subset sum problem

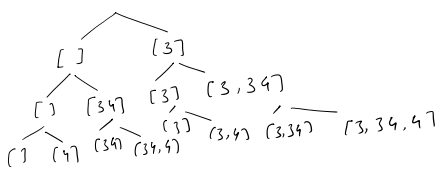
Monday, March 17, 2025 4:46 PM

Input: arr[] = {3, 34, 4, 12, 5, 2}, sum = 9
Output: true
Explanation: Here there exists a subset with target sum = 9, 4+3+2 = 9.

I/p array = [3,34,4, 12,5,2], sum = 9

what is subset? without changing the relative order of elements, when you delete some or all of the elements => gives subset.

[3, 34, 4, 12, 5, 2]



Brute force :-
- start from the last element.
- include that element in the running sum
OR
exclude that element in the running sum

Base conditions :- if(sum == 0) return 1;

if(i<0 || sum<0) return 0;

else if (sum == 0) return dp[i][sum] = 1;

```
class Solution{
    public:
        bool isSubsetSum(vector<int>
            int n = arr.size();
            vector<vector<int>> dp
            return help(arr, sum
        bool help( vector<int> &a
            if(target == 0) retu
```

```
> &arr, int sum){

> (n, vector<int>(sum+1, -1));
n, n-1, dp); }
arr, int sum , int i, vector<vector<int>> &dp){

m1;
eturn 0;
```

```
if(i<0 || target<0) r
if(dp[i][target] != -
return dp[i][target] = help
                       help
};
```

```
eturn 0;
1) return dp(i)[target];
b(arr, sum-arr[i], i-1, dp) ||
p(arr, sum, i-1, dp);
```