

Test:

1. Formalize in KRZ the sentence below.

If it is not true that (i eat lunch and drink coffee), then (i do not eat lunch or drink coffee).

Show that it is a tautology, or give an evaluation that refutes the formula.

2. Formalize the following sentences in KRZ.

1. If today is Wednesday, then I have a test in Logic or Philosophy.
2. If my Logic professor is absent, then I will not have a test in Logic.
3. Today is Wednesday and my Logic professor is absent.
4. (Therefore) I have a test in Philosophy.

3. Using the method of analytic tables, show that

$$p \rightarrow (q \vee s), r \rightarrow \sim q, p \wedge r \vdash_{KRZ} s$$

4. Construct a formal derivation for the previous inference. (You can use the list of axioms from last week's handout).

Exercises for today:

1. Show that the formulas below are intuitionistic tautologies.

- $p \rightarrow p$
- $p \rightarrow \sim\sim p$ (What about $\sim\sim p \rightarrow p$?)
- $\sim p \rightarrow \sim\sim\sim p$