





## Logical Completeness

Can implement ANY truth table with AND, OR, NOT.


Building Functions from Logic Gates
We've already seen how to implement truth tables using AND, OR, and NOT -- an example of combinational logic.

Combinational Logic Circuit

- output depends only on the current inputs
- Stateless

View the online lecture to see examples of some useful combinational circuits
Summary
MOS transistors used as switches to implement logic functions.

- N-type: connect to GND, turn on (with 1 ) to pull down to 0
- P-type: connect to +2.9 V , turn on (with 0 ) to pull up to 1
Basic gates: NOT, NOR, NAND
- Logic functions are usually expressed with AND, OR, and NOT


## Properties of logic gates

- Completeness: can implement any truth table with AND, OR, NOT
- DeMorgan's Law: convert AND to OR by inverting inputs and output
Building logic functions from a truth table

