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# Mathematics

## Theorem (Fermat's little theorem)

*For a prime  $p$  and  $a \in \mathbb{Z}$  it holds that  $a^p \equiv a \pmod{p}$ .*

## Proof.

The invertible elements in a field form a group under multiplication. In particular, the elements

$$1, 2, \dots, p-1 \in \mathbb{Z}_p$$

form a group under multiplication modulo  $p$ . This is a group of order  $p-1$ . For  $a \in \mathbb{Z}_p$  and  $a \neq 0$  we thus get  $a^{p-1} = 1 \in \mathbb{Z}_p$ . The claim follows. ■

# Mathematics

## Example

The function  $\varphi: \mathbb{R} \rightarrow \mathbb{R}$  given by  $\varphi(x) = 2x$  is continuous at the point  $x = \alpha$ , because if  $\epsilon > 0$  and  $x \in \mathbb{R}$  is such that  $|x - \alpha| < \delta = \frac{\epsilon}{2}$ , then

$$|\varphi(x) - \varphi(\alpha)| = 2|x - \alpha| < 2\delta = \epsilon.$$

# Highlighting

# Highlighting

Some times it is useful to **highlight** certain words in the text.

## Important message

If a lot of text should be **highlighted**, it is a good idea to put it in a box.

It is easy to match the colour theme.

# Lists

- Bullet lists are marked with a grey box.
- 1 Numbered lists are marked with a white number inside a grey box.

Description highlights important words with grey text.

Items in numbered lists like 1 can be referenced with a grey box.

## Example

- Lists change colour after the environment.

# Effects

## 1 Effects that control

Use textblock for arbitrary placement of objects.





# Effects

- 1 Effects that control
- 2 when text is displayed

Use **textblock** for arbitrary placement of objects.

## Theorem

*This theorem is only visible on slide number 2.*

# Effects

- 1 Effects that control
- 2 when text is displayed
- 3 are specified with `<>` and a list of slides.

Use **textblock** for arbitrary placement of objects.



# Effects

- 1 Effects that control
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# Effects

- 1 Effects that control
- 2 when text is displayed
- 3 are specified with `<>` and a list of slides.

Use **textblock** for arbitrary placement of objects.

It creates a box with the specified width (here in a percentage of the slide's width) and upper left corner at the specified coordinate (x, y) (here x is a percentage of width and y a percentage of height).

# References I



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# References II

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**Beamer example**

Usage of the theme `MathDept`

