

Exercises for Basic Derivations

February 5, 2009

Due in class: February 12, 2009

1 Derivations

Provide derivations (with justifications for each step) for the following arguments.

$$\text{a. } \frac{(\forall x)(Fx \supset \sim Gx)}{\sim(\exists x)(Fx \ \& \ Gx)}$$

$$\text{b. } \frac{(\forall x)(Dx \vee C)}{(\forall x)Dx \vee C}$$

$$\text{c. } \frac{\sim(\forall x)\sim Rx}{(\exists x)Rx}$$

$$\text{d. } \frac{(\exists x)(x = a \ \& \ x = b)}{a = b}$$

$$\text{e. } \frac{\frac{(\forall x)(Bx \supset Gxf(x))}{(\forall x)Bf(x)}}{(\forall x)Gf(x)f(f(x))}$$

2 Bound Variables

Complete the first task of Teller exercises 3-1, pp. 32-33: draw link lines to show which quantifiers bind which variables.