Logic, First Course, Winter 2020. Week 8, Section Meeting. Back to course website

Combinations of arrows-statements and derived rules

In this section meeting, we just focus on doing some simple examples of proofs in classical logic. We focus on proofs that involve combinations of arrows-statements and our derived rules.

Example 1.

exercise

```
(s → ¬(p ∨ (¬q ∨ r))), s ⊢ (¬p ∧ (¬r ∧ q))
```

```
1. s→~(p∨(~q∨r)) :assumption
2. s :assumption
```

Example 2.

exercise

```
(a ∧ (b ∨ (c ∧ d))), ¬((a ∧ c) ∧ d) ⊢ b
```

```
1. a∧(b∨(c∧d)) :assumption
2. ~((a∧c)∧d) :assumption
```

Example 3 (Pierce's Law).

exercise

```
⊤ ⊢ (((p → q) → p) → p)
```

```
1.
```

Example 4.

exercise

(¬p ∨ q) ⊢ (p → q)

1. ~p∨q :assumption

Example 5.

exercise

(p → q) ⊢ (¬p ∨ q)

1. p→q :assumption

This is a section notes for this course. It is run on the Carnap software, which is an: