Standard Contest Algorithms and Data Structures

1. **Graph algorithms:** Breadth first search(BFS), Depth first search(DFS), Strongly connected components(SCC), Dijkstra, Floyd-Warshall, Minimum spanning tree(MST), Topological sort.

2. **Dynamic programming:** Standard dynamic programming problems such as Rod Cutting, Knapsack, Matrix chain multiplication etc.

3. **Number theory:** Modular arithmetic, Fermat's theorem, Chinese remainder theorem(CRT), Euclidian method for GCD, Logarithmic Exponentiation, Sieve of Eratosthenes, Euler's totient function.

4. **Greedy:** Standard problems such as Activity selection.

5. **Search techniques:** Binary search, earch, Ternary search and Meet in the middle.

6. **Data structures (Basic):** Stacks, Queues, Trees and Heaps.

7. **Data structures (Advanced):** Trie, Segment trees, Fenwick tree or Binary indexed tree(BIT), Disjoint data structures.

8. **Strings**: Knuth Morris Pratt(KMP), Z algorithm, Suffix arrays/Suffix trees. These are bit advanced algorithms.

9. **Computational geometry:** Graham-Scan for convex hull, Line sweep.