

$$X = 4$$

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	A	B	C	D	<u>Output</u>
0	0	0	0	0	0
1	0	0	0	1	0
2	0	0	1	0	0
3	0	0	1	1	0
4	0	1	0	0	1
5	0	1	0	1	1
6	0	1	1	0	1
7	0	1	1	1	1
8	1	0	0	0	1
9	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	1
	1	1	1	1	1

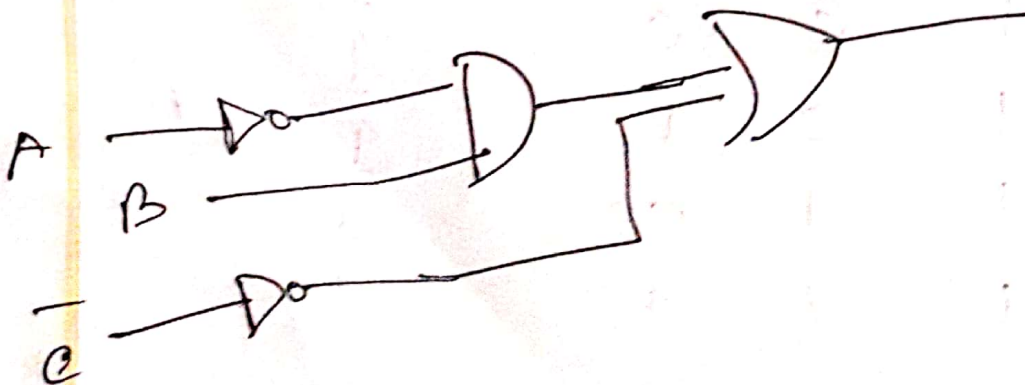
Expression:

$$(\overline{A}\overline{B}CD) + (\overline{A}\overline{B}C\overline{D} + A$$

$$\begin{array}{l} \overline{A}B\overline{C}\overline{D} + \overline{A}B\overline{C}D + \overline{A}B\overline{C}\overline{D} + \overline{A}B\overline{C}D \\ + A\overline{B}\overline{C}\overline{D} + A\overline{B}\overline{C}D \end{array}$$

AB \ CD	00	01	11	10
00				
01	1	1	1	1
11				
10	1	1		

$$\overline{A}B + \overline{C}$$



$$2^4 = 16$$

$$2^3 = 8$$

$$2^2 = 4$$

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(2)  $x_1 = \underline{2}$   
 $x_2 = \underline{1}$   
 $x_3 = \underline{4}$

truth table

m	$x_1$	$x_2$	$x_3$	output
0	0	0	0	0
1	0	0	1	1
2	0	1	0	1
3	0	1	1	1
4	1	0	0	1
5	1	0	1	x
6	1	1	0	x
7	1	1	1	x

c \ AB		0		1
		0	1	
0	0			1
0	1	1		
1	1			
1	0	1		

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

