

The following collection of ‘inline’ symbols might be helpful. (Thanks to Vivek for the prompt.)

A. Propositional and predicate logic

Lecture 1: Introduction and propositions

- \neg negation (not)
- \wedge conjunction (and)
- \vee disjunction (or)
- \Rightarrow implication
- \Leftrightarrow equivalence

Lecture 2: Predicate logic

- $:$ declaration
- \forall universal quantification
- \exists existential quantification
- $[\dots / \dots]$ substitution

Lecture 3: Equality

- $=$ equality
- \exists_1 ‘There is a unique value that ...’
- μ ‘The unique value that ...’

B. Sets, relations, functions, and sequences

Lecture 5: Sets and types

- $\{\dots\}$ set
- $==$ abbreviation
- \in ‘is an element of’
- \notin ‘not an element of’

\subseteq	subset
\subset	strict subset
\emptyset or $\{\}$	empty set
\mathbb{P}	power set (set of subsets)
\mathbb{F}	set of finite subsets
$\#$	cardinality (of a finite set)
\times	Cartesian product
(\dots, \dots)	ordered pair
$.$	component selection
\cup	union
\cap	intersection
\setminus	set difference
\bigcup	distributed union
\bigcap	distributed intersection
\mathbb{Z}	the set of integers

Lecture 6: Definitions

[...] Basic type definition

Lecture 7: Relations

\mapsto	maplet
$X \leftrightarrow Y$	The set of all relations between X and Y
dom	domain
ran	range
\lhd	domain restriction
\rhd	range restriction
\ll	domain corestriction
\rr	range corestriction
\sim	relational inverse
$\langle \rangle$	relational image
\circ	relational composition
r	reflexive closure
s	symmetric closure
$+$	transitive closure
$*$	reflexive, transitive closure

Lecture 8: Functions

$X \rightarrow Y$	The set of all (partial) functions between X and Y
$X \hookrightarrow Y$	The set of all total functions between X and Y
$X \hookrightarrow\!\!\! \rightarrow Y$	The set of all (partial) injections between X and Y
$X \rightarrowtail Y$	The set of all total injections between X and Y
$X \twoheadrightarrow Y$	The set of all (partial) surjections between X and Y
$X \twoheadrightarrow Y$	The set of all total surjections between X and Y
$X \leftrightarrow Y$	The set of all (partial) bijections between X and Y
$X \xrightarrow{\sim} Y$	The set of all total bijections between X and Y
$X \# Y$	The set of all finite functions between X and Y
λ	Lambda
\oplus	Function override
\dots	'up to'

Lecture 9: Sequences

$\text{seq } X$	The set of all sequences of type X
$\text{iseq } X$	The set of all injective sequences of type X
$\langle \dots \rangle$	sequence
$\hat{}$	concatenation
\upharpoonright	filter
$\#$	length (overloading of the cardinality operator)
head	head
tail	tail
reverse	reverse
squash	squash
$\text{bag } X$	The set of all bags of type X
$\llbracket \dots \rrbracket$	bag