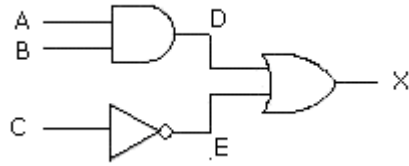


Part E [10 points]

Refer to the following circuit diagram for all questions in this Part.



1. Complete the Truth Table for this circuit, including Boolean expressions for D, E, and X. [5]

A	B	C	D = A•B or AB	E = C'	X = D + E
0	0	0	0	1	1
0	0	1	0	0	0
0	1	0	0	1	1
0	1	1	0	0	0
1	0	0	0	1	1
1	0	1	0	0	0
1	1	0	1	1	1
1	1	1	1	0	1

1 point for columns A,B,C
 1 point for correct expressions in the titles
 1 point for each correct column

2. Write a Boolean expression that represents the whole circuit.[2]

$$X = AB + C'$$

3. Show how this circuit can be described in a single Excel formula.[3]

$$= \text{OR}(\text{AND}(A, B), \text{NOT}(C))$$

1 for OR(,)
 1 for AND(A ,B)
 1 for NOT(C)