

### **Indirect Truth Tables Method for determining validity:**

1. Make the conclusion false under the main operator
2. Plug those values into the premises
3. "Make" the premises all true by putting a "T" underneath each premise's main operator
4. Now start with the easiest premise to work on
5. After you've made it true, plug in the new values in the other premises where they appear
6. Continue until you are able to make all the premises true, or you get a contradiction
7. If there is more than one way to make the conclusion false, and you get a contradiction in the premises, go back and try the other possibilities for making the conclusion false
8. If you are finally unable to get all true premises and a false conclusion, the argument is VALID, but if at any point in working on the problem you can make all the premises true while the conclusion is false the argument is INVALID

### **Indirect Truth Tables Method for determining whether two or more statements are consistent:**

1. Make EACH claim true under their main operators
2. Start with the claim that has a dot as its main operator, or with the claim that can be made true in the least number of ways.
3. After you've made it true, plug in the new values in the other claims where they appear
4. Continue until you are able to make all the claims true, or you get a contradiction (again, start with the easiest claim)
5. If there is more than one way to make the first claim you worked on true, and you get a contradiction in claims, go back and try the other possibilities for making the first claim true
6. If you are finally unable to get all the claims to be true, the claims are INCONSISTENT, but if you can make all the claims true at any point in working on the problem, the claims are CONSISTENT

**NOTE:** When working on either type of problem, if a letter could be either true or false and it would not affect the truth value of the entire statement, do not choose a value for that letter.