

symbols

A, B, C ...

signs

sets

A the set of ice bears
 B the set of penguins
 C the set of birds
 D the set of white animals
 E the set of flying animals
 F the set of non flying animals
 G the set of animals
 ϕ the empty set

element

$x \in A$ x is an ice bear

\in

subset

$B \subset C$ penguins are birds

\subset

union

$E \cup F = G$ birds do either fly or do not

\cup

intersection

$E \cap B = \phi$ penguins do not fly

\cap

complement

$\bar{E} = F$ those who do not fly aren't able to fly

$\bar{}$

propositions

H The bear is white.
 I The bear is black.
 J There are traces in the snow.
 K Snow fell.
 L An ice bear came along.

conjunction

$H \wedge I$

A Panda bear is white and is black.

\wedge , AND, *

disjunction

$H \vee I$

The color of a bear is white or is black.

\vee , OR, +

negation

$\neg J$

The snow is plane.

\neg , NOT, -

implication

$L \Rightarrow J$

An ice bear came along, so there are traces.

\Rightarrow

quantifiers

all quantor

$\forall x \in A: x \in D$

For all ice bears: they are white.

\forall , all

Ice bears are white.

existence quantor

$\exists x \in C: \neg x \in E$

There are birds who cannot fly.

\exists , one, some

Some birds aren't able to fly.

first order predicate logic

symbols

sets

propositions

quantifiers

See also

Algebraic Semantics in Language and Philosophy

by Godehard Link

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