class Solution {

    public int findTargetSumWays(int[] nums, int target) {

        Map<String, Integer> memo = new HashMap<>();

        return countWays(nums, 0, 0, target, memo);

    }

    private int countWays(int[] nums, int index, int sum, int target, Map<String, Integer> memo) {

        String key = index + "," + sum;

        if (memo.containsKey(key)) {

            return memo.get(key);

        }

        if (index == nums.length) {

            return sum == target ? 1 : 0;

        }

        int add = countWays(nums, index + 1, sum + nums[index], target, memo);

        int subtract = countWays(nums, index + 1, sum - nums[index], target, memo);

        memo.put(key, add + subtract);

        return add + subtract;

    }

}