

MATH1061 Cheatsheet (Calculus)

Abyan Majid

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1 Sets, numbers

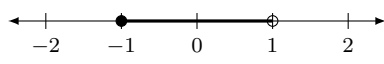
1.1 Union, intersection, difference, complement, subset

Operation	Notation	Description
Union	$A \cup B$	All elements that are in A or B or both
Intersection	$A \cap B$	All elements that are both in A and B
Difference	$A \setminus B$	All elements that are in A but not in B
Complement	\overline{A}	All elements in the universal set that are not in A
Subset	$A \subseteq B$	A is a subset of B ; every element in A is also in B
Proper subset	$A \subset B$	A is a subset of B and $A \neq B$

1.2 Common number sets

Name (Symbol)	Set
Natural numbers (\mathbb{N})	$\{0, 1, 2, 3, 4, \dots\}$
Integers (\mathbb{Z})	$\{\dots - 2, -1, 0, 1, 2, \dots\}$
Rational numbers (\mathbb{Q})	$\left\{\frac{1}{2}, -\frac{4}{3}, \frac{17}{12}, \dots\right\}$
Irrational numbers ($\mathbb{R} \setminus \mathbb{Q}$)	$\{\sqrt{2}, \pi, e, \sqrt{7}, \dots\}$
Real numbers (\mathbb{R})	All numbers

1.3 Interval notation

Interval notation
$D = [-1, 1)$

Note: Infinity ∞ is always open-bracketed, i.e. (∞, ∞)

1.4 Modulus

Modulus
Distance on the number line
$ x - y $