}) \vee$$

$$(\neg e_{1,2} \wedge \neg e_{2,3} \wedge e_{2,4} \wedge \neg e_{2,5} \wedge \neg e_{2,6}) \vee (\neg e_{1,2} \wedge \neg e_{2,3} \wedge \neg e_{2,4} \wedge e_{2,5} \wedge \neg e_{2,6}) \vee (\neg e_{1,2} \wedge \neg e_{2,3} \wedge \neg e_{2,4} \wedge \neg e_{2,5} \wedge e_{2,6})$$

$$(\neg e_{1,2} \vee \neg e_{2,3} \vee \neg e_{2,4} \vee \neg e_{2,5} \vee \neg e_{2,6}) \wedge (\neg e_{1,2} \vee \neg e_{2,3} \vee \neg e_{2,4} \vee e_{2,5} \vee e_{2,6}) \wedge (\neg e_{1,2} \vee \neg e_{2,3} \vee e_{2,4} \vee \neg e_{2,5} \vee e_{2,6}) \wedge$$

$$(\neg e_{1,2} \vee \neg e_{2,3} \vee e_{2,4} \vee e_{2,5} \vee \neg e_{2,6}) \wedge (\neg e_{1,2} \vee e_{2,3} \vee \neg e_{2,4} \vee \neg e_{2,5} \vee e_{2,6}) \wedge (\neg e_{1,2} \vee e_{2,3} \vee \neg e_{2,4} \vee e_{2,5} \vee \neg e_{2,6}) \wedge (\neg e_{1,2} \vee$$

$$e_{2,3} \vee e_{2,4} \vee \neg e_{2,5} \vee \neg e_{2,6}) \wedge (\neg e_{1,2} \vee e_{2,3} \vee e_{2,4} \vee e_{2,5} \vee e_{2,6}) \wedge (e_{1,2} \vee \neg e_{2,3} \vee \neg e_{2,4} \vee \neg e_{2,5} \vee e_{2,6}) \wedge (e_{1,2} \vee \neg e_{2,3} \vee$$

$$\neg e_{2,4} \vee e_{2,5} \vee \neg e_{2,6}) \wedge (e_{1,2} \vee \neg e_{2,3} \vee e_{2,4} \vee \neg e_{2,5} \vee \neg e_{2,6}) \wedge (e_{1,2} \vee \neg e_{2,3} \vee e_{2,4} \vee e_{2,5} \vee e_{2,6}) \wedge (e_{1,2} \vee e_{2,3} \vee \neg e_{2,4} \vee$$

$$\neg e_{2,5} \vee \neg e_{2,6}) \wedge (e_{1,2} \vee e_{2,3} \vee \neg e_{2,4} \vee e_{2,5} \vee e_{2,6}) \wedge (e_{1,2} \vee e_{2,3} \vee e_{2,4} \vee \neg e_{2,5} \vee e_{2,6}) \wedge (e_{1,2} \vee e_{2,3} \vee e_{2,4} \vee e_{2,5} \vee \neg e_{2,6})$$

$e_{1,3}$	$e_{2,3}$	$e_{3,4}$	$e_{3,5}$	$e_{3,6}$	$e_{1,3} \oplus e_{2,3} \oplus e_{3,4} \oplus e_{3,5} \oplus e_{3,6}$
0	0	0	0	0	0
0	0	0	0	1	1
0	0	0	1	0	1
0	0	0	1	1	0
0	0	1	0	0	1
0	0	1	0	1	0
0	0	1	1	0	0
0	0	1	1	1	1
0	1	0	0	0	1
0	1	0	0	1	0
0	1	0	1	0	0
0	1	0	1	1	1
0	1	1	0	0	0
0	1	1	0	1	1
0	1	1	1	0	1
0	1	1	1	1	0
1	0	0	0	0	1
1	0	0	0	1	0
1	0	0	1	0	0
1	0	0	1	1	1
1	0	1	0	0	0
1	0	1	0	1	1
1	0	1	1	0	1
1	0	1	1	1	0
1	1	0	0	0	0
1	1	0	0	1	1
1	1	0	1	0	1
1	1	0	1	1	0
1	1	1	0	0	1
1	1	1	0	1	0
1	1	1	1	0	0
1	1	1	1	1	1

$$\begin{aligned}
& (e_{1,3} \wedge e_{2,3} \wedge e_{3,4} \wedge e_{3,5} \wedge e_{3,6}) \vee (e_{1,3} \wedge e_{2,3} \wedge e_{3,4} \wedge \neg e_{3,5} \wedge \neg e_{3,6}) \vee (e_{1,3} \wedge e_{2,3} \wedge \neg e_{3,4} \wedge e_{3,5} \wedge \neg e_{3,6}) \vee (e_{1,3} \wedge e_{2,3} \wedge \neg e_{3,4} \wedge \neg e_{3,5} \wedge e_{3,6}) \vee (e_{1,3} \wedge \neg e_{2,3} \wedge e_{3,4} \wedge e_{3,5} \wedge \neg e_{3,6}) \vee (e_{1,3} \wedge \neg e_{2,3} \wedge e_{3,4} \wedge \neg e_{3,5} \wedge e_{3,6}) \vee (e_{1,3} \wedge \neg e_{2,3} \wedge \neg e_{3,4} \wedge e_{3,5} \wedge e_{3,6}) \vee (e_{1,3} \wedge \neg e_{2,3} \wedge \neg e_{3,4} \wedge \neg e_{3,5} \wedge \neg e_{3,6}) \vee (\neg e_{1,3} \wedge e_{2,3} \wedge e_{3,4} \wedge e_{3,5} \wedge \neg e_{3,6}) \vee (\neg e_{1,3} \wedge e_{2,3} \wedge e_{3,4} \wedge \neg e_{3,5} \wedge e_{3,6}) \vee (\neg e_{1,3} \wedge e_{2,3} \wedge \neg e_{3,4} \wedge e_{3,5} \wedge e_{3,6}) \vee (\neg e_{1,3} \wedge e_{2,3} \wedge \neg e_{3,4} \wedge \neg e_{3,5} \wedge \neg e_{3,6}) \vee (\neg e_{1,3} \wedge \neg e_{2,3} \wedge e_{3,4} \wedge e_{3,5} \wedge e_{3,6}) \vee (\neg e_{1,3} \wedge \neg e_{2,3} \wedge e_{3,4} \wedge \neg e_{3,5} \wedge \neg e_{3,6}) \vee (\neg e_{1,3} \wedge \neg e_{2,3} \wedge \neg e_{3,4} \wedge e_{3,5} \wedge \neg e_{3,6}) \vee (\neg e_{1,3} \wedge \neg e_{2,3} \wedge \neg e_{3,4} \wedge \neg e_{3,5} \wedge e_{3,6}) \\
& \vee (\neg e_{1,3} \wedge \neg e_{2,3} \wedge \neg e_{3,4} \wedge e_{3,5} \wedge e_{3,6}) \vee (\neg e_{1,3} \wedge \neg e_{2,3} \wedge \neg e_{3,4} \wedge \neg e_{3,5} \wedge \neg e_{3,6})
\end{aligned}$$

$$e_{3,6}) \vee (\neg e_{1,3} \wedge e_{2,3} \wedge \neg e_{3,4} \wedge e_{3,5} \wedge e_{3,6}) \vee (\neg e_{1,3} \wedge e_{2,3} \wedge \neg e_{3,4} \wedge \neg e_{3,5} \wedge \neg e_{3,6}) \vee (\neg e_{1,3} \wedge \neg e_{2,3} \wedge e_{3,4} \wedge e_{3,5} \wedge e_{3,6}) \vee$$

$$(\neg e_{1,3} \wedge \neg e_{2,3} \wedge e_{3,4} \wedge \neg e_{3,5} \wedge \neg e_{3,6}) \vee (\neg e_{1,3} \wedge \neg e_{2,3} \wedge \neg e_{3,4} \wedge e_{3,5} \wedge \neg e_{3,6}) \vee (\neg e_{1,3} \wedge \neg e_{2,3} \wedge \neg e_{3,4} \wedge \neg e_{3,5} \wedge e_{3,6})$$

$e_{1,3}$	$e_{2,3}$	$e_{3,4}$	$e_{3,5}$	$e_{3,6}$	$e_{1,3} \oplus e_{2,3} \oplus e_{3,4} \oplus e_{3,5} \oplus e_{3,6}$
0	0	0	0	0	0
0	0	0	0	1	1
0	0	0	1	0	1
0	0	0	1	1	0
0	0	1	0	0	1
0	0	1	0	1	0
0	0	1	1	0	0
0	0	1	1	1	1
0	1	0	0	0	1
0	1	0	0	1	0
0	1	0	1	0	0
0	1	0	1	1	1
0	1	1	0	0	0
0	1	1	0	1	1
0	1	1	1	0	1
0	1	1	1	1	0
1	0	0	0	0	1
1	0	0	0	1	0
1	0	0	1	0	0
1	0	0	1	1	1
1	0	1	0	0	0
1	0	1	0	1	1
1	0	1	1	0	1
1	0	1	1	1	0
1	1	0	0	0	0
1	1	0	0	1	1
1	1	0	1	0	1
1	1	0	1	1	0
1	1	1	0	0	1
1	1	1	0	1	0
1	1	1	1	0	0
1	1	1	1	1	1

$$(e_{1,3} \wedge e_{2,3} \wedge e_{3,4} \wedge e_{3,5} \wedge e_{3,6}) \vee (e_{1,3} \wedge e_{2,3} \wedge e_{3,4} \wedge \neg e_{3,5} \wedge \neg e_{3,6}) \vee (e_{1,3} \wedge e_{2,3} \wedge \neg e_{3,4} \wedge e_{3,5} \wedge \neg e_{3,6}) \vee (e_{1,3} \wedge e_{2,3} \wedge$$



$$\begin{aligned}
& \neg e_{3,4} \wedge \neg e_{3,5} \wedge e_{3,6}) \vee (e_{1,3} \wedge \neg e_{2,3} \wedge e_{3,4} \wedge e_{3,5} \wedge \neg e_{3,6}) \vee (e_{1,3} \wedge \neg e_{2,3} \wedge e_{3,4} \wedge \neg e_{3,5} \wedge e_{3,6}) \vee (e_{1,3} \wedge \neg e_{2,3} \wedge \neg e_{3,4} \wedge \\
& e_{3,5} \wedge e_{3,6}) \vee (e_{1,3} \wedge \neg e_{2,3} \wedge \neg e_{3,4} \wedge \neg e_{3,5} \wedge \neg e_{3,6}) \vee (\neg e_{1,3} \wedge e_{2,3} \wedge e_{3,4} \wedge e_{3,5} \wedge \neg e_{3,6}) \vee (\neg e_{1,3} \wedge e_{2,3} \wedge e_{3,4} \wedge \neg e_{3,5} \wedge \\
& e_{3,6}) \vee (\neg e_{1,3} \wedge e_{2,3} \wedge \neg e_{3,4} \wedge e_{3,5} \wedge e_{3,6}) \vee (\neg e_{1,3} \wedge e_{2,3} \wedge \neg e_{3,4} \wedge \neg e_{3,5} \wedge \neg e_{3,6}) \vee (\neg e_{1,3} \wedge \neg e_{2,3} \wedge e_{3,4} \wedge e_{3,5} \wedge e_{3,6}) \vee \\
& (\neg e_{1,3} \wedge \neg e_{2,3} \wedge e_{3,4} \wedge \neg e_{3,5} \wedge \neg e_{3,6}) \vee (\neg e_{1,3} \wedge \neg e_{2,3} \wedge \neg e_{3,4} \wedge e_{3,5} \wedge \neg e_{3,6}) \vee (\neg e_{1,3} \wedge \neg e_{2,3} \wedge \neg e_{3,4} \wedge \neg e_{3,5} \wedge e_{3,6})
\end{aligned}$$

$$\begin{aligned}
& (\neg e_{1,3} \vee \neg e_{2,3} \vee \neg e_{3,4} \vee \neg e_{3,5} \vee \neg e_{3,6}) \wedge (\neg e_{1,3} \vee \neg e_{2,3} \vee \neg e_{3,4} \vee e_{3,5} \vee e_{3,6}) \wedge (\neg e_{1,3} \vee \neg e_{2,3} \vee e_{3,4} \vee \neg e_{3,5} \vee e_{3,6}) \wedge \\
& (\neg e_{1,3} \vee \neg e_{2,3} \vee e_{3,4} \vee e_{3,5} \vee \neg e_{3,6}) \wedge (\neg e_{1,3} \vee e_{2,3} \vee \neg e_{3,4} \vee \neg e_{3,5} \vee e_{3,6}) \wedge (\neg e_{1,3} \vee e_{2,3} \vee \neg e_{3,4} \vee e_{3,5} \vee \neg e_{3,6}) \wedge (\neg e_{1,3} \vee \\
& e_{2,3} \vee e_{3,4} \vee \neg e_{3,5} \vee \neg e_{3,6}) \wedge (\neg e_{1,3} \vee e_{2,3} \vee e_{3,4} \vee e_{3,5} \vee e_{3,6}) \wedge (e_{1,3} \vee \neg e_{2,3} \vee \neg e_{3,4} \vee \neg e_{3,5} \vee e_{3,6}) \wedge (e_{1,3} \vee \neg e_{2,3} \vee \\
& \neg e_{3,4} \vee e_{3,5} \vee \neg e_{3,6}) \wedge (e_{1,3} \vee \neg e_{2,3} \vee e_{3,4} \vee \neg e_{3,5} \vee \neg e_{3,6}) \wedge (e_{1,3} \vee \neg e_{2,3} \vee e_{3,4} \vee e_{3,5} \vee e_{3,6}) \wedge (e_{1,3} \vee e_{2,3} \vee \neg e_{3,4} \vee \\
& \neg e_{3,5} \vee \neg e_{3,6}) \wedge (e_{1,3} \vee e_{2,3} \vee \neg e_{3,4} \vee e_{3,5} \vee e_{3,6}) \wedge (e_{1,3} \vee e_{2,3} \vee e_{3,4} \vee \neg e_{3,5} \vee e_{3,6}) \wedge (e_{1,3} \vee e_{2,3} \vee e_{3,4} \vee e_{3,5} \vee \neg e_{3,6})
\end{aligned}$$

$e_{1,4}$	$e_{2,4}$	$e_{3,4}$	$e_{4,5}$	$e_{4,6}$	$e_{1,4} \oplus e_{2,4} \oplus e_{3,4} \oplus e_{4,5} \oplus e_{4,6}$
0	0	0	0	0	0
0	0	0	0	1	1
0	0	0	1	0	1
0	0	0	1	1	0
0	0	1	0	0	1
0	0	1	0	1	0
0	0	1	1	0	0
0	0	1	1	1	1
0	1	0	0	0	1
0	1	0	0	1	0
0	1	0	1	0	0
0	1	0	1	1	1
0	1	1	0	0	0
0	1	1	0	1	1
0	1	1	1	0	1
0	1	1	1	1	0
1	0	0	0	0	1
1	0	0	0	1	0
1	0	0	1	0	0
1	0	0	1	1	1
1	0	1	0	0	0
1	0	1	0	1	1
1	0	1	1	0	1
1	0	1	1	1	0
1	1	0	0	0	0
1	1	0	0	1	1
1	1	0	1	0	1
1	1	0	1	1	0
1	1	1	0	0	1
1	1	1	0	1	0
1	1	1	1	0	0
1	1	1	1	1	1

$$\begin{aligned}
& (e_{1,4} \wedge e_{2,4} \wedge e_{3,4} \wedge e_{4,5} \wedge e_{4,6}) \vee (e_{1,4} \wedge e_{2,4} \wedge e_{3,4} \wedge \neg e_{4,5} \wedge \neg e_{4,6}) \vee (e_{1,4} \wedge e_{2,4} \wedge \neg e_{3,4} \wedge e_{4,5} \wedge \neg e_{4,6}) \vee (e_{1,4} \wedge e_{2,4} \wedge \neg e_{3,4} \wedge \neg e_{4,5} \wedge e_{4,6}) \vee (e_{1,4} \wedge \neg e_{2,4} \wedge e_{3,4} \wedge e_{4,5} \wedge \neg e_{4,6}) \vee (e_{1,4} \wedge \neg e_{2,4} \wedge e_{3,4} \wedge \neg e_{4,5} \wedge e_{4,6}) \vee (e_{1,4} \wedge \neg e_{2,4} \wedge \neg e_{3,4} \wedge e_{4,5} \wedge e_{4,6}) \vee (e_{1,4} \wedge \neg e_{2,4} \wedge \neg e_{3,4} \wedge \neg e_{4,5} \wedge \neg e_{4,6}) \vee (\neg e_{1,4} \wedge e_{2,4} \wedge e_{3,4} \wedge e_{4,5} \wedge \neg e_{4,6}) \vee (\neg e_{1,4} \wedge e_{2,4} \wedge e_{3,4} \wedge \neg e_{4,5} \wedge e_{4,6}) \vee (\neg e_{1,4} \wedge e_{2,4} \wedge \neg e_{3,4} \wedge e_{4,5} \wedge \neg e_{4,6}) \vee (\neg e_{1,4} \wedge e_{2,4} \wedge \neg e_{3,4} \wedge \neg e_{4,5} \wedge e_{4,6}) \vee (\neg e_{1,4} \wedge \neg e_{2,4} \wedge e_{3,4} \wedge e_{4,5} \wedge \neg e_{4,6}) \vee (\neg e_{1,4} \wedge \neg e_{2,4} \wedge e_{3,4} \wedge \neg e_{4,5} \wedge e_{4,6}) \vee (\neg e_{1,4} \wedge \neg e_{2,4} \wedge \neg e_{3,4} \wedge e_{4,5} \wedge \neg e_{4,6}) \vee (\neg e_{1,4} \wedge \neg e_{2,4} \wedge \neg e_{3,4} \wedge \neg e_{4,5} \wedge e_{4,6})
\end{aligned}$$

$$e_{4,6}) \vee (\neg e_{1,4} \wedge e_{2,4} \wedge \neg e_{3,4} \wedge e_{4,5} \wedge e_{4,6}) \vee (\neg e_{1,4} \wedge e_{2,4} \wedge \neg e_{3,4} \wedge \neg e_{4,5} \wedge \neg e_{4,6}) \vee (\neg e_{1,4} \wedge \neg e_{2,4} \wedge e_{3,4} \wedge e_{4,5} \wedge e_{4,6}) \vee$$

$$(\neg e_{1,4} \wedge \neg e_{2,4} \wedge e_{3,4} \wedge \neg e_{4,5} \wedge \neg e_{4,6}) \vee (\neg e_{1,4} \wedge \neg e_{2,4} \wedge \neg e_{3,4} \wedge e_{4,5} \wedge \neg e_{4,6}) \vee (\neg e_{1,4} \wedge \neg e_{2,4} \wedge \neg e_{3,4} \wedge \neg e_{4,5} \wedge e_{4,6})$$

$e_{1,4}$	$e_{2,4}$	$e_{3,4}$	$e_{4,5}$	$e_{4,6}$	$e_{1,4} \oplus e_{2,4} \oplus e_{3,4} \oplus e_{4,5} \oplus e_{4,6}$
0	0	0	0	0	0
0	0	0	0	1	1
0	0	0	1	0	1
0	0	0	1	1	0
0	0	1	0	0	1
0	0	1	0	1	0
0	0	1	1	0	0
0	0	1	1	1	1
0	1	0	0	0	1
0	1	0	0	1	0
0	1	0	1	0	0
0	1	0	1	1	1
0	1	1	0	0	0
0	1	1	0	1	1
0	1	1	1	0	1
0	1	1	1	1	0
1	0	0	0	0	1
1	0	0	0	1	0
1	0	0	1	0	0
1	0	0	1	1	1
1	0	1	0	0	0
1	0	1	0	1	1
1	0	1	1	0	1
1	0	1	1	1	0
1	1	0	0	0	0
1	1	0	0	1	1
1	1	0	1	0	1
1	1	0	1	1	0
1	1	1	0	0	1
1	1	1	0	1	0
1	1	1	1	0	0
1	1	1	1	1	1

$$(e_{1,4} \wedge e_{2,4} \wedge e_{3,4} \wedge e_{4,5} \wedge e_{4,6}) \vee (e_{1,4} \wedge e_{2,4} \wedge e_{3,4} \wedge \neg e_{4,5} \wedge \neg e_{4,6}) \vee (e_{1,4} \wedge e_{2,4} \wedge \neg e_{3,4} \wedge e_{4,5} \wedge \neg e_{4,6}) \vee (e_{1,4} \wedge e_{2,4} \wedge$$



$e_{1,5}$	$e_{2,5}$	$e_{3,5}$	$e_{4,5}$	$e_{5,6}$	$e_{1,5} \oplus e_{2,5} \oplus e_{3,5} \oplus e_{4,5} \oplus e_{5,6}$
0	0	0	0	0	0
0	0	0	0	1	1
0	0	0	1	0	1
0	0	0	1	1	0
0	0	1	0	0	1
0	0	1	0	1	0
0	0	1	1	0	0
0	0	1	1	1	1
0	1	0	0	0	1
0	1	0	0	1	0
0	1	0	1	0	0
0	1	0	1	1	1
0	1	1	0	0	0
0	1	1	0	1	1
0	1	1	1	0	1
0	1	1	1	1	0
1	0	0	0	0	1
1	0	0	0	1	0
1	0	0	1	0	0
1	0	0	1	1	1
1	0	1	0	0	0
1	0	1	0	1	1
1	0	1	1	0	1
1	0	1	1	1	0
1	1	0	0	0	0
1	1	0	0	1	1
1	1	0	1	0	1
1	1	0	1	1	0
1	1	1	0	0	1
1	1	1	0	1	0
1	1	1	1	0	0
1	1	1	1	1	1

$$\begin{aligned}
& (e_{1,5} \wedge e_{2,5} \wedge e_{3,5} \wedge e_{4,5} \wedge e_{5,6}) \vee (e_{1,5} \wedge e_{2,5} \wedge e_{3,5} \wedge \neg e_{4,5} \wedge \neg e_{5,6}) \vee (e_{1,5} \wedge e_{2,5} \wedge \neg e_{3,5} \wedge e_{4,5} \wedge \neg e_{5,6}) \vee (e_{1,5} \wedge e_{2,5} \wedge \neg e_{3,5} \wedge \neg e_{4,5} \wedge e_{5,6}) \vee (e_{1,5} \wedge \neg e_{2,5} \wedge e_{3,5} \wedge e_{4,5} \wedge \neg e_{5,6}) \vee (e_{1,5} \wedge \neg e_{2,5} \wedge e_{3,5} \wedge \neg e_{4,5} \wedge e_{5,6}) \vee (e_{1,5} \wedge \neg e_{2,5} \wedge \neg e_{3,5} \wedge e_{4,5} \wedge e_{5,6}) \vee (e_{1,5} \wedge \neg e_{2,5} \wedge \neg e_{3,5} \wedge \neg e_{4,5} \wedge \neg e_{5,6}) \vee (\neg e_{1,5} \wedge e_{2,5} \wedge e_{3,5} \wedge e_{4,5} \wedge \neg e_{5,6}) \vee (\neg e_{1,5} \wedge e_{2,5} \wedge e_{3,5} \wedge \neg e_{4,5} \wedge e_{5,6}) \vee (\neg e_{1,5} \wedge e_{2,5} \wedge \neg e_{3,5} \wedge e_{4,5} \wedge \neg e_{5,6}) \vee (\neg e_{1,5} \wedge e_{2,5} \wedge \neg e_{3,5} \wedge \neg e_{4,5} \wedge e_{5,6}) \vee (\neg e_{1,5} \wedge \neg e_{2,5} \wedge e_{3,5} \wedge e_{4,5} \wedge \neg e_{5,6}) \vee (\neg e_{1,5} \wedge \neg e_{2,5} \wedge e_{3,5} \wedge \neg e_{4,5} \wedge e_{5,6}) \vee (\neg e_{1,5} \wedge \neg e_{2,5} \wedge \neg e_{3,5} \wedge e_{4,5} \wedge \neg e_{5,6}) \vee (\neg e_{1,5} \wedge \neg e_{2,5} \wedge \neg e_{3,5} \wedge \neg e_{4,5} \wedge e_{5,6}) \\
& \vee (\neg e_{1,5} \wedge \neg e_{2,5} \wedge e_{3,5} \wedge e_{4,5} \wedge e_{5,6}) \vee (\neg e_{1,5} \wedge \neg e_{2,5} \wedge \neg e_{3,5} \wedge e_{4,5} \wedge e_{5,6}) \vee (\neg e_{1,5} \wedge \neg e_{2,5} \wedge \neg e_{3,5} \wedge \neg e_{4,5} \wedge \neg e_{5,6})
\end{aligned}$$

$$e_{5,6}) \vee (\neg e_{1,5} \wedge e_{2,5} \wedge \neg e_{3,5} \wedge e_{4,5} \wedge e_{5,6}) \vee (\neg e_{1,5} \wedge e_{2,5} \wedge \neg e_{3,5} \wedge \neg e_{4,5} \wedge \neg e_{5,6}) \vee (\neg e_{1,5} \wedge \neg e_{2,5} \wedge e_{3,5} \wedge e_{4,5} \wedge e_{5,6}) \vee$$

$$(\neg e_{1,5} \wedge \neg e_{2,5} \wedge e_{3,5} \wedge \neg e_{4,5} \wedge \neg e_{5,6}) \vee (\neg e_{1,5} \wedge \neg e_{2,5} \wedge \neg e_{3,5} \wedge e_{4,5} \wedge \neg e_{5,6}) \vee (\neg e_{1,5} \wedge \neg e_{2,5} \wedge \neg e_{3,5} \wedge \neg e_{4,5} \wedge e_{5,6})$$

$e_{1,5}$	$e_{2,5}$	$e_{3,5}$	$e_{4,5}$	$e_{5,6}$	$e_{1,5} \oplus e_{2,5} \oplus e_{3,5} \oplus e_{4,5} \oplus e_{5,6}$
0	0	0	0	0	0
0	0	0	0	1	1
0	0	0	1	0	1
0	0	0	1	1	0
0	0	1	0	0	1
0	0	1	0	1	0
0	0	1	1	0	0
0	0	1	1	1	1
0	1	0	0	0	1
0	1	0	0	1	0
0	1	0	1	0	0
0	1	0	1	1	1
0	1	1	0	0	0
0	1	1	0	1	1
0	1	1	1	0	1
0	1	1	1	1	0
1	0	0	0	0	1
1	0	0	0	1	0
1	0	0	1	0	0
1	0	0	1	1	1
1	0	1	0	0	0
1	0	1	0	1	1
1	0	1	1	0	1
1	0	1	1	1	0
1	1	0	0	0	0
1	1	0	0	1	1
1	1	0	1	0	1
1	1	0	1	1	0
1	1	1	0	0	1
1	1	1	0	1	0
1	1	1	1	0	0
1	1	1	1	1	1

$$(e_{1,5} \wedge e_{2,5} \wedge e_{3,5} \wedge e_{4,5} \wedge e_{5,6}) \vee (e_{1,5} \wedge e_{2,5} \wedge e_{3,5} \wedge \neg e_{4,5} \wedge \neg e_{5,6}) \vee (e_{1,5} \wedge e_{2,5} \wedge \neg e_{3,5} \wedge e_{4,5} \wedge \neg e_{5,6}) \vee (e_{1,5} \wedge e_{2,5} \wedge$$



$e_{1,6}$	$e_{2,6}$	$e_{3,6}$	$e_{4,6}$	$e_{5,6}$	$e_{1,6} \oplus e_{2,6} \oplus e_{3,6} \oplus e_{4,6} \oplus e_{5,6}$
0	0	0	0	0	0
0	0	0	0	1	1
0	0	0	1	0	1
0	0	0	1	1	0
0	0	1	0	0	1
0	0	1	0	1	0
0	0	1	1	0	0
0	0	1	1	1	1
0	1	0	0	0	1
0	1	0	0	1	0
0	1	0	1	0	0
0	1	0	1	1	1
0	1	1	0	0	0
0	1	1	0	1	1
0	1	1	1	0	1
0	1	1	1	1	0
1	0	0	0	0	1
1	0	0	0	1	0
1	0	0	1	0	0
1	0	0	1	1	1
1	0	1	0	0	0
1	0	1	0	1	1
1	0	1	1	0	1
1	0	1	1	1	0
1	1	0	0	0	0
1	1	0	0	1	1
1	1	0	1	0	1
1	1	0	1	1	0
1	1	1	0	0	1
1	1	1	0	1	0
1	1	1	1	0	0
1	1	1	1	1	1

$$\begin{aligned}
& (e_{1,6} \wedge e_{2,6} \wedge e_{3,6} \wedge e_{4,6} \wedge e_{5,6}) \vee (e_{1,6} \wedge e_{2,6} \wedge e_{3,6} \wedge \neg e_{4,6} \wedge \neg e_{5,6}) \vee (e_{1,6} \wedge e_{2,6} \wedge \neg e_{3,6} \wedge e_{4,6} \wedge \neg e_{5,6}) \vee (e_{1,6} \wedge e_{2,6} \wedge \neg e_{3,6} \wedge \neg e_{4,6} \wedge e_{5,6}) \vee (e_{1,6} \wedge \neg e_{2,6} \wedge e_{3,6} \wedge e_{4,6} \wedge \neg e_{5,6}) \vee (e_{1,6} \wedge \neg e_{2,6} \wedge e_{3,6} \wedge \neg e_{4,6} \wedge e_{5,6}) \vee (e_{1,6} \wedge \neg e_{2,6} \wedge \neg e_{3,6} \wedge e_{4,6} \wedge e_{5,6}) \vee (e_{1,6} \wedge \neg e_{2,6} \wedge \neg e_{3,6} \wedge \neg e_{4,6} \wedge \neg e_{5,6}) \vee (\neg e_{1,6} \wedge e_{2,6} \wedge e_{3,6} \wedge e_{4,6} \wedge \neg e_{5,6}) \vee (\neg e_{1,6} \wedge e_{2,6} \wedge e_{3,6} \wedge \neg e_{4,6} \wedge \neg e_{5,6}) \vee (\neg e_{1,6} \wedge \neg e_{2,6} \wedge e_{3,6} \wedge e_{4,6} \wedge \neg e_{5,6}) \vee (\neg e_{1,6} \wedge \neg e_{2,6} \wedge e_{3,6} \wedge \neg e_{4,6} \wedge e_{5,6}) \vee (\neg e_{1,6} \wedge \neg e_{2,6} \wedge \neg e_{3,6} \wedge e_{4,6} \wedge \neg e_{5,6}) \vee (\neg e_{1,6} \wedge \neg e_{2,6} \wedge \neg e_{3,6} \wedge \neg e_{4,6} \wedge e_{5,6})
\end{aligned}$$



$$e_{5,6}) \vee (\neg e_{1,6} \wedge e_{2,6} \wedge \neg e_{3,6} \wedge e_{4,6} \wedge e_{5,6}) \vee (\neg e_{1,6} \wedge e_{2,6} \wedge \neg e_{3,6} \wedge \neg e_{4,6} \wedge \neg e_{5,6}) \vee (\neg e_{1,6} \wedge \neg e_{2,6} \wedge e_{3,6} \wedge e_{4,6} \wedge e_{5,6}) \vee$$

$$(\neg e_{1,6} \wedge \neg e_{2,6} \wedge e_{3,6} \wedge \neg e_{4,6} \wedge \neg e_{5,6}) \vee (\neg e_{1,6} \wedge \neg e_{2,6} \wedge \neg e_{3,6} \wedge e_{4,6} \wedge \neg e_{5,6}) \vee (\neg e_{1,6} \wedge \neg e_{2,6} \wedge \neg e_{3,6} \wedge \neg e_{4,6} \wedge e_{5,6})$$

$e_{1,6}$	$e_{2,6}$	$e_{3,6}$	$e_{4,6}$	$e_{5,6}$	$e_{1,6} \oplus e_{2,6} \oplus e_{3,6} \oplus e_{4,6} \oplus e_{5,6}$
0	0	0	0	0	0
0	0	0	0	1	1
0	0	0	1	0	1
0	0	0	1	1	0
0	0	1	0	0	1
0	0	1	0	1	0
0	0	1	1	0	0
0	0	1	1	1	1
0	1	0	0	0	1
0	1	0	0	1	0
0	1	0	1	0	0
0	1	0	1	1	1
0	1	1	0	0	0
0	1	1	0	1	1
0	1	1	1	0	1
0	1	1	1	1	0
1	0	0	0	0	1
1	0	0	0	1	0
1	0	0	1	0	0
1	0	0	1	1	1
1	0	1	0	0	0
1	0	1	0	1	1
1	0	1	1	0	1
1	0	1	1	1	0
1	1	0	0	0	0
1	1	0	0	1	1
1	1	0	1	0	1
1	1	0	1	1	0
1	1	1	0	0	1
1	1	1	0	1	0
1	1	1	1	0	0
1	1	1	1	1	1

$$(e_{1,6} \wedge e_{2,6} \wedge e_{3,6} \wedge e_{4,6} \wedge e_{5,6}) \vee (e_{1,6} \wedge e_{2,6} \wedge e_{3,6} \wedge \neg e_{4,6} \wedge \neg e_{5,6}) \vee (e_{1,6} \wedge e_{2,6} \wedge \neg e_{3,6} \wedge e_{4,6} \wedge \neg e_{5,6}) \vee (e_{1,6} \wedge e_{2,6} \wedge$$

