

2.36.1 Inference Rule Problems

A. For each line in the following deduction, supply the **justification** for that line (citing both the **rule** used, and the **line(s)** which the rule was applied to).

1. $((P \vee Q) \wedge R)$
2. $(\sim P \vee \sim R)$
3. $(\sim(Q \vee S) \vee T)$
- _____ Get: T
4. $(P \vee Q)$
5. R
6. $\sim\sim R$
7. $\sim P$
8. Q
9. $(Q \vee S)$
10. $\sim\sim(Q \vee S)$
11. T

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B. In 2.34 the (connective) **dual of an argument** was defined as follows.

The (connective) **dual of an argument** is the result of (i) switching the conclusion and the premise(s) of that argument, then (ii) replacing each sentence with its (connective) dual. (If the argument has more than one premise, these premises are conjoined together before Step (i).)

Treating a rule of inference as a formal argument, state the (**connective**) **dual** of each of the following rules of inference.

1. Vel Intro ($\vee+$)
2. Tilde Elim ($\sim-$)
3. Tilde Intro ($\sim+$)
4. Repetition (R)

C. The definition of dual of an argument requires us to conjoin together multiple premises. What effect will that have when figuring out the dual of **Wedge Intro** ($\wedge+$)?