



## How to change the logical notation

- To change the logical symbols displayed by the app, touch the Menu button and choose "Logical notation". The symbols currently in use are listed, along with the name of the corresponding logical operator.
- Touch one of the operator rows to see a list of available symbols for that operator. The app will automatically rewrite all formulas using the symbol you select.
- Touch the "Variables" entry to choose upper or lowercase variables.

## How to select derivation rules

- To select the derivation rules used by the app, touch the Menu button and choose "Derivation rules". A list of all available rules is displayed, with the active ones indicated by a green switch.
- Touch a switch to activate or deactivate a rule. You can also edit the name and abbreviation for each rule to match your textbook.
- The app uses the rules you select to determine whether the derivations you construct are complete. *Therefore you must select only those rules that are used by your textbook.* It's a good idea to consult with your instructor to ensure you have selected the correct derivation rules.

## How to add derivation lines

- Use the **Add**, **Ins**, and **Hyp** toolbar buttons to add lines to the derivation. Touching any of these buttons opens the Formula Editor.
- The **Add** button adds a line to the end of the derivation. The **Ins** button inserts a line between two other lines. The **Hyp** button adds a hypothesis to the beginning of the derivation. Touch the **Edit** button to delete or reorder derivation lines.
- A derivation line is coloured blue if it can be derived from previous lines by using one of the rules of inference you have selected. Lines that cannot be derived from previous lines are coloured white. Hypothesis lines are coloured green.

## How to edit formulas

- The Formula Editor opens when you add a line to the derivation, or when you touch an existing derivation line.
- Use the standard keypad to enter variables. Variables will appear automatically in upper or lowercase, depending on which logical notation has been selected.
- To enter logical symbols and parentheses, use the accessory keypad that appears above the standard keypad. If your textbook uses the  $\perp$  symbol, it can be entered with the  $\cdot$  key.
- The formulas you enter are automatically formatted, so the space bar need not be used. The editor will not allow you to enter a formula that contains syntax errors.

## How to add subderivations

- Use the **Sub** button on the toolbar to insert a subderivation line into the main derivation. Touch a subderivation line to display the derivation lines it contains.
- The derivation lines in a subderivation can be edited in the same way as in the main derivation.
- The first line of a subderivation is always a hypothesis, so it is automatically coloured green. The **Hyp** button is disabled in a subderivation.
- Touching the **Scope** button will display a list of all previous derivation lines that are in the scope of that subderivation.

## How to construct a derivation

- Use the **Hyp** button to enter the hypotheses of the derivation. The hypotheses are coloured green. Use the **Edit** button to reorder them if necessary. Then use the **Add** button to enter the conclusion of the derivation.
- To complete the derivation, use the **Ins** and **Sub** buttons to insert derivation lines between the hypotheses and the conclusion. A derivation is complete when each line that is not a hypothesis follows from previous lines by one of the derivation rules.
- When a line is justified by a derivation rule, its colour changes from white to blue. Thus the derivation is complete when all of its lines are coloured either green or blue.
- Touch the **Menu** button and select "Test the derivation" to check whether the derivation is complete. To see which rules are used to justify which lines, select "Annotate the derivation".

## How to save a derivation

- To save a derivation to a file on your device, touch the **Menu** button and choose "Save the derivation". You will be prompted to enter a file name. A warning is displayed if a derivation has already been saved with that name.
- Choose "Saved derivations" on the Menu to see a list of the derivations you have saved. Selecting a derivation from this list will load it into the Main Derivation of the app. *This will overwrite any existing lines in the Main Derivation.*
- Use the **Edit** button on the "Saved derivations" list to delete a derivation you have saved.