Natural Language Processing

Write about three of the following problems, describing the issues they raise for natural language processing and possible techniques for dealing with them.

(a) The morphological decomposition and semantic interpretation of the following words:
   - reuse versus react
   - thinker versus washer versus beggar
   - decentralisation

(b) The syntactic ambiguity introduced by rules such as $N \rightarrow N \, N$ for noun compounds.

(c) The resolution of the potential ambiguity in List the Frenchman among the programmers who understand(s) English through the use of agreement features.

(d) The representation and recovery of the semantic interpretation of Every company gave its representative a car and the resolution of quantifier scope ambiguity.

(e) The representation and recovery of the anaphoric and referential links in the following discourse:
   - John saw a house he liked. The windows were large and the door was varnished. He wanted to go inside it.

[20 marks]