

This week's highlights

- Evaluate the truth value of a compound proposition given truth values of its constituent variables.
- Prove propositional equivalences using truth tables
- Prove propositional equivalences using other known equivalences, e.g.
 - DeMorgan's laws
 - Double negation laws
 - Distributive laws, etc.
- Compute the CNF and DNF of a given compound proposition.
- Define a predicate over a finite domain using a table of values and as properties
- Determine the truth value of the proposition resulting from evaluating a predicate
- Describe the set of domain elements that make a predicate with one input evaluate to true.
- Evaluate universal and existential statements about finite domains (with no quantifier alternations).
- Counterexample and witness-based arguments for predicates with infinite domains
- Practice combinations of \wedge , \rightarrow in conjunction with universal and existential quantifiers
- State and apply DeMorgan's law for quantified statements.
- Translate sentences from English to propositional logic using appropriate propositional variables and boolean operators.

- Decide and justify whether or not a collection of propositions is consistent.
- Use predicates with set of tuples as their domain to relate values to one another
- Evaluate nested quantifiers: both alternating and not.

Lecture videos

Week 4 Day 1 YouTube playlist

Week 4 Day 2 YouTube playlist

Week 4 Day 3 YouTube playlist

Monday January 25

Friday January 29

Review quiz questions

1. Monday
2. Wednesday

3. Friday