LGIC 010 & PHIL 005
Problem Set 4
Spring Term, 2010

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?

2. (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 no schema on the list implies "$(\forall x)(Fx \supset Gx)$"?

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 implies the next schema on the list, but is not implied by it?

4. (25 points) Is there a pure monadic schema S involving only the predicate letters "F" and "G" such that exactly 274 structures with universe of discourse $\{1, 2, 3, 4, 5\}$ satisfy S? Is there a schema S involving only the predicate letters "F" and "G" such that exactly 750 structures with universe of discourse $\{1, 2, 3, 4, 5\}$ satisfy S? (You must answer both questions correctly to receive any credit for this problem.)