

LGIC 010 & PHIL 005

Problem Set 3

Spring Term, 2011

1. (25 points) How many structures with universe of discourse $\{1, 2, 3, 4, 5\}$ interpreting only the monadic predicate letters “ F ” and “ G ” make true the schema

$$(\forall x)(Fx \supset Gx).$$

2. (25 points) Write down a non-valid schema involving only the monadic predicate letters “ F ” and “ G ” which is satisfied by every structure with universe of discourse $\{1, 2\}$.

3. (25 points) How many structures with universe of discourse $\{1, 2, 3, 4, 5\}$ interpreting only the monadic predicate letters “ F ” and “ G ” make true the schema

$$(\exists x)(Fx \oplus Gx).$$

4. (25 points) How many structures with universe of discourse $\{1, 2, 3, 4, 5\}$ interpreting only the monadic predicate letters “ F ” and “ G ” make true the schema

$$(\exists x)Fx \oplus (\exists x)Gx.$$