Assignment #10. Due Thurs April 14.

1. Construct **QL** trees for the following *q*-valid **QL** arguments.

(a) $\forall x(Cx \supset (Fx \vee Nx)), \forall x(Fx \supset Bx), \neg\forall x(Cx \supset Bx) \therefore \neg\forall x(Cx \supset \neg Nx)$

(b) $\forall x(Fx \supset (Bx \equiv \neg Tx)), \neg\forall x(Fx \supset (Bx \vee Cx)), \neg\exists x(Tx \wedge \neg(Dx \supset Cx)) \therefore \exists x(Fx \wedge \neg(Cx \vee Dx))$

(c) $\forall x((Fx \vee Gx) \supset Hx), (\forall xHx \supset \forall xSx) \therefore (\forall xFx \supset \forall xSx)$

2. Construct **QL** trees to demonstrate that the following **QL** *wffs* are *q*-logical truths.

(a) $((\exists xFx \vee \exists xGx) \equiv \exists x(Fx \vee Gx))$

(b) $(\forall x(Fx \supset \neg(Gx \vee Hx)) \supset \neg\exists x(Fx \wedge Hx))$