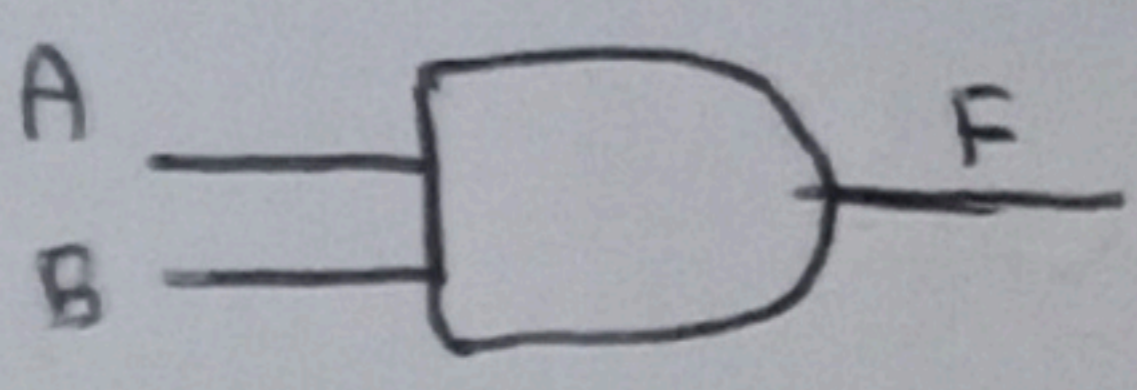
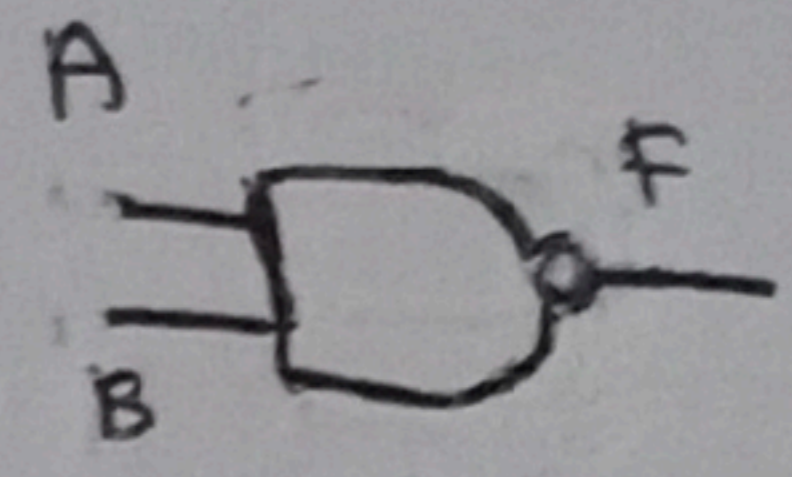
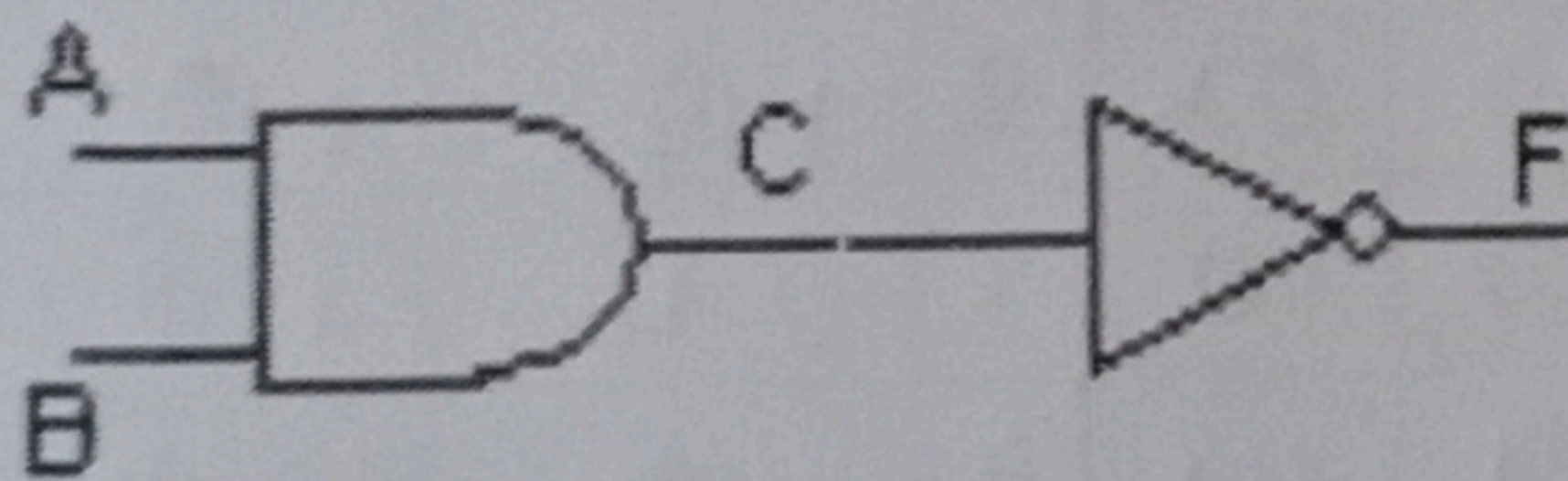


D. Preliminary Work

1. Draw a symbol determine the IC number and produce a truth table for the following gate.

<u>AND</u>	<u>NAND</u>																																				
<p>Symbol:</p> 	<p>Symbol:</p> 																																				
<p>IC Number: 7408 Quad 2-input AND gate</p>	<p>IC Number: 7400 Quad 2-input NAND gate</p>																																				
Truth Table 1	Truth Table 2																																				
<table border="1" style="margin: auto;"> <thead> <tr> <th colspan="2">Input</th> <th>Output</th> </tr> <tr> <th>A</th> <th>B</th> <th>F</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td><td>0</td></tr> <tr><td>0</td><td>1</td><td>0</td></tr> <tr><td>1</td><td>0</td><td>0</td></tr> <tr><td>1</td><td>1</td><td>1</td></tr> </tbody> </table>	Input		Output	A	B	F	0	0	0	0	1	0	1	0	0	1	1	1	<table border="1" style="margin: auto;"> <thead> <tr> <th colspan="2">Input</th> <th>Output</th> </tr> <tr> <th>A</th> <th>B</th> <th>F</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td><td>1</td></tr> <tr><td>0</td><td>1</td><td>1</td></tr> <tr><td>1</td><td>0</td><td>1</td></tr> <tr><td>1</td><td>1</td><td>0</td></tr> </tbody> </table>	Input		Output	A	B	F	0	0	1	0	1	1	1	0	1	1	1	0
Input		Output																																			
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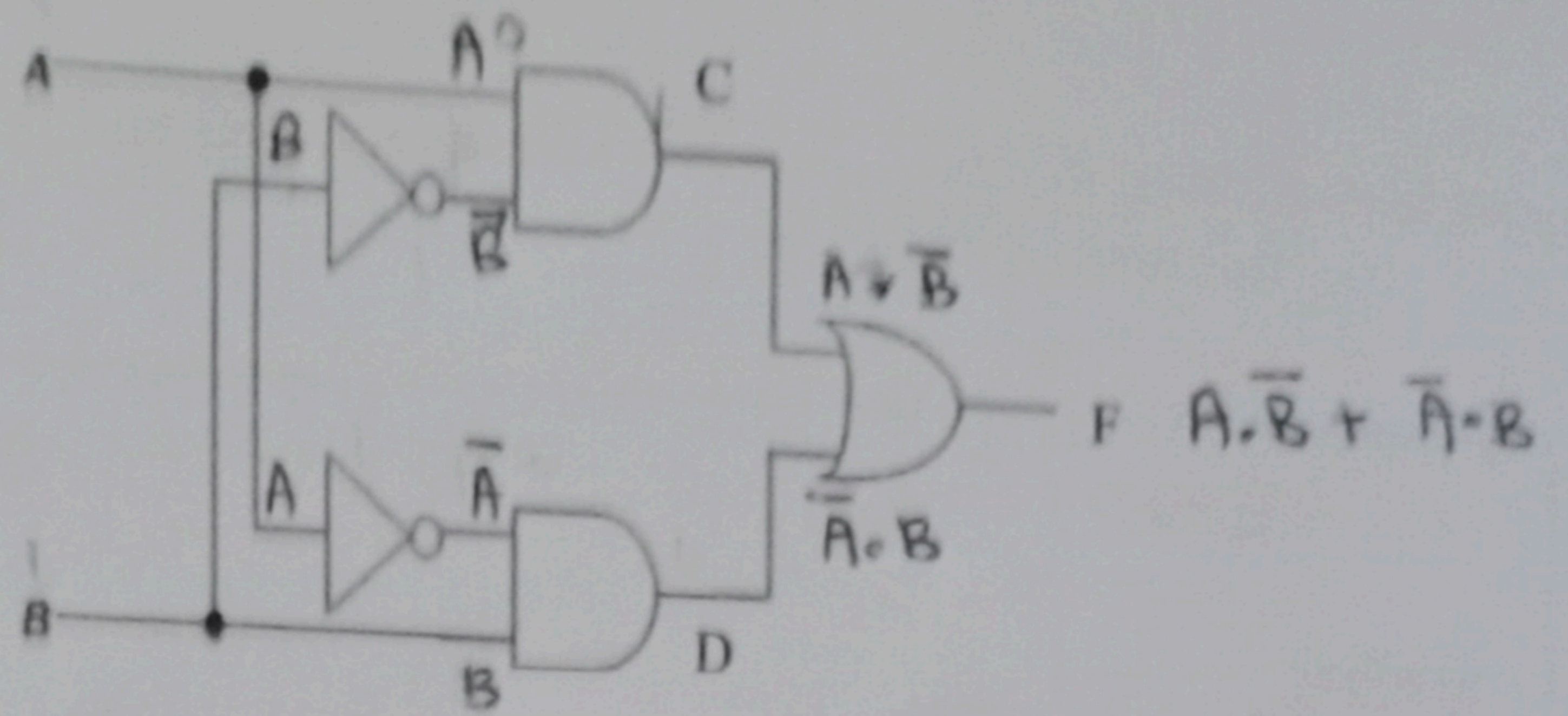
2. Complete the truth table for the following circuit.



Truth Table 3

A	B	C	F
0	0	0	1
0	1	0	1
1	0	0	1
1	1	1	0

3. Write the Boolean expression for output C, D and F the following circuit.



$$C = A \cdot \bar{B}$$

$$D = \bar{A} \cdot B$$

$$F = C \oplus D$$

$$A \cdot \bar{B} + \bar{A} \cdot B$$

4. Complete the truth table for the circuit in (3) based on the Boolean expression produced for C, D and F.

Truth Table 4

A	B	C	D	F
0	0	0	0	0
0	1	0	1	1
1	0	1	0	1
1	1	0	0	0