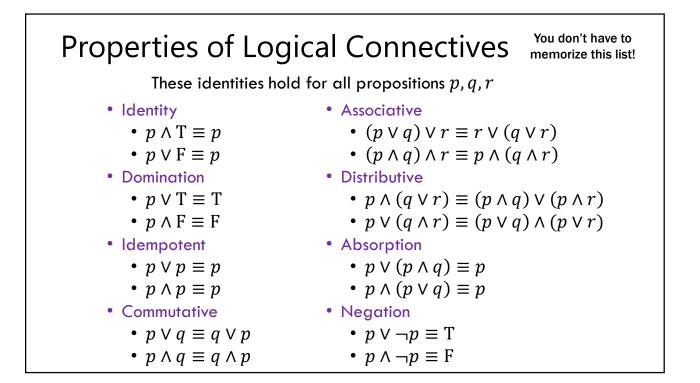
A More Complicated Statement "Robbie knows the Pythagorean Theorem if he is a mathematician and took geometry, and he is a mathematician or did not take geometry." Is this a proposition? We'd like to *understand* what this proposition means. In particular, is it true?

Logical	Connectives
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Negation (not)	$\neg p$
Conjunction (and)	$p \land q$
Disjunction (or)	$p \lor q$
Exclusive Or	$p \oplus q$
Implication(if-then)	$p \rightarrow q$
Biconditional	$p \leftrightarrow q$

These ideas have been around for so long most have at least two names.

Two more connectives to discuss!



Our First Proof

 $(a \land b) \lor (\neg a \land b) \lor (\neg a \land \neg b) \equiv$

None of the rules look like this

Practice of Proof-Writing: **Big Picture**...WHY do we think this might be true?

The last two "pieces" came from the $\equiv (\neg a \lor b)$ vacuous proof lines...maybe the " $\neg a$ " came from there? Maybe that simplifies down to $\neg a$