

# PHIL 250: Introduction to Symbolic Logic

October 18, 2007

Here are fluent English translations of the formal sentences on the first exercise sheet.

1.  $\neg(\exists xFx \vee \exists yGy)$   
It is not the case that either someone is flatulent or someone is grumpy.
2.  $\neg\exists xFx \vee \exists yGy$   
Either no one is flatulent or someone is grumpy.
3.  $\neg\exists x(Fx \wedge \forall yLxy)$   
No one who is flatulent loves everyone.
4.  $\neg\exists xFx \wedge \exists x\forall yLxy$   
No one is flatulent, and someone loves everyone.
5.  $\forall x(Fx \rightarrow \exists yLxy)$   
Everyone who is flatulent loves someone.
6.  $\forall xFx \rightarrow \exists y\forall xLxy$   
If everyone is flatulent, then someone is loved by everyone.
7.  $\forall x\forall y(Lxy \rightarrow Fx)$   
Anyone who loves anyone is flatulent.
8.  $\forall x(\exists yLxy \rightarrow Fx)$   
Anyone who loves someone is flatulent.
9.  $\forall x((Fx \vee Gx) \rightarrow Lxx)$   
Anyone who is flatulent or grumpy loves him/herself.
10.  $\exists x((\neg Fx \wedge \neg Gx) \wedge \neg Lxx)$   
Someone who is not flatulent and not grumpy does not love him/herself.