

# Investigating 3SAT

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# Notation

Write a formula  $\phi$  in 3-CNF form

$$\bigwedge_{i=1}^n (x_i \vee x_j \vee x_k)$$

# Definition of the problem

## Decisional 3SAT

Given a boolean expression in 3-CNF form, decide if it is satisfiable.

## Computational 3SAT

Given a boolean expression in 3-CNF form, find a satisfying assignment if satisfiable.

## Optimization 3SAT

Given a boolean expression in 3-CNF form, find an assignment that minimizes the number of non-satisfying clauses.