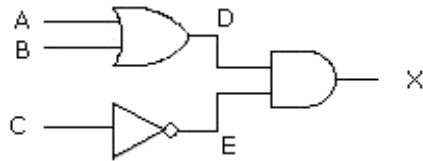


Part E [10 points]

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	E = C'	X = D•E or DE
0	0	0	0	1	0
0	0	1	0	0	0
0	1	0	1	1	1
0	1	1	1	0	0
1	0	0	1	1	1
1	0	1	1	0	0
1	1	0	1	1	1
1	1	1	1	0	0

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]

$$X = (A + B) \cdot C' \quad \text{- parentheses are NECESSARY!}$$

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

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