Lab #8c Name: _____ Per: _____

Title: **The Universal NOR Gate**

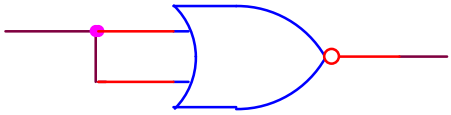
Materials:

[2] 7402 2-input NOR gate IC

Procedure:

1. Complete the truth table for the following logic diagram:

A	Boolean Expression:
0	
1	

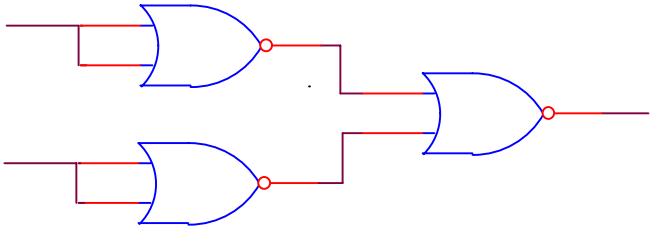


What is another name for the drawing above? _____

2. **Draw** a logic diagram of a 2-input OR gate using two 2-input NOR gates.

3. Construct the 2-input OR you have drawn. **Get instructor's signature.**
4. Complete the truth table for the following logic diagram:

A	B	Boolean Expression:
0	0	
0	1	
1	0	
1	1	



What is another name for the drawing above? _____

Lab #8c (cont'd)

5. **Draw** a logic diagram of a 2-input NAND gate using four 2-input NOR gates.

6. Construct the 2-input logic diagram from above steps 4 and 5.
   Get instructor's signature.

7. What is the minterm expression for an XOR gate:
   Using that expression and the facts above, **Draw** a logic diagram of a 2-input XOR gate using six 2-input NOR gates.

8. Describe how you would make a 2-input XNOR gate from above.

9. **Draw** a logic diagram of a 2-input XNOR gate using five 2-input NOR gates.

10. Construct the 2-input XOR and XNOR you have drawn. **Get instructor's signature.**

A	B	OR	AND	NAND	XOR	XNOR
0	0					
0	1					
1	0					
1	1					