Due: June 6, 2005, in class

1. Suppose that instead of there being a unitary domain in the $QII-x$ semantical systems, there were distinct domains for each world, all of which contain the same members. Would the resulting semantical systems be equivalent to the $QII-x$ systems? Explain your answer.

2. Give a semantical proof that the converse of the Barcan consequence, $\{\Box(\forall x)Fx\} \vDash_{QII-x} (\forall x)\Box Fx$, holds in $QII-x$.

3. Show that the following is a semantical entailment in $QII-K$: $\{(\exists x)\Box Fx\} \vDash_{QII-K} \Box(\exists x)Fx$.

4. Show that the following derivability relation holds in $QID-K$: $\{(\exists x)\Box Fx\} \vDash_{QID-K} \Box(\exists x)Fx$.

5. Show that the following is a semantical entailment in $QII-x$: $\{a = b\} \vDash_{QII-x} \Box Fa \supset \Box Fb$. 