Theory of Computation: Mathematical study of computing machines, their fundamental capabilities and their limitations.

Q1: What problems are solvable, in PRACTICE, by computer and what problems are not?

⇒ Complexity theory answers these questions. Note that, in human history, no reduction has yet been found for $L_1 \leq_p L_2$, where $L_1 \in \mathbf{P}$, $L_2 \in$ **NPC**.

Q2: What problems are solvable, in PRINCIPLE, by computer and what problems are not?

⇒ Computability theory answers these questions.

P=NP? or P≠ NP?