

Date: 10 / 1 / 21

Demonstrate by means of truth tables the validity of the following identities: The distributive law: x + yz = (x+y)(x+z)

×	У	સ	ΥŁ	X+À5	х+у	X+Z	(x+y)(x+z)
0	0	0	0	0	0	0	0
0	0	١	0	0	0	1	0
0	١.	0	0	0	1	0	o
0	ı	١	1	ı	1	1	ì
ı	٥	0	0	1	ı	1	ı
1	0	١	0	i	١	1	ı
1	1	0	0	1	1	1	1
1	1	١	,	i i	١	1	i i

 $\pm 2$  Simplify the following Boolean expressions to a minimum number of literals.

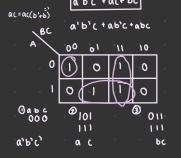
(a) (a + b + c')(a	'b' + c)
--------------------	----------

- (c) (a' + c')(a + b' + c')

- 90, p, + 0, pp, +0, p, c, +0c+pc+bc+bc
- bc (a'ra) + bc'(ara')
- a'a+a'b'+a'c'+c'a+c'b'+c'&

- a'b'c'+ac+ bc

- b(4/c')
- Ь
- a, p,+c,



- 00 01 011
  - 010

  - 110
  - b
- e) AB'+A'B'D 1A'CD'
  - B(AMO) ACD
    - B [(A/A)(A+D)]+A'CD'
    - B'(A+D)+A'CD'
    - AB'+6'D+A'CD'

BD

d) ABC'D+A'BD+ABCD

ABD((X+C)+A'BD

ABD+A'BD BD (A/A')

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mnot the whole express

3. Find the complement of the following expression

$$[(\Psi P, + C)D, + E]$$

$$[(\Psi P, + C)D, + E]$$

using dimergans: (A+B)' = A'B' (AB)'= A'+B'

#5 Obtain the truth table of the function F = (A + C)(B' + C) and express the function in sum of minterms and product of maxterms.

Α	В	С	g,	A+ C	в,+ c	(A+C)(B'+
0	O	o	1	o	1	ø
ט	0	1	1	ì	1	1
o	١.	o	0	0	0	O
0	١.	1	0	i	1	1
ſ	O	o		i	1	1
ı	0		١.	i	1	1
1	1	0	0	ì	0	0
	· \	 	0	i	1	

Sum of minterms

product of maxterms

Express the following function in sum of minterms and product of maxterms:

$$F(01, b, c, 01) = (c' + 01)(b' + c')$$

= 
$$\sum_{m}$$
 (0,1,3,4,5,8,9,11,12,13)

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