1 Introduction

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2 Truth table

The table may be way to big to be displayed on the page. At generation time no calculation was done on the size of the table with respect to the width/height of the page.

2.1 Compacted truth table

$o0$	$o1$	$o2$	$o3$	a	b	c	d	e	f	g
0	0	0	0	1	1	1	1	1	1	0
0	0	0	1	0	1	1	0	0	0	0
0	0	1	0	1	1	0	1	1	0	1
0	0	1	1	1	1	1	1	0	0	1
0	1	0	0	0	1	1	0	0	1	1
0	1	0	1	1	0	1	0	0	1	1
0	1	1	0	1	0	1	1	1	1	1
0	1	1	1	1	1	1	0	0	0	0
1	0	0	0	1	1	1	1	1	1	1
1	0	0	1	1	1	1	1	0	1	1
1	0	1	0	1	1	1	0	1	1	1
1	0	1	1	0	0	1	1	1	1	1
1	1	0	0	1	0	0	1	1	1	0
1	1	0	1	0	1	1	1	1	0	1
1	1	1	0	1	0	0	1	1	1	1
1	1	1	1	1	0	0	0	1	1	1

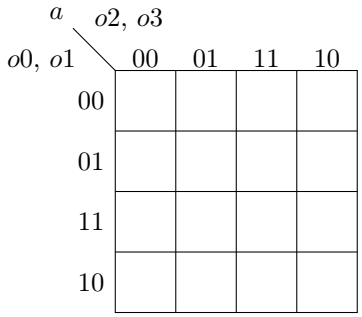
2.2 Complete truth table

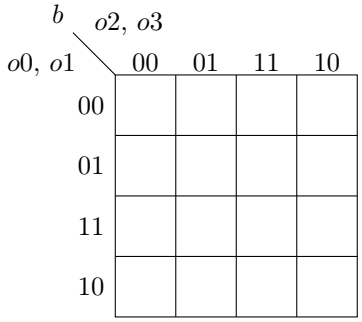
$o0$	$o1$	$o2$	$o3$	a	b	c	d	e	f	g
0	0	0	0	1	1	1	1	1	1	0
0	0	0	1	0	1	1	0	0	0	0
0	0	1	0	1	1	0	1	1	0	1
0	0	1	1	1	1	1	1	0	0	1
0	1	0	0	0	1	1	0	0	1	1
0	1	0	1	1	0	1	0	0	1	1
0	1	1	0	1	0	1	1	1	1	1
0	1	1	1	1	1	1	0	0	0	0
1	0	0	0	1	1	1	1	1	1	1
1	0	0	1	1	1	1	1	0	1	1
1	0	1	0	1	1	1	0	1	1	1
1	0	1	1	0	0	1	1	1	1	1
1	1	0	0	1	0	0	1	1	1	0
1	1	0	1	0	1	1	1	1	0	1
1	1	1	0	1	0	0	1	1	1	1
1	1	1	1	1	0	0	0	1	1	1

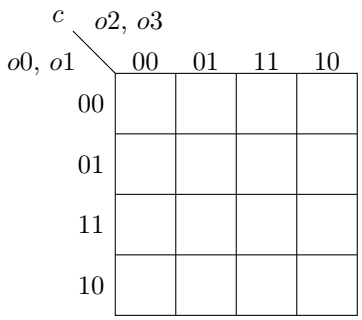
3 Karnaugh diagrams

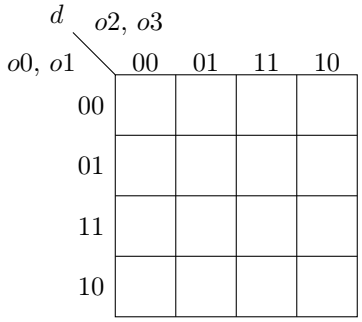
This section shows various versions of the Karnaugh diagrams of the given functions.

3.1 Empty Karnaugh diagrams









e

$o0$, $o1$ \ $o2$, $o3$	00	01	11	10
00				
01				
11				
10				

f

$o0$, $o1$ \ $o2$, $o3$	00	01	11	10
00				
01				
11				
10				

g

$o0$, $o1$ \ $o2$, $o3$	00	01	11	10
00				
01				
11				
10				

3.2 Filled in Karnaugh diagrams

a

$o0$, $o1$ \ $o2$, $o3$	00	01	11	10
00	1	0	1	1
01	0	1	1	1
11	1	0	1	1
10	1	1	0	1

b

$o0$, $o1$ \ $o2$, $o3$	00	01	11	10
00	1	1	1	1
01	1	0	1	0
11	0	1	0	0
10	1	1	0	1

c

$o0$, $o1$ \ $o2$, $o3$	00	01	11	10
00	1	1	1	0
01	1	1	1	1
11	0	1	0	0
10	1	1	1	1

d

$o0$, $o1$ \ $o2$, $o3$	00	01	11	10
00	1	0	1	1
01	0	0	0	1
11	1	1	0	1
10	1	1	1	0

e

$o0$, $o1$ \ $o2$, $o3$	00	01	11	10
00	1	0	0	1
01	0	0	0	1
11	1	1	1	1
10	1	0	1	1

f

$o0$, $o1$ \ $o2$, $o3$	00	01	11	10
00	1	0	0	0
01	1	1	0	1
11	1	0	1	1
10	1	1	1	1

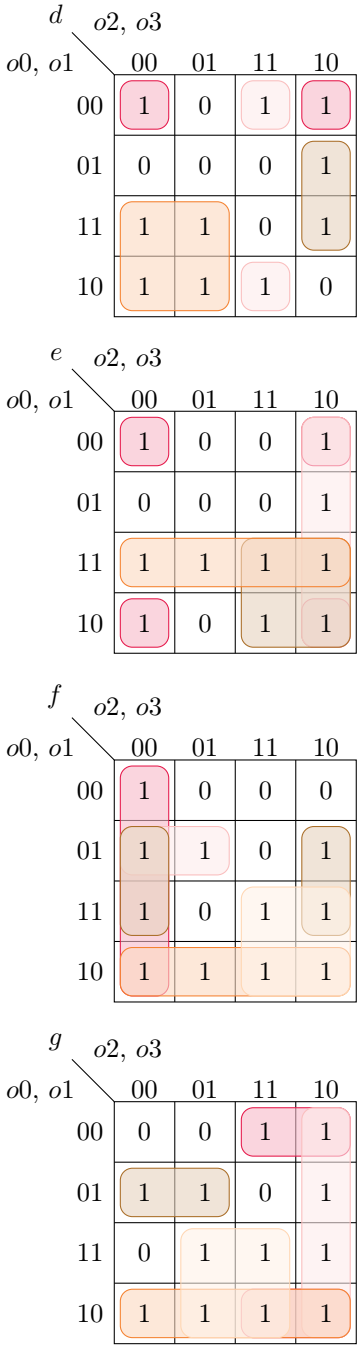
g	$o2, o3$			
$o0, o1$	00	01	11	10
00	0	0	1	1
01	1	1	0	1
11	0	1	1	1
10	1	1	1	1

3.3 Filled in Karnaugh diagrams with covers

a	$o2, o3$			
$o0, o1$	00	01	11	10
00	1	0	1	1
01	0	1	1	1
11	1	0	1	1
10	1	1	0	1

b	$o2, o3$			
$o0, o1$	00	01	11	10
00	1	1	1	1
01	1	0	1	0
11	0	1	0	0
10	1	1	0	1

c	$o2, o3$			
$o0, o1$	00	01	11	10
00	1	1	1	0
01	1	1	1	1
11	0	1	0	0
10	1	1	1	1



4 Minimal expressions

$a = \overline{o1} \cdot \overline{o3} + \overline{o0} \cdot o2 + \overline{o0} \cdot o1 \cdot o3 + o1 \cdot o2 + o0 \cdot \overline{o1} \cdot \overline{o2} + o0 \cdot \overline{o3}$
$b = \overline{o0} \cdot \overline{o1} + \overline{o0} \cdot \overline{o2} \cdot \overline{o3} + \overline{o1} \cdot \overline{o3} + \overline{o0} \cdot o2 \cdot o3 + o0 \cdot \overline{o2} \cdot o3$
$c = \overline{o0} \cdot \overline{o2} + \overline{o0} \cdot o3 + \overline{o2} \cdot o3 + \overline{o0} \cdot o1 + o0 \cdot \overline{o1}$
$d = \overline{o0} \cdot \overline{o1} \cdot \overline{o3} + \overline{o1} \cdot o2 \cdot o3 + o1 \cdot o2 \cdot \overline{o3} + o0 \cdot \overline{o2}$
$e = \overline{o1} \cdot \overline{o3} + o2 \cdot \overline{o3} + o0 \cdot o2 + o0 \cdot o1$
$f = \overline{o2} \cdot \overline{o3} + \overline{o0} \cdot o1 \cdot \overline{o2} + o1 \cdot \overline{o3} + o0 \cdot \overline{o1} + o0 \cdot o2$
$g = \overline{o1} \cdot o2 + o2 \cdot \overline{o3} + \overline{o0} \cdot o1 \cdot \overline{o2} + o0 \cdot \overline{o1} + o0 \cdot o3$