

MAS114, Numbers and Groups: Exam Advice

Exam Duration: 2 hours.

Format: 6 compulsory questions; 60 marks total.

- The exam will consist of six compulsory questions. The exam is worth 80% of your final grade; the other 20% comes from the online tests.
- It is not necessary to memorize complicated proofs from the course. However, it is important that you are able to state the main definitions and results confidently, and have a good understanding of the arguments and ideas used in the proofs.
- When trying to construct proofs, do not be scared! A proof is simply a clearly presented argument for why something is true. So do your best to state, as clearly as possible, why a result holds. Almost all proofs have the same form: they start with an assumption or supposition, make a series of deductions, and end with a conclusion. That is, they usually have a form similar to:

Suppose that ... (something)

Then ...

Hence ...

... and so ...

Therefore ... (conclusion).

- On the course website, next to each past exam paper you will find the feedback I sent to students after the exam. It may be helpful to see what kind of things people did wrong; perhaps you can learn from their mistakes!
- Finally, some words on exam-technique. There are certain key terms (below) that are used in maths questions, and often give some hint as to how to proceed. Of course, you will be familiar with these words from everyday usage.

Deduce or *conclude* means something like ‘use your recently proven statement to (fairly quickly) prove’. It is unlikely to be much work, although there is usually one key step to take which will need to be fully justified.

Hence (on its own) is usually an indication that you must use the previous result to deduce what you are being asked to show. When paired with ‘or otherwise’ you should take it to mean that an alternative method will be accepted in the mark-scheme.

Write down usually indicates there will not be credit for workings for that part, but that marks will be given for a clear statement of the results.

The phrase *briefly explain* is likely to mean that a formal proof is not required, but that the underlying idea behind the proof is necessary.

Try to keep these phrases in mind - you’ll notice them all over the place on homeworks and exam papers.