

LGIC 010 & PHIL 005
Problem Set 3
Spring Term, 2019
DUE IN CLASS MONDAY, FEBRUARY 11

1. (30 points) How many structures with universe of discourse $\{1, 2, 3, 4, 5\}$ interpreting only the monadic predicate letters “ F ,” “ G ,” and H make true the schema

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

2. (40 points) Is there a satisfiable schema involving only the monadic predicate letters “ F ,” “ G ,” and “ H ” which is satisfied by no structure with universe of discourse $\{1, 2, 3, 4, 5\}$? If yes, exhibit such a schema. If no, explain why.

3. (30 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

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