

Logic Worksheet 5

Your name:	Mark (out of 5):
Logic class (A–F):	
Logic class tutor:	

Reading

§§25–29 of forall χ :Cambridge.

Self-marked exercises

Do the following practice exercises from forall χ :Cambridge.

- §26 Part A and Part B, those parts not involving ‘ \neg ’
- §26 Part C 3–6
- ★ §26 Part C 9–12
- ★ §27 Part A
- ★ §27 Part B

Exercises marked with a ‘★’ will be covered in the lecture on the day before the worksheet is due. When you have completed them, carefully check your answers against the answers available at <http://www.nottub.com/forallx.shtml>. Correct your own work *in red*, for the marker to review. In the box below, write something that you now firmly understand, as a result of doing these exercises:

Understand:

And in this box, write something that you want to know more about:

Want to know more about:

How you fill out these boxes will help to guide your logic class.

Further exercises

A. Give a proof for each of the following arguments:

1. $A \rightarrow B, C \rightarrow D \therefore (A \wedge C) \rightarrow (B \wedge D)$
2. $F \rightarrow (G \vee H), G \leftrightarrow I, H \leftrightarrow I \therefore F \rightarrow (G \wedge (H \wedge I))$ *warning: long!*
3. $\star \neg D, \neg D \rightarrow (C \vee D) \therefore C$
4. $\star P \rightarrow Q, \neg P \vee \neg Q \therefore \neg P$
5. $\star A \vee (B \rightarrow A) \therefore \neg A \rightarrow \neg B$
6. $\star A \vee B, \neg A \vee C, \neg B \vee D \therefore C \vee D$ *warning: tricky!*