Deductive Reasoning has some amount of Probability involved

→ questioning the process of reasoning ⇒ Circular Process

Laws of thought

⇒ You can't do math - bth without transforming it to a thought

⇒ Symbolic logic was initially part of mathematics

→ but Aristotle wanted to bring it to everyday life

Laws of thought

(1) Law of Identity: Everything is identical to itself

(1.1) eg: A duck is a duck

A non-duck is a non-duck

(1.2) Some people refer such statements as a tautology

(2) Law of non-contradiction - nothing can be p & ¬p

(2.1) A duck cannot be both a duck & non duck

(3) Law of excluded middle: Everything is either p or not-p

(3.1) An object is either a duck or non duck

Schrödinger's cat (Am I a joke to you?)

George Boole's addition

Mathemical logic

George Boole's Laws

(1) Law of commutativity for conjunction: The order of statements joined by 'and' is of NO implication to the truth value

→ The conjunction to a statement is of same truth value as the statement itself

↳ Law of index

Note: negation is not negative → a concept in everyday life → on numbering

also Zero is not positive, and not negative

also (2) != -2

↳ it can be any number