## CSE 473: Introduction to Artificial Intelligence <br> HW 7: Exercise 20 pts

1. You are given the following facts:
```
JJ is pink.
JJ is a plebian.
Plebians are people.
All pink people eat Cheerios.
```

You want to prove the conjecture: JJ eats Cheerios.
(a) Convert the facts and the negation of the conjecture to first-order logic formulas and express them in CNF.
(b) Show a refutation graph for the proof by contradiction that JJ eats Cheerios.
2. Given the following game tree:
(a) Fill in the values for full minimax search.

(b) Show how a depth-first alpha-beta procedure works. Indicate values of alpha and beta and show cutoffs by drawing a line through the edges leading to cutoff nodes.


