**Backtracking:**

* Searches every possible combination in order to solve computational problem.
* Can be considered as general technique
* Recursion is used in order to explore the possibilities until we get the best result.
* Uses DFS with any bounding function.

Advantages:

* Easy to understand
* Definite procedure
* Code size is small
* Easier to debug

**Recursion vs Backtracking:**

|  |  |
| --- | --- |
| Recursion | Backtracking |
| Method of solving problem that involves breaking problems into smaller problems | General algorithm technique that considers every possible combination in order to solve the problem. |
| The function calls itself | It searches fro the solution for a problem |
| Bottom up approach | Top down approach |
| Example: Factorial/GCD | Used in BFS &DFS algorithms |

**Subset Sum Problem:**

w={5,10,12,13,15,18}  
M=30  
Soln: