Phil 225 -- Symbolic Logic

Homework 5

Due Friday, March 2, 2012

1. Chapter 5, problem 3. If for your translations the conclusion is not a consequence of the premises, give a suitable interpretation to show that it is not.

(2) For each of (a) and (b) below, if it is a consequence of (1) - (4), indicate that it is. If it is not a consequence, show that it is not with a suitable interpretation.

(1) (x)(y)(Fxy  (z)Gxz)

(2) (x)(y)Fxy

(3) (x)(y)(Fxy  (z)Fxz)

(4) (x)(y)(Fxy  (z)Fyz)

(a) (x)(y)Gyx (b) (x)(y)Gxy

(3) For each of the following, identify clearly whether it is valid, inconsistent, or neither. If it is not valid, show that it is not with a suitable interpretation. If it is not inconsistent, show that it is not with a suitable interpretation.

(a) (x)(Fx  Gx)  [(x)Fx  (x)Gx]

(b) (x)(Fx  Gx)  [(x)Fx (x)Gx]

(c) (x)(Fx  Gx)  [(x)Fx  (x)Gx]

(d) (x)Fx  (y)[Gy  (x)(Fx  Gx)]

(e) (x)(Fx –Fx)

(f) (x)(y)(Fyy  – Fxy)

(4) Construct a truth table for: ((P  –Q)  –(R  –(P  R)))