

General optimization problem:

- hard to solve
- compromise: computation time, not always finding the solution(may not matter in practice)

Exceptions:

- least-squares problems:
 - analytical solution
- linear programming problems:
 - no analytical solution
 - mature tech
- convex optimization problems:
 - no analytical solution
 - almost mature
 - many tricks for transforming into convex form
 - difficult to recognize, but could solve many problems