

|                          |   |                     |  |
|--------------------------|---|---------------------|--|
| 1A Logic: Worksheet 1    | 5 | <i>Excellent</i>    |  |
|                          | 4 | <i>Good</i>         |  |
| Your name:               | 3 | <i>Satisfactory</i> |  |
| Logic class (A/B/C/D/E): | 2 | <i>Weak</i>         |  |
| Logic class tutor:       | 1 | <i>Very poor</i>    |  |

## Reading

Read *Introduction to Formal Logic*, Chapters 1–6. For parallel reading, you could also see for example

S. Guttenplan, *The Languages of Logic*, Chapters 1–3.

W. Hodges, *Logic*, §§1–8.

Then do the following Exercises as instructed, and firmly clip/staple this cover sheet to your work *with your name/group correctly entered*. 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](http://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).

Exercises 1 (pp. 7–8): Qns 4, 5, 7, 9.

Exercises 2 (pp. 16–17): Qns 1, 2, 3, 4, 5.

Exercises 3 (pp. 27–28): Qns A1–A4.

Exercises 4 (pp. 34–35): Qns 1, 2, 3, 4, 5.

Queries

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

## 2 Further exercises

**A** For each of the following arguments, say whether the argument is deductively valid or not. Give brief reasons for your answers (giving counterexamples for the invalid inference patterns used):

1. Some philosophers are not eccentric. All eccentrics are annoying. So some philosophers are not annoying.
2. 'If a man could not have done otherwise than he in fact did, then he is not responsible for his action. But if determinism is true, it is true of every action that the agent could not have done otherwise. Therefore, if determinism is true, no one is ever responsible for what he does.'
3. 'If each man had a definite set of rules of conduct by which he regulated his life, he would be no more than a machine. But there are no such rules, so men are not machines.'
4. No philosopher is illogical; Jones keeps making argumentative blunders; no logical person keeps making argumentative blunders; all existentialists are philosophers; so, Jones is not an existentialist.
5. Jan has brown hair; Jan doesn't have brown hair; hence Jan is a dutchman.

**B** Which of the following are true, which false and why?

1. If a valid inference has a true conclusion then its premisses cannot all be false.
2. A valid inference with a false conclusion must have at least one false premiss.
3. A sound argument cannot have a false conclusion.
4. Some sound arguments have inconsistent premisses.
5. If a set of propositions is inconsistent, then the falsehood of any one can be deduced from the truth of the remainder.

## 3 For possible discussion in class

Think about the following.

- How should we further explain the notion of possibility that is involved when we say that a valid inference is one where it is not possible for the premisses to be true and the conclusion false?
- When should we say that a multi-step argument is inferentially cogent?
- What's the role of deductive reasoning in scientific enquiry – isn't science inductively based?