You are not allowed to co-operate with your fellow classmates on this exam. Clarification questions should be sent to me. In evaluating your responses, I will grade you on correctness, clarity, and precision. Your answers should present clearly the logic behind your choices. Make sure that your trees do not violate the rules discussed in class and your textbook.

1. Assume the following conditions on coreference.

   (1) a. Anaphors: an anaphor must refer to a c-commanding NP within the smallest TP that contains the anaphor.
      
      b. Pronouns: a pronoun cannot refer to a c-commanding NP within the smallest TP that contains the pronoun.

   a. Draw trees for the following examples. One tree can actually suffice for all five examples but for clarity you can draw individual trees. There are three NPs in this tree: (i) the NP corresponding to John, call this NP$_1$, (ii) the NP corresponding to John's mother, call this NP$_2$, and (iii) the NP corresponding to the object, call this NP$_3$. (12 pts.)

   (2) a. *John's mother adores himself.
      b. John's mother adores herself.
      c. John's brother adores himself.
      d. John's mother adores her.
      e. John's mother adores him.

      (use the rules developed in class together with the following rule:
      NP $\rightarrow$ ((NP, D)) (AP+) N.
      For now, we ignore the s.)

   b. Using your tree(s) for (2), fill out the following table. If NP$_i$ c-commands NP$_j$, write yes in the box for (row i, column j), otherwise write no. (18 pts.)
Table 1: c-command relations in the tree for (2)

<table>
<thead>
<tr>
<th></th>
<th>NP₁</th>
<th>NP₂</th>
<th>NP₃</th>
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</thead>
<tbody>
<tr>
<td>NP₁</td>
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<tr>
<td>NP₂</td>
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<tr>
<td>NP₃</td>
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</tr>
</tbody>
</table>

3. Using your tree(s) for (2) and the rules of coreference, answer the following questions. (12 pts.)

(3)   a. Why is (2a) ungrammatical?
   b. Why is (2b) grammatical?
   c. Why can't himself refer to John in (2c)?
   d. Why can't her refer to John's mother in (2d)?
   e. Why can him refer to John in (2e)?

2. Challenge Problem Set 3 on Irish, Page 133, Chapter 4 of the textbook. (16 points)

3. The following sentences are structurally ambiguous. For each sentence, identify the meanings and then provide trees that go with the meanings. Mention which meaning corresponds to the high attachment and which meaning goes with the low attachment. (16 points)

(4)   a. Chief Blue, the last full-blooded Catawba Indian Chief, died in 1959.
      The Evening Herald incorrectly said on Wednesday that he died three years ago due to a reporting error. (treat due to as a P)
      b. We will sell gasoline to anyone in a glass container.

4. In your last homework assignment, we discussed the ambiguity of sentences like Jane said to Chris that Mary went to the store quickly. In such sentences, the adverb may modify either said or went. Now consider the following sentences. (16 points)

(5)   a. That Mary went to the store quickly was said by Jane to Chris.
      b. That Mary went to the store was said by Jane to Chris quickly.

These sentences are not ambiguous.

(6)   a. Draw a tree for (5a).
      b. quickly can only modify one of said/went in (5a). Which one? Why can it not modify the other one?
      c. Draw a tree for (5b).
      d. quickly can only modify one of said/went in (5b). Which one? Why can it not modify the other one?