

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.

exercise

$(a \wedge \neg b) \vdash \neg(a \rightarrow b)$

1.  $a \wedge \neg b$  :assumption

### Example 2.

exercise

$a, \neg(a \wedge b) \vdash \neg b$

1.  $a$  :assumption  
2.  $\neg(a \wedge b)$  :assumption

### Example 3.

exercise

$(\neg a \vee \neg b), a \vdash \neg b$

1.  $\neg a \vee \neg b$  :assumption  
2.  $a$  :assumption

*Example 4.*

exercise

$$(\neg a \vee \neg b) \vdash \neg(a \wedge b)$$

1.  $\neg a \vee \neg b$  :assumption

*Example 5.*

exercise

$$\neg\neg(a \wedge b) \vdash \neg\neg a$$

1.  $\neg\neg(a \wedge b)$  :assumption