# 3 Sum & 4 Sum (Level = Medium)

3 Sum 🡪 Given an array of n integers, are 3 elements a, b, c in array such that a + b + c = 0?

4 Sum 🡪 Given an array of n integers and a target (int), are there 4 elements a, b, c, d in array such that a + b + c + d = target?

Lets generalize the problem to K sum

K Sum 🡪 Given an array of n integers and a target (int), are there K elements a, b, c, d, up to K in array such that a + b + c + d +….. + k = target?

Note

* Solution set must not contain duplicates. Ignore the duplicates combinations.

Examples

|  |  |  |
| --- | --- | --- |
| **No.** | **Input** | **Output** |
| 1 | {1, 0, -1, 0, -2, 2}  k = 4 Target = 0 | {-2, -1, 1, 2}  {-2, 0, 0, 2}  {-1, 0, 0, 1} |
| 2 | {1, 0, -1, 0, -2, 2, 3, -3}  k = 4 Target = 0 | {-3, -2, 2, 3}  {-3, -1, 1, 3}  {-3, 0, 0, 3}  {-3, 0, 1, 2}  {-2, -1, 0, 3}  {-2, -1, 1, 2}  {-2, 0, 0, 2}  {-1, 0, 0, 1} |