

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 ...’
$\mu$	‘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
$\cdot$	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
$\triangleleft$	domain restriction
$\triangleright$	range restriction
$\triangleleft\!\!\triangleleft$	domain corestriction
$\triangleright\!\!\triangleright$	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

$X \twoheadrightarrow Y$	The set of all (partial) functions between $X$ and $Y$
$X \rightarrow Y$	The set of all total functions between $X$ and $Y$
$X \hookrightarrow Y$	The set of all (partial) injections between $X$ and $Y$
$X \mapsto Y$	The set of all total injections between $X$ and $Y$
$X \twoheadrightarrowtail Y$	The set of all (partial) surjections between $X$ and $Y$
$X \twoheadrightarrowtail Y$	The set of all total surjections between $X$ and $Y$
$X \leftrightarrow Y$	The set of all (partial) bijections between $X$ and $Y$
$X \mapsto Y$	The set of all total bijections between $X$ and $Y$
$X \rightrightarrows Y$	The set of all finite functions between $X$ and $Y$
$\lambda$	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
$\frown$	concatenation
$\upharpoonright$	filter
$\#$	length (overloading of the cardinality operator)
$\text{head}$	head
$\text{tail}$	tail
$\text{reverse}$	reverse
$\text{squash}$	squash
$\text{bag } X$	The set of all bags of type $X$
$\llbracket \dots \rrbracket$	bag