

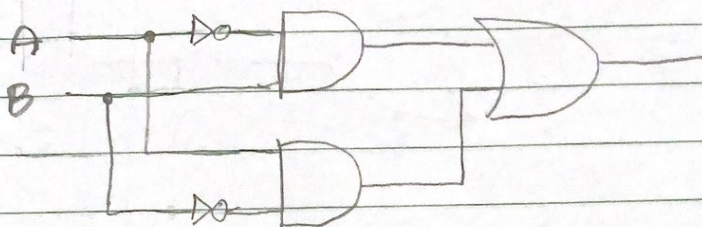
# LISTA 6

1

a)  $\bar{A}B + A\bar{B}$

b)

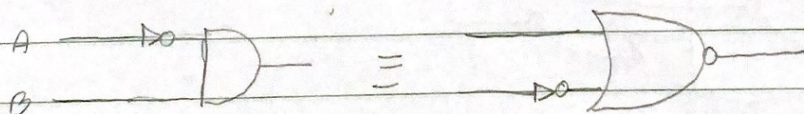
$A \bar{A} B \bar{B}$



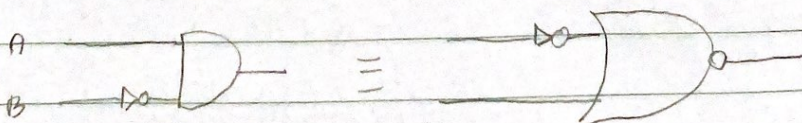
c)

#PORTA AND

$$* \overline{A \cdot B} = (\overline{\bar{A} \cdot B}) = (\overline{A + \bar{B}})$$

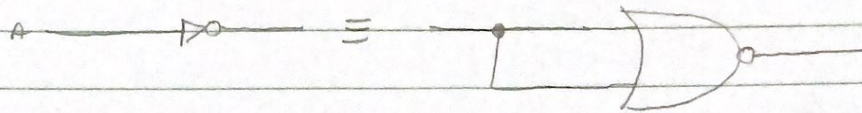


$$* \overline{A \cdot \bar{B}} = (\overline{A \cdot \bar{B}}) = (\overline{\bar{A} + B})$$





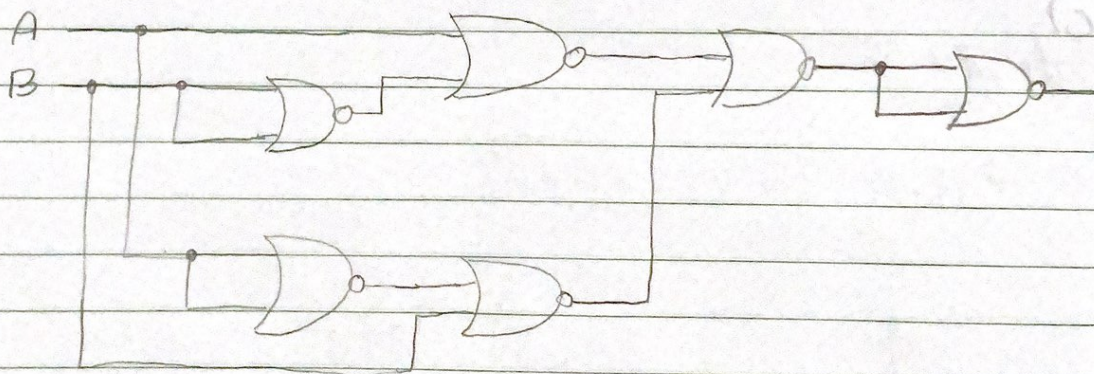
# Porta NOT (Inversão)



# Porta OR



# Circuito



$$\begin{aligned}
 2^a) S &= \bar{A}\bar{B}\bar{C} + A\bar{B}\bar{C} + A\bar{B}C \\
 &= \bar{A}(\bar{B}\bar{C} + B\bar{C}) + A\bar{B}C \\
 &= \bar{A}(\bar{C}(\bar{B}+B)) + A\bar{B}C \\
 &= \bar{A} \cdot \bar{C} \cdot 1 + A\bar{B}C \\
 &= \bar{A}\bar{C} + A\bar{B}C
 \end{aligned}$$

CIRC. ORIGINAL

- 6 inversões

- 3 ANDs

- 2 ORs

- 3 Entradas

CIRC. SIMPLIFICADO

- 3 inversões - 1 OR

- 2 ANDs - 2 Entradas



$$Q2) S = (A+B+C)(\bar{A}+\bar{B}+C)$$

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

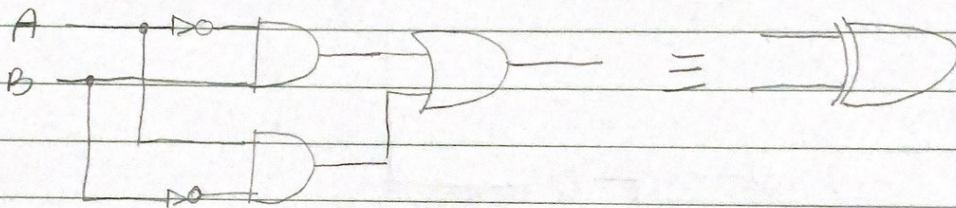
$$= C + \cancel{A\bar{A}} + A\bar{B} + \bar{A}B + \cancel{B\bar{B}}$$

$$= C + A\bar{B} + \bar{A}B$$

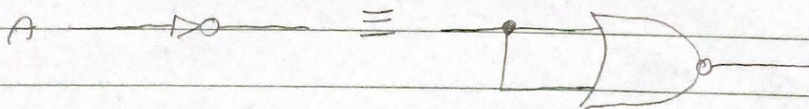
$$= A \oplus B + C$$

$$\textcircled{3} \quad \bar{A}B + A\bar{B} = A \oplus B$$

#CIRCUITO ORIGINAL

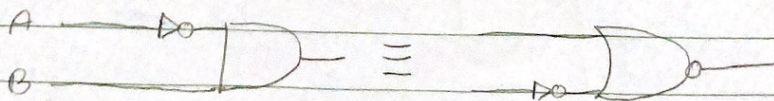


#PONTA NOT (INVERSION)



#PONTA AND COM INVERSIONES

$$\bar{A}B = \overline{\overline{A}B} = \overline{A + \bar{B}}$$

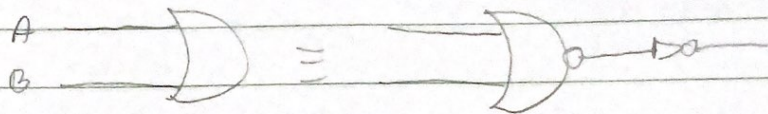


$$A\bar{B} = \overline{\overline{A\bar{B}}} = \overline{A + B}$$

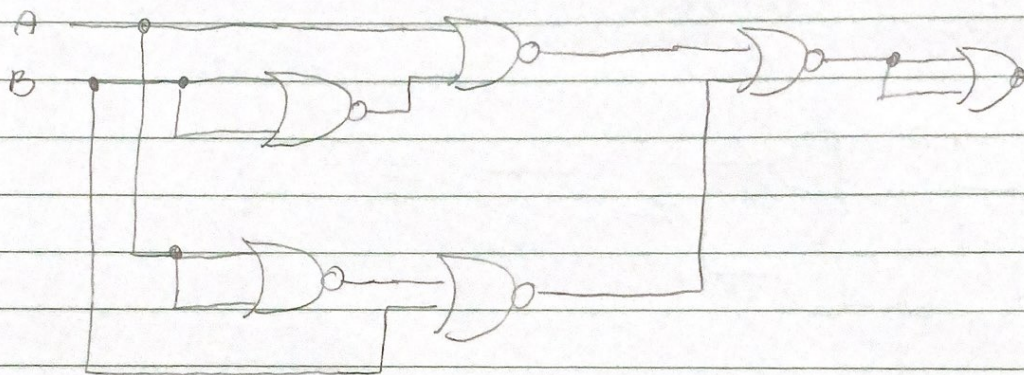




# PORTA C1



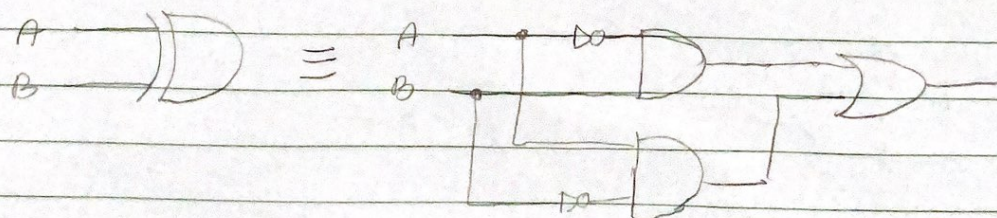
# NOVO CIRCUITO



RESOLUÇÃO TAMBÉM NO LOGISIM!!!

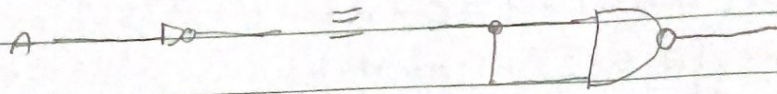
④  $A \oplus B = \bar{A}B + A\bar{B}$

# CIRCUITO ORIGINAL

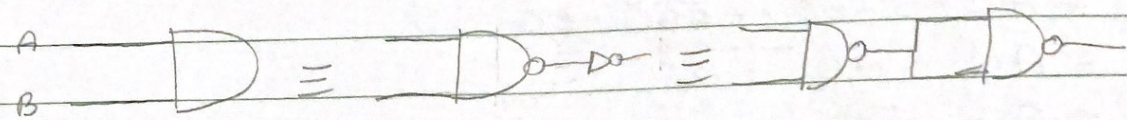




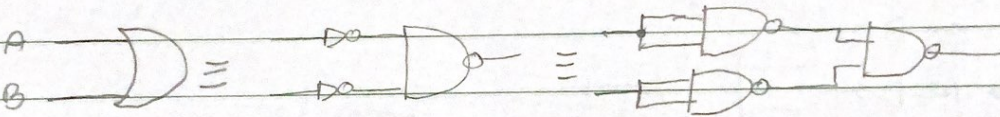
# PONTA NOT



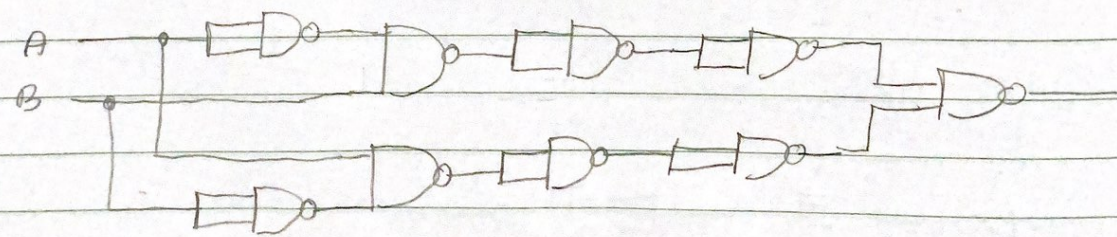
# PONTA AND



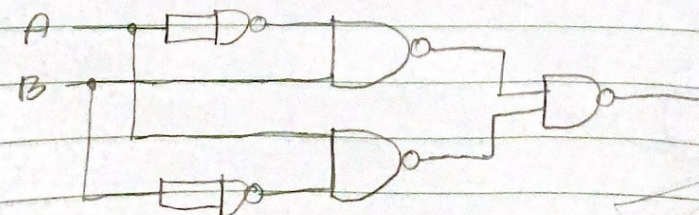
# PONTA OR



# Novo circuito



≡

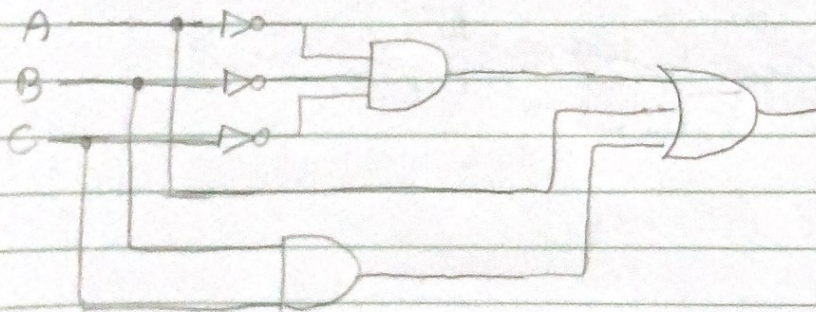




## RESOLUÇÃO TAMBÉM NO LOGISIM!!!

$$\begin{aligned}
 \textcircled{5} \quad S &= A + (B \odot C)(\overline{A \odot B}) + (\overline{A \odot C} + \overline{B}) \\
 &= A + (\overline{AB} + AB)(A + B + \overline{C}) + ((A + C)B) \\
 &= A + (\overline{A} \overline{B} + \overline{A} B + A \overline{B} + AB)(A + B + \overline{C}) + B(A + C) \\
 &= A + \overline{A} \overline{B} \overline{C} + \overline{A} B \overline{C} + A \overline{B} \overline{C} + AB \overline{C} + \overline{A} B C + A B C + B A + B C \\
 &= A + \overline{A} \overline{B} \overline{C} + \overline{A} B \overline{C} + A \overline{B} \overline{C} + AB \overline{C} + B C \\
 &= A(1 + B + B \overline{C}) + \overline{A} \overline{B} \overline{C} + B C \\
 &= A \cdot 1 + \overline{A} \overline{B} \overline{C} + B C \\
 &= A + \overline{A} \overline{B} \overline{C} + B C
 \end{aligned}$$

# CIRCUITO ORIGINAL

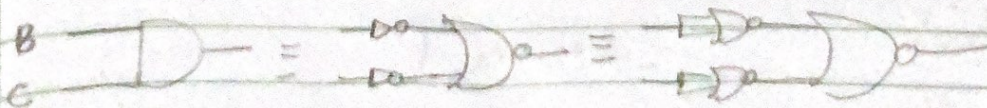


# PORTA NOT



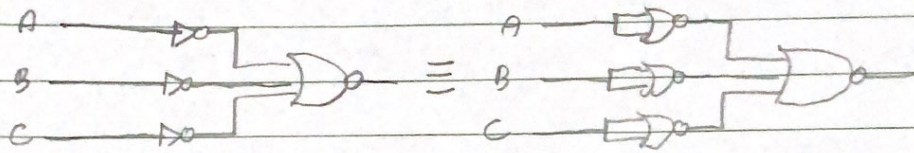
# PORTA AND

$$* BC = \overline{\overline{BC}} = (\overline{B} + \overline{C})$$

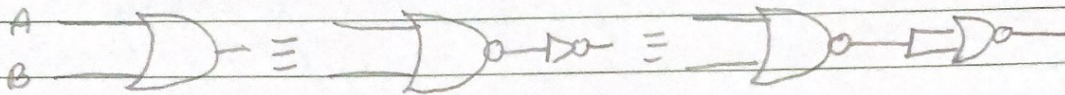




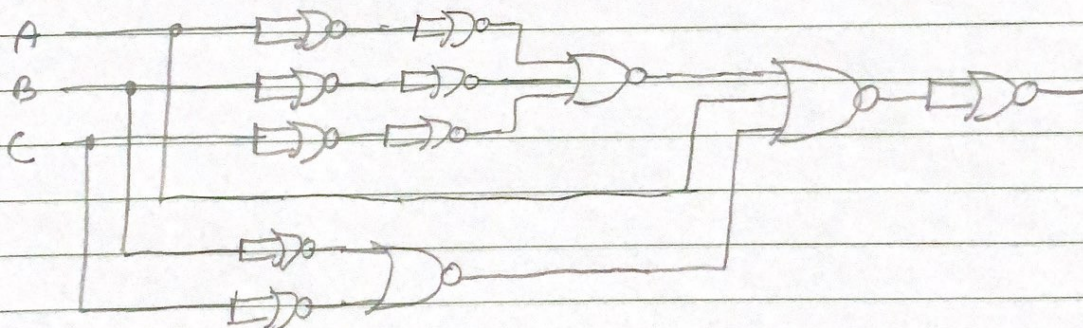
$$* ABC = \overline{\overline{ABC}} = (\overline{\overline{A} + \overline{B} + \overline{C}})$$



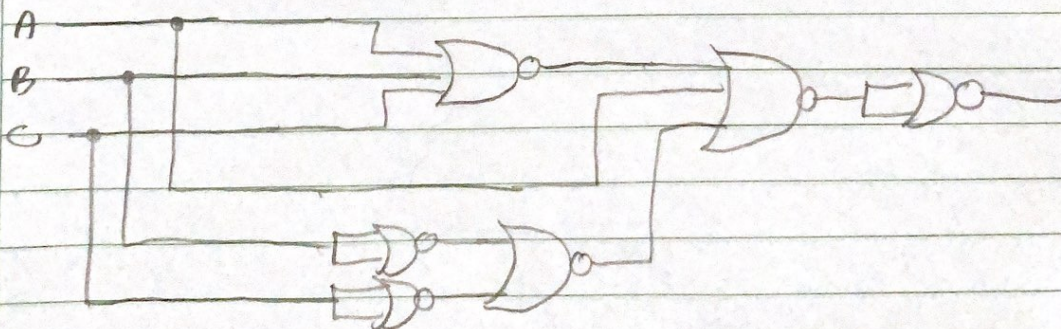
#Bem on



#NOVO CIRCUITO



≡



RESOLUÇÃO TAMBM NO LOGISIM !!!