1. (25 points) How long a list of pure monadic schemata involving only the predicate letters “F,” “G,” and “H” can be constructed so that no two schemata on the list are equivalent and no schema on the list is implied by “(∃x)(Fx ∧ Hx) ∨ (∃x)(Gx ∧ Hx)”?

2. (25 points) How long a list of pure monadic schemata involving only the predicate letters “F,” “G,” and “H” can be constructed so that each schema on the list implies the next schema on the list, but is not implied by it, and every schema on the list implies “(∀x)(Fx ⊃ Gx) ∧ (∀x)(Gx ⊃ Hx)”?

3. (25 points) How long a list of pure monadic schemata involving only the predicate letters “F,” “G,” and “H” can be constructed so that each schema on the list neither implies, nor is implied by, “(∀x)(Fx ⊕ Gx ⊕ Hx)”?

4. (25 points) How long a list of pure monadic schemata involving only the predicate letters “F” and “G” can be constructed so that no two schemata on the list are equivalent and each schema on the list is satisfied by exactly 40 structures with universe of discourse \{1, 2, 3, 4\}.