Math for CS

1. Predicates, Sets, and Proofs

1.1. What is a Proof?

A method of ascertaining truth.

- Experiments and observations
- Sampling
- Legal preceding
- Authority and religion
- Inner conviction

A mathematical proof is a verification of a proposition by a chain of logical deductions from a base set of axioms.

A proposition is a statement that can be true or false.

A predicate is like a proposition that contains variables, it is true for some values of the variables and false for others. If quantified it becomes a proposition.

Goldbach's Conjecture: Every even number greater than 2 is the sum of two prime numbers.

Logical operators $\neg \wedge \vee \rightarrow$ can be used to form compound propositions.

A	$\neg A$
T	F
F	T