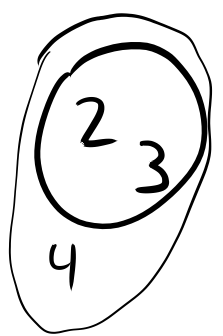
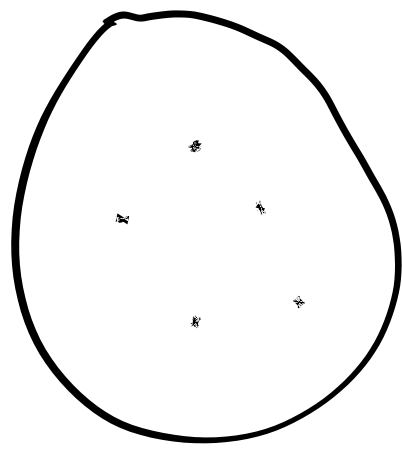


Set(Integer)
set()



7



1 (1)

Member
or
NOT

- not mutable
- do not have other properties
^
members

Set of integers

{1, 2, 3, 4, ~~5~~}

{2, 3}

7

{3, 2}

seven

~~{2, 3, 2}~~

~~seven~~ types

Operators

$$2 + 3 = 5$$

$$2 < 3 = \text{True}$$

$$2 > 3 = \text{False}$$

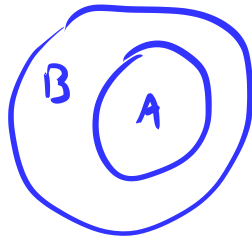
<

≤

Proper Subset of

$$A \subset B$$

<



$$\{1, 2\} \subseteq \{1, 2, 3\} = \text{True}$$

$$\{1, 2\} \subseteq \{1, 3, 5\} = \text{False}$$

$$\{1, 2\} \subseteq \{1, 2\} = \text{True}$$

$$\{1, 2\} \subset \{1, 2\} = \text{False}$$

Superset

$$P \supseteq Q$$



$$\{2\} \setminus \{1, 2, 3, 4\} = \{\} = \emptyset$$

$$\{\} \setminus \{\} = \{\}$$

$$\{2, 3\} \setminus \{\} = \{2, 3\}$$

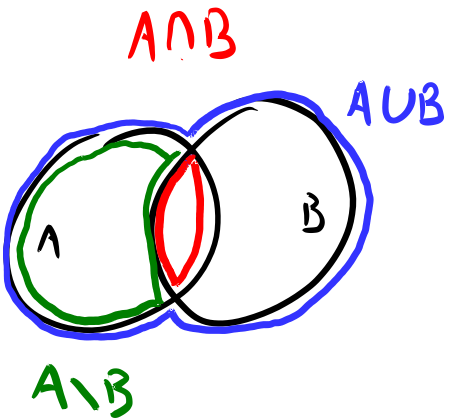
SUB
⊂

SUP
⊃

$$2 \in \{1, 2\} = \text{True}$$

element of

$$3 \in \{1, 2\} = \text{False}$$



both

$$\{2, 3\} \cap \{3, 4\} = \{3\}$$

intersection

either

$$\{2, 3\} \cup \{3, 4\} = \{2, 3, 4\}$$

union

$$\{2, 3\} \setminus \{3, 4\} = \{2\}$$

SET MINUS

$\{2, 3, \{4\}\}$

2

3

$\{4\}$

$|\{2\}| = 1$
Cardinality

$|\{2, 3, \{4\}\}| = 3$

$$\{2\} \in \{2, 3\} = \text{False}$$

$$\{2\} \in \{2, 3, \{2\}\} = \text{True}$$

$$\{2\} \subseteq \{2, 3, \{2\}\} = \text{True}$$

$$\{2\} \subseteq \{2, 3\} = \text{True}$$

$$\{2\} \subseteq \{3, 4, \{2\}\} = \text{False}$$

$\{\text{☺}, 0, \text{False}\}$

$\{\}$

1
+
3
+
3
 $\{\text{☺}\}, \{0\}, \{\text{False}\}$

3
+
1
 $\{\text{☺}, 0\}, \{0, \text{False}\}, \{\text{☺}, \text{False}\}$

1
 $\{\text{☺}, 0, \text{False}\}$

8

of subsets = $2^{|A|}$
of A

Subsid $\{\}$ $\{\}$

$2^{|\{\}\}|} = 2^0 = 1$

$|A| = 3$

3 distinct x
 $x \in A$ is true

8 — distinct B

$B \subseteq A$ true?

Power set = set of all subsets

$\mathcal{P}(A)$

$$\mathcal{P}(\{1, 2\}) = \{\emptyset, \{1\}, \{2\}, \{1, 2\}\}$$

Power(A)

$$|\mathcal{P}(A)| = 2^{|A|}$$

$$A \in \mathcal{P}(A)$$

$$\emptyset \in \mathcal{P}(A)$$

A and B are disjoint

$$\text{if } A \cap B = \{\}$$

$$\{2,3\} = \{2,3\}$$

$$\{2,3\} \neq \{2,4\}$$

Break

Possible