

# Summary of Mathematical Terms

# Summary

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Alphabet

# Summary

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Alphabet

A finite set of objects called symbols

# Summary

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Alphabet

A finite set of objects called symbols

Argument

# Summary

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Alphabet

A finite set of objects called symbols

Argument

An input to a function

# Summary

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Alphabet

A finite set of objects called symbols

Argument

An input to a function

Binary relation

# Summary

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Alphabet	A finite set of objects called symbols
Argument	An input to a function
Binary relation	A relation whose domain is a set of pairs

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Alphabet	A finite set of objects called symbols
Argument	An input to a function
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Boolean operation	

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Alphabet	A finite set of objects called symbols
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Boolean value	

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Argument	An input to a function
Binary relation	A relation whose domain is a set of pairs
Boolean operation	An operation on Boolean values
Boolean value	<i>TRUE</i> , <i>FALSE</i> represented by 1, 0

# Summary

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Alphabet	A finite set of objects called symbols
Argument	An input to a function
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Cartesian product	

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Complement	

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Complement	Operation on a set forming set of elements not present

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Concatenation	

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Concatenation	Operation that sticks together two strings

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Conjunction	

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Connected graph	

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Connected graph	Graph with paths connecting every two nodes
Cycle	

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Connected graph	Graph with paths connecting every two nodes
Cycle	Path that starts and ends with the same node

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Connected graph	Graph with paths connecting every two nodes
Cycle	Path that starts and ends with the same node
Directed graph	

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Conjunction	Boolean <i>AND</i> operation
Connected graph	Graph with paths connecting every two nodes
Cycle	Path that starts and ends with the same node
Directed graph	Graph whose edges are arrows

# Summary, continuation

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Disjunction

# Summary, continuation

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Disjunction

Boolean *OR* operation

# Summary, continuation

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Disjunction

Boolean *OR* operation

Domain

# Summary, continuation

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Disjunction

Boolean *OR* operation

Domain

The set of possible inputs to a function

# Summary, continuation

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Disjunction

Boolean *OR* operation

Domain

The set of possible inputs to a function

Edge

# Summary, continuation

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Disjunction

Boolean *OR* operation

Domain

The set of possible inputs to a function

Edge

A line connecting two nodes in a graph

# Summary, continuation

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Disjunction

Boolean *OR* operation

Domain

The set of possible inputs to a function

Edge

A line connecting two nodes in a graph

Element

# Summary, continuation

---

Disjunction	Boolean <i>OR</i> operation
Domain	The set of possible inputs to a function
Edge	A line connecting two nodes in a graph
Element	An object in a set

# Summary, continuation

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Disjunction	Boolean <i>OR</i> operation
Domain	The set of possible inputs to a function
Edge	A line connecting two nodes in a graph
Element	An object in a set
Empty set	

# Summary, continuation

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Disjunction	Boolean <i>OR</i> operation
Domain	The set of possible inputs to a function
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# Summary, continuation

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Empty set	A set with no elements
Empty string	

# Summary, continuation

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Disjunction	Boolean <i>OR</i> operation
Domain	The set of possible inputs to a function
Edge	A line connecting two nodes in a graph
Element	An object in a set
Empty set	A set with no elements
Empty string	The string of length zero

# Summary, continuation

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Disjunction	Boolean <i>OR</i> operation
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Equivalence relation	

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Equivalence relation	reflexive, symmetric, and transitive binary relation

# Summary, continuation

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Function	

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Function	A mapping from inputs to outputs

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Graph	

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Function	A mapping from inputs to outputs
Graph	A collection of points and lines connecting some points

# Summary, continuation

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Function	A mapping from inputs to outputs
Graph	A collection of points and lines connecting some points
Intersection	

# Summary, continuation

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Disjunction	Boolean <i>OR</i> operation
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Equivalence relation	reflexive, symmetric, and transitive binary relation
Function	A mapping from inputs to outputs
Graph	A collection of points and lines connecting some points
Intersection	Operation of forming common elements of two sets

# Summary, continuation

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Intersection	Operation of forming common elements of two sets
<i>k</i> -tuple	

# Summary, continuation

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Intersection	Operation of forming common elements of two sets
<i>k</i> -tuple	A list of <i>k</i> objects

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Equivalence relation	reflexive, symmetric, and transitive binary relation
Function	A mapping from inputs to outputs
Graph	A collection of points and lines connecting some points
Intersection	Operation of forming common elements of two sets
<i>k</i> -tuple	A list of <i>k</i> objects
Language	

# Summary, continuation

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Empty string	The string of length zero
Equivalence relation	reflexive, symmetric, and transitive binary relation
Function	A mapping from inputs to outputs
Graph	A collection of points and lines connecting some points
Intersection	Operation of forming common elements of two sets
<i>k</i> -tuple	A list of <i>k</i> objects
Language	A set of strings

# Summary, continuation

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Member

# Summary, continuation

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Member

An object in a set

# Summary, continuation

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Member      An object in a set

Node

# Summary, continuation

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Member      An object in a set

Node         A point in a graph

# Summary, continuation

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Member	An object in a set
Node	A point in a graph
Pair	

# Summary, continuation

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Member	An object in a set
Node	A point in a graph
Pair	A list of two elements, also called a 2-tuple

# Summary, continuation

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Member	An object in a set
Node	A point in a graph
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Path	

# Summary, continuation

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Member	An object in a set
Node	A point in a graph
Pair	A list of two elements, also called a 2-tuple
Path	A sequence of nodes in a graph connected by edges

# Summary, continuation

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Member	An object in a set
Node	A point in a graph
Pair	A list of two elements, also called a 2-tuple
Path	A sequence of nodes in a graph connected by edges
Predicate	

# Summary, continuation

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Member	An object in a set
Node	A point in a graph
Pair	A list of two elements, also called a 2-tuple
Path	A sequence of nodes in a graph connected by edges
Predicate	A function whose range is $\{TRUE, FALSE\}$

# Summary, continuation

---

Member	An object in a set
Node	A point in a graph
Pair	A list of two elements, also called a 2-tuple
Path	A sequence of nodes in a graph connected by edges
Predicate	A function whose range is $\{TRUE, FALSE\}$
Property	

# Summary, continuation

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Member	An object in a set
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Pair	A list of two elements, also called a 2-tuple
Path	A sequence of nodes in a graph connected by edges
Predicate	A function whose range is $\{TRUE, FALSE\}$
Property	A predicate

# Summary, continuation

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Member	An object in a set
Node	A point in a graph
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Path	A sequence of nodes in a graph connected by edges
Predicate	A function whose range is $\{TRUE, FALSE\}$
Property	A predicate
Range	

# Summary, continuation

---

Member	An object in a set
Node	A point in a graph
Pair	A list of two elements, also called a 2-tuple
Path	A sequence of nodes in a graph connected by edges
Predicate	A function whose range is $\{TRUE, FALSE\}$
Property	A predicate
Range	The set from which the outputs of a function are drawn

# Summary, continuation

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Member	An object in a set
Node	A point in a graph
Pair	A list of two elements, also called a 2-tuple
Path	A sequence of nodes in a graph connected by edges
Predicate	A function whose range is $\{TRUE, FALSE\}$
Property	A predicate
Range	The set from which the outputs of a function are drawn
Relation	

# Summary, continuation

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Member	An object in a set
Node	A point in a graph
Pair	A list of two elements, also called a 2-tuple
Path	A sequence of nodes in a graph connected by edges
Predicate	A function whose range is $\{TRUE, FALSE\}$
Property	A predicate
Range	The set from which the outputs of a function are drawn
Relation	Predicate, typically when domain is a set of $k$ -tuples

# Summary, continuation

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Member	An object in a set
Node	A point in a graph
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Predicate	A function whose range is $\{TRUE, FALSE\}$
Property	A predicate
Range	The set from which the outputs of a function are drawn
Relation	Predicate, typically when domain is a set of $k$ -tuples
Sequence	

# Summary, continuation

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Member	An object in a set
Node	A point in a graph
Pair	A list of two elements, also called a 2-tuple
Path	A sequence of nodes in a graph connected by edges
Predicate	A function whose range is $\{TRUE, FALSE\}$
Property	A predicate
Range	The set from which the outputs of a function are drawn
Relation	Predicate, typically when domain is a set of $k$ -tuples
Sequence	A list of objects

# Summary, continuation

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Predicate	A function whose range is $\{TRUE, FALSE\}$
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Range	The set from which the outputs of a function are drawn
Relation	Predicate, typically when domain is a set of $k$ -tuples
Sequence	A list of objects
Set	

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Relation	Predicate, typically when domain is a set of $k$ -tuples
Sequence	A list of objects
Set	A collection of objects

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Predicate	A function whose range is $\{TRUE, FALSE\}$
Property	A predicate
Range	The set from which the outputs of a function are drawn
Relation	Predicate, typically when domain is a set of $k$ -tuples
Sequence	A list of objects
Set	A collection of objects
Simple path	

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Relation	Predicate, typically when domain is a set of $k$ -tuples
Sequence	A list of objects
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Simple path	A path without repetition

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Simple path	A path without repetition
String	

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Sequence	A list of objects
Set	A collection of objects
Simple path	A path without repetition
String	A finite list of symbols from an alphabet

# Summary, continuation

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Symbol

# Summary, continuation

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Symbol    A member of an alphabet

# Summary, continuation

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Symbol    A member of an alphabet

Tree

# Summary, continuation

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Symbol	A member of an alphabet
Tree	A graph without cycles

# Summary, continuation

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Symbol     A member of an alphabet

Tree        A graph without cycles

Union

# Summary, continuation

---

Symbol	A member of an alphabet
Tree	A graph without cycles
Union	Operation combining elements of two sets into a single set

# Summary, continuation

---

Symbol	A member of an alphabet
Tree	A graph without cycles
Union	Operation combining elements of two sets into a single set
Vertex	

# Summary, continuation

---

Symbol	A member of an alphabet
Tree	A graph without cycles
Union	Operation combining elements of two sets into a single set
Vertex	A point in a graph