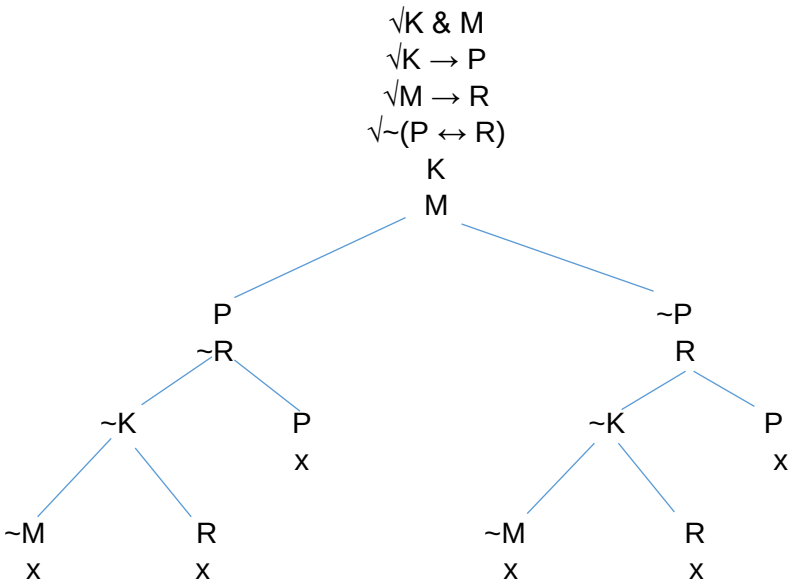
Philosophy 160 Homework 1

Solution to assigned problems.

Use refutation trees to determine whether the arguments below are valid or invalid.

3. **K & M, K → P, M → R ⊢ (P ↔ R)**



This is a valid argument because when we negate the conclusion all branches of the tree close.

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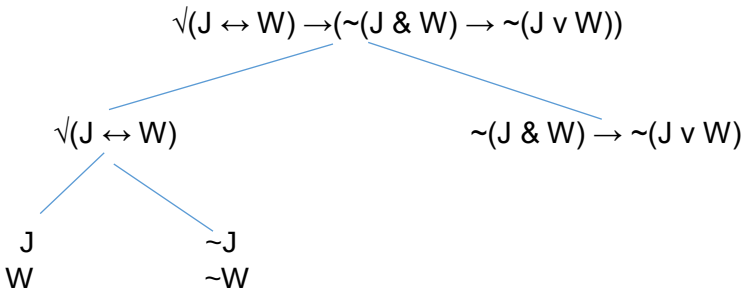
Solution to assigned problems.

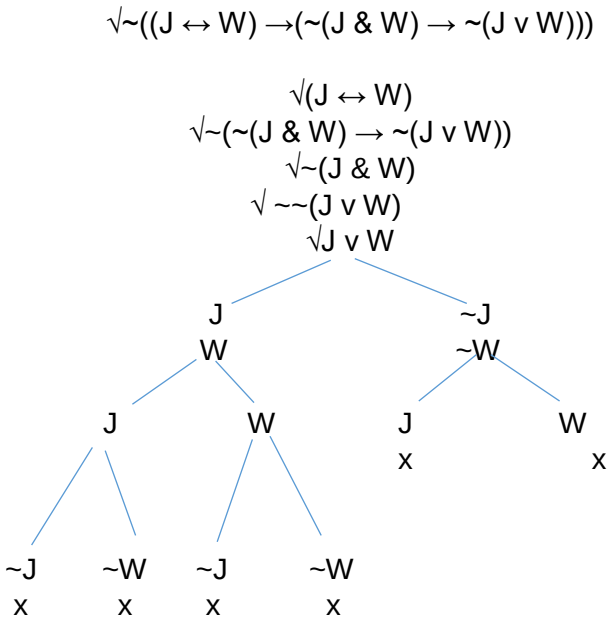
4. **(J ↔ W) →(~(J & W) → ~(J v W))**

Test for contradiction:



This is not a contradiction because at least one fully decomposed branch does not close. Once this is determined, there is no need to complete the rest of the tree.

Test for tautology:



This shows that the formula is a tautology, because the tree under the negated formula closes under every tree.