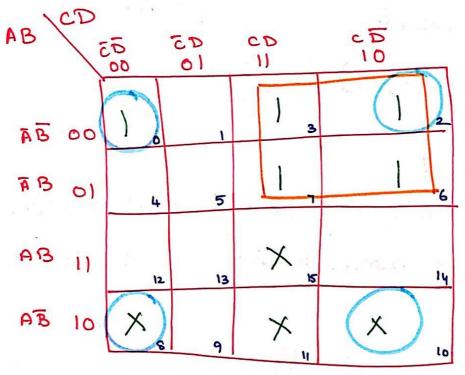
5implify using k-Map F(D,B,C,D) = 2m (0,2,3,6,7) + d(8,10,11,15)

## Note:

4 don't case (x) term can be used for grouping

H possible with 1s

\* don't come term l'alone need not be grouped



(i) Y= ABC + ABC + ABC + ABC

$$Y = AB + A\overline{B} (\overline{A} \overline{B})$$
  
 $= AB + A\overline{B} (\overline{A} + \overline{B})$   
 $= AB + AA\overline{B} (A + B)$   
 $= AB + AA\overline{B} + AB\overline{B}$  [:  $B\overline{B} = 0$ ]  
 $= AB + AB$  [:  $AA = A$ ]  
 $= A(B + \overline{B})$  [:  $B + \overline{B} = 1$ ]

Simplify using k-map for the given function Y= Em (3,5,6,7)

It is a 3 vaiable k-map as the number is

## 3. Convert

## (i) (434.27), to Octal Number.

$$8 | 434$$
 $0.97 \times 8 = 2.16$ 
 $8 | 54 - 21$ 
 $6 - 6$ 
 $6.08 \times 8 = 0.64$ 
 $0.64 \times 8 = 5.12$ 

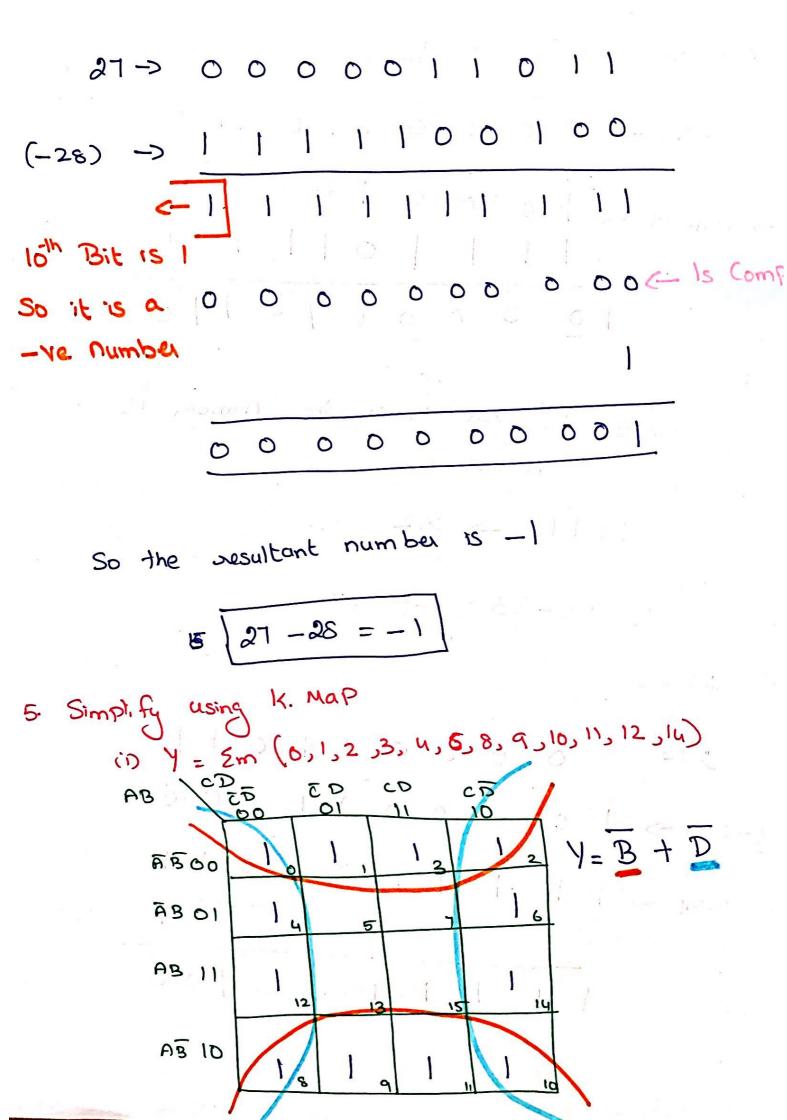
$$(63AB.CD9)_{16} = > (61653.6331)_{8}$$

$$0.123 \times 2 = 0.246$$
 $0.246 \times 2 = 0.492$ 
 $0.498 \times 2 = 0.984$ 
 $6.984 \times 2 = 1.968$ 
 $0.968 \times 2 = 1.936$ 

4. Perform the following using 2's complement Arthemater by using 10 bits

(i) 
$$55 - 33 \Rightarrow 55 + (-33)$$

Add 55 with 23 Complement 33 55 -> 0 0 0 0 1 1 0 11 1 2's Comp 33 -> 1000 11101111 Carry @10000010110 Since 10th bit is 0 the number is positive 10110 -> 22 . 55-33 = 22 (ii) 27 -28 27>000001101 (-28) -> 1000011100 1s comp -> 1 1 1 1 1 0 0 0 1 1 -28,25 -> 1 1 1 1 1 0 0 1 0 0 Comp



## (ii) Y=ABCD+ABCD+ABCD+ABCD ABCD+ABCD+ABCD ABCD+ABCD+ABCD

Deade the above Equation in Binary

4 1100 + 1101 + 11111 - 11100 + 1100 + 1000 + 0 101 + 0111

Y= 2m(0,1,3,4,5,7,12,13,15)

