

N.1 25/11/2015

abc	f
000	0
001	1
010	1
011	0
100	1
101	0
110	1
111	0

①

(a)  $(ab) \oplus a \oplus b \oplus c =$

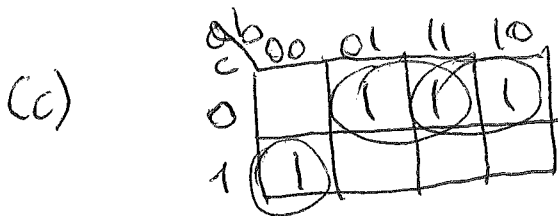
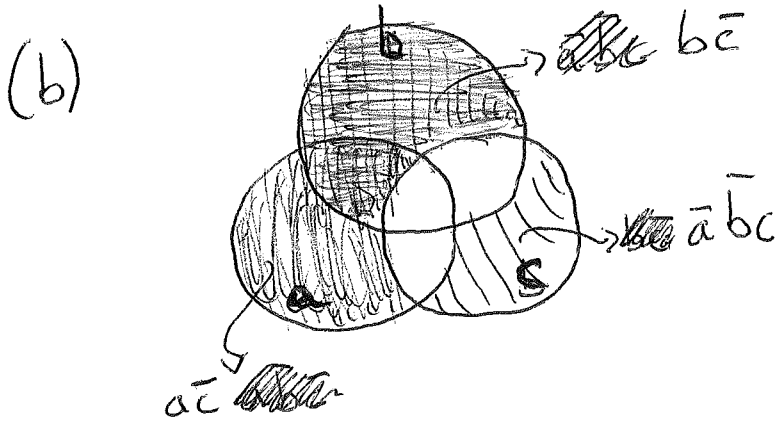
$= (\bar{a}b a + ab\bar{a}) \oplus (\bar{b}c + b\bar{c}) =$

$= ((\bar{a}+b)a) \oplus (\bar{b}c + b\bar{c}) =$

$= (\bar{b}a) \oplus (\bar{b}c + b\bar{c}) =$

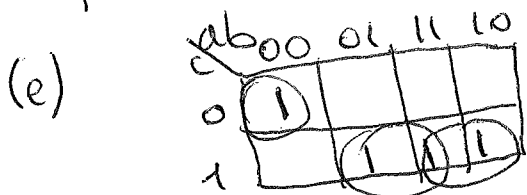
~~$\bar{b}a (\bar{b}c + b\bar{c})$~~   $= (b + \bar{a})(\bar{b}c + b\bar{c}) + \bar{b}a(\bar{b}\bar{c} + bc) =$

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



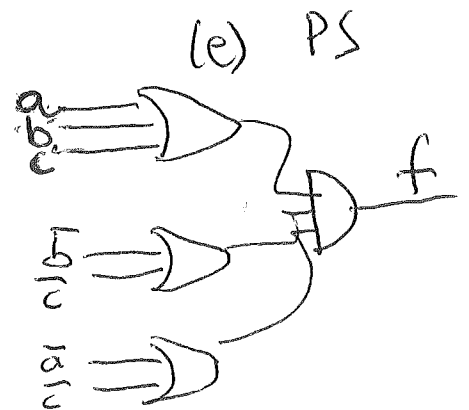
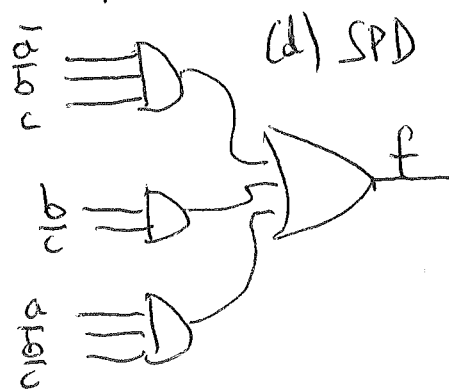
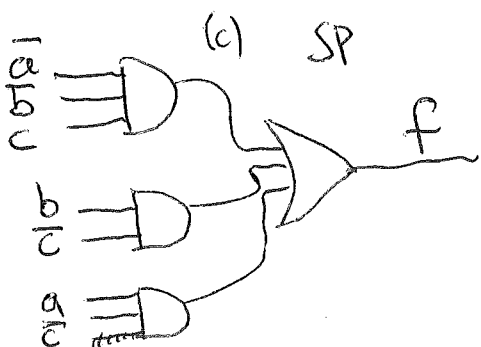
$f = \bar{a}\bar{b}c + b\bar{c} + a\bar{c}$

(d)  $f = \bar{a}\bar{b}c + b\bar{c} + a\bar{c}$  (opposite  $f = \bar{a}\bar{b}\bar{c} + \bar{a}b\bar{c} + a\bar{c}$ )



$f' = \bar{a}\bar{b}\bar{c} + bc + ac$

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

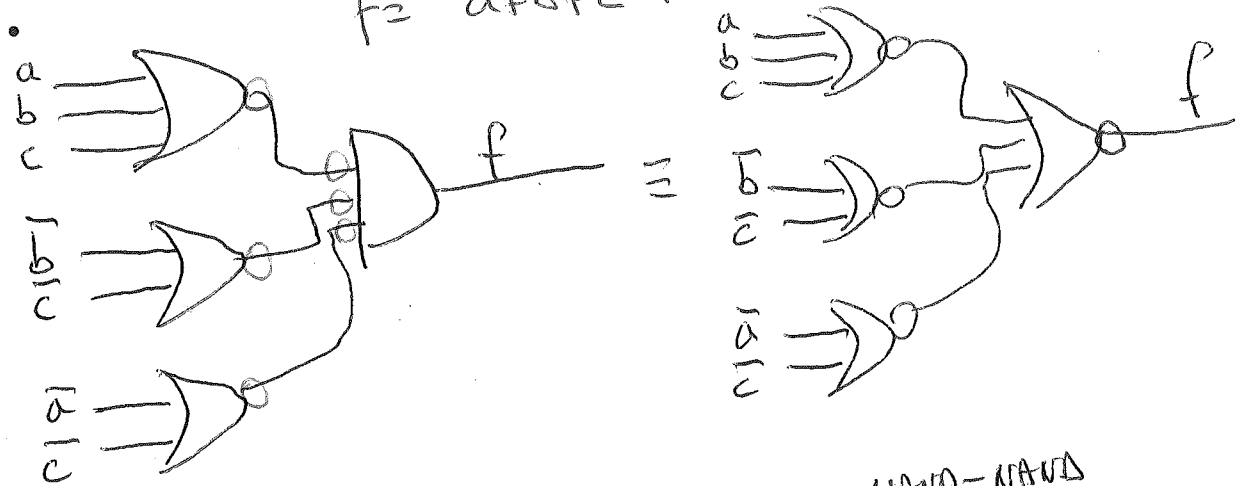


(f) da (e) ricevuto

NOR-NOR

(2)

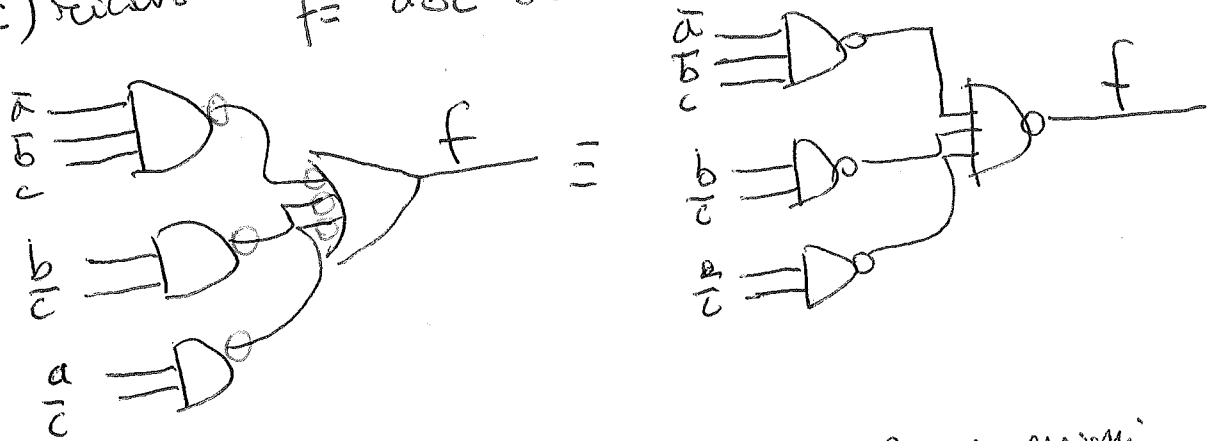
$$f = \overline{a+bc} + \overline{b+c} + \overline{a+c}$$



(g) da (c) ricevuto

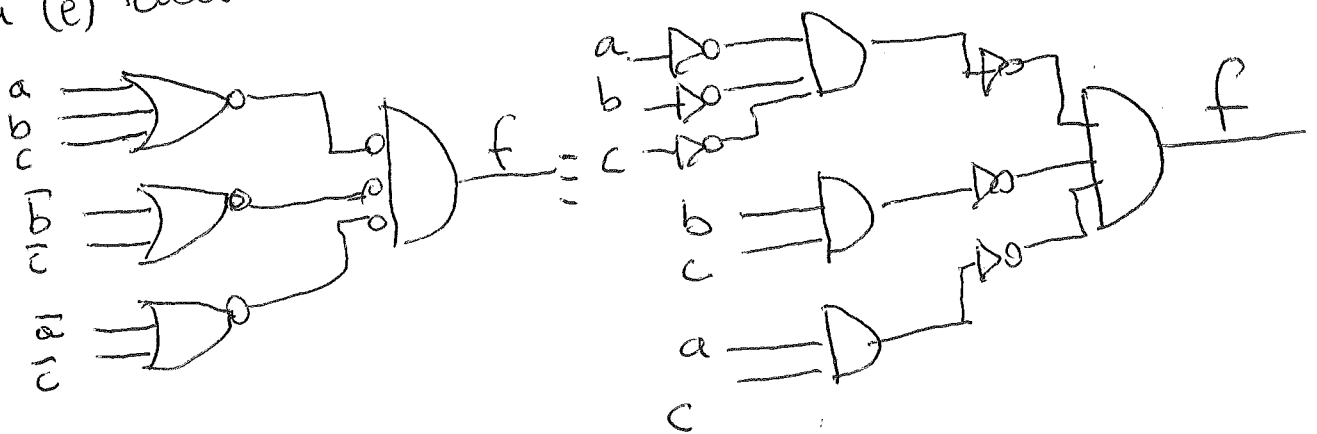
$$f = \overline{\overline{a}bc} \overline{b\overline{c}} \overline{a\overline{c}}$$

NAND-NAND



(h) da (e) ricevuto

AND + inversioni

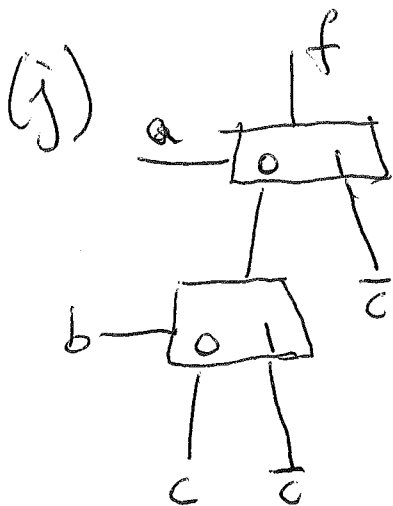
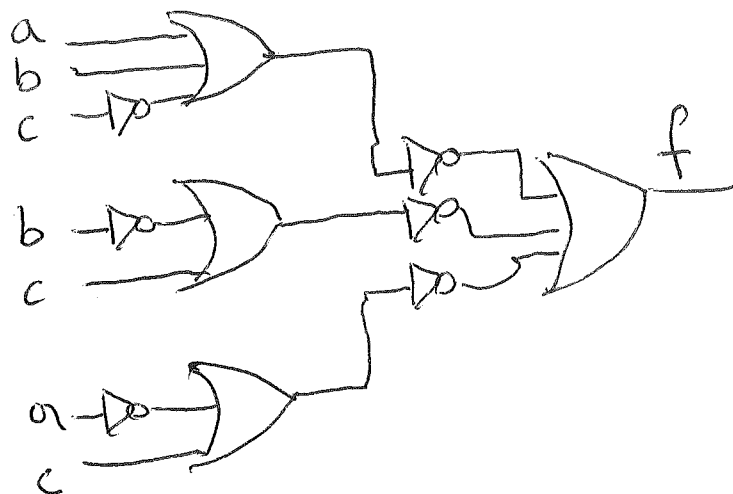
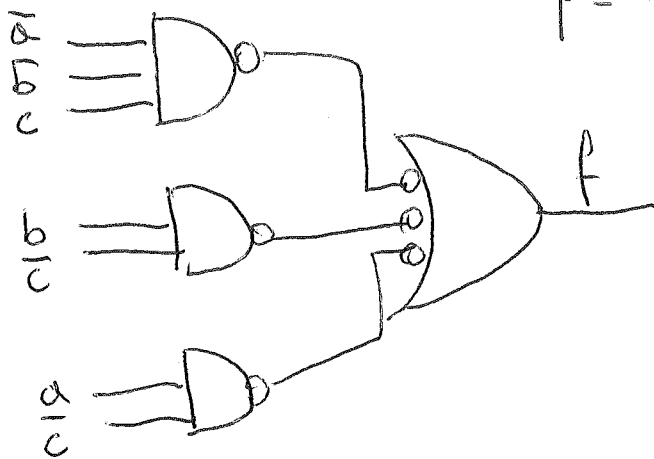


$$f = \overline{\overline{a}bc} \overline{b\overline{c}} \overline{a\overline{c}}$$

(i) da (g) ricavato

OR + inversioni

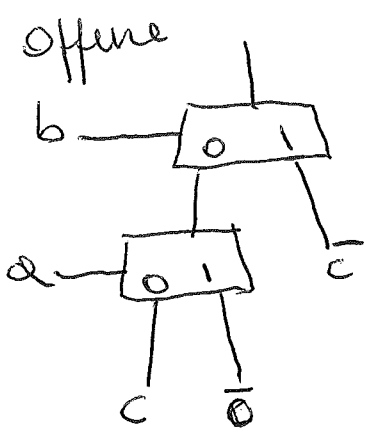
$$f = \overline{a+b+c} + \overline{b+c} + \overline{a+c}$$



$$= a(c' + b'c) + a'(bc' + b'c) =$$

$$f = a\bar{c} + \bar{a}(bc' + b'c)$$

ITE (if-then-else)  
 o selezione (schema seguito dal diagramma di decisione binario)



$$= b(c' + ac) + b'(a'c + ac')$$

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

so dovrebbero provare tutti gli ordini possibili delle 3 variabili a, b, c

P.S. So noto che  $f = (ab) \oplus a \oplus b \oplus c$   
 e' un esempio di forme normali algebriche (ANF)  
 o forme normali di Zhegalkin o espansione di  
 Reed-Muller (o Daves).