Reading


Do the following exercises as instructed, and firmly clip/staple this question sheet – with grid correctly completed – onto the front of your work (include your work for the self-marked Section 1).

1 Exercises from the Book

Do the following questions from the end-of-chapter exercises in *An Introduction to Formal Logic*. Then, when you have completed them, carefully check your answers against the answers available on the book’s website at www.logicmatters.net. Correct your own work in red, for the marker to review. In the box below, note any residual queries or problems you have with these self-marked exercises (use a continuation sheet if you have more queries than you can mention here). Take disjunctions to be inclusive!

- Exercises 14 (p. 136) : Qns A7–A11, B3, B7.

Queries

Is there a continuation sheet with more queries? Yes/No
2 Further exercises

A Suppose that

‘P’ expresses Popper is a great philosopher.
‘Q’ expresses Quine is a great philosopher.
‘R’ expresses Ramsey is a great philosopher.
‘S’ expresses Sellars is a great philosopher.

translate the following into PLC as best you can.

1. Popper is a great philosopher only if Quine is one.
2. If either Ramsey or Sellars is a great philosopher, neither Quine nor Popper is.
3. Only if Popper and Quine are great philosophers is Ramsey one too.
4. Popper’s being a great philosopher is a necessary condition for Quine to be one.
5. It is sufficient for Quine’s being a great philosopher that either Popper or Sellars is one.
6. Ramsey and Sellars are great philosophers if and only if Quine is.
7. If and only if Ramsey is a great philosopher are Popper and Quine both great philosophers.

B Use truth-tables to test which of the following are tautologically valid.

1. \((P \supset Q), (Q \supset R), (R \supset P) \vdash (P \equiv Q)\)
2. \((P \equiv \neg Q), (Q \equiv \neg R) \vdash (P \equiv R)\)
3. \((P \supset (Q \equiv R)), (Q \supset (R \equiv P)) \vdash (R \supset (P \land Q))\)

C Which of the following are true and why?

1. If \(\varphi\) tautologically entails \(\psi\) and \(\psi\) tautologically entails \(\varphi\) then \(\varphi \equiv \psi\) is tautology.
2. If \(\varphi\) tautologically entails \(\psi\) and \(\varphi\) tautologically entails \(\neg \psi\), then \(\varphi\) is a contradiction.
3. If \(\varphi\), \(\psi\) and \(\chi\) are tautologically inconsistent, then \(\neg \varphi\), \(\neg \psi\) and \(\neg \chi\) are tautologically consistent.

Question for discussion in class What is the relation between the ‘if . . . , then . . . ’ of ordinary discourse and the material conditional?