

# A tale of two primes

Gleb Bystrov

December 4, 2025

Some text about the article.

A helpful tool for mathematicians.

## Example

This is an example of a block.

## Euclid's theorem

This is a theorem.

## Definition

This is a definition.

## Definition

This is a definition.

## Euclid's theorem

This is a theorem.

## 1 Element

- 1 Element
- 2 Element



- 1 Element
- 2 Element
- 3 Element

# Sets

A **set** is a collection of objects.

# Sets

A **set** is a collection of objects.

For example:

$$Z = \{\text{cow}, \text{pig}, \text{elephant}\}.$$

# Sets

A **set** is a collection of objects.

For example:

$$Z = \{\text{cow}, \text{pig}, \text{elephant}\}.$$

We call the objects in  $Z$  the **elements** of  $Z$ .

# Sets

A **set** is a collection of objects.

For example:

$$Z = \{\text{cow}, \text{pig}, \text{elephant}\}.$$

We call the objects in  $Z$  the **elements** of  $Z$ .

We write

$$\text{cow} \in Z$$

# Sets

A **set** is a collection of objects.

For example:

$$Z = \{\text{cow}, \text{pig}, \text{elephant}\}.$$

We call the objects in  $Z$  the **elements** of  $Z$ .

We write

$$\text{cow} \in Z$$

with “cow is an element of  $Z$ ”.

# Sets

A **set** is a collection of objects.

For example:

$$Z = \{\text{cow}, \text{pig}, \text{elephant}\}.$$

We call the objects in  $Z$  the **elements** of  $Z$ .

We write

$$\text{cow} \in Z$$

with “cow is an element of  $Z$ ”.

Frequently encountered sets are

# Sets

A **set** is a collection of objects.

For example:

$$Z = \{\text{cow}, \text{pig}, \text{elephant}\}.$$

We call the objects in  $Z$  the **elements** of  $Z$ .

We write

$$\text{cow} \in Z$$

with “cow is an element of  $Z$ ”.

Frequently encountered sets are

$$\mathbb{N}$$



# Sets

A **set** is a collection of objects.

For example:

$$Z = \{\text{cow}, \text{pig}, \text{elephant}\}.$$

We call the objects in  $Z$  the **elements** of  $Z$ .

We write

$$\text{cow} \in Z$$

with “cow is an element of  $Z$ ”.

Frequently encountered sets are

$$\mathbb{N} = \{1, 2, 3, \dots\}$$

# Sets

A **set** is a collection of objects.

For example:

$$Z = \{\text{cow}, \text{pig}, \text{elephant}\}.$$

We call the objects in  $Z$  the **elements** of  $Z$ .

We write

$$\text{cow} \in Z$$

with “cow is an element of  $Z$ ”.

Frequently encountered sets are

$$\mathbb{N} = \{1, 2, 3, \dots\} \quad (\text{“natural numbers”})$$

# Sets

A **set** is a collection of objects.

For example:

$$Z = \{\text{cow}, \text{pig}, \text{elephant}\}.$$

We call the objects in  $Z$  the **elements** of  $Z$ .

We write

$$\text{cow} \in Z$$

with “cow is an element of  $Z$ ”.

Frequently encountered sets are

$$\mathbb{N} = \{1, 2, 3, \dots\} \quad (\text{“natural numbers”})$$

$\mathbb{Z}$

# Sets

A **set** is a collection of objects.

For example:

$$Z = \{\text{cow}, \text{pig}, \text{elephant}\}.$$

We call the objects in  $Z$  the **elements** of  $Z$ .

We write

$$\text{cow} \in Z$$

with “cow is an element of  $Z$ ”.

Frequently encountered sets are

$$\mathbb{N} = \{1, 2, 3, \dots\} \quad (\text{“natural numbers”})$$

$$\mathbb{Z} = \{\dots, -2, -1, 0, 1, 2, \dots\}$$

# Sets

A **set** is a collection of objects.

For example:

$$Z = \{\text{cow}, \text{pig}, \text{elephant}\}.$$

We call the objects in  $Z$  the **elements** of  $Z$ .

We write

$$\text{cow} \in Z$$

with “cow is an element of  $Z$ ”.

Frequently encountered sets are

$$\mathbb{N} = \{1, 2, 3, \dots\} \quad (\text{“natural numbers”})$$

$$\mathbb{Z} = \{\dots, -2, -1, 0, 1, 2, \dots\} \quad (\text{“integer numbers”})$$

# Sets

A **set** is a collection of objects.

For example:

$$Z = \{\text{cow}, \text{pig}, \text{elephant}\}.$$

We call the objects in  $Z$  the **elements** of  $Z$ .

We write

$$\text{cow} \in Z$$

with “cow is an element of  $Z$ ”.

Frequently encountered sets are

$$\mathbb{N} = \{1, 2, 3, \dots\} \quad (\text{“natural numbers”})$$

$$\mathbb{Z} = \{\dots, -2, -1, 0, 1, 2, \dots\} \quad (\text{“integer numbers”})$$

$$\mathbb{Q}$$

# Sets

A **set** is a collection of objects.

For example:

$$Z = \{\text{cow}, \text{pig}, \text{elephant}\}.$$

We call the objects in  $Z$  the **elements** of  $Z$ .

We write

$$\text{cow} \in Z$$

with “cow is an element of  $Z$ ”.

Frequently encountered sets are

$$\mathbb{N} = \{1, 2, 3, \dots\} \quad (\text{“natural numbers”})$$

$$\mathbb{Z} = \{\dots, -2, -1, 0, 1, 2, \dots\} \quad (\text{“integer numbers”})$$

$$\mathbb{Q} = \{p/q : p, q \in \mathbb{Z}, q \neq 0\}$$

# Sets

A **set** is a collection of objects.

For example:

$$Z = \{\text{cow}, \text{pig}, \text{elephant}\}.$$

We call the objects in  $Z$  the **elements** of  $Z$ .

We write

$$\text{cow} \in Z$$

with “cow is an element of  $Z$ ”.

Frequently encountered sets are

$$\mathbb{N} = \{1, 2, 3, \dots\} \quad (\text{“natural numbers”})$$

$$\mathbb{Z} = \{\dots, -2, -1, 0, 1, 2, \dots\} \quad (\text{“integer numbers”})$$

$$\mathbb{Q} = \{p/q : p, q \in \mathbb{Z}, q \neq 0\} \quad (\text{“rational numbers”})$$



# Sets

A **set** is a collection of objects.

For example:

$$Z = \{\text{cow}, \text{pig}, \text{elephant}\}.$$

We call the objects in  $Z$  the **elements** of  $Z$ .

We write

$$\text{cow} \in Z$$

with “cow is an element of  $Z$ ”.

Frequently encountered sets are

$$\mathbb{N} = \{1, 2, 3, \dots\} \quad (\text{“natural numbers”})$$

$$\mathbb{Z} = \{\dots, -2, -1, 0, 1, 2, \dots\} \quad (\text{“integer numbers”})$$

$$\mathbb{Q} = \{p/q : p, q \in \mathbb{Z}, q \neq 0\} \quad (\text{“rational numbers”})$$

$$\mathbb{R}$$

# Sets

A **set** is a collection of objects.

For example:

$$Z = \{\text{cow}, \text{pig}, \text{elephant}\}.$$

We call the objects in  $Z$  the **elements** of  $Z$ .

We write

$$\text{cow} \in Z$$

with “cow is an element of  $Z$ ”.

Frequently encountered sets are

$$\mathbb{N} = \{1, 2, 3, \dots\} \quad (\text{“natural numbers”})$$

$$\mathbb{Z} = \{\dots, -2, -1, 0, 1, 2, \dots\} \quad (\text{“integer numbers”})$$

$$\mathbb{Q} = \{p/q : p, q \in \mathbb{Z}, q \neq 0\} \quad (\text{“rational numbers”})$$

$$\mathbb{R} = \{\text{decimal numbers}\}$$

# Sets

A **set** is a collection of objects.

For example:

$$Z = \{\text{cow}, \text{pig}, \text{elephant}\}.$$

We call the objects in  $Z$  the **elements** of  $Z$ .

We write

$$\text{cow} \in Z$$

with “cow is an element of  $Z$ ”.

Frequently encountered sets are

$$\mathbb{N} = \{1, 2, 3, \dots\} \quad (\text{“natural numbers”})$$

$$\mathbb{Z} = \{\dots, -2, -1, 0, 1, 2, \dots\} \quad (\text{“integer numbers”})$$

$$\mathbb{Q} = \{p/q : p, q \in \mathbb{Z}, q \neq 0\} \quad (\text{“rational numbers”})$$

$$\mathbb{R} = \{\text{decimal numbers}\} \quad (\text{“real numbers”})$$

The derivative of  $f(x) = g(x) \cdot h(x)$ , with  $g(x) = x^2$  and  $h(x) = \sin(x)$  equals

$$f'(x)$$

The derivative of  $f(x) = g(x) \cdot h(x)$ , with  $g(x) = x^2$  and  $h(x) = \sin(x)$  equals

$$f'(x) = g'(x) \cdot h(x) +$$

The derivative of  $f(x) = g(x) \cdot h(x)$ , with  $g(x) = x^2$  and  $h(x) = \sin(x)$  equals

$$f'(x) = g'(x) \cdot h(x) + g(x) \cdot h'(x)$$

The derivative of  $f(x) = g(x) \cdot h(x)$ , with  $g(x) = x^2$  and  $h(x) = \sin(x)$  equals

$$\begin{aligned} f'(x) &= g'(x) \cdot h(x) + g(x) \cdot h'(x) \\ &= 2x \cdot \sin(x) + \end{aligned}$$

The derivative of  $f(x) = g(x) \cdot h(x)$ , with  $g(x) = x^2$  and  $h(x) = \sin(x)$  equals

$$\begin{aligned} f'(x) &= g'(x) \cdot h(x) + g(x) \cdot h'(x) \\ &= 2x \cdot \sin(x) + x^2 \cdot \cos(x). \end{aligned}$$



