

Math 3510 Handout 1
01/26/16
Concepts and Notation

You are expected to have a working knowledge of all concepts and notation below. Working knowledge means not only the definition but also context of usage, examples, and non-examples.

Concepts	Notation
empty set	$\{\dots \dots\dots\}$
subset	
improper subset	\in, \notin
proper subset	
Cartesian product	\emptyset
(binary) relation	
equality relation	\subseteq, \supseteq
function	
map	\subset, \supset
mapping	
domain	$A \times B$ (A and B are sets)
codomain	
range	$\mathbb{R}, \mathbb{Z}, \mathbb{Q}, \mathbb{C}$
cardinality	
one-to-one correspondence	$\mathbb{R}^+, \mathbb{Z}^+, \mathbb{Q}^+$
one to one	
onto	$\mathbb{R}^*, \mathbb{Z}^*, \mathbb{Q}^*, \mathbb{C}^*$
inverse function	
same cardinality	$\phi : X \rightarrow Y, \phi(x), \phi[X]$
infinite set	
disjoint	$\leftrightarrow, \updownarrow$
partition	
cell	ϕ^{-1}
residue class (modulo n)	
congruence modulo n	$ A $ (A is a set)
equivalence relation	
reflexive	\aleph_0
symmetric	
transitive	
equivalence class	$\equiv_n, \equiv \pmod{n}$