

Name:

Date:

Class:

Gate Handout #2 Answer Key

Three new truth tables have been provided for the XOR, NAND, and NOR gates. Use the names and your knowledge of the other gates to determine the correct outputs. Defend your answer using 1-4 complete sentences on the lines provided.

Note: All of these tables are set up from the perspective of the green trucks. Hints: Ask yourself, "Is the truck going in (the input) green?" "Is the truck coming out (the output) green?"

Truth Table #5		
Input A	Input B	Output
Green	Green	Red
Green	Red	Green
Red	Green	Green
Red	Red	Green

This is a combination of an AND gate and a NOT gate. Thus, the outputs are the opposite of an AND Truth Table. When the two input trucks are green, the output isn't green. All other outputs are green.

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Truth Table #6

Input A	Input B	Output
		A NOR B
Green	Green	Red
Green	Red	Red
Red	Green	Red
Red	Red	Green

This is a combination of an OR gate and a NOT gate. Thus, the outputs are the opposite of an OR Truth Table. If either input truck is green, the output isn't green. The output of the remaining input, when both inputs are red, is green.

Truth Table #7

Input A	Input B	Output
		A XOR B
Green	Green	Red
Green	Red	Green
Red	Green	Green
Red	Red	Red

Only produces a green output when the two inputs are **different**.