AND-OR Config

Caution :

"AND-OR" config. / "AND-OR" circuit

This has special meaning.

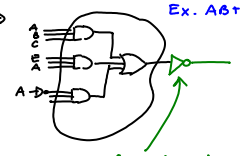
This is not simply circuit with AND/OR/Inverter.

There is sth more about this config.

"AND-OR" circuit is of the following form :

Have direct relationship with SOP expression

Ex. AB+CD



If an inverter is added after the OR gate, then the circuit is called AND-OR-Invert circuit.

Have direct relationship with POS expression.

Ex. SOP : $AB + CD$

↓

AND-OR config. circuit

Now, what'll happen if I put one more inverter at the output ?

Output : $\overline{AB+CD}$

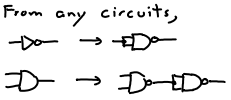
$= \bar{A}\bar{B} \cdot \bar{C}\bar{D}$

$= (\bar{A}+\bar{B}) \cdot (\bar{C}+\bar{D})$ ← POS

NAND Circuit :

There are two ways to transform circuits into NAND circuit

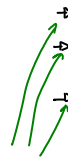
① From any circuits,



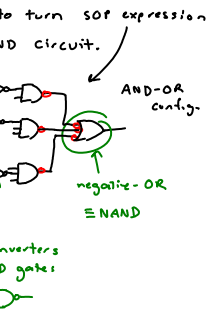
(change other gates to their NAND equivalent constructions)

② From any circuits / expressions convert them into SOP expressions.

Easy t
into NAN



Convert i
to NAN
by -[


to turn SOP expression
ND circuit.
AND-OR
config.
negative-OR
≡NAND
nverters
D gates