Notes on drawing logic trees

The branches must be directed down the page, and they point to the sub-formulae that the connective acts upon.

A proposition must never have a branch coming out of it.

Brackets never appear in the tree.

Do we need brackets/Precedence?

What does q∧r∨w mean?

We intuitively sort out precedence ourselves when speaking, but we must not be ambiguous here:

- We apply the connectives in this order, unless brackets tell us otherwise:
    - ¬, ∧, ∨, →, ↔
- Where there are multiple ∧ or ∨ (or →, ↔) symbols, we combine them on the left first.

In this module we will try to use brackets in most cases to avoid confusion, but there will be a question on the exam paper where we must know this precence in order to do the question.

We must memorise it.

Drawing complex trees

It helps to draw in the brackets so that you can then pick the root connective correctly (it's the one that's inside the fewest brackets).

Determining the Truth of Complex Propositional Statements

1. Work out how to read the expression
2. Construct the truth table
3. Determine the truth of the atomic propositions
4. Some fourth step

or

1. four more steps