

# The Title of your Talk

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## 1 Introduction to functions

**Definition 1.1** (function). Suppose  $A$  and  $B$  are sets. A subset  $f \subseteq A \times B$  is called a *function from  $A$  into  $B$*  if and only if

$$\forall a \in A \exists b \in B: (a, b) \in f$$

and

$$\forall a \in A \forall b, b' \in B: (a, b) \in f \wedge (a, b') \in f \implies b = b'.$$

**Remark 1.2.** See for example <https://en.wikibooks.org/wiki/LaTeX/Mathematics> for more mathematical commands. Also try to not overuse quantifiers in formulas – they usually have a negative impact on readability.

## 2 Properties of functions

**Theorem 2.1** (union of functions). *Suppose that  $A$ ,  $B$  and  $C$  are sets and  $f \subseteq A \times C$  is a function from  $A$  into  $C$  and  $g \subseteq B \times C$  is a function from  $B$  into  $C$ . If  $A \cap B = \emptyset$  then  $f \cup g$  is a function from  $A \cup B$  into  $C$ .*

*Proof.* We verify that  $f \cup g$  fulfills the properties from Definition 1.1. ... □

**Remark 2.2.** Above result is a special case of [1, Theorem 1.23].

## 3 Examples

**Example 3.1.**

- Try to find some (counter-)examples!
- They help to illustrate new concepts.
- And thus make it easier to understand those concepts.

**Exercise 3.2.** Also put in some exercises if possible. This allows the other participants to test their understanding of the new subject.

## References

- [1] M. Mustermann. *Title of the Paper/Book*, further information, 2016.

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