

## An Energy Efficient Gait Generation for The Humanoid Robot

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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

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

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  $\varphi \colon \mathbb{R} \to \mathbb{R}$  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

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 red box.
- Numbered lists are marked with a white number inside a red box.

Description highlights important words with red text.

## Example

Lists change colour after the environment.



#### References I

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