Tree relations. Answer the following questions about the abstract tree below.
(1) Which nodes in this tree does F c-command?
(2) Which nodes in this tree does J c-command?
(3) Which nodes in this tree does E c-command?
(4) Which nodes in this tree c-command F?
(5) Which nodes in this tree does E dominate?
(6) Which nodes in this tree dominate F?


Binding theory. For each ungrammatical sentence below, name the principle of Binding Theory that is violated. Draw a box around the anaphor, pronoun, or R-expression that is in violation of the principle of Binding Theory you identified. If the noun you boxed is bound, underline any nouns that bind it.

Examples:
I. $\quad{ }^{*} \operatorname{Steve}_{i}$ gave $\operatorname{him}_{i}$ a raise.
II. $* \mathrm{He}_{i}$ gave $\mathrm{Steve}_{i}$ a raise.
$\underline{\text { Steve }_{i}}$ gave him $_{i}$ a raise. Principle B. $\underline{\mathrm{He}_{i}}$ gave Steve $_{i}$ a raise. Principle C.

Yours to do:
(7) $*$ Jack $_{i}$ 's father told himself ${ }_{i}$ to act more optimistic.
(8) $* \mathrm{He}_{i}$ was not happy to discover that $\mathrm{Jack}_{i}$ hurt himself ${ }_{i}$.
(9) $*$ Jack $_{i}$ vowed that he $i_{i}$ would take better care of $\operatorname{him}_{i}$.
(10) $*$ Jack $_{i}$ remembered that himself ${ }_{i}$ had met Desmond before.

Derivations and trees. Construct derivations for the $v$ Ps in the following sentences. Include category features and uninterpretable features (see notes below). I'll provide one example of what I have in mind here.

Notes:

- Include category features and uninterpretable features, no others (so, no plural features).
- Write the operation (Merge, Adjoin, Move) that happened in each step.
- For category features, use the node label (e.g., don't write [N], but use N or NP as the node label).
- For something like books below, which is both an N and an NP, use NP as the label.
- For the step where you build the node that will be $v^{\prime}$, go ahead and write $v^{\prime}$ (instead of $\nu \mathrm{P}$ )—we know it can't end up as $\nu \mathrm{P}$, because it still has an uninterpretable $[u \mathrm{~N}]$ feature.
- Cross out uninterpretable features as they are checked.
- You can cross out the features on the terminal nodes (as I suggested in class and on the handouts) rather than on the non-terminal nodes (as is done in the book). It's a bit less confusing.
- Write gave as gave (rather than as $v+h a v e ~ o r ~ v+g o)$.

Example:
I. Pat read books by candlelight.


Step 2. ${\underset{\mathrm{V}}{\operatorname{read}[u \mathrm{~N}]} \begin{array}{c}\mathrm{NP} \\ \text { books }\end{array}}_{\text {VP }}^{\text {berge }}$

Step 3.


Step 4.


Step 5.


Step 6.


Adjoin

Yours to do:
(11) Claudia gave mustard to Oliver.
(12) Claudia gave Oliver mustard.
(13) Matt read reports about polls with concern.
(14) Ducks quacked beside Chris.

