Complexity Classes P and NP

MATH 3220

Supplemental Presentation

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The cure for boredom is curiosity. There is no cure for curiosity

-- *Dorothy Parker*

Computational Complexity Theory

- In computer science, **computational complexity theory** is the branch of the theory of computation that studies the resources, or *cost*, of the computation required to solve a given computational problem.
- The relative computational difficulty of computable functions is the subject matter of computational complexity.
- Complexity theory analyzes the difficulty of computational problems in terms of many different computational resources.
- Example: Mowing grass has linear complexity because it takes double the time to mow double the area. However, looking up something in a dictionary has only logarithmic complexity because a double sized dictionary only has to be opened one time more (e.g. exactly in the middle - then the problem is reduced to the half).

Source: Wikipedia (Computatoinal Complexity Theory)