① $\overline{X}\cdot\overline{Y} + \overline{X}\cdot Y$

X	Y	$\overline{X}$	$\overline{Y}$	$\overline{X\,Y}$	$\overline{X}Y$	$\overline{XY}+\overline{XY}$
0	0	1	1	1	0	1
0	1	1	0	0	1	1
1	0	0	1	0	0	0
1	1	0	0	0	0	0

② Verifi:

$$\overline{(X+Y)} = \overline{X}\cdot\overline{Y}$$

$$X \qquad Y \qquad X+Y \qquad \overline{(X+Y)}$$

X	Y	$X+Y$	$\overline{(X+Y)}$
T	T	T	F
T	F	T	F
F	T	T	F
F	F	F	T

$$\overline{X} \qquad \overline{Y} \qquad \overline{X}\,\overline{Y}$$

$\overline{X}$	$\overline{Y}$	$\overline{X}\,\overline{Y}$
F	F	F
F	T	F
T	F	F
T	T	T

SOP $\quad$ E.g.:

$$\overline{X} \cdot Y + \overline{X} Y + \overline{X} \overline{Y}$$

Multip^n $\quad$ Add^n $\quad$ Multip^n $\quad$ $\quad$ Multp^n

Product Sum $\quad$ Product Sum $\quad$ Product

POS $\quad$ E.g.

$$(X + Y) \cdot (\overline{X} + Y) \cdot (\overline{X} + \overline{Y})$$

1) SOP from TT

Eg.

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

2nd
3rd
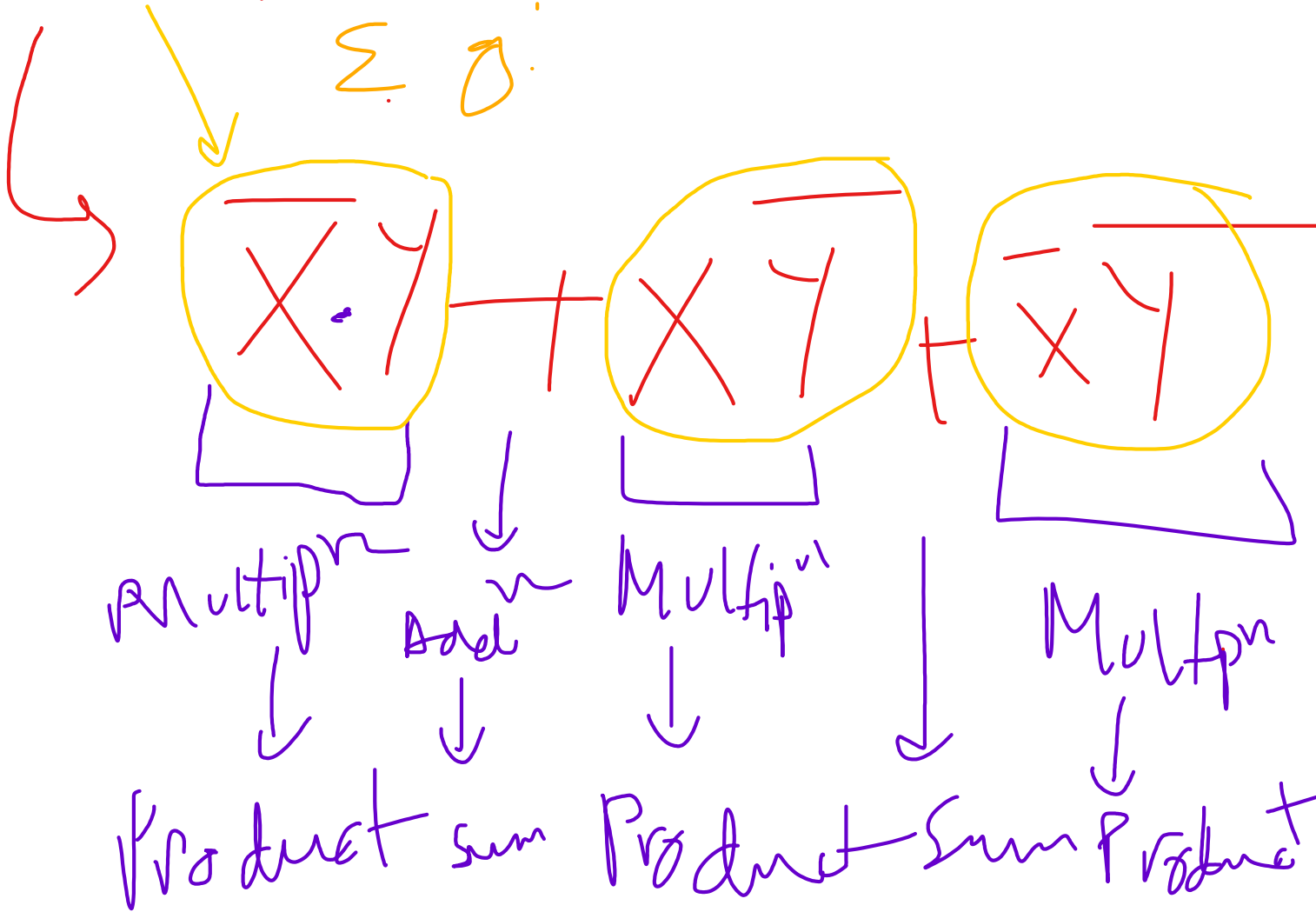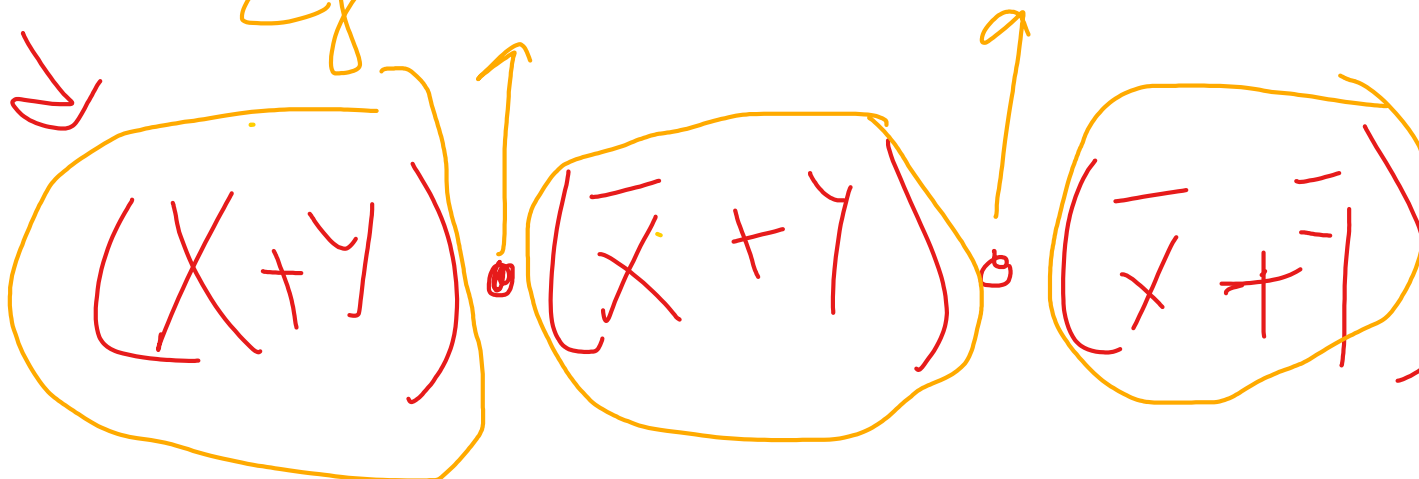
Sol^n :

I) Consider only combinations of A & B where $Y = 1$

II) Write Product term for them

2nd : $\bar{A}B$

3rd : $A\bar{B}$

III) Sum (OR) : $\boxed{\bar{A}B + A\bar{B}}$

1) POS from TT

	A	B	C	Y
1st	0	0	0	0 ✓
2nd	0	0	1	1
3rd	0	1	0	1
4th	0	1	1	0 ✓
5th	1	0	0	1
6th	1	0	1	0 ✓
7th	1	1	0	0 ✓
8th	1	1	1	1

1) Consider $comb^n$ where $Y = 0$

1I) Write SumTerm.

1st: $A + B + C$

4th: $A + \bar{B} + \bar{C}$

6th: $\bar{A} + B + \bar{C}$

7th: $\bar{A} + \bar{B} + C$

III) AND/Multiply:

$(A + B + C) \cdot (A + \bar{B} + \bar{C}) \cdot (\bar{A} + B + \bar{C})$

✓ $\cdot (\bar{A} + \bar{B} + C)$

Minterm: A product term in which all the variables appear exactly once either complemented or uncomplemented. (m)

Max: A sum term in which all the variables appear exactly once either complemented or uncomplemented. (M)

---X---_____

Test: Unit - 1, 2, 3

Program - 3 (1, 2)

Sql Commands - 3

Theory