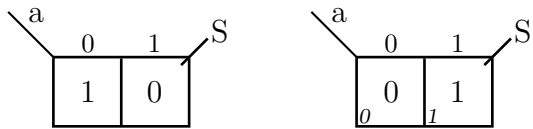
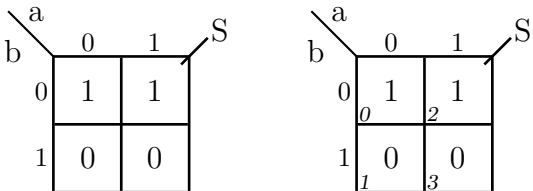


# American Style Karnaugh Maps

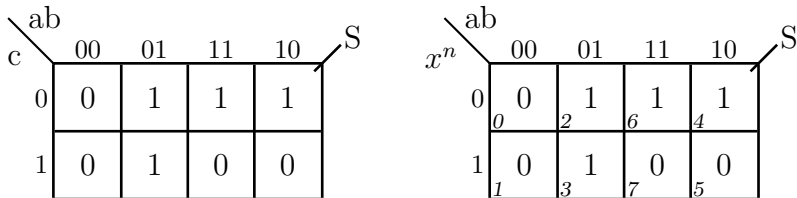
The Karnaugh maps for one variable



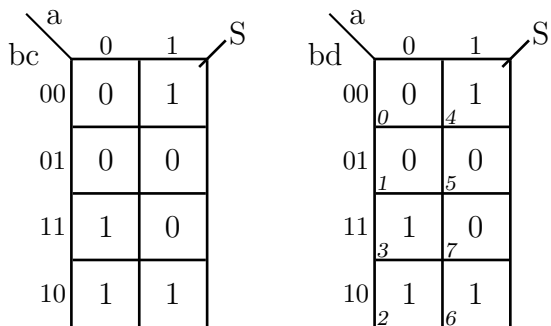
The Karnaugh maps for two variables



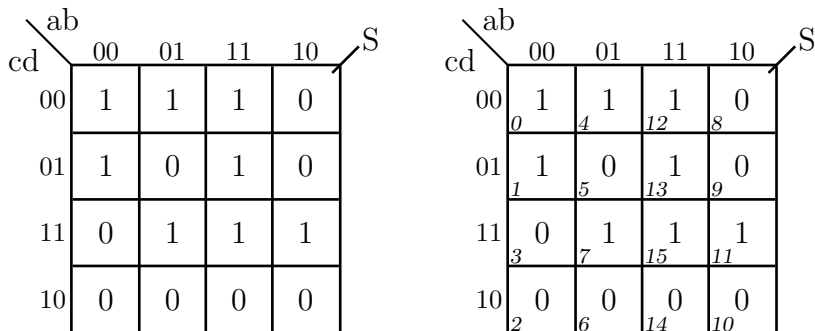
The Karnaugh maps for three variables



The Karnaugh maps for three variables (alternate style)



The Karnaugh maps for four variables



The Karnaugh maps for five variables

abc										S
de		000	001	011	010	110	111	101	100	
00		0	0	1	1	1	1	0	0	
		<sub>0</sub>	<sub>4</sub>	<sub>12</sub>	<sub>8</sub>	<sub>24</sub>	<sub>28</sub>	<sub>20</sub>	<sub>16</sub>	
01		1	1	0	0	0	0	1	1	
		<sub>1</sub>	<sub>5</sub>	<sub>13</sub>	<sub>9</sub>	<sub>25</sub>	<sub>29</sub>	<sub>21</sub>	<sub>17</sub>	
11		1	1	0	0	0	0	1	1	
		<sub>3</sub>	<sub>7</sub>	<sub>15</sub>	<sub>11</sub>	<sub>27</sub>	<sub>31</sub>	<sub>23</sub>	<sub>19</sub>	
10		0	0	1	1	1	1	0	0	
		<sub>2</sub>	<sub>6</sub>	<sub>14</sub>	<sub>10</sub>	<sub>26</sub>	<sub>30</sub>	<sub>22</sub>	<sub>18</sub>	

Or you can split the 5-map into two 4-maps with additional information at the bottom...

		bc				S
		00	01	11	10	
de	00	0 <sub>0</sub>	0 <sub>4</sub>	1 <sub>12</sub>	1 <sub>8</sub>	
	01	1 <sub>1</sub>	1 <sub>5</sub>	0 <sub>13</sub>	0 <sub>9</sub>	
	11	1 <sub>3</sub>	1 <sub>7</sub>	0 <sub>15</sub>	0 <sub>11</sub>	
	10	0 <sub>2</sub>	0 <sub>6</sub>	1 <sub>14</sub>	1 <sub>10</sub>	

a = 0

		bc				S
		00	01	11	10	
de	00	0 <sub>0</sub>	0 <sub>4</sub>	1 <sub>12</sub>	1 <sub>8</sub>	
	01	1 <sub>1</sub>	1 <sub>5</sub>	0 <sub>13</sub>	0 <sub>9</sub>	
	11	1 <sub>3</sub>	1 <sub>7</sub>	0 <sub>15</sub>	0 <sub>11</sub>	
	10	0 <sub>2</sub>	0 <sub>6</sub>	1 <sub>14</sub>	1 <sub>10</sub>	

a = 1

You can also do math things by using the known \$ signs...

$a_1$ $a_0$	0	1	$S_0$
	0	1	
1	0	0	

You can do math thing in roman font...

$M_2^n M_1^n$ $M_0^n$	00	01	11	10	$M_0^{n+1}$
	0	1	1	1	
1	1	0	1	1	

You can do things with don't cares...

$a$ $b$	0	1	$S$
	0	0	
1	1	-	

$a$ $c$	00	01	11	10	$S$
	0	0	1	0	
1	0	-	-	1	

$a$ $cd$	00	01	11	10	$S$
	0	4	12	8	
00	1	-	1	-	
01	1	0	-	0	
11	-	1	1	0	
10	0	0	1	0	
	2	6	14	10	

You can use colors and empty function values and variables as values too...

$a$ $c$	00	01	11	10	$S$
	0	0	1	0	
1	0			1	

$a$ $b$	0	1	$S$
	0	$i_0$	
1	$i_1$	$i_3$	

You can set the font to something else ... and use sans math font ...

		ab				S
		00	01	11	10	
cd	00	0	1	0	1	
	01	1	1	0	1	
	11	0	0	1	1	
	10	1	1	1	1	

		$p_1^n p_0^n$				$Q_0^{n+1}$
		00	01	11	10	
$q_1^n q_0^n$	00	0	1	0	1	
	01	1	1	0	1	
	11	0	0	1	1	
	10	1	1	1	1	

You can use the last parameter to create to your own picture commands...

		xy				F
		00	01	11	10	
z	0	1	1	1	0	
	1	1	0	1	1	

blabla

		x		F
		0	1	
y	0	0	1	
	1	1	1	

		x		F
		0	1	
y	0	0	1	
	1	1	1	

# Bounding Boxes around the Maps

a	0	1	S
	0	1	
	<sub>0</sub>	<sub>1</sub>	

a	0	1	S
b	0	1	
	0	1	
	<sub>0</sub>	<sub>2</sub>	
	1	1	
	<sub>1</sub>	<sub>3</sub>	

ab	00	01	11	10	S
c	0	0	1	1	
	<sub>0</sub>	<sub>2</sub>	<sub>6</sub>	<sub>4</sub>	
	1	1	1	1	
	<sub>1</sub>	<sub>3</sub>	<sub>7</sub>	<sub>5</sub>	

a	0	1	S
bc	00	01	
	0	1	
	<sub>0</sub>	<sub>4</sub>	
	01	1	
	<sub>1</sub>	<sub>5</sub>	
	11	1	
	<sub>3</sub>	<sub>7</sub>	
	10	1	
	<sub>2</sub>	<sub>6</sub>	

ab	00	01	11	10	S
$x^n y^n$	00	0	1	1	
	<sub>0</sub>	<sub>4</sub>	<sub>12</sub>	<sub>8</sub>	
	01	1	1	1	
	<sub>1</sub>	<sub>5</sub>	<sub>13</sub>	<sub>9</sub>	
	11	1	1	1	
	<sub>3</sub>	<sub>7</sub>	<sub>15</sub>	<sub>11</sub>	
	10	1	1	1	
	<sub>2</sub>	<sub>6</sub>	<sub>14</sub>	<sub>10</sub>	

abc	000	001	011	010	110	111	101	100	S
ll	00	0	1	1	1	1	1	1	
	<sub>0</sub>	<sub>4</sub>	<sub>12</sub>	<sub>8</sub>	<sub>24</sub>	<sub>28</sub>	<sub>20</sub>	<sub>16</sub>	
	01	1	1	1	1	1	1	1	
	<sub>1</sub>	<sub>5</sub>	<sub>13</sub>	<sub>9</sub>	<sub>25</sub>	<sub>29</sub>	<sub>21</sub>	<sub>17</sub>	
	11	1	1	1	1	1	1	1	
	<sub>3</sub>	<sub>7</sub>	<sub>15</sub>	<sub>11</sub>	<sub>27</sub>	<sub>31</sub>	<sub>23</sub>	<sub>19</sub>	
	10	1	1	1	1	1	1	1	
	<sub>2</sub>	<sub>6</sub>	<sub>14</sub>	<sub>10</sub>	<sub>26</sub>	<sub>30</sub>	<sub>22</sub>	<sub>18</sub>	

