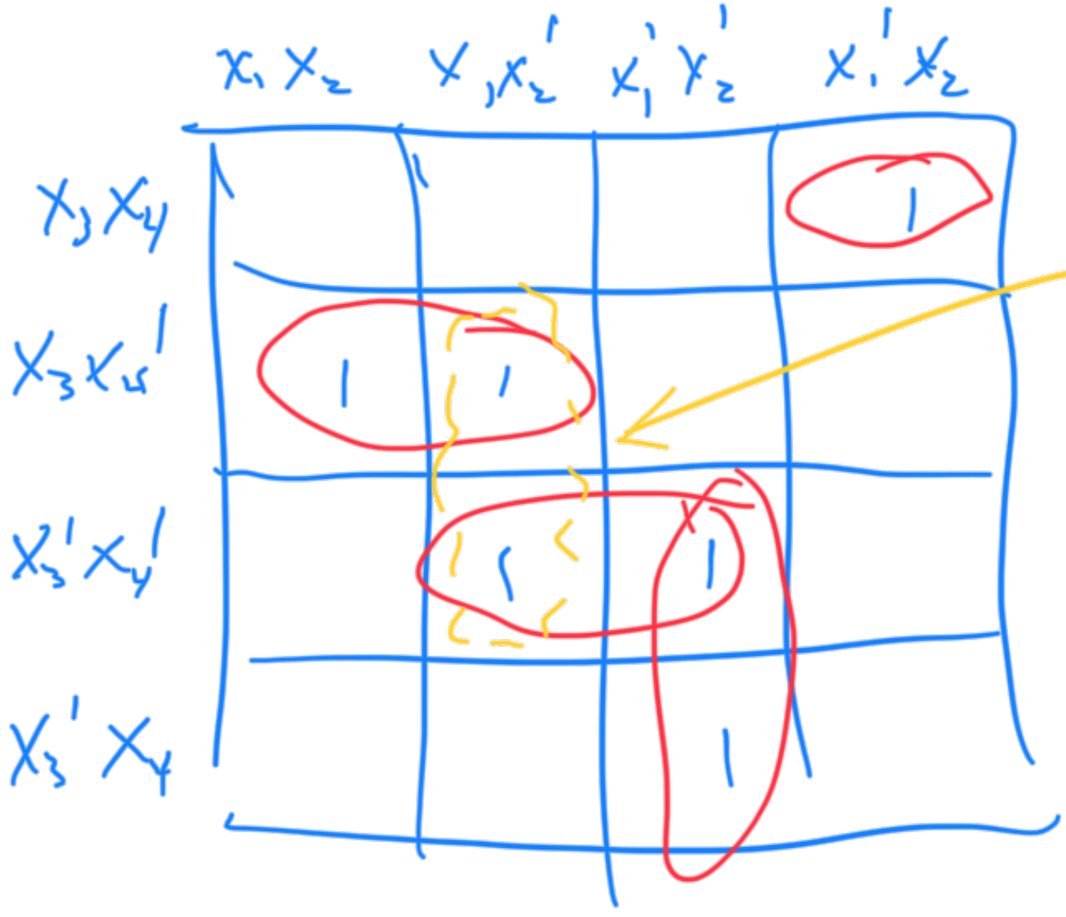
§8.3 #8, 17, 28

#8



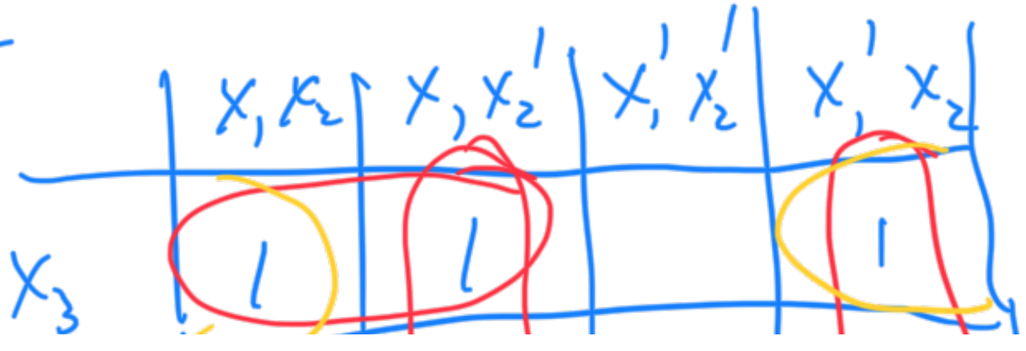
Could have done R_3 instead of R_2 one:

$x_1x_2'x_4'$

$f(x_1,x_2,x_3,x_4) = x_1x_3x_4' + x_2'x_3'x_4' + x_1'x_2'x_4' + x_1'x_2x_3x_4$

unpaired

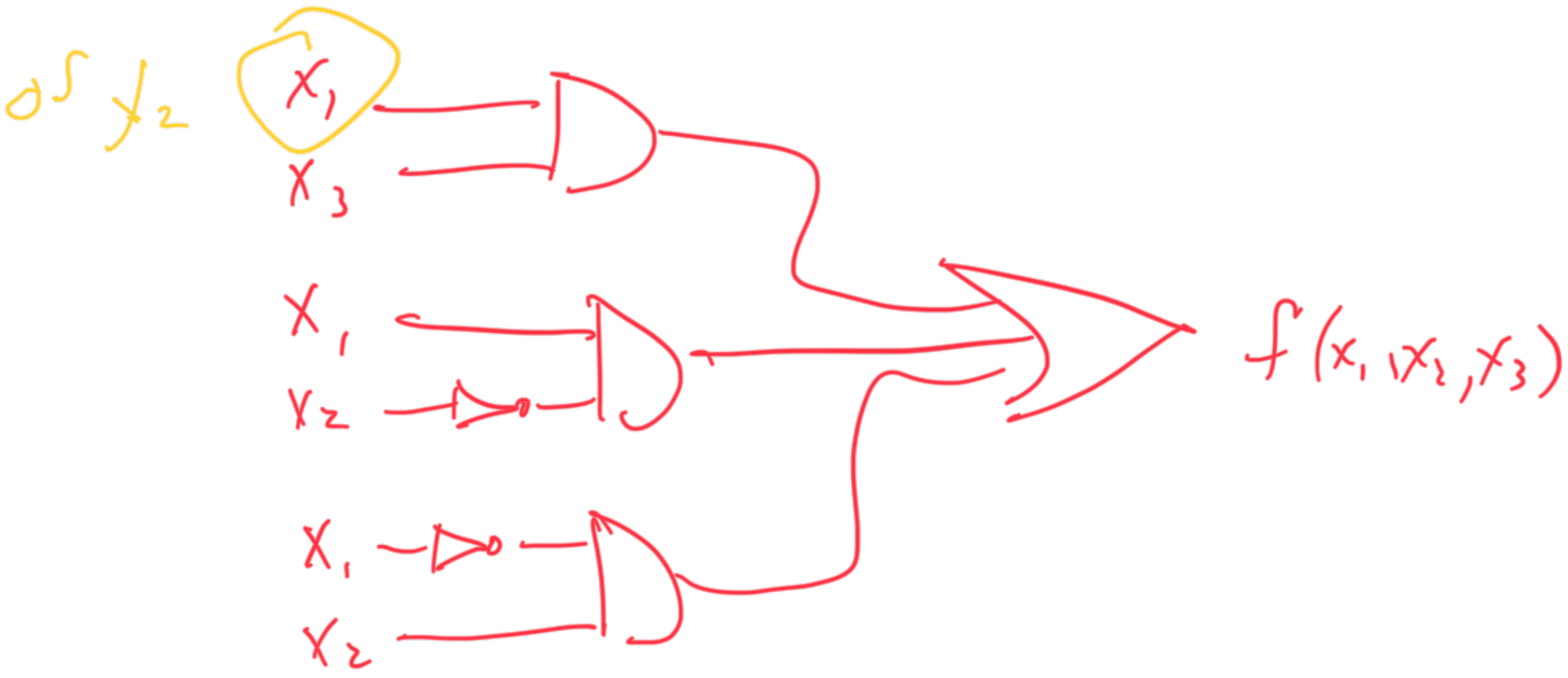
#17



or:

$x_2x_3 + x_1x_2' + x_1'x_2$

$$X_1 \cdot X_3 + X_1 \cdot X_2' + X_1' \cdot X_2$$



#28

01010 ~~x~~

01107 ~~3~~

11111 ~~5~~

00101 ~~x~~

	X_1	X_2	X_3	X_4	X_5	
5 ones	1	1	1	1	1	1 2
4	1	0	1	1	1	1, 3
	1	1	0	1	1	2

1 0 1 1 4

0 0 0 0 1 1

1 , 1 0 0 3

1 , 0 1 1 4

1 0 1 0 3

0 0 0 1 0

3	0	1	1	0	1	4
	1	0	1	0	1	3 5
	1	1	1	0	0	7
2	0	1	0	1	0	6
	0	0	1	0	1	4 5 7
1	0	0	0	0	1	7
	0	0	0	1	0	6

	x_1	x_2	x_3	x_4	x_5
4 ones	1	–	1	1	1
	1	1	–	1	1
3	1	0	1	–	1
2	0	–	1	0	1

no further simplification!

	11111	10111	11011	01101	10101	11100	01010	00101	00001	00010
11100						✓				
1-111	✓	✓								
111-1	✓		✓							
101-1		✓			✓					
0-101				✓				✓		
-0101					✓			✓		
0-010						✓				✓
00-01								✓	✓	

$$f(x_1, x_2, x_3, x_4, x_5) = x_1 x_2 x_3 x_4' x_5' +$$

$$x_1 x_2 x_4 x_5 +$$

$$x_1 x_2' x_3 x_5 +$$

$$x_1' x_3 x_4' x_5 +$$

$$x_1' x_3' x_4 x_6' +$$
$$x_1' x_2' x_4' x_5$$