

## MA552 Analysis

### Why prove things at all?

1. Confidence in the result.
2. Intellectual honesty.
3. In the process, you learn about your basic assumptions. You can then ask yourself, are these valid? What if they are not valid?

**Why should I, the lecturer, prove things for you?** After all, they are proved by someone somewhere! Can't we just accept them and move on?

1. So *you* can be confident in the results! You need to see for yourself what is true and what isn't, and why. Isn't keeping the proofs from you somewhat patronising? You are capable of understanding the proofs!
2. Mathematical history and culture; it's what mathematicians do! The history of mathematics involves a constant revision of foundations to incorporate new examples and phenomena as they are discovered.
3. To satisfy your intellectual curiosity; just *why* is something true, and something else false?

### Why should you learn the proofs, and how to prove things for yourself?

1. Why should you be excluded from the intellectual adventure?
2. So you can develop your own sense of intellectual honesty.
3. So you can deepen your understanding of fundamental mathematical processes.
4. **So you can prove things for yourself;** sometime, somewhere, you will need to!