Optimization

Common:
- Fake/dfs
- DP/greedy/bf
- Binary Search/TS
- Branch & Bound
- RMQ/LCA
- Line sweep
- AlgoX

Minimization
- MCMF
- Min cut / vertex
- MST / Dijkstra
- Chull / mec

Maximization
- Max flow / MCMF
- Max Independent Set
- Kruskal Reverse
- LIS/GCD

Search Algorithms
- BFS / DFS / ID-dfs
- Backtracking
- Binary Search/TS
- Golden Ratio
- Meet in middle
- Divide & Conquer
- Branch & Bound
- Min Enclosing Circle

DP

General
- State representation(s)
- Diff sub-states calls?
-- move to state
- Cycles?
-- Depth?
-- Dijkstra / Bfs
-- Dec(rement)-inc-dec

Types
- Restricted / Range
- Counting
- Tree / Partitioning
- Extending table

Concerns
- Base case order
- Search space?
-- Constrained pars
- Redundant pars

States
- Canonical states?
- Local Minima
- Small substates cnt?
- Large pars
- Reduces fast? (e.g. /)

Counting Problems
- DP
- Combinations / Perms
- Inclusion-exclusion
- Graph Power

Data Structures
- Set/Heap /DisjointSets
- BIT
- Segmentation Tree
- Treab, KDT
- LCA/RMQ
- Hashing
- Interval Compression
- Quad Tree

Graph Algorithms
- MST: Kruskal / Prime
- Dijkstra / Topological
- Convex Hull / Floyd
- Max Flow/Min Cut
- Max Matching
- Max Indep Set
- Min path/vertex cover
- Bellman / DConsts
- Euler/Postman

String Algorithms
- Trie
- Permutation Cycles
- LIS / LCS
- Polynomial Hashing
- KMP / Aho Corasick
- Suffix tree/array

Mathematics
- GCD/LCM/Phi/Mob
- NIM/Grundy/Chinese
- Seive/Factorization
- System of Linear Eqs
- Determinant
- Simplex/ Pick's Theo
- Numerical Integration
- Matrix Power
- Closed Form
- Pigeon Hole
- Triangle inequality
- Voronoi diagram

Adhock Algorithms
- Greedy
- Line Sweep
- Sliding Window
- Canonical Form
- Grid Compression
- Constructive algos
- Test cases driven
- Randomization
- Time cut-off
- Stress Test & Observe

Decision Algorithms
- 2SAT
- Difference constraints
- Grundy
- Bipartite?