

LGIC 010 & PHIL 005

Problem Set 4

Spring Term, 2011

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 “ $(\exists x)Fx$ ”?
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?
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, and each schema on the list implies “ $(\forall x)(Fx \vee Gx)$ ”?
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 30 structures with universe of discourse $\{1, 2, 3, 4, 5\}$.