Procedure for the derivation worksheet

Enter any premises of the argument as initial assumptions, enter its conclusion as a goal, and follow the procedure below until you are done.

1. *Find any open gaps.*
   - If there aren't any, you've shown that the initial argument is valid and you're done.
   - If there are any, pick one to work on, and go on to step 2.

2. *Note the proximate argument of the gap.* That is, write down the gap's active resources and goal.
   - Go on to step 3.

3. *Find any rules that can be used to close the gap.* Write the name of each such rule under the conclusion of the proximate argument.

conditions for closing the gap	rule
the goal is among the resources	QED
the goal is $\bot$, and there are resources φ and $\neg\,\varphi$	Nc
the goal is $\top$	ENV
$\bot$ is a resource	EFQ

   - If there aren't any, go on to step 4.
   - If there are any, pick one, use it to close the gap, and go back to step 1.

4. *Find any rules that can be used to exploit resources or plan for the goal.* Write the name of each such rule under the sentence in the proximate argument it exploits or plans for.

kind of sentence		exploitation rule	planning rule
conjunction		Ext	Cnj
negated {	atomic sentence	*none*	RAA
	non-atomic sent.	CR (when the goal is $\bot$)	
atomic sentence		*none*	IP
$\top$ or $\bot$		*none*	*none*

   - If there aren't any, you've reached a dead-end open gap, so you've shown that the initial argument is not valid, and you're done.
   - If there are any, pick one, apply it, and go back to step 1.