1. **Scalar adjectives**

On the theory developed by Syrett et al. (2009, ‘Meaning and context in children's understanding of gradable adjectives’), what is the expected pattern of behavior (for children and adults) for the prompt ‘Hand me the full one’ in an experimental condition in which the subject is presented with two cups, one noticeably fuller than the other but neither full in any absolute sense? Are the results of their experiment 1 consistent with this expectation? (2–3 sentence response.)

2. **Functional application**

Reduce the following expressions by applying the necessary application and substitution steps. You should reduce the expressions as far as is possible, including subexpressions.

i. \( (\lambda x(x > 4 \text{ and } x < 10)) \)

ii. \( (\lambda x(\lambda y (x > y))) \)

iii. \( (\lambda f(\lambda x (x < f(7))))(\lambda y (y - 1)) \)

3. **A (non-existent) non-conservative determiner**

Consider the hypothetical quantificational determiner \( llarof \):

\[
[llarof] = \{\langle A, B \rangle : B \subseteq A \}
\]

Thus, \( llarof \ hippos skateboard \) would be true just in case the set of hippos was a superset of the set of skateboarders. Show that this hypothetical determiner is not conservative. To do this, you just need to find a counterexample – sets \( A \) and \( B \) that fail the conservativity test when given as arguments to \([llarof]\) – and explain why those sets constitute a counterexample.
4 Functional quantifier  [2 points]

Give a functional denotation for the quantificational determiner *at most three*. (For examples of such denotations, see section 5.7 of the ‘Semantic composition’ handout.)

5 Compositional analysis  [4 points]

For each of the top (root) nodes in the following trees, provide (i) the name of the rule you used to derive that meaning from its constituent parts, according to the handout ‘Semantic composition’, and (ii) the meaning itself after all the allowable substitutions from functional applications. Thus, for example, given the tree on the left, the answer at right would be complete and accurate:

5.1

\[
\text{VP} \\
\text{V} \quad \text{PN} \\
\text{loves} \quad \text{Maggie}
\]

Rule (TV) derives \( \lambda x \left( \text{T if } \langle x, b \rangle \in \{ \langle a, b \rangle : a \text{ loves } b \}, \text{ else } F \right) \)

5.2

\[
\text{QP} \\
\text{D} \quad \text{NP} \\
\text{a} \quad \text{N} \\
\text{child}
\]

5.3

\[
\text{D} \\
\text{a}
\]
6 Where ever can appear

The English adverbial particle *ever* has a highly restricted distribution. On the basis of the following examples (where * marks ungrammatical cases, as usual), formulate a generalization in terms of the monotonicity properties of determiners about where *ever* can appear:

(7) a. No [NP students who have ever taken semantics] [VP have been to Peru]
   b. No [NP students] [VP have ever been to Peru]
   c. *Some [NP students who have ever taken semantics] [VP have been to Peru]
   d. *Some [NP students] [VP have ever been to Peru]
   e. At most three [NP students who have ever taken semantics] [VP have been to Peru]
   f. At most three [NP students] [VP have ever been to Peru]
   g. Exactly three [NP students who have ever taken semantics] [VP have been to Peru]
   h. Exactly three [NP students] [VP have ever been to Peru]
   i. Every [NP student who has ever taken semantics] [VP has been to Peru]
   j. *Every [NP student] [VP has ever been to Peru]

Please restrict your attention to this set of examples when formulating your generalization, and accept the grammaticality judgments as given (even if you disagree with them).

Note: I’ve used square bracketing to indicate the basic syntactic structure of these cases. In all cases, the string inside [NP …] corresponds to the restriction of the determiner semantically, and the string inside [VP …] corresponds to the scope of the determiner semantically.
7  A surprising indefinite  

It's common to knock on the door of a locked public restroom and hear (1a) uttered from inside the restroom. Use Grice's maxims to explain why this response is favored over each of (1b) and (1c). (Be sure to argue that it is superior to each of them separately.)

(1)  
  a. “Someone's in here.”
  b. “X is in here!” (where X is the speaker's name)
  c. “Albania's chief export is chrome!” (or something else arbitrary in the language of the speech community)

8  PNs as quantifiers  

In our current semantic grammar, the VP meaning applies to the subject meaning when the subject is a PN, whereas the VP meaning is the argument of the subject meaning when the subject is a QP. Some people find this mixed directionality unsatisfying. The simplest way to address it is to raise the type of PNs so that they take VP meanings as arguments, which makes them QPs (and allows us to use rule Q2 with them). Your task: describe such a quantificational meaning for the proper name Lisa. This meaning should be a function from functions into truth values, it should deliver truth conditions that are identical to the ones we obtain in the current grammar, and it should immediately generalize to other PNs.