Q1.

Write a lambda term that will apply to a subject generalized quantifier interpretation and turn it into a generalized quantifier interpretation that would appear as the object of a transitive verb.

Q2.

Let us take the definite article *the* into our repertoire. There is a gigantic literature on the meaning of the definite article. We will take a simple analysis, which covers most uses of the article. We will assume the following lexical entry:

(1)   the   := $S/(S\backslash NP)/N$: $\lambda p \lambda q.q(the'p)$ :: $et(ett)$

The interpretation of the lexical item *the* has a function *the'* in its interpretation. This function maps properties (or sets) to their most salient element. When one says *Pass me the book*, the sentence does not make much sense if there is a book uniquely identifiable both by the speaker and the hearer. The function *the'* is aimed to model this behavior. Give the type of the function *the'*.

Q3.

Adjectives can be used both attributively (*the blue book*) and predicatively (*the book is blue*). Recall from the previous assignment that the attributive form of an adjective is defined as follows:

(2)   blue   := N/N : $\lambda p \lambda x.blue'x \wedge px$

This definition is not suitable for deriving predicative readings. What we mean as a predicative reading is interpreting *The book is blue* as $blue'(the'(\lambda x.book'x))$, or *Every book is blue* as $\forall x.book'x \rightarrow blue'x$.

Assuming that the copula *is* is an identity function — it gives back what it takes as an argument, we can propose another definition for adjectives as follows:

(3)   blue   := A : $\lambda x.blue'x$

which has *A* as a new syntactic category. Assuming that this is the basic category for adjectives, we need a way to derive the adjective category for attributive uses. Write a lambda term that transforms interpretations like in (3) to those like in (2).

Q4.

(Bonus question!) Can we take the category in (2) as basic, and derive the predicative reading by assigning the copula a category different than the identity function? If yes, how? (Hint: if you cannot obtain (3) directly, aim for something logically equivalent to it.)