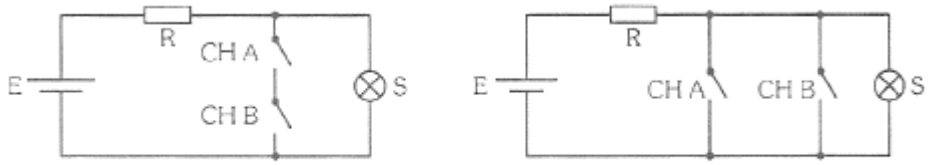
Gabarito – LD Lista 3

1.



(a) NE (b) NOU

2. a)

$$S = \left[\overline{(A + B)(\overline{A}\,\overline{C})} + \overline{(\overline{B} + D)}\right]$$

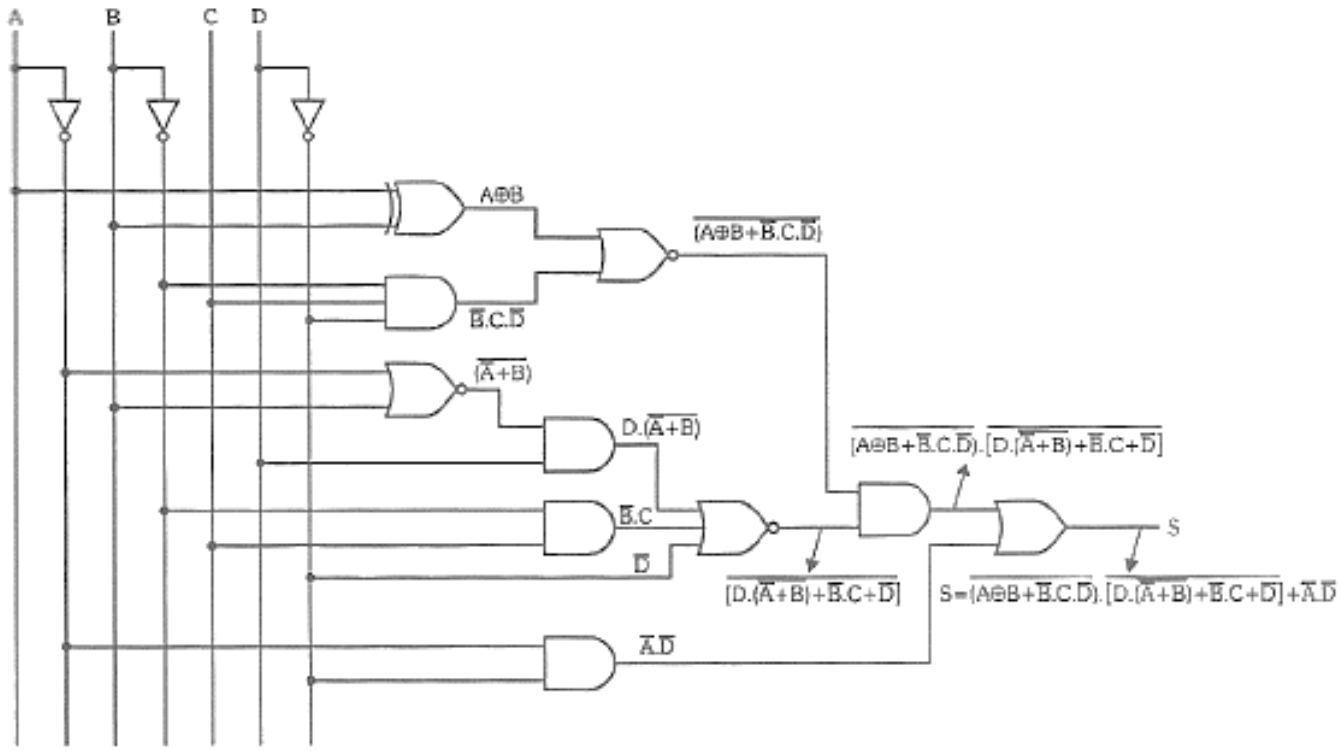
b)

$$S = \left[\overline{(B\overline{D} + A)(\overline{B}D + CD)}\right]\left[\overline{C + (\overline{A} + C)(\overline{B}\,\overline{D})}\right]$$

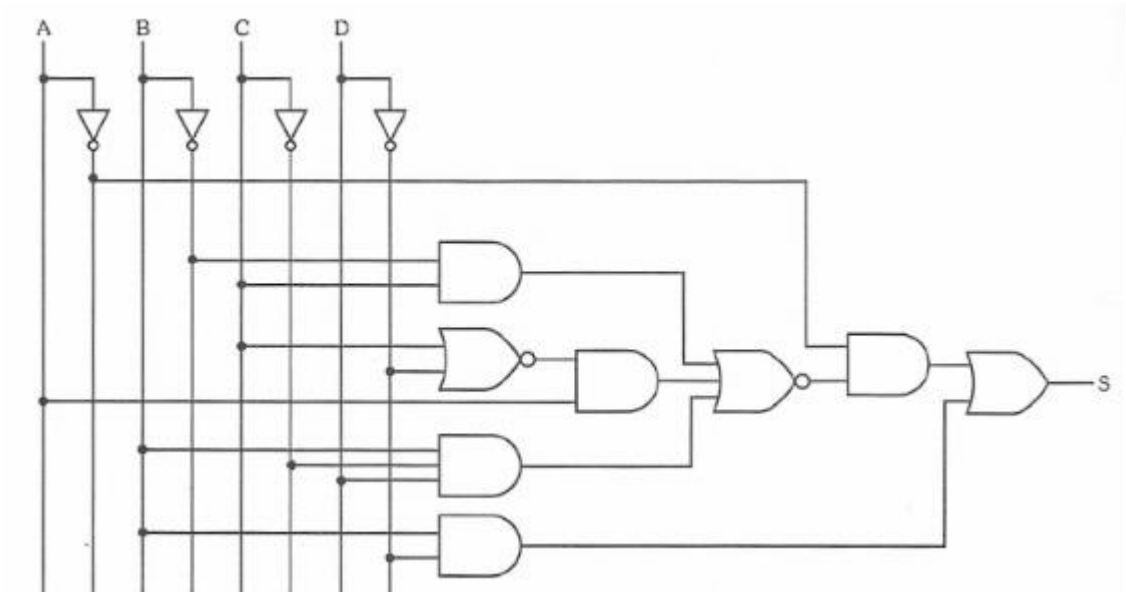
c)

$$S = B \oplus D + C\left[\overline{(A\,\overline{C}\,D)} + \overline{(\overline{A} + B + \overline{C})}\right] + \left[\overline{(\overline{A} + B + \overline{C})}D\right]$$

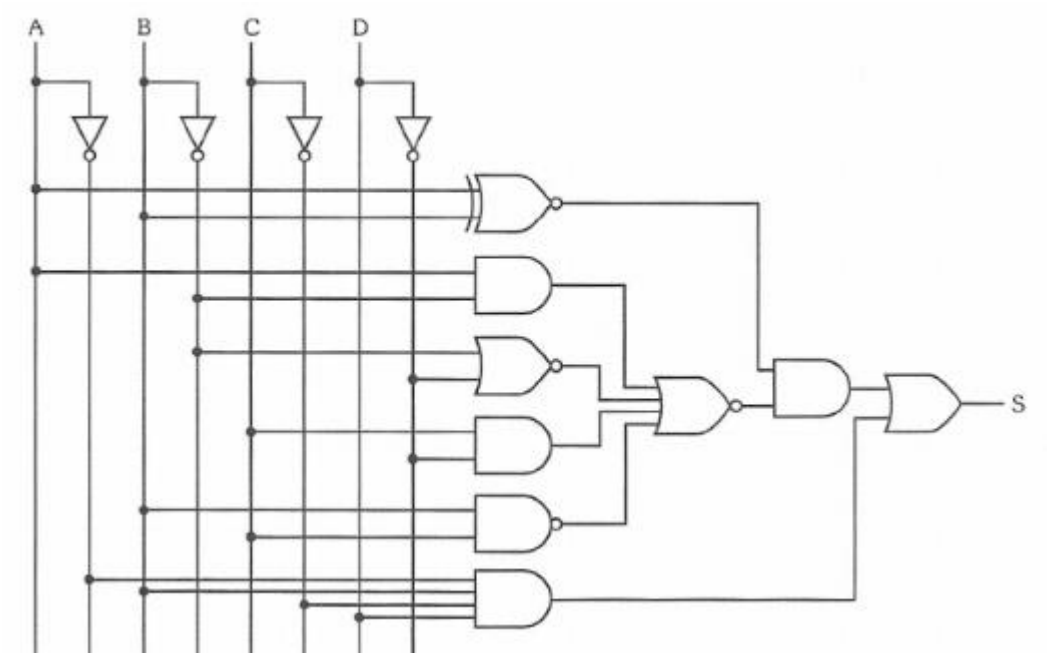
d)



3. a)



b)



4.

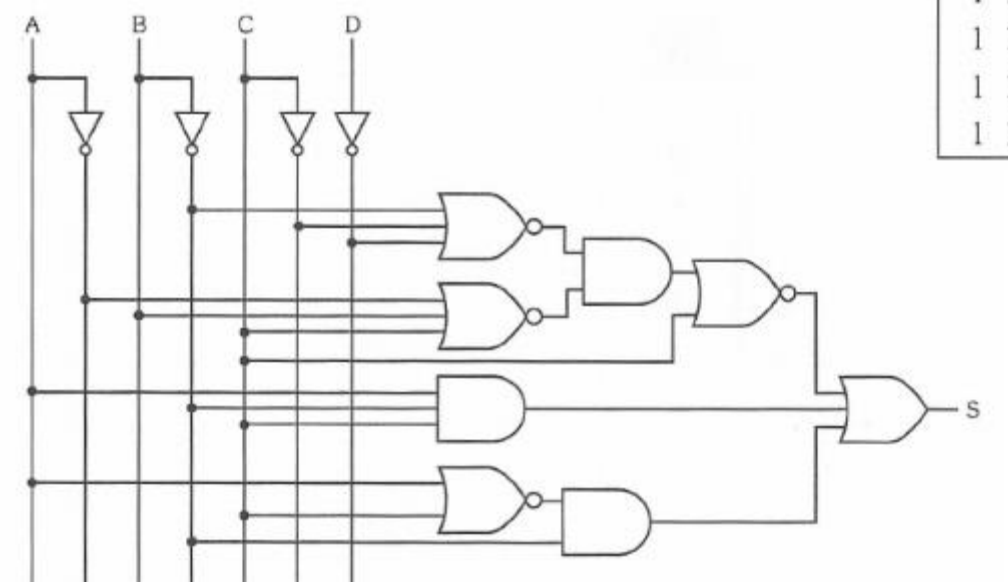
A B C	S
0 0 0	1
0 0 1	0
0 1 0	0
0 1 1	0
1 0 0	0
1 0 1	0
1 1 0	1
1 1 1	0

5.

$$S = \left[\overline{(\overline{AB}) + (\overline{C\overline{D}})}\right]$$

A B C D	S
0 0 0 0	0
0 0 0 1	0
0 0 1 0	0
0 0 1 1	0
0 1 0 0	0
0 1 0 1	0
0 1 1 0	0
0 1 1 1	0
1 0 0 0	0
1 0 0 1	0
1 0 1 0	0
1 0 1 1	0
1 1 0 0	0
1 1 0 1	0
1 1 1 0	1
1 1 1 1	0

6.



A B C D	S
0 0 0 0	1
0 0 0 1	1
0 0 1 0	0
0 0 1 1	0
0 1 0 0	1
0 1 0 1	1
0 1 1 0	0
0 1 1 1	0
1 0 0 0	1
1 0 0 1	1
1 0 1 0	1
1 0 1 1	1
1 1 0 0	1
1 1 0 1	1
1 1 1 0	0
1 1 1 1	0

7.

A B C D	S
0 0 0 0	0
0 0 0 1	0
0 0 1 0	0
0 0 1 1	0
0 1 0 0	0
0 1 0 1	0
0 1 1 0	0
0 1 1 1	0
1 0 0 0	0
1 0 0 1	0
1 0 1 0	0
1 0 1 1	1
1 1 0 0	1
1 1 0 1	0
1 1 1 0	1
1 1 1 1	0

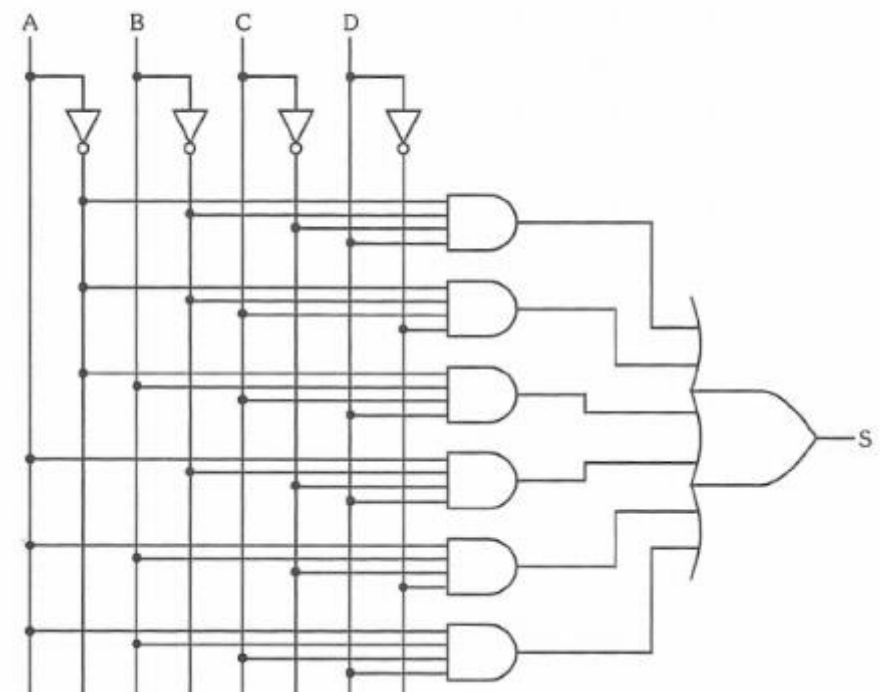
8.

A B C	A ⊙ (B ⊕ C)	A ⊕ (B ⊙ C)
0 0 0	1	1
0 0 1	0	0
0 1 0	0	0
0 1 1	1	1
1 0 0	0	0
1 0 1	1	1
1 1 0	1	1
1 1 1	0	0

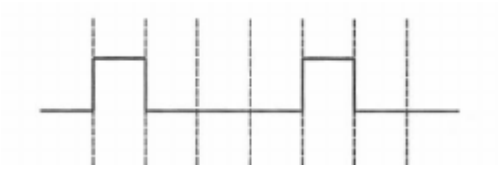
9. a)

$$S = \overline{A}\,\overline{B}\,\overline{C} + \overline{A}\,B\,C + A\,\overline{B}\,\overline{C} + A\,B\,C$$

b)



10.



11.

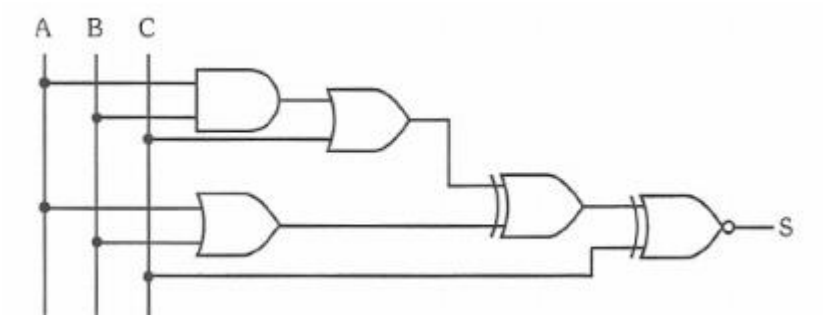
A B	S
0 0	0
0 1	1
1 0	1
1 1	0

12.

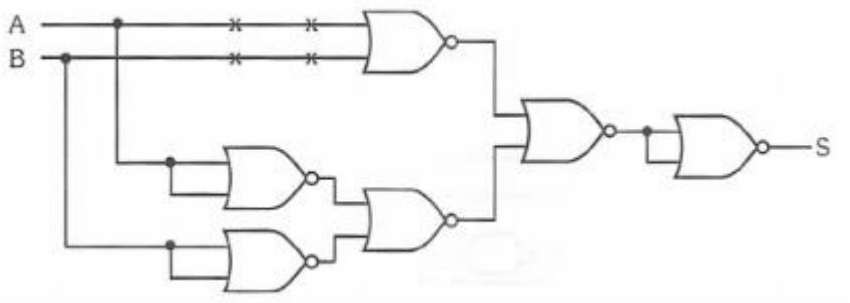
A B	S
0 0	1
0 1	0
1 0	0
1 1	1

17.

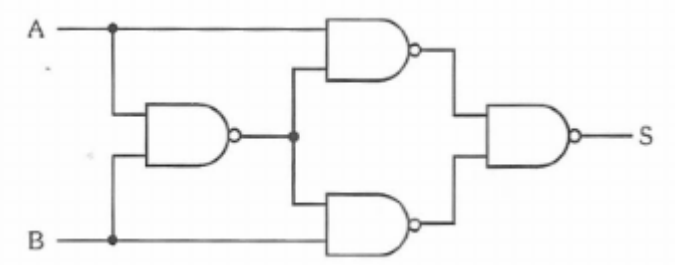
A B C	S
0 0 0	1
0 0 1	1
0 1 0	0
0 1 1	0
1 0 0	0
1 0 1	0
1 1 0	1
1 1 1	0



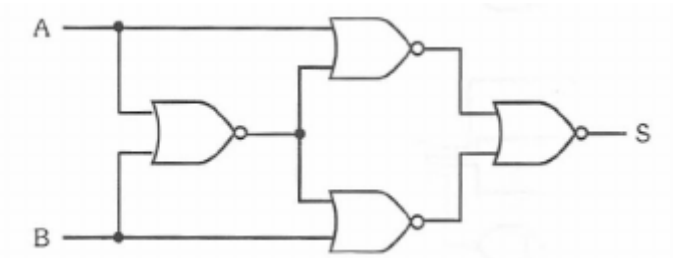
18.



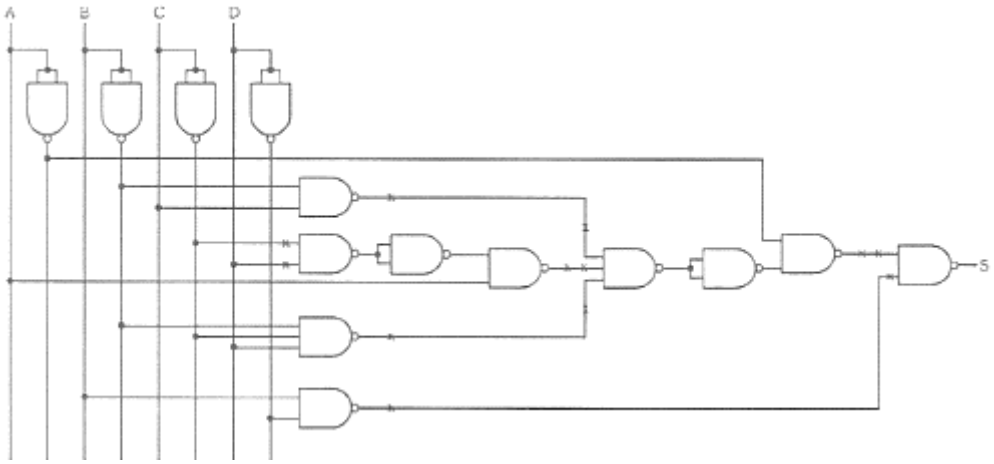
19.



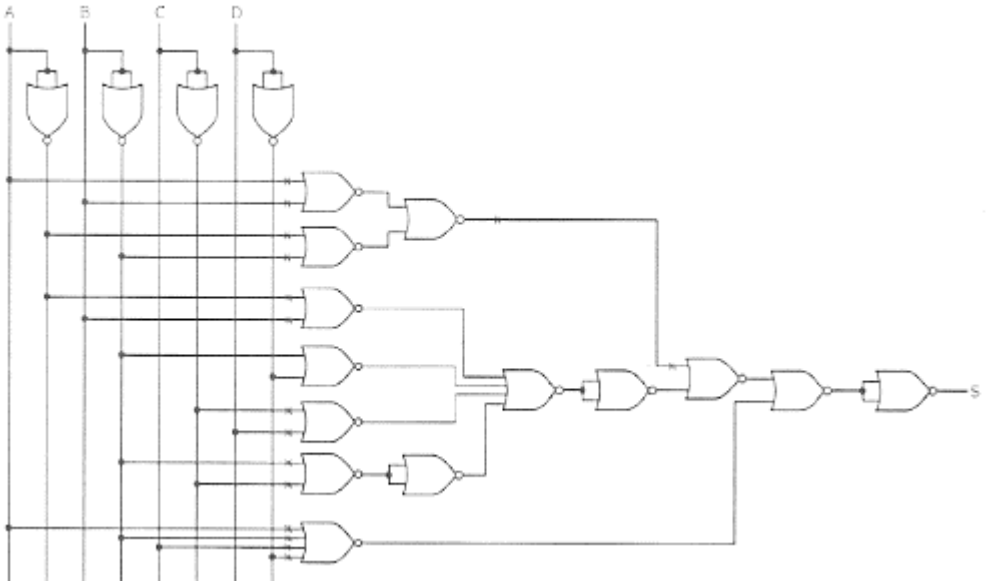
20.



21. a)

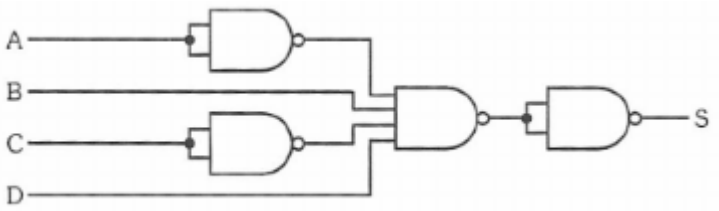


b)

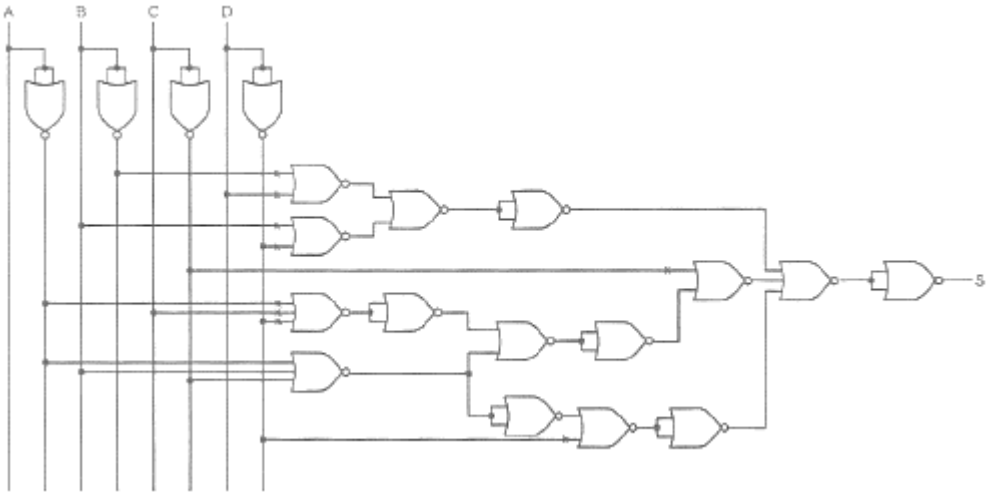


22.

A B C D	S
0 0 0 0	0
0 0 0 1	0
0 0 1 0	0
0 0 1 1	0
0 1 0 0	0
0 1 0 1	1
0 1 1 0	0
0 1 1 1	0
1 0 0 0	0
1 0 0 1	0
1 0 1 0	0
1 0 1 1	0
1 1 0 0	0
1 1 0 1	0
1 1 1 0	0
1 1 1 1	0



23.



24. FALSO

25.

a) $S = A \cdot B \cdot \overline{C}$

b) $S = \overline{A} \cdot B + A \cdot \overline{B}$

c) $S = \overline{A} + C$

d) $S = A \cdot (\overline{B} + C)$

e) $S = \overline{A} \cdot C + B$

f) $S = \overline{A} \cdot \overline{B} \cdot \overline{C}$

g) $S = \bar{A}C + B$ (enunciado igual a letra e, logo mesma respota)

h) $S = AB + C\overline{D}$

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

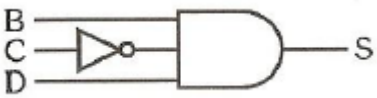
j) $S = C\overline{D} + AB + AD + AC$

k) $S = \bar{A}\overline{D} + \bar{A}\bar{B}\bar{C} + ABD$

l) $S = B + AC$

m) $S = A\bar{C}\overline{D}$

27.



28.

$$S = A \odot (B \oplus C)$$

$$S = \overline{A}\left(\overline{B \oplus C}\right) + A\left(B \oplus C\right)$$

$$S = \overline{A}\ (B \odot C) + A\ (\overline{B \odot C})$$

$$S = A \oplus (B \odot C)$$

29. $S = A \cdot \overline{B} \cdot C$

30. $S = A + B \cdot \overline{C} + \overline{B} \cdot C$ ou $S = A + (B \oplus C)$

30.

$S = A \cdot B \cdot (\overline{C} \cdot \overline{D} + C \cdot D)$ ou $S = A \cdot B \cdot (C \otimes D)$

31.

$S = (A + B) \cdot C + D$

32. a) $S_1 = A + \overline{B}$ $S_2 = \overline{A}$

b) $S_1 = \overline{B}\,\overline{C} + AC + \overline{A}\,B$ $S_3 = \overline{B}\,C + A\,\overline{C}$

$S_2 = \overline{B} + \overline{C}$ $S_4 = \overline{A}\,\overline{B}C + A\,\overline{C} + AB + B\,\overline{C}$

c) $S_1 = \overline{B} + \overline{C}\,\overline{D} + CD$ $S_3 = \overline{A}\,B\,\overline{D} + B\,\overline{C}\,D + \overline{B}\,C\,\overline{D}$

$S_2 = \overline{A}\,\overline{D} + BD + A\,\overline{B}\,\overline{C}$ $S_4 = \overline{A}\,B\,\overline{C} + \overline{A}\,CD + ABC + A\,\overline{C}\,D$

33. a) $S_1 = A + B$ $S_2 = \overline{A}\,\overline{B} + AC$

b) $S_1 = \overline{B} + \overline{D}$ $S_3 = B\,\overline{D} + A\,\overline{B}\,\overline{C} + ABC + \overline{A}\,\overline{B}\,CD$

$S_2 = BD + AC + \overline{B}\,\overline{D}$ $S_4 = B\,\overline{C} + AD + CD + AB$