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## GIVING A TALK ON MATHEMATICS

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Of course, there are exceptions to every rule. So, the text below is not about rules but rather provides some ideas that may be useful for the preparation of a talk.

### KEEP YOUR AUDIENCE IN MIND!

When preparing a talk it is often good to have a concrete person in mind that you want to address in your talk. For example, if you give a talk on analysis then think of a good friend of yours who is a mathematician but specialized in algebra. How would you present things to this friend? This is how you should present things in your talk.

### THINK WHAT YOUR AUDIENCE SHOULD REMEMBER FROM YOUR TALK!

After your talk your audience should be able to answer the following questions:

- What is the topic of your talk?
- What is the reason for studying this topic?
- What is the main aim / result?

Of course, your audience can only answer these questions if you can. Thus, you should think carefully on these questions before your talk. In particular, it may be a good idea to start preparation by writing down short sentences answering each of these questions.

What goes for the talk as a whole also applies for each single piece (slide / section / chapter) of your talk: There should be a topic, a reason and an aim in each of these single pieces.

### MAKE PEOPLE HAPPY!

People are happy if they understand things. People become angry if they do not understand things. (People become very angry if they do not understand things and you mention that things are really easy.)

So, make sure that everything you explain you explain in a really simple way. (This may also mean that you skip completely those parts that you can not explain in a simple way.)

At the end of your talk people will be considerably more happy if they have understood a simple piece of mathematics than if they have failed to understand a complicated piece of mathematics.

### PROVIDE STRUCTURE!

Providing structure is a very simple way of making people happy. The reason is that people can understand the structure (and this makes them happy). Without structure people will get lost (and this makes them unhappy). There are lots of structures in your talk among them global structure and local structure.

The global structure comes from the sections of your talk. Typical sections of a talk (on a result of yours) may be structured as follows:

- Background. (Here, you present motivation and history and introduce some key concepts.)
- Main result. (Here, you present your main result.)
- A Lemma. (Here, you provide one lemma that is a key to proving your main result.)
- Further aspects (Here, you comment on related concepts and further study.)

The local structure describes what you are doing and where you are heading (e.g. giving a counterexample, providing a proof, making a remark, motivating a definition etc...). The local structure should be clear to everybody in the audience even if they do not understand a single detail of your talk. There is an easy way to make the local structure transparent to you audience: Just tell them, what you are doing!

### PREPARE YOUR TALK!

After you have prepared the notes / slides of your talk put away everything you have prepared and do not look at it. Now, write down what you remember from your talk. Compare what you have written to the notes / the slides you have prepared. If it agrees you are done. If there are differences, then adjust your talk. Now, start this procedure again ;-)