Exercícios

1. Obtenha a tabela-verdade a partir das expressões:

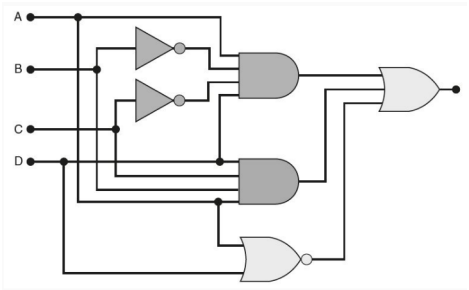
   (a) $S = \overline{A}\overline{B}C + A\overline{B}\overline{C} + A\overline{B}C + ABC + AB\overline{C} + ABC$
   R.:

A	**B**	**C**	$\overline{\mathbf{A}}$	$\overline{\mathbf{B}}$	$\overline{\mathbf{C}}$	$\overline{\mathbf{A}}\mathbf{B}\overline{\mathbf{C}}$	$\mathbf{A}\overline{\mathbf{B}}\overline{\mathbf{C}}$	$\mathbf{A}\overline{\mathbf{B}}\mathbf{C}$	**ABC**	$\mathbf{AB}\overline{\mathbf{C}}$	$\overline{\mathbf{A}}\mathbf{BC}$	**S**
0	0	0	1	1	1	0	0	0	0	0	0	0
0	0	1	1	1	0	1	0	0	0	0	0	1
0	1	0	1	0	1	0	0	0	0	0	0	0
0	1	1	1	0	0	0	0	0	0	0	1	1
1	0	0	0	1	1	0	1	0	0	0	0	0
1	0	1	0	1	0	0	0	1	0	0	0	1
1	1	0	0	0	1	0	0	0	0	1	0	1
1	1	1	0	0	0	0	0	0	1	0	0	1

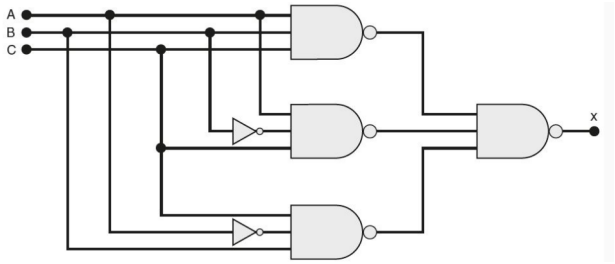
   (b) $S = A\overline{B} + ACD + A\overline{B}C$
   R.:

A	**B**	**C**	**D**	$\overline{\mathbf{B}}$	$\mathbf{A}\overline{\mathbf{B}}$	**ACD**	$\mathbf{A}\overline{\mathbf{B}}\mathbf{C}$	**S**
0	0	0	0	1	0	0	0	0
0	0	0	1	1	0	0	0	0
0	0	1	0	1	0	0	0	0
0	0	1	1	1	0	0	0	0
0	1	0	0	0	0	0	0	0
0	1	0	1	0	0	0	0	0
0	1	1	0	0	0	0	0	0
0	1	1	1	0	0	0	0	0
1	0	0	0	1	1	0	0	1
1	0	0	1	1	1	0	0	1
1	0	1	0	1	1	0	1	1
1	0	1	1	1	1	1	1	1
1	1	0	0	0	0	0	0	0
1	1	0	1	0	0	0	0	0
1	1	1	0	0	0	0	0	0
1	1	1	1	0	0	1	0	1

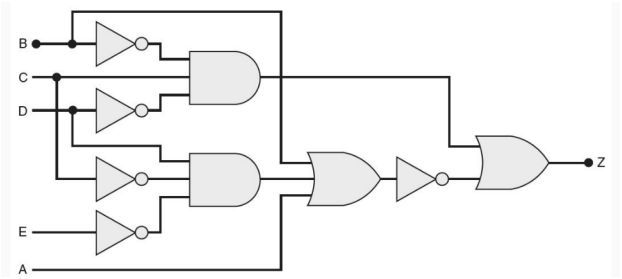
2. Determine a expressão do circuito lógico:

   (a) 

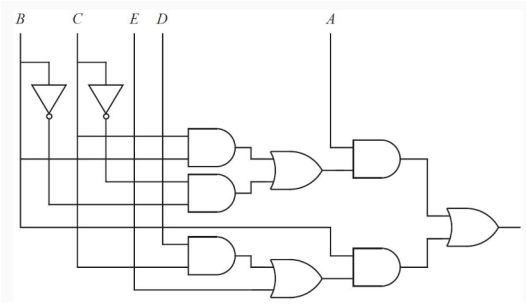
   $S = (A\overline{BC}D) + (ABCD) + (\overline{A + D})$

(b) 

$S = \overline{ABC}.\overline{A\overline{B}C}.\overline{\overline{A}BC}$

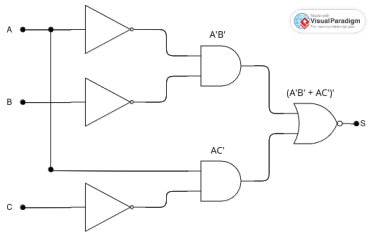
(c) 

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

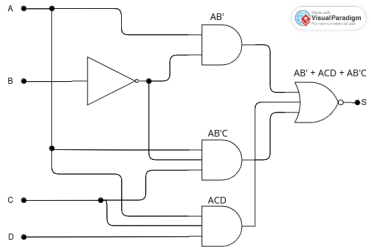
(d) 

$S = (A.CB + \overline{CB}) + (B.DC + E)$

3. Desenhe o circuito lógico das expressões:

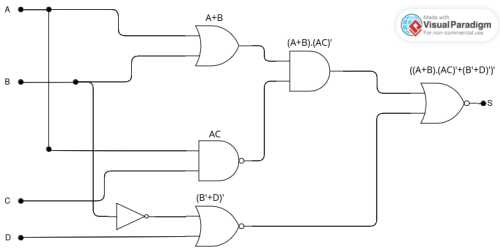
(a) 

$S = \overline{\overline{AB} + A\overline{C}}$

(b) 

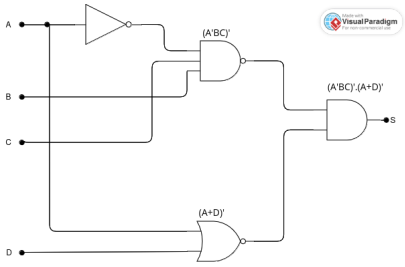
$S = A\overline{B} + ACD + A\overline{B}C$

(c)



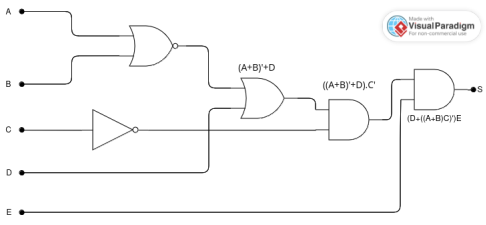
$$S = \overline{(A+B)\overline{AC} + (\overline{\overline{B}+D})}$$

(d)



$$S = \overline{\overline{A}BC}.\overline{(A+D)}$$

(e)



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