Logic, First Course, Winter 2020. Week 7, Section Meeting. Back to course website

Simple examples of proofs involving negation

In this section meeting, we just focus on doing some simple examples of proofs involving negation, and practice inputting them into the proof-checker.

Example 1.

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exercise

(a ∧ ¬b) ⊢ ¬(a → b)

    1. a∧~b    :assumption
```

Example 2.

exercise

a, ¬(a ∧ b) ⊢ ¬b

> 1. a :assumption
> 2. ~(a∧b) :assumption

Example 3.

exercise

(¬a ∨ ¬b), a ⊢ ¬b

> 1. ~a∨~b :assumption
> 2. a :assumption

Example 4.

exercise

(¬a ∨ ¬b) ⊢ ¬(a ∧ b)

   1. ~a∨~b :assumption

Example 5.

exercise

¬¬(a ∧ b) ⊢ ¬¬a

   1. ~~(a∧b) :assumption