

Assignment #6. Due Thurs March 10.

1. Use the following translation key to translate the sentences in English into **QL**.
F means ___ is a logic instructor
G means ___ is boring
h means Hank
 - (a) Hank is a boring logic instructor.
 - (b) All logic instructors are boring.
 - (c) If Hank is a logic instructor then some logic instructors are not boring.

2. Translate the following from English into **QL**. Use the following translation key.
P means ___ is a person **W** means ___ will go to heaven
R means ___ ate rice **D** means ___ is rich
S means ___ got sick **A** means ___ is appreciated
G means ___ is good **F** means ___ is famous.
B means ___ is beautiful
 - (a) Not everyone who ate rice got sick.
 - (b) Some beautiful people are not good and will not get to heaven.
 - (c) No one will be appreciated unless they are either beautiful or rich.

3. Translate the following from **QL** into English using the translation key from #2.
 - (a) $\neg \forall x((Px \wedge (Bx \wedge Gx)) \supset (Dx \vee Ax))$
 - (b) $\forall x((Px \wedge ((Dx \wedge Fx) \vee Ax)) \supset (Gx \vee Bx))$

4. Use the given translation key to translate the following into English or **QL**, as the case may be. For the English translations, write an ordinary English sentence, not a literal logical reading.

F means ___ is a professor	H means ___ has ___
S means ___ is a student	L means ___ listens to ___
B means ___ is a book	W means ___ writes ___
P means ___ is poetry	R means ___ reads ___
D means ___ is well-rounded	A means ___ assigns ___ to ___
G means ___ gets good grades	

 - (a) $(\exists x)(\exists y)(Fx \wedge Sy \wedge Hxy \wedge Lxy)$
 - (b) $(\exists x)(Fx \wedge (\forall y)((Py \wedge \neg Wxy) \supset \neg Rxy))$
 - (c) Some students read some books assigned by some of their professors.
 - (d) Some well-rounded students who don't get good grades both read and write poetry.