Aufgabe 1.1.  [Tree Automata]  (10 points)
Define tree automata to recognize the following languages:

1. Expressions over natural numbers (0, Suc) and operators +, * that evaluate to odd numbers. Hint: Be careful with multiplication by zero.

2. Expressions over true, false, and operators ∧, ¬ that are true.

3. Lists of pairs of natural numbers (use the alphabet 0/0, Suc/1, Nil/0, Cons/2, Pair/2)

Aufgabe 1.2.  [Epsilon Rules]  (10 points)
Consider removal of ε-rules from the lecture. Complete the proof that $L(A) = L(A')$, i.e., show that

$$t \rightarrow_{A'} q \implies t \rightarrow_{A} q$$