

# Truth table

$x_4$	$x_3$	$x_2$	$x_1$	$f$
0	0	0	0	0
0	0	0	1	0
0	0	1	0	0
0	0	1	1	0
0	1	0	0	0
0	1	0	1	0
0	1	1	0	0
0	1	1	1	0
1	0	0	0	0
1	0	0	1	0
1	0	1	0	0
1	0	1	1	0
1	1	0	0	0
1	1	0	1	0
1	1	1	0	0
1	1	1	1	0

## Karnaugh-veigh

	$\bar{x}_1$	$x_1$	
$\bar{x}_2$	0	1	0
$x_2$	0	0	0
$x_3$	1	1	1

	$\bar{x}_1$	$x_1$	
$\bar{x}_2$	0	1	0
$x_2$	0	0	0
$x_3$	1	1	1

$$f = \underline{x_2 \bar{x}_4} \vee \underline{x_3 x_2} \vee \bar{x}_1 x_3 \bar{x}_4 \vee x_1 \bar{x}_3 \bar{x}_4$$

Sum of products

$$f = x_2 x_3 \oplus \bar{x}_3 \bar{x}_4 \oplus \bar{x}_1 \bar{x}_2 \bar{x}_4$$

ESOP  
exclusive  
SOP