

For each part below, state your answer in a combination of English and standard mathematical notation.

Part A (30%)

Define the syntax and semantics of propositional logic. Include in your answer, definitions of the notions of *formula*, *interpretation*, *valuation function*, and *model*.

Part B (40%)

Define the notion of a *term* from first-order logic as well as the notions of *substitution*, *unifier*, and *most-general unifier*. Give an algorithm for computing the most-general unifier of two first-order terms.

Part C (30%)

Define the notion of a *constraint satisfaction problem*. Define what it means for a constraint satisfaction problem to be *arc consistent*. Give an algorithm for making a constraint satisfaction problem arc consistent.