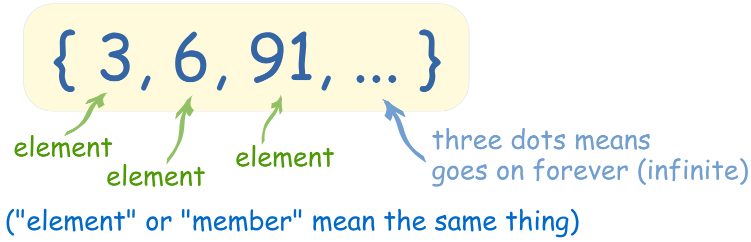
Set Symbols

A set is a collection of things, usually numbers. We can list each element (or "member") of a set inside curly brackets like this:



Common Symbols Used in Set Theory

Symbols save time and space when writing. Here are the most common set symbols

In the examples C = {1,2,3,4} and D = {3,4,5}

Symbol	Meaning	Example
{ }	Set: a collection of elements	{1,2,3,4}
A ∪ B	Union: in A or B (or both)	C ∪ D = {1,2,3,4,5}
A ∩ B	Intersection: in both A and B	C ∩ D = {3,4}
A ⊆ B	Subset: A has some (or all) elements of B	{3,4,5} ⊆ D
A ⊂ B	Proper Subset: A has some elements of B	{3,5} ⊂ D
A ⊄ B	Not a Subset: A is not a subset of B	{1,6} ⊄ C
A ⊇ B	Superset: A has same elements as B, or more	{1,2,3} ⊇ {1,2,3}
A ⊃ B	Proper Superset: A has B's elements and more	{1,2,3,4} ⊃ {1,2,3}
A ⊅ B	Not a Superset: A is not a superset of B	{1,2,6} ⊅ {1,9}
A^C	Complement: elements not in A	D^C = {1,2,6,7} When 𝕌 = {1,2,3,4,5,6,7}
A − B	Difference: in A but not in B	{1,2,3,4} − {3,4} = {1,2}
a ∈ A	Element of: *a* is in A	3 ∈ {1,2,3,4}
b ∉ A	Not element of: *b* is not in A	6 ∉ {1,2,3,4}
Ø	Empty set = {}	{1,2} ∩ {3,4} = Ø
𝕌	Universal Set: set of all possible values	

	(in the area of interest)	
P(A)	Power Set: all subsets of A	P({1,2}) = { {}, {1}, {2}, {1,2} }
A = B	Equality: both sets have the same members	{3,4,5} = {5,3,4}
A×B	Cartesian Product (set of ordered pairs from A and B)	{1,2} × {3,4} = {(1,3), (1,4), (2,3), (2,4)}
|A|	Cardinality: the number of elements of set A	|{3,4}| = 2
|	Such that	{ *n* | *n* > 0 } = {1,2,3,...}
:	Such that	{ *n* : *n* > 0 } = {1,2,3,...}
∀	For All	$\forall x>1, x^2>x$
∃	There Exists	$\exists\ x \mid x^2>x$
∴	Therefore	*a*=*b* ∴ *b*=*a*
ℕ	Natural Numbers	{1,2,3,...} or {0,1,2,3,...}
ℤ	Integers	{..., -3, -2, -1, 0, 1, 2, 3, ...}
ℚ	Rational Numbers	
𝔸	Algebraic Numbers	
ℝ	Real Numbers	
𝕀	Imaginary Numbers	3**i**
ℂ	Complex Numbers	2 + 5**i**