1. Given a formula $F$: is $F$ satisfiable?
   - Convert $F$ into negation normal form (NNF)
     - if $F$ is not yet in NNF
       - run the tableau algorithm on $F$
     - if not, find a complete open tableau branch
       - this output: $F$ is satisfiable
         - otherwise (we cannot find a complete open branch)
           - all branches are closed.
           - thus output: $F$ is not satisfiable.
           - (if $F$ is unsatisfiable).

2. Given a formula $F$: is $F$ unsatisfiable?
   - the same thing as above.

3. Given a formula $F$: is $F$ valid?
   - this the same as asking: is $\neg F$ unsatisfiable?
     - convert $\neg F$ into negation normal form
       - run tableau alg. on $\neg F$ (after conversion)
     - if all branches are closed, then $\neg F$ is unsatisfiable
       - (i.e., $F$ is valid)
     - otherwise, you find a complete open tableau branch for $\neg F$
       - thus output: $F$ is satisfiable
         - hence, $F$ is not valid.

4. Given two formulas $F, G$: $F \equiv G$?
   - is $F \rightarrow G$ valid?
     - answer the question as in 3 with input $F \rightarrow G$

5. Given a set of formulas $M = \{F_1, \ldots, F_n\}$ and another $G$, $M \equiv G$?
   - is $(F_1 \land \ldots \land F_n) \rightarrow G$ valid?
     - use 4

6. Given two formulas $F, G$: $F \Rightarrow G$?
   - is $(F \rightarrow G)$ valid?
     - (use 4)
     - $(F \rightarrow G) \land (G \rightarrow F)$