

# Assignment Week 6

Philosophy 305

Due February 11, 2022, 5pm

## Proofs

Provide proofs of each of the following arguments. You should enter these in <http://carnap.io>, and make a note in Canvas when you are done.

1.  $A \rightarrow B, A \rightarrow C \vdash A \rightarrow (B \wedge C)$
2.  $A \rightarrow (B \rightarrow C) \vdash (A \wedge B) \rightarrow C$
3.  $A \vee C, A \rightarrow C, B \rightarrow D \vdash C \vee D$
4.  $A \vee (B \wedge C) \vdash (A \vee B) \wedge (A \vee C)$
5.  $(A \rightarrow C) \wedge (B \rightarrow C) \vdash (A \vee B) \rightarrow C$
6.  $\neg A \rightarrow \neg B \vdash B \rightarrow A$

Challenge questions (to get full marks, you just need to complete any one of these, but you are welcome to try all of them)

7.  $\neg(A \wedge B) \vdash \neg A \vee \neg B$
8.  $A \rightarrow (B \vee C) \vdash (A \rightarrow B) \vee (A \rightarrow C)$
9.  $\vdash (A \rightarrow B) \vee (B \rightarrow A)$
10.  $(A \rightarrow B) \rightarrow A \vdash A$