

9/22/09 outline

- HW 4 posted + Due Thursday
- Exam 1 date changed to Oct 9th
- No extra credit for Picnic since Physics exam
- Hand back Quiz 3
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$$f' = 1$$

$$f'' = 0$$

$$f(a,b,c) = \sum m(1, 3, 5, 6, 7)$$

a	b	c	f
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	1
1	1	1	1

Arrows point from the minterms 1, 3, 5, 6, 7 in the truth table to the corresponding rows in the Karnaugh map below.

$$f = \bar{a}\bar{b}c + \bar{a}bc + a\bar{b}c + ab\bar{c} + abc$$

$$f = \bar{b}c(\bar{a} + a) + \bar{a}bc + ab\bar{c} + abc \quad 1) \text{ Dist.}$$

$$f = \bar{b}c + \bar{a}bc + ab\bar{c} + abc \quad 2) \text{ comp, id}$$

$$f = \bar{b}c + bc + ab\bar{c}$$

3) Dist, comp, id

$$f = c + ab\bar{c}$$

4) Dist, comp, id

$$f = c + (ab) \cdot \bar{c}$$

$$f = (c + ab) * (c + \bar{c})$$

5) Dist (2)

$$f = (c + ab)$$

6) Comp, id

$$c=1$$

$$f=1$$

$$c=0$$

$$f=ab$$

$$(\overline{abc})' = \overline{a} + b + \overline{c}$$

SOP

$$\begin{array}{l} (abc + \overline{a}b\overline{c} + \overline{a}bc)' \quad \underline{\text{SOP}} \\ (\overline{a} + \overline{b} + \overline{c})(\underline{a + \overline{b} + c})(a + \overline{b} + \overline{c}) \quad \text{POS} \end{array}$$

K-map

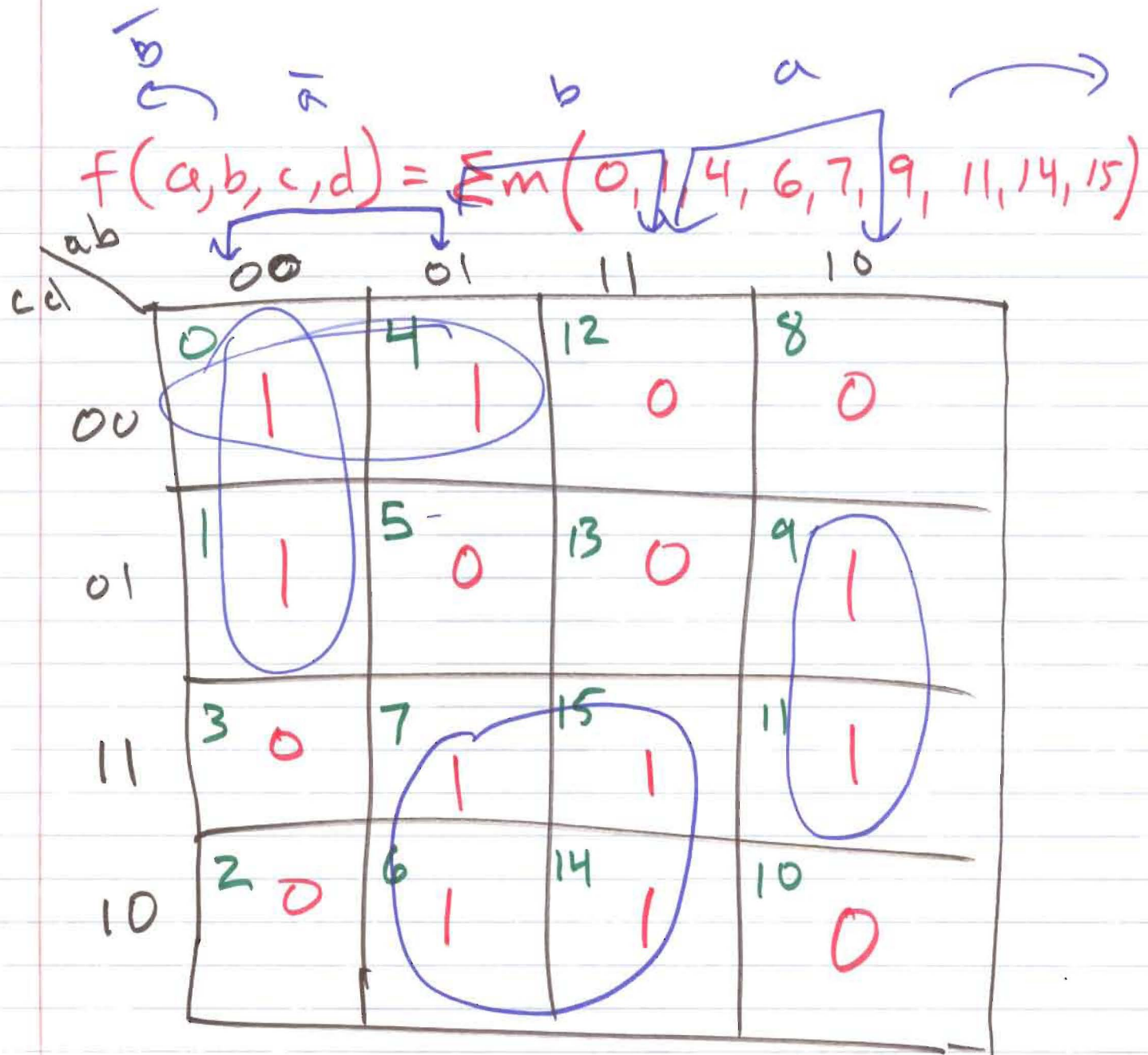
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c \ ab	00	01	11	10
0	0	0	1	0
1	1	1	1	1

Group is in power of 2 Groupings
1, 2, 4, 8, 16

$f = c + ab$

c \ ab	00	01	11	10
0	0	2	6	4
1	1	3	7	5



$$f = bc + \bar{a}bd + \bar{a}\bar{c}\bar{d} + \bar{a}\bar{b}\bar{c}$$