

Правила преобразования:

$$\begin{aligned}
 (x_1) &\Leftrightarrow (x_1 \vee \bar{y}_1 \vee \bar{y}_2)(x_1 \vee \bar{y}_1 \vee y_2)(x_1 \vee y_1 \vee \bar{y}_2)(x_1 \vee y_1 \vee y_2) \\
 (x_1 \vee x_2) &\Leftrightarrow (x_1 \vee x_2 \vee \bar{y}_k)(y_k \vee x_1 \vee x_2) \\
 (x_1 \vee x_2 \vee x_3) &\Leftrightarrow (x_1 \vee x_2 \vee x_3) \\
 (x_1 \vee x_2 \vee x_3 \vee x_4) &\Leftrightarrow (x_1 \vee x_2 \vee \bar{y}_k)(y_k \vee x_3 \vee x_4) \\
 (x_1 \vee x_2 \vee x_3 \vee x_4 \vee x_5) &\Leftrightarrow (x_1 \vee x_2 \vee \bar{y}_k)(y_k \vee x_3 \vee \bar{y}_{k+1})(y_{k+1} \vee x_4 \vee x_5) \\
 (x_1 \vee x_2 \vee x_3 \vee x_4 \vee x_5 \vee x_6) &\Leftrightarrow (x_1 \vee x_2 \vee \bar{y}_k)(y_k \vee x_3 \vee \bar{y}_{k+1})(y_{k+1} \vee x_4 \vee \bar{y}_{k+2})(y_{k+2} \vee x_5 \vee x_6) \\
 (x_1 \vee x_2)(x_3 \vee x_4) &\Leftrightarrow (x_1 \vee x_2 \vee \bar{y}_k)(y_k \vee x_1 \vee x_2)(x_3 \vee x_4 \vee \bar{y}_{k+1})(y_{k+1} \vee x_3 \vee x_4)
 \end{aligned}$$

Пример:

Преобразуем КНФ:

$$\begin{aligned}
 &(x_1 \vee x_2)(x_1 \vee \bar{x}_2 \vee x_3 \vee \bar{x}_4)(\bar{x}_1 \vee x_2 \vee \bar{x}_3 \vee x_4 \vee \bar{x}_5) \Leftrightarrow \\
 &\Leftrightarrow (x_1 \vee x_2 \vee \bar{y}_1)(x_1 \vee x_2 \vee y_1)(x_1 \vee \bar{x}_2 \vee \bar{y}_2)(y_2 \vee x_3 \vee \bar{x}_4)(\bar{x}_1 \vee x_2 \vee \bar{y}_3) \dots \\
 &\dots (y_3 \vee \bar{x}_3 \vee \bar{y}_4)(y_4 \vee x_4 \vee \bar{x}_5)
 \end{aligned}$$

Задача 1:

Преобразуем КНФ:

$$\begin{aligned}
 &(x_1 \vee \bar{x}_2)(\bar{x}_1 \vee x_2 \vee x_3 \vee x_4 \vee \bar{x}_5) \Leftrightarrow (x_1 \vee \bar{x}_2 \vee \bar{y}_1)(y_1 \vee x_1 \vee \bar{x}_2)(\bar{x}_1 \vee x_2 \vee \bar{y}_2) \cdot \\
 &\cdot (y_2 \vee x_3 \vee x_4)(y_3 \vee x_4 \vee \bar{x}_5)
 \end{aligned}$$

Задача 2:

Преобразуем КНФ:

$$(x_1 \vee \bar{x}_2 \vee x_3 \vee x_4)(\bar{x}_1 \vee x_2 \vee \bar{x}_3 \vee \bar{x}_4) = (x_1 \vee \bar{x}_2 \vee \bar{y}_1)(y_1 \vee x_3 \vee x_4)(\bar{x}_1 \vee x_2 \vee \bar{y}_2)(y_2 \vee \bar{x}_3 \vee \bar{x}_4)$$

Задача 3:

Преобразуем КНФ:

$$(x_1 \vee x_2)(\bar{x}_1 \vee x_2 \vee \bar{x}_3)(\bar{x}_1 \vee \bar{x}_2 \vee x_3 \vee \bar{x}_4 \vee \bar{x}_5 \vee x_6) = (x_1 \vee x_2 \vee \bar{y}_1)(y_1 \vee x_1 \vee x_2)(\bar{x}_1 \vee x_2 \vee \bar{x}_3) \cdot$$

$$\cdot (\bar{x}_1 \vee \bar{x}_2 \vee \bar{y}_2)(y_2 \vee x_3 \vee \bar{y}_3)(y_3 \vee \bar{x}_4 \vee \bar{y}_4)(y_4 \vee \bar{x}_5 \vee x_6)$$

Задача 4:

Преобразуем КНФ:

$$\bar{x}_4(\bar{x}_1 \vee x_2 \vee \bar{x}_3 \vee x_4 \vee x_5 \vee x_6 \vee x_7) = (\bar{x}_4 \vee \bar{y}_1 \vee \bar{y}_2)(\bar{x}_4 \vee \bar{y}_1 \vee y_2)(\bar{x}_4 \vee y_1 \vee \bar{y}_2)(\bar{x}_4 \vee y_1 \vee y_2) \cdot$$

$$\cdot (\bar{x}_1 \vee x_2 \vee \bar{y}_3)(y_3 \vee \bar{x}_3 \vee \bar{y}_4)(y_4 \vee x_4 \vee \bar{y}_5)(y_5 \vee x_5 \vee \bar{y}_6)(y_6 \vee x_6 \vee x_7)$$

Задача 5:

Преобразуем КНФ:

$$(x_1 \vee x_3)(x_1 \vee \bar{x}_2)(x_2 \vee \bar{x}_3)(\bar{x}_1 \vee \bar{x}_2 \vee x_3) = (x_1 \vee x_3 \vee \bar{y}_1)(x_1 \vee x_3 \vee y_1)(x_1 \vee \bar{x}_2 \vee \bar{y}_2)(x_1 \vee \bar{x}_2 \vee y_2) \cdot$$

$$\cdot (x_2 \vee \bar{x}_3 \vee \bar{y}_3)(x_2 \vee \bar{x}_3 \vee y_3)(\bar{x}_1 \vee \bar{x}_2 \vee x_3)$$