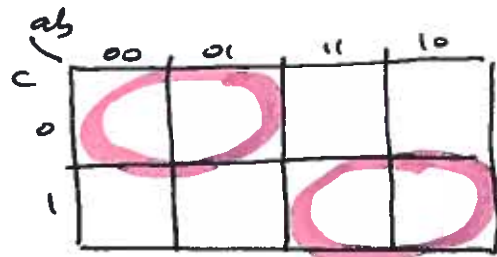
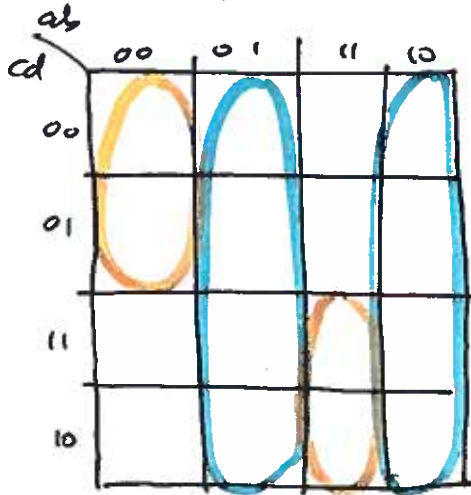
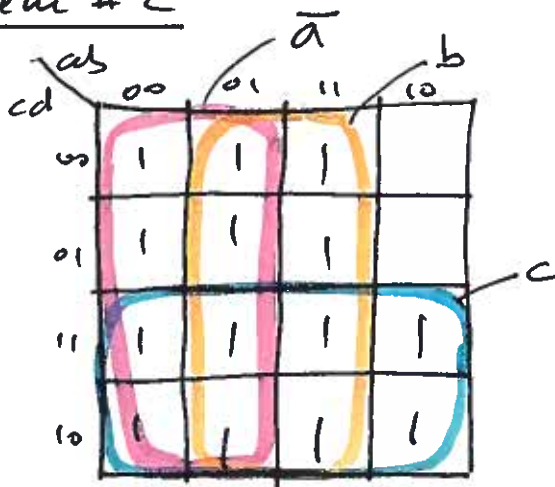


Problem # 1

patterns of xor



Problem # 2



$$f = \bar{a} + b + c$$

②

A 4x4 Karnaugh map for function g . The vertical axis is labeled cd with values 00, 01, 11, 10. The horizontal axis is labeled ab with values 00, 01, 11, 10. The map contains 1s in the following cells: (00,00), (01,00), (11,00), (10,00), (00,01), (01,01), (11,01), (10,01), (00,11), (01,11), (11,11), (10,11), (00,10), (01,10), (11,10), (10,10). Two prime implicants are circled in orange: a vertical column of 1s for $ab=00$ and a vertical column of 1s for $ab=11$.

$$g = \overline{a \oplus b}$$

A 4x4 Karnaugh map for function h . The vertical axis is labeled cd with values 00, 01, 11, 10. The horizontal axis is labeled ab with values 00, 01, 11, 10. The map contains 1s in the following cells: (01,01), (01,10), (11,01), (11,10). All other cells contain an 'X'. A pink circle highlights the prime implicants for h , which are the two 1s in the $cd=01$ row and the two 1s in the $cd=11$ row. Arrows labeled 'd' point from the pink circle to the text below.

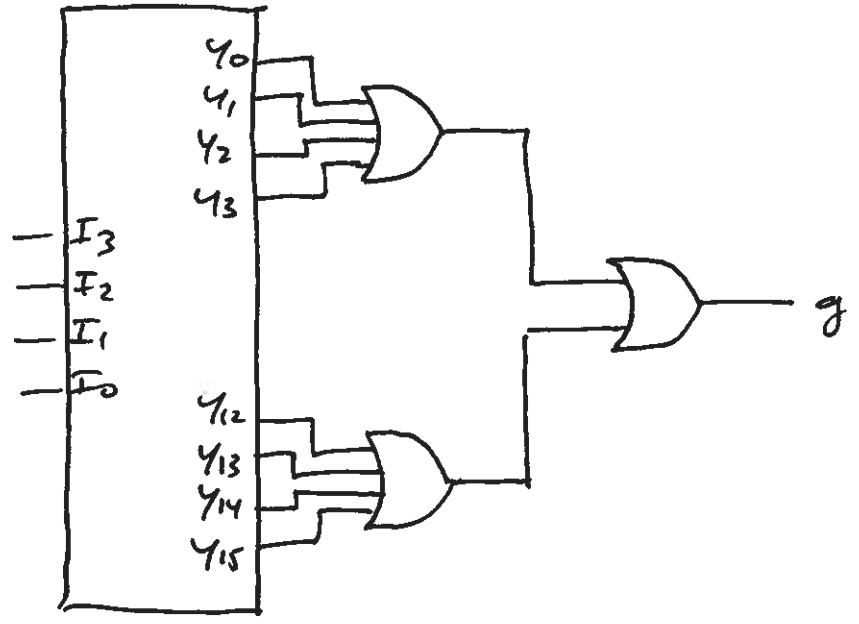
$$h = \overline{\pi(2, 3, 6, 8, 10, 11, 12, 14, 15)}$$
$$= \Sigma(0, 1, 4, 5, 7, 9, 13)$$

$$h = d$$

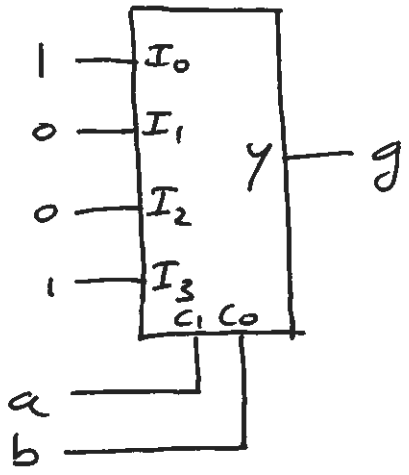
these are the only 1s we need to cover. Whenever a 1 overlaps with an X, it becomes an X.

Problem #3

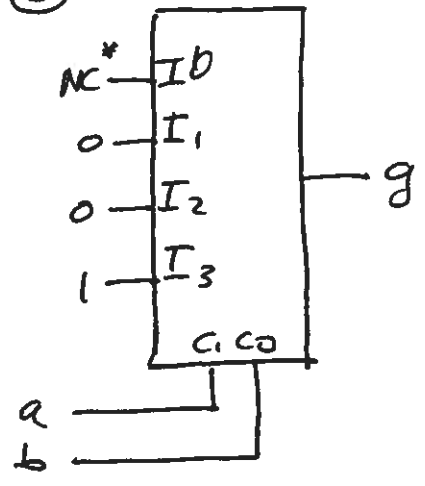
1



2



3



(* NC = Not Connected)